

A not so delicate sound of Europeanness. European fiscal policy events and the euro-dollar risk premium

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Abstract

Although the European Monetary Union (EMU) is mainly an economic institution, its future has always hinged upon political manoeuvres. This article examines whether and to what extent non-scheduled and scheduled political events concerning the fiscal governance framework of the EMU have influenced foreign exchange markets. In particular, we estimate how decisions made by the European Commission, the Economic and Financial Affairs Council and the European Council affected the systematic euro-dollar risk premium. Analysing daily data from 2001 to 2005 with a Component GARCH model, we show how the political rhetoric and action have influenced financial markets. Our empirical results highlight crucial shortcomings of the fiscal policy framework of the EMU.

Keywords: Component GARCH, exchange rates, euro, political events, risk premium, uncovered interest rate parity

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1. Introduction

A widespread perception of the European Union (EU) boils down to the reproach that political decisions made at the European level are often no matter of great moment. Although the formation of the European Monetary Union (EMU) is mainly an economic matter, political manoeuvres have shaped and sometimes threatened the success of the EMU project. The handling – or, rather, mishandling – of the ‘Greece case’ is an illustration of this (Fahrholz, Wójcik 2010).

This article moves beyond the analysis of individual episodes and examines more generally whether political events surrounding the formation of public debt within EMU member countries have influenced the ups and downs in the risk premium of the euro-dollar exchange rate. We argue that financial markets consider short-term developments in the Stability and Growth Pact (SGP) as a key indicator for the long-term public solvency within Europe. The viability of EMU, in other words, hinges on the degree to which member countries comply with the Maastricht criteria and the willingness of the European actors to enforce these rules.

The growing evidence of the market relevance of substantial European political events nurtures our expectation that fiscal policy related decisions affect foreign exchange market. Bechtel and Schneider (2010) show, for instance, that the substantial results achieved at the summit meetings of the European Council have systematically affected the returns of the main European defence contractors. Goldbach and Fahrholz (2011) similarly demonstrate that the haggling over the SGP bear on the sovereign creditworthiness of the euro area as a whole.

As decisions on domestic debt have in a monetary union like the EMU direct economic repercussions, we should expect that such developments also influence the foreign exchange market. This article therefore examines whether and to what extent scheduled and non-scheduled political events – i.e. statements, decisions and the scheduled gatherings of the key EMU institutions, the European Council, the Economic and Financial Affairs Council, and the European Commission – affect the euro-dollar exchange rate. To this end, we establish with the help of a Component General Autoregressive Conditional Heteroskedasticity (CGARCH) model whether or not European political events exert any influence on the level and particularly on the volatility of the risk premium of the euro-dollar exchange rate. The risk premium is derived from the Uncovered Interest Rate Parity (UIP), to which the literature also sometimes refers to as the ‘Peso problem’ (Mussa 1979; Lewis 1988). This challenge, which has also been dubbed the empirically observable ‘forward premium anomaly’, stands for a mismatch between forward and then realized spot exchange rates; see also Taylor (1995) for a thorough discussion of the economics of exchange rates. A forward bias arises, according to some interpretations, because financial investors expect with some probability a future policy and regime change that may eventually not occur at all. Such ‘erroneous’ expectations pave an alternative equilibrium path of forward rates, thus explaining the forward premium anomaly. We apply this logic to the fiscal policy sphere of the EMU and examine the risk premium of the euro-dollar exchange rate. Our analysis covers the period from January 2, 2001, when Greece was admitted to the EMU, to March 23, 2005 and thus the day when the SGP was crucially reformed.

The analysis indicates that markets react systematically to political events in the ‘European’ arena. Hence, this article clarifies whether statements in favour or against the Maastricht criteria help us to explain how the risk premium of the euro-dollar exchange rate varies over time and

whether the discussion over a softening of the Maastricht criteria affected this particular market. While scheduled gatherings on the European level do not exert any significant influence on foreign exchange markets in the light of our empirical results, decisions and statements by relevant European actors affect the volatility of the euro-dollar risk premium and thus the uncertainty economic agents have regarding the possible formation of public debt. We argue that this effect represents a ‘not so delicate sound of Europeanness’, showing how much markets care about the credibility of political commitment to the EMU rules and the long-term viability of the euro area.

2. Literature review

This article analyses the influence that political events on the European level exert on the risk premium of the euro-dollar foreign exchange market. In doing so, we draw on the phenomenon of the forward premium anomaly which has been puzzling economists for decades. Theoretically, we should expect that the returns from investing in an asset in one country equal those of holding a similar security – in terms of investment horizon and risk properties – in some other country or currency. The related Uncovered Interest Rate Parity (UIP) claims that the expected rates of return in a foreign exchange market from holding one currency must offset the opportunity costs of holding one interest-bearing asset in one currency rather than the other at the time such assets mature. In this respect, the UIP thesis assumes rational expectations, risk neutrality, free capital mobility and the absence of taxes on capital flows. If rational financial investors forecast future prices, then currencies in which assets offer higher returns should devalue relative to lower return assets denominated in other currencies. A positive (negative) interest rate differential should, in other words, coincide with a currency depreciation (appreciation) of equal scale. Empirically, we should be able to interpret the forward premium as an unbiased estimator of the return on the spot exchange rate. The rational expectation claim boils down to the prediction that the forward exchange rate is an unbiased forecast of the future spot rate.

Many explanations for the forward premium anomaly have been proposed; see Lewis (1995) for a survey. Engel (1999), for instance, surveys numerous empirical studies on the validity of the UIP claim, documenting a failure of the efficient market hypothesis; see also Froot, Thaler (1990). The study of Chinn (2006) also detects evidence against the UIP for the case of major currencies. Already Fama (1984) stresses in this context the importance of a risk premium. According to this interpretation, a risk premium compensates financial investors for low returns during ‘bad times’ (Froot, Frankel 1989). Other interpretations of the anomaly aim at the role of transaction costs and at market frictions which possibly create a liquidity shortage in the foreign exchange market, whereas Taylor (1995) argues that detection of such market inefficiencies rather pertains to flawed financial data. Recently, studies dealing with UIP and risk premium have shifted their attention toward ‘overconfidence’ in the behaviour of financial investors. Gourinchas and Tornell (2004), for example, argue that the forward premium anomaly may be explained with the help of a systematic distortion in financial investors’ beliefs about the interest rate process, i.e. financial investors ‘under-react’ to innovations. Against this backdrop we will discuss below the empirical relevance of a risk premium and its implications for our empirical analysis which translates the forward premium anomaly into a risk premium. Accordingly the recurrence of exchange rate forecast

errors in financial markets does not necessarily violate the rational expectation assumption if ‘erroneous’ expectations arise through a ‘Peso problem’ (Mussa 1979). Forward exchange rates may, to put it differently, systematically deviate from the realized spot values. We can attribute the forward bias to the behaviour of economic agents who expect with some probability a future policy and regime change. Deviations from UIP, which seemingly indicate a failure of the efficient market hypothesis, may thus occur during periods in which expectations only slowly adjust to alterations in the regime. An alternative explanation of the forward premium anomaly would focus on the anticipation of prolonged periods of regime changes that possibly never materialize. Such systematic forecast errors will be reflected in an alternative equilibrium path of future prices that breed a risk premium, which, in turn, may have repercussions on exchange rates (Hodrick 1989).

We contend in this article that important political variables can be added to a list of factors that affect the risk premium. Studies on the effect of more general forms of political decision-making on exchange-rate behaviour are, however, rare. Bachman (1992) has probably been the first to run econometric analyses on the impact of elections on the forward premium of selected exchange rates including the U.S. and the Canadian dollar, the British pound and the French Franc; see also Garfinkel, Glazer, Lee (1999) for a more recent study.

The literature quite often investigates the impact of central bank interventions on the risk premium. For instance, Baillie and Osterberg (2000) consider U.S. and German central bank interventions and their bearing on deviations from UIP. In dealing with communication strategies of various central banks, Ehrmann and Fratzscher (2007), for example, show that the processing of news by economic agents also hinges on the design of the underlying institutional framework in monetary affairs. In a related study, though without addressing the issue of risk premia, Jansen and de Haan (2007) examine the impact of rhetoric within the European Central Bank (ECB) – such as statements by executive board members or national central bankers – on the euro-dollar exchange rate and detect significant volatility effects.

Other empirical research on the impact of elections and political business cycles on exchange rates often emphasizes the partisanship of incumbent government: forecasts of short-term exchange-rate behaviour of the U.S. dollar, British pound and German mark by Blomberg and Hess (1997) rely on political variables which capture party-, election- and candidate-specific characteristics. Lobo and Tufte (1998) investigate the impact of partisanship and political business cycles on the volatility of the U.S. dollar exchange rate against the yen, the British pound, the German mark and the Canadian dollar. Further, Freeman, Hays and Stix (2000) examine the effects of uncertainty about electoral outcomes and policy shifts on exchange rates. Studies that are driven by a similar motivation like our query focus on other segments of the financial market. Bechtel and Schneider (2010), for example, examine to what extent summits of the European Council influence the ordering book of the defence sector. To our knowledge, there are no other studies that assess the possible impact of EMU-related political events on foreign exchange markets. This article tries to fill this niche and attempts to systematically investigate and evaluate the influence that fiscal policy making at the European level exerts on the risk premium of the euro-dollar exchange rate.

3. The forward premium and the role of European politics

This section establishes a causal link between EMU-related decisions and the euro-dollar exchange market and interest rates. Our analytical framework perceives the exchange rate as one of the prices that equilibrate markets for financial assets. Spot exchange rates behave, in this view, as asset prices, and they are strongly influenced by the economic agents' expectation of future events (Frenkel, Mussa 1980). We should, accordingly, be able to trace movements of exchange rates and the related risk premium back to new information such as political events. The risk premium emerges as financial investors require an expected excess return on a currency to compensate for the risk of holding it. In general, the exchange-rate forecasts errors will be random under the assumptions of rational expectations. In the case of a 'Peso problem' these errors may in fact be systematic over time when financial investors anticipate changes in the underlying process generating the return distribution.

As an analytical point of departure, we consider the interest parity relation in its logarithmic approximation. In our analysis, s_t denotes the logarithmic exchange rate at time t , and f_t refers to the logarithmic forward exchange rate at time t . By the same token, i_t denotes the domestic currency price of the interest rate on domestic deposits, whereas i_t^f is the interest rate on foreign deposits of equivalent risk and maturity. The U.S. dollar is the numéraire currency of all rates. Given our rational expectations assumptions, risk neutrality, free capital mobility and the absence of taxes on capital transfers, it follows that

$$i_t - i_t^f = f_t - s_t = E_t(s_{t+1}) - s_t \quad (1)$$

where $E_t(s_{t+1})$ is the mathematical expectation conditioned on the set of all relevant information at time t . This is to say that the interest parity relation holds if the current period's home minus foreign nominal interest rate differential is equivalent to the current forward premium $f_t - s_t$. The latter forward premium should indicate how much the spot rate changes in the next period. From the UIP relation with $s_{t+1} = E(s_{t+1}) + u_{t+1}$ follows that

$$s_{t+1} - s_t = i_t - i_t^f + u_{t+1} \quad (2a)$$

where u_{t+1} is the serially uncorrelated exchange rate forecast error. Expected real returns in the forward market must, in other words, be zero. The validity of the UIP in equation (2a) is checked with the regression on:

$$s_{t+1} - s_t = a + b(i_t - i_t^f) + u_{t+1} \quad (2b)$$

where the null hypothesis of UIP without a systematic risk premium should equal (plus) unity. Assuming u_{t+1} is serially uncorrelated, however, the null hypotheses of a zero intercept a and unit slope b cannot be rejected in many empirical tests concerning equation (2b). For example, according to a survey of 75 published slope coefficients estimates in ordinary least square (OLS) regressions of future changes in the log spot exchange rate on the forward premium, the average value of the slope coefficient amounts to -0.88 (Froot, Thaler 1990). By the same token, more recent studies such as Chinn (2006) find some more empirical support for the validity of the UIP, though

the short-term interest differential remains a biased predictor of exchange rate changes. In line with the ‘Peso problem’ we refer to an UIP relation ameliorated by a systematic risk premium so that the UIP is represented by

$$s_{t+1} - s_t = i_t - i_t^f + y_t + \varepsilon_{t+1} \quad (3)$$

where y_t is the risk premium, which is in our case conditioned on a set of political events and other fundamentals at time t and ε_{t+1} is white noise (see below equation 4). When dealing with the euro-dollar exchange market, we may easily abstract from liquidity aspects and transactions costs that affect the systematic risk premium y_t because of the relatively high level of financial integration across both currency areas. Assuming that the euro-dollar risk premium responds to news stemming from the political sphere, we model the dynamics on the level of the market day. Choosing this level of temporal aggregation enables us to incorporate relevant fiscal policy events into our analysis of the euro-dollar risk premium.

We contend that uncertainty about the course of EMU-related fiscal policies directly affects the expectations of financial investors. In their view, losing momentum in European fiscal cooperation foreshadows a possible stalemate in the economic or financial integration of the EU and possibly even a breakdown of EMU. Such moves thwart the optimism of financial investors. Mounting evidence supports the claim of a positive relationship between fiscal profligacy and expectations as well as interest rates charged on public debt within Europe (e.g. Faini 2006). In this respect, the SGP represents the nucleus of the legal fiscal policy framework at the European level. The SGP benchmark criteria (commonly referred to as stability criteria) curtail the size of budget deficits to 3% and of the accumulated public debt to 60% of the GDP. The European Commission monitors the obligation to meet these criteria under the Excessive Deficit Procedure (EDP) and the Early Warning Mechanism (EWM). The Economic and Financial Affairs Council, which assembles the relevant ministers of the EU member countries, is the key decision making arena that deals with the implementation of these rules. The European Commission approaches its corresponding institution in the case of an existing or impending infringement of the SGP criteria. This means that the member countries, which are the target of these very rules, decide themselves whether or not they live up to these self-imposed obligations. The lack of outside monitoring increases the possibility for opportunistic governments to disregard the SGP rules. The soft law nature and the contracting problem increase the uncertainty about the enforceability of the SGP sanctions (de Haan, Berger, Jansen 2004).

This study focuses on the influence of directly observable European political events on financial assets. In particular, we consider the impact of both scheduled and non-scheduled events that refer to the political-decision making process of relevant European actors such as the European Commission and the Economic and Financial Affairs Council. Moreover, we also account for the possible impact of European Council summits on the euro-dollar risk premium. Although this institution is not at the heart of European fiscal governance, the political deliberation process on this intergovernmental level may on some occasions signal future fiscal policy shifts. We expect that news that stem from the activities of all these decision making bodies influence the current evaluation of the European fiscal policy framework and particularly the SGP. The reason is that the medium- to long-term sustainability of public debt and corresponding private claims of financial investors heavily depend on responsible fiscal-policy decision makers. The afore-mentioned

investors are expected – in line with the arguments of the efficient market hypothesis – to pay close attention to the behaviour of the key politicians acting in this arena, as their moves point to possible future public debt formation. Obviously, markets cannot directly observe the viability of the SGP, but they might derive some information on the commitment towards balanced fiscal policies in the medium- to the long-term through the public statements of politicians and the fora in which they act (Gray 2009).

Signals through which financial investors could expect the EU to adhere to its fiscal policy framework would provide an anchor. Political events on the European level may highlight the political willingness to stick to the goal of securing European public solvency. If an event indicates a lack of compliance with or enforcement of the SGP, it should directly shape the expectations financial investors have with regard to whether or not fiscal cooperation between the EU member countries continues or fails. In our view, policy developments therefore provide a suitable yardstick to assess the willingness of the EU member countries to live up to the overarching goal of preserving the EMU project. As the outcomes of EU decision making signal a possible change in fiscal policy making, financial investors may demand an altered euro-dollar risk premium. This applies most notably to the European Commission, which is the primary guardian of the SGP. Accordingly, any lack of commitment to the SGP-rules by a member country should undermine the overall credibility of EMU fiscal governance. Further events that may affect these rules negatively are deviations from the European Commission's policy stance by the secondary central authority, i.e. the Economic and Financial Affairs Council. Any softening by this rather intergovernmental EU institution may signal future slack in enforcing SGP rules and may, thus, also contribute to altering risk premia. Economic agents may generally find it difficult to anticipate the European fiscal policy process, especially because the complexities of the decision making process aggravate the problem in anticipating whether or not negotiations will end up in an agreement. Hence, the occurrence of a European gathering that relates to fiscal policy making can convey new information to financial investors. Admittedly, some scheduled political events may end in failure, leaving it wide open whether the resulting crisis will be a temporary affair only or the beginning of a meltdown endangering the fiscal policy framework or, in the worst case, the common currency. The extent of such political uncertainty priced in the euro-dollar risk premium would remain unchanged if such gatherings would represent the kind of useless talking shops to which media frequently and in some cases also policy analysts allude. Although such meetings often end in failure, they might, in our view, nevertheless often convey relevant information to the financial sector. The same should be true for many of the other political statements through which policy makers try to shape the rules of the SGP according to the wishes of their constituents. Hence, we argue that an often 'not so delicate sound of Europeanness' characterises the euro-dollar risk premium.

We will test, based on this argument, two hypotheses on the possible impact of non-scheduled and scheduled political events on the risk premium of the euro-dollar exchange market. Given the size and depth of European and U.S. financial markets, we argue that no level effects should be observable, but that political developments increase the uncertainty of financial investors. Accordingly, the focus of the empirical analysis will be on the influence that political events on the European level may exert on the volatility of the euro-dollar risk premium.

H1: Political events – in particular, decisions taken either by the European Commission and/or by the Economic and Financial Affairs Council – that indicate a present and/or future lack

of commitment to fiscal prudence within the EMU affect the volatility of the euro-dollar risk premium.

H2: Political events – either in the form of non-scheduled derogatory statements concerning the European fiscal governance or scheduled gatherings of relevant European bodies – do not bear on the volatility of the euro-dollar risk premium.

4. Data

This section describes the economic and political variables that we employ to test the hypotheses fleshed out in detail above. The exchange rate and other economic time series for the U.S. have been retrieved from the Economic Research of Federal Reserve Bank of St. Louis – Economic Data (FRED), whereas relevant time series for the euro area have been provided by the Euribor-European Banking Federation (EURIBOR-EBF). More precisely, we use spot rates of the euro-dollar exchange rate denominated in U.S. dollar per euro unit and recorded as noon buying rates at New York City, i.e. Greenwich Mean Time (GMT) -5h. Our analysis further employs overnight interest rates with one-day maturity to arrive at daily deviations from UIP (i.e. the forward premium) to measure the risk-premium augmented UIP relation. The empirical basis for the U.S. interest rates is the (risk-free) Effective Federal Fund Rate (EFFR, actual/360), which is the weighted average interest rate at which private banking institutions lend funds at the Federal Reserve System to other banking institutions at the overnight inter-banking market. EFFR is a target interest rate that the Federal Open Market Committee (FOMC) sets for primarily guiding its open market operations in U.S. securities. As a proxy for our risk-free euro area interest rate we use the counter-partying European Overnight Index Average (EONIA, actual/360). Although this interest rate is also a weighted average of effective inter-banking contracts between private banking institutions, it is a fixed price for overnight borrowing at the ECB. The advantage of employing EFFR and EONIA time series is that the maturity time is equal to the sampling frequency. However, some fuzziness arises from differences in recording the time of the day, the time of publication and from the difficulties in dealing across different time zones: The EFFR is recorded at the Federal Reserve Bank of New York as a closing date at 6:30PM Eastern Standard Time (GMT -5h). By the same token, EONIA is calculated by the ECB at 6:00PM and published at about 7:00PM Central European Time. Ambiguities stemming from differences in the timing of data, possibly even further blurred by variations in day-saving time, are mitigated through a proper event window size. We add day-of-the-week effects to the list of economic variables. A final decision in our research design refers to the possible elimination of European political events because of differences in trading days between Europe and the U.S. Here, we have given precedence to interpolation of the EONIA values, which affects 18 out of 1061 observations. Yet, the latter adjustments only affect five interpolated observations that may have a bearing on the variance process within bounds of a trading week encompassing a political event of interest.

To identify relevant political events, we have conducted a systematic content analysis of the relevant statements by three EU institutions, the European Commission (COM), the Economic and Financial Affairs Council (ECOFIN), and the European Council (SUMMIT).¹ The coded events

¹ We have also constructed political event data for statements and decisions by the European Court of Justice as well as the ECB. However, we have dropped such events because they are not sufficiently frequent.

distinguish between (non-scheduled) *Statements* and *Decisions* that indicate some form of non-compliance or infringement of the rules of European fiscal governance and the SGP in particular. Further, the empirical analysis considers scheduled ECOFIN gatherings and European Council summits through a variable labelled *Meetings*.

As the European Commission is the main arbiter of the SGP rules, we can expect *Statements* to influence the expectations of financial investors. This applies to comments by Commissioners or other leading staff of the European Commission who indicate a potential lack of compliance with the fiscal policy norms. Whenever the European Commission officially reports a violation of the SGP and/or recommends the opening of either an EDP or an EWP, we code such developments as a *Decision* by contrast. Since the supranationalist agency continuously monitors the fiscal performance of EU member countries, constructing a category *Meeting* comprising scheduled meetings of this institution is not feasible. The second actor considered here, the Economic and Financial Affairs Council, decides upon recommendation by the European Commission. However, ECOFIN does not necessarily comply with decisions of the European Commission. Accordingly, we summarize all events indicating that ECOFIN is not following such a recommendation by adjusting or reinterpreting the legal framework of SGP in the indicator *Decision*. Likewise, opinions expressed by national ministers of finance or economics as representative members of the ECOFIN point at a possible infringement of SGP or a softening of these rules; we call this variable *Statements*. In addition, the ECOFIN meets on a regular basis (i.e. the category *Meeting*) sometimes in the form of preparing European Council meetings, sometimes shortly after such sessions. Finally, the analysis considers *Statements* and *Meetings* of European Council meetings (i.e. SUMMITS), while the type *Decision* is not applicable as these gatherings do not belong to the regular European fiscal policy process. At this stage, *Statements* refer to cases where the heads of the national governments have spoken of the SGP in a ‘derogatory’ manner. Such rhetoric signals the willingness to possibly violate the rules of the European fiscal policy framework in the future. Scheduled meetings by the SUMMIT are coded as *Meetings*, which may also impact the level and especially the volatility of the euro-dollar risk premium.

To code developments within the realm of the EMU we refer to EU documentation regarding any official *Decision* and *Meeting* as well as to the *Financial Times* reporting *Statements*.² With respect to the political events under consideration, we have to address the challenge that the political events that we consider here often take place on non-trading days, particularly on weekends or during holidays. There are two general approaches to surmount the resulting problem: interpolation and the shifting of the event to the next trading day. As the first solution would heavily bias the variance of our time series, we treat a European political event that took place on weekend or holiday as if it had occurred on the next trading day. At the same time, we only retain the final days of sessions by ECOFIN and SUMMIT where the results of the haggling are typically presented at news conferences or official press releases. This procedure affects 15 gatherings of the European Council (SUMMIT) and only 1 meeting by ECOFIN.

As we cannot be sure whether published news on European political events have arrived ‘in due time’, we have adjusted the window size of our political event data. In a similar vein,

² We have drawn on the *Financial Times* (European edition) and in terms of a cross-check on the German newspaper *Frankfurter Allgemeine Zeitung*. The resulting binary variables were coded as a ‘statement’ when both newspapers reported such event at the same time.

our analysis takes the possible anticipation of certain developments into account through an enlarged event window; see, for example, MacKinlay (1997) for a similar approach. Our three-day window *Decisions* contains therefore the day prior and the one succeeding the actual event. As statements are often made rather surprisingly, the event window *Statements* encloses only the day during which the event occurred plus the next trading day. Moreover, a final decision had to be made with regard to the overlapping of the temporal frame of both the Economic and Financial Affairs Council and the European Council meetings. Here, we have given as much precedence as reasonable to the SUMMITS as the sessions of the ECOFIN are often closely intertwined with these higher-level gatherings and have therefore often only a preparatory or wrap-up character.³ Our research strategy allows us, in sum, to precisely estimate the reactions of the euro-dollar risk premium – particularly in terms of the perceived political uncertainty – after political news have arrived as well as before final decisions are made.

Our sample is confined to the period from January 2, 2001, to March 23, 2005, to assure as much homogeneity in our sample as possible. The analysis sets in with the entry of Greece to the EMU and ends with the agreement of the EU member countries to substantially reform the fiscal policy framework. The data set that we examine below comprises 1061 observations.

5. Empirical model

This section presents the empirical research strategy through which we examine the impact of European political events on the systematic euro-dollar risk premium (henceforth, *Premium*). Econometrically, we rely on general autoregressive conditional heteroskedasticity (GARCH) models to study the influence European political events exert on the levels and volatility of the *Premium*. GARCH models focus on the conditional variance of the underlying series by identifying and measuring the degree of autocorrelation in second moments.

5.1. Diagnostic statistics

A problem that high-frequency data analyses like the one undertaken in this article often encounter is non-stationarity. When considering, however, a daily exchange-rate risk premium covering a relatively tranquil period of about four years in 2001–2005, we can hardly conceive of a non-mean reverting process in the case of our dependent variable. If there was no mean reversion in the *Premium*, then this would imply that the risk premium could increase infinitely. It is thus no surprise that the augmented Dickey-Fuller (ADF) test and the non-parametric Phillips-Perron (PP) test indicate that we can always reject the null hypothesis of a unit root in the *Premium*, even in the case of allowing for trend and drift components, at any conventional level of significance. Therefore, we give precedence to an analysis of serial correlation in residuals. We have calculated the sample autocorrelation and partial autocorrelation functions for the *Premium* series up to lag 20. Both functions confirm the stationarity of the *Premium* in levels; the absolute values are

³ The number of days included in some disaggregated series will therefore slightly deviate from the number of observations of the aggregated political event series, which only contains the ECOFIN and SUMMIT variables.

very small and do not suffer from serial correlation at the 5%-level of significance. Interestingly, however, some form of cyclicity sets in at the fourth lag, which is indicated by a change of sign. The subsequent empirical analysis takes this regularity into account through the inclusion of a lagged dependent variable as a regressor. At the same time, this cyclicity shows that there exists also no random walk drift beyond the zero mean as the zero level is crossed several times.

Table 1
Diagnostic statistics

	<i>Premium</i>		<i>Premium</i>
Observations	1061	Skewness	-0.276
Mean	0.032	Kurtosis	3.320
Standard Deviation	0.635	Jarque-Bera	18.016***
Minimum	-2.471	LM(10)	26.039**
Maximum	1.828	BPG	10.026**

Notes: the values of the dependent variable *Premium* are multiplied by 100, i.e. basis points of (discrete) returns; **, and *** represent 0.01- and 0.001-level of significance.

Further diagnostic tests reported in Table 1 indicate that only moderate skewness, low excess kurtosis, and non-normal distribution characterise the outcome variable *Premium*. The variation of the *Premium* is rather low as minimum and maximum values are within a range of a quadruplicated standard deviation at a quasi zero mean. At the same time, the financial time series particularly suffers from serial correlation in squared standardized returns. For this reason, we have calculated some auxiliary ordinary least square regression to test the null of no heteroskedasticity.⁴ A series of conventional Lagrange-multiplier (LM) tests up to lag 10 (henceforth, LM(10)) indicates that heteroskedasticity problems set in at the sixth lag at the 5%-level of significance, while the same test at the first five lags supports the null hypothesis that no autoregressive conditional heteroskedasticity (ARCH) effects exist at any conventional level of significance. This rather awkward feature of the *Premium* time series may, on the one hand, indicate that there are some pronounced long memory effects at work. They might, however, on the other hand, also be related to the highly significant non-normal distribution of the dependent variable. To examine this possibility, we calculated the chi-squared Breusch-Pagan-Godfrey (BGP) test statistics, which considers the log of the original squared residuals. At this stage, the null hypothesis of no heteroskedasticity can be rejected at the 1%-level of significance. For this reason, there exists a conditional, time-dependent variance of our *Premium* series warranting

⁴ The auxiliary regressions consider i) only the constant as an regressor and ii) a set of regressors composed of the constant, a day-of-the-week effect and the exchange-rate spot returns as is the case in the subsequent mean specification in Model 0 (see below) and which is here the basis of the reported test statistics on heteroskedasticity in Table 1. Moreover, we have also calculated the according tests on heteroskedasticity for the underlying (first-differenced and logarithmic) euro-dollar exchange rate series. The results of these tests do not substantially differ.

a GARCH-specification for further analysis. Being aware of the possibly very persistent memory effects, we iteratively checked Ljung-Box (LB) test statistics and (partial) autocorrelations functions of (squared) residuals for various GARCH-specifications such as a conventional GARCH(1,1), and GARCH-in-Mean specifications. Eventually, we arrived at well-specified mean and variance equations for the case of Component GARCH (CGARCH) specifications, which also particularly allows addressing persistent long memory effects.

5.2. The Component GARCH model

Our analysis particularly stresses the volatility of the *Premium*. In doing so, we refer to a particular class of GARCH models known as CGARCH, which decomposes volatility into two components. In particular, the CGARCH specification considers a permanent and a transitory component, which captures deviations from the trend of conditional variance; see Engle, Lee (1999) for the seminal contribution; further, e.g. Byrne, Davis (2005), Christoffersen et al. (2008). The following set of equations describes our CGARCH model:

$$y_t = \gamma_1(y_{t-4}) + \gamma_2(Mondays) + \gamma_3 \dot{s}_t + \sum_{\substack{j=1, \\ k=1}}^3 \theta_{j,k}(D_{j,t}) + \varepsilon_t \quad (4)$$

$$h_t^2 = q_t + \alpha_1(\varepsilon_{t-1}^2 - q_{t-1}) + \beta_1(\sigma_{t-1}^2 - q_{t-1}) + \delta_1 \dot{s}_t + \sum_{\substack{j=1, \\ k=1}}^3 \lambda_{j,k}(D_{j,k,t}) \quad (5)$$

$$q_t = \omega + \rho(q_{t-1} - \omega) + \varphi(\varepsilon_{t-1}^2 - \sigma_{t-1}^2) + \delta_2(Mondays) + \sum_{\substack{j=1, \\ k=1}}^3 \tau_{j,k}(D_{j,k,t}) \quad (6)$$

where $\varepsilon_t = z_t \sigma_t$ with z_t i.i.N (0,1)

The mean equation in (4) comprises the *Premium* on the left hand side. This dependent variable is calculated in accordance with equation 3 (see above). The formation of the level effects hinges on a set of independent variables on the right hand side. Firstly, in order to address the aforementioned problem of cyclicity, we incorporate an autoregressive (AR) term (i.e. the first term on the right hand side of equation 4). At the same time, however, we abstain from employing moving average (MA) terms, which lack any theoretical foundation. From a theoretical point of view, a MA-term would imply a systematic trend value of the outcome variable different from zero, which could be taken as a sign of lacking efficiency in European and U.S. financial markets. Besides, we have suppressed the constant. While suppressing a regression constant in a market model of, for example, stock returns would be rather inappropriate, such procedure is tenable for risk premia. The reason is that underlying exchange rates are prices that do not pertain to any immediate surplus value in terms of real production, i.e. there is no interest earning subject to market appraisal as is the case, for instance, with securities. In other words, suppressing the constant is admissible from a theoretical point of view. Secondly, apart from the AR-term, there is a term referring to a day-of-the-week effect, which here boils down to *Mondays* (see below). Thirdly, we control for the influence that log-differenced (i.e. continuous) exchange-rate returns \dot{s}_t may exert on the level of the *Premium*.

This is to say that our study takes into account that a risk premium component may be very sensitive to short-term financial capital flows. Fourth, the set of political event dummies $D_{j,t}$ with $j \in \{1, 2, 3\}$ accounts for the influence of *Decisions* ($j = 2$), *Statements* ($j = 1$), and *Meetings* ($j = 3$) on the level of the dependent variable. Finally, the term ε_t is a conditionally normally distributed white noise process.

The conditional variance in equations (5) and (6) is of particular interest to our endeavour. The transitory component in equation (5) models the conditional variance h_t^2 as a linear function of q_t (see below) as well as the ARCH- and GARCH-term (i.e. the coefficients α_1 and β_1), which are adjusted by a lagged q_{t-1} . The permanent component q_t in equation (6) reflects a trend component around which short-term volatility fluctuates. The key coefficients of this variance process are ω (*Permanent*) representing the time-invariant level of volatility, the coefficient ρ for the first-lagged variance (*AR(1)-variance*), and coefficient φ correcting for the forecast error within the conditional variance process. The *Forecast error* is the difference between the ARCH-term and the first lag of the (forecasted) variance of the time series.

Various restrictions are invoked to ensure that the CGARCH model generates consistent estimates for the variance process (Engle, Lee 1999). The latter restrictions within the CGARCH specification concern $0 < \alpha_1 + \beta_1 < 1$ – which is a pre-condition for volatility converging to its long-run trend – and $0 < \rho < 1$ – which is also a pre-condition for convergence towards the time-invariant unconditional level of variance – and require that $0 < \alpha_1 + \beta_1 < \rho < 1$. This implies that the transitory component of the conditional variance converges faster than the permanent component. In order to ensure that the conditional variance is non-negative for out-of-sample forecasts the CGARCH specification also requires that the remaining parameters are positive ($\omega > 0$ and $\beta_1 > \varphi > 0$).

The variance equations (5) and (6) are further ameliorated by the aforementioned independent variables. When modelling a best-fit baseline economic model (see below), the analysis suggests that the exchange-rate returns \hat{s}_t enter only the transitory component in equation (5), whereas the day-of-the-week effect (i.e. *Mondays*) just refers to the permanent component in equation (6). The influence that our dummy political event data $D_{j,k,t}$ with $j \in \{1, 2, 3\}$ and $k \in \{1, 2, 3\}$ may exert on the volatility of the *Premium* are of key interest to our study. At this stage, we are not only concerned with the general categories for *Decisions*, *Statements*, and *Meetings*, but we also further differentiate – if applicable – between key actors COM ($k = 1$), ECOFIN ($k = 2$), and SUMMIT ($k = 3$).

5.3. Estimation results

Table 2a shows the estimates of the key parameters of our empirical analysis on the influence that EMU-related political events exert on the daily *Premium*. In this respect, all maximum likelihood estimates of the CGARCH models draw on the Marquardt algorithm. We employ heteroskedasticity consistent standard errors (HCSE) for the coefficients in all subsequent specifications because of the non-normally distributed *Premium* and residuals respectively.

We start the discussion with a baseline, unrestricted economic model (Model 0 in Table 2a), albeit we also touch upon relevant features of the postdiagnostic statistics, which are also shared by all other CGARCH models (Model 1.0-1.3 in Table 2a).

Table 2a

Key estimates and postdiagnostics of refined empirical analysis

	Parameters	Model 0	Model 1.0	Model 1.1	Model 1.2	Model 1.3
Key parameters of conditional mean equation						
AR(4)	γ_1	0.059* (0.029)	0.067* (0.029)	0.063* (0.028)	0.076** (0.027)	0.069* (0.028)
Mondays [171]	γ_2	0.067 (0.049)	0.064 (0.048)	0.064 (0.048)	0.064 (0.048)	0.068 (0.047)
Exchange-rate Returns	γ_3	-1.388 (2.722)	-2.587 (1.843)	-2.768 (1.758)	-2.137 (1.969)	-2.578 (1.833)
Decisions [37]	θ_1	–	0.098 (0.048)	0.110 (0.082)	0.060 (0.072)	0.082 (0.078)
Statements [42]	θ_2	–	-0.060 (0.096)	-0.087 (0.095)	-0.073 (0.061)	-0.052 (0.093)
Meetings [64]	θ_3	–	0.031 (0.074)	0.047 (0.076)	0.058 (0.075)	0.025 (0.074)
Key parameters of conditional variance equation						
ARCH(1)	α_1	-0.091*** (0.022)	-0.097*** (0.019)	-0.083*** (0.020)	-0.086*** (0.018)	-0.100*** (0.019)
GARCH(1)	β_1	0.614*** (0.178)	0.591*** (0.122)	0.580** (0.124)	0.407** (0.164)	0.615*** (0.118)
Permanent	ω	0.221*** (0.066)	0.272* (0.109)	0.318*** (0.094)	0.346** (0.107)	0.303** (0.108)
AR(1)-variance	ρ	0.965*** (0.015)	0.975*** (0.009)	0.976*** (0.008)	0.970*** (0.010)	0.975*** (0.009)
Forecast error	φ	0.034* (0.015)	0.028** (0.010)	0.021* (0.009)	0.025** (0.010)	0.028** (0.009)
Postdiagnostics						
Log Likelihood	LL	-993.217	-984.680	-983.783	-983.003	-982.646
Ljung-Box	$LB(10)$	8.683	8.542	8.953	9.201	8.686
ARCH-LM	$LM(10)$	11.906	12.249	12.828	15.618	12.450
BPG	BPG	0.974	1.154	2.255	1.182	1.516
Jarque-Bera	JB	10.392**	6.662*	7.270*	5.490	6.116*
Akaike IC	AIC	1.900	1.899	1.901	1.904	1.899
Schwarz IC	SIC	1.945	1.988	2.000	2.012	1.998
Likelihood Ratio	$LR_{(df)}$	–	17.076 ₍₉₎	18.869* ₍₁₁₎	20.430* ₍₁₃₎	21.143* ₍₁₁₎

Notes:

Key parameters of conditional mean and variance equation depict coefficients with HCSE in brackets, whilst postdiagnostics portrays test statistic values supplemented by degrees of freedom (df) if applicable;

*, **, and *** represent 0.05-, 0.01-, and 0.001-level of significance;

1061 observations with number of observations for disaggregated *Decisions*, *Statements*, and *Meetings* in square brackets of the first column.

As regards the variance process, all specifications point to rather persistent shocks in the *Premium* time series. The highly significant (negative yet small) ARCH-error coefficient α_1 implies that volatility reactions are not very ‘spiky’ in the transitory component. On the contrary, the relatively large GARCH lag coefficient β_1 , particularly when compared with the significantly positive but small coefficient φ of the *Forecast error*, indicates that it takes rather a long time for shocks to die out. Technically, this means that the volatility is quite persistent. The relatively low sum of the ARCH- and GARCH-term coefficients in model 0 and its ‘political’ ameliorations arises from the decomposition of the variance process within the CGARCH modelling framework. The time-invariant, permanent level of volatility ω is significantly positive throughout all model specifications. The coefficient ρ for *AR(1)-variance* is large and significant at the 0.1%-level of significance and exceeds the sum of the coefficients $\alpha_1 + \beta_1$ in the transitory component in all instances. In all model specifications, the coefficient of the ARCH-term is negative. However, Wald tests reject the null hypothesis that the two coefficients $\alpha_1 + \beta_1$ are simultaneously equal to zero at least at the 1%-level of significance (not displayed) in all instances.

Regarding post-diagnostic tests, the Ljung-Box test statistics up to lag 10 for the standardized residuals demonstrates a correct specification of the mean equation at all instances. By the same token, the ARCH-LM test statistics at the tenth lag testing for remaining ARCH-effects indicates that the variance process is modelled in a proper way in all specifications. This result is confirmed by the BPG-test statistics which cannot reject the null of no heteroskedasticity at any conventional level of significance. The Jarque-Bera (JB) test statistics cannot reject the null hypothesis that the data are normally distributed, though there is statistical evidence for normal distribution in the case of Model 1.2. Furthermore, we have constructed two sub-samples in order to check the robustness of the underlying structural model. Either way, cutting off the first or the last third of our sample does not substantially change the size of the estimates (not displayed), though proceeding in this way certainly impedes the levels of significance. Nevertheless, we may summarily argue that the structural model is robust, the mean equations are correctly specified and the variance processes revert each to its mean in the case of all models, so that we can interpret our statistical results of all independent variables regressed on the *Premium*.

In line with the diagnostic statistics, the small coefficient γ_1 refers to the fourth-lagged AR-term and is highly significant at the 0.1%-level of significance. This phenomenon is a frequently encountered statistical property of high-frequency time series; see also, e.g. Jansen, de Haan (2005). The advantage of this AR-term at the fourth lag is that it effectively smoothes heteroskedasticity. The inclusion of the latter AR-term helps ruling out the cyclicity within the squared standardized residuals (see above). There are neither significant estimates for the coefficients γ_2 (i.e. *Mondays* as a day-of-the-week effect) and γ_3 (i.e. exchange-rate returns \dot{s}_t), nor any significant effects of our political event dummies $D_{j,t}$ on the mean equation of the unrestricted Model 0. At the same time, however, exchange-rate returns exert a highly significant influence on the transitory component of conditional variance. This is to say that a one unit positive change in the continuous exchange-rate return (i.e. an exchange rate appreciation of the dollar vis-à-vis the euro in basis points) decreases the volatility of the *Premium* by about seven units. This result does not substantially change in the course of all subsequent model specifications. Hence, we may already infer that a considerable portion of the volatility of the *Premium* series stems from short-term financial capital flows. Regarding the day-of-the-week effect the according estimate for γ_2 indicates that *Mondays*

significantly bear on the transitory volatility of the *Premium*. However, the inclusion of political event dummies alters this (preliminary) finding. While the (restricted) Model 1.0 only accounts for the influence of political events in a rather coarse-grained manner, i.e. distinguishing dummies only along the dimension j , the other restricted Models 1.1–1.3 successively test for the influence that particular European actors – again, the European Commission (COM), the Economic and Financial Affairs Council (ECOFIN), and the European Council (SUMMIT) as initiators of specific events – may exert on the volatility of the *Premium*. A common feature of all these restricted models is that *Mondays* do not significantly bear on the transitory component any longer, while the opposite holds true in the case of particular political events (see below). This is hardly surprising given that a considerable amount of political events data has been passed on to the opening day of a trading week.

Overall, the AIC and SIC statistics seem to indicate that Models 1.0–1.3 hardly improve (if at all) the estimates. However, the likelihood ratio (LR) tests in Table 2a, particularly with regard to the restricted Models 1.1–1.3, allow us to reject the null hypothesis that model specifications comprising political event data do not fit better than the unrestricted Model 0. Hence, adding political event data to the UIP-related systematic euro-dollar risk premium improves estimates. The following discussion sheds more light on the influence that political action and rhetoric exert on the *Premium*.

Model 1.0 in Table 2b displays the impact of political events on the volatility of the dependent variable *Premium*. The political events are differentiated into the general categories of *Decisions*, *Statements* and *Meetings* (see above). The subsequent CGARCH specifications of Model 1.1–1.3 further allow for distinguishing between different European key actors – again, the European Commission (COM), the Economic and Financial Affairs Council (ECOFIN), and the European Council (SUMMIT) as initiators of a specific event. The coefficients $\lambda_{j,k}$ and $\tau_{j,k}$ with $j \in \{1, 2, 3\}$ and $k \in \{1, 2, 3\}$ are so small that we restrict ourselves to an interpretation of the signs. An advantage of the CGARCH modelling framework is that the variables of interest can enter both the short-run and the long-run component of the conditional variance. In Model 1.0, none of the political event data exerts a significant influence on the permanent component of the volatility process. However, there is statistical evidence at the 0.1%-level of significance in support of a negative impact of *Decisions* on the transitory component of the conditional variance of the *Premium*. Those European decision-making processes that display a lack of commitment to the European fiscal regime decrease the volatility in financial markets. In Model 1.1, breaking *Decisions* down to key European actors shows that both the COM and the ECOFIN negatively influence the transitory component of the variance process.

The disaggregated *Statements* variable affects the permanent component of the conditional variance (see Model 1.2 in Table 2b) at the 5%-level of significance. While the influence of *Statements* in the case of COM has a positive sign, the opposite holds true in the case of ECOFIN. Apparently, the COM increases the volatility of the *Premium*, while *Statements* by the ECOFIN rather mitigate the conditional variance process. This finding basically means that the European Commission is perceived as a guard of fiscal prudence within the European sphere, so that derogatory statements trigger the uncertainty of financial investors. At the same time, derogatory statements by the Economic and Financial Affairs Council tend to confirm expectations of the financial investors and thus reduce their uncertainty. Finally, neither *Meetings* by ECOFIN nor

Table 2b

Variance estimation results for refined event data

	Parameters	Model 0	Model 1.0	Model 1.1	Model 1.2	Model 1.3
Variables of the permanent component of conditional variance						
Exchange-rate Returns	δ_1	-6.857*** (2.047)	-7.108*** (1.711)	-8.303*** (1.858)	-8.245*** (1.932)	-6.926*** (1.643)
Decisions [37]	λ_1	—	0.006 (0.046)	—	-0.011 (0.050)	0.014 (0.045)
COM [30]	$\lambda_{1,1}$	—	—	-0.016 (0.050)	—	1
ECOFIN [7]	$\lambda_{1,2}$	—	—	0.189 (0.114)	—	—
Statements [42]	λ_2	—	0.047 (0.064)	0.033 (0.070)	—	0.033 (0.056)
COM [14]	$\lambda_{2,1}$	—	—	—	0.150* (0.068)	—
ECOFIN [21]	$\lambda_{2,2}$	—	—	—	-0.129* (0.060)	—
SUMMIT [8]	$\lambda_{2,3}$	—	—	—	0.324 (0.280)	—
Meetings [64]	λ_3	—	0.009 (0.057)	0.021 (0.059)	0.040 (0.065)	—
ECOFIN [49]	$\lambda_{3,2}$	—	—	—	—	0.070 (0.065)
SUMMIT [17]	$\lambda_{3,3}$	—	—	—	—	-0.115 (0.091)
Variables of the transitory component of conditional variance						
Mondays [171]	δ_2	0.038*	0.023 (0.015)	0.014 (0.011)	0.023 (0.017)	0.021 (0.014)
Decisions [37]	τ_1	—	-0.066*** (0.020)	—	-0.063** (0.021)	-0.077*** (0.020)
COM [30]	$\tau_{1,1}$	—	—	-0.062** (0.019)	—	—
ECOFIN [7]	$\tau_{1,2}$	—	—	-0.096*** (0.029)	—	—
Statements [42]	τ_2	—	0.004 (0.018)	0.007 (0.014)	—	0.005 (0.017)
COM [14]	$\tau_{2,1}$	—	—	—	-0.009 (0.030)	—
ECOFIN [21]	$\tau_{2,2}$	—	—	—	-0.002 (0.027)	—
SUMMIT [8]	$\tau_{2,3}$	—	—	—	-0.019 (0.038)	—
Meetings [64]	τ_3	—	0.025 (0.026)	0.018 (0.026)	0.003 (0.026)	—
ECOFIN [49]	$\tau_{3,2}$	—	—	—	—	0.034 (0.034)
SUMMIT [17]	$\tau_{3,3}$	—	—	—	—	-0.006 (0.043)

Notes:

Short- and long-run components of conditional variance equation depict coefficients with HCSE in brackets;

*, **, and *** represent 0.05-, 0.01-, and 0.001-level of significance;

1061 observations with number of observations for disaggregated *Decisions*, *Statements*, and *Meetings* in square brackets of the first column.

SUMMITS affect the conditional variance. This finding substantially confirms the widespread reproach that political action on the European level are often no matter of great moment and that they largely confirm decisions that have been made before.

The analysis supports hypothesis 1 that decisions by the European Commission and/or by the Economic and Financial Affairs Council affect the volatility of the euro-dollar risk premium. Our empirical analysis stresses that the European Commission plays the key role in European fiscal governance. The Economic and Financial Affairs Council also provides financial investors with relevant news and mitigates the volatility of the euro-dollar risk premium. Hypothesis 2 states that neither non-scheduled derogatory statements nor scheduled gatherings should affect the volatility of the systematic risk premium. As the evidence shows, the volatility effects of derogatory statements depend on the body which talks the European fiscal system down. While such statements are not expected from the Commission, they are, however, what the European Council and other intergovernmental bodies of the EU have become infamous for. The analysis thus suggests that different institutions influence the volatility in varying ways and that theories about the interconnection between EU decision making and financial markets should consider these discrepancies. The empirical results show that in the early history of the EMU, financial markets closely observe what the governments of the EMU member states and other relevant actors decide. While politicians and civil servants cannot talk down or uplift the Euro, they can at least manipulate the uncertainty of financial investors to a considerable extent. The progressive weakening of the Maastricht criteria and the related EMU rules that we examined in this article were thus never without economic repercussion. This suggests for the current debate that some actors should carefully consider what they really intend to say in their attempts to stabilize the European currency.

6. Conclusion

Econometric studies on UIP-related issues have so far only paid scant attention to the European integration process and its possible impact on a systematic risk premium in exchange rate series. This analysis has focused on political events that affect the core of the EMU and question in this way the long-term viability of the monetary union. In this article, we have explored the impact of decisions, statements, and meetings of key European institutions on the systematic euro-dollar risk premium. Relevant actors on the European level concerning the fiscal governance of EMU comprise the European Commission, the Economic and Financial Affairs Council, and the European Council – though this body is not officially involved within the SGP-framework. All these European institutions provide economically relevant political news and we have shown to what extent financial investors are sensitive to the political rhetoric that has accompanied the early years of the common currency. More particularly, our analysis has demonstrated, with the help of Component-GARCH models, how non-scheduled political interventions influence the volatility of the euro-dollar risk premium. To start with, decisions by the European Commission, which tries to detect member state infringements of the SGP, decrease this crucial indicator of the uncertainty that financial markets develop. This supports the early hope that the set-up of the EMU provided a credible commitment against the national temptation to violate or weaken the Maastricht criteria.

The irrelevance of scheduled events that our analysis establishes further supports the optimistic assessments of the European fiscal governance framework. However, the significant impact of other political events such as statements taken by the Economic and Financial Affairs Council on the volatility of the risk premium spoils the impression that all was well in the beginning of the 2000s with the EMU. If the European economic governance structure had represented a solid commitment towards fiscal prudence and thus the long-run viability of the EMU project, financial investors would not have paid any attention to statements that mostly pertain to the national sphere. The plummeting volatility of the euro-dollar risk premium in the course of such political rhetoric suggests that national principals still governed the 'European arena' despite the attempts by the Commission to provide supranational EMU leadership.

The Treaty of Lisbon has altered the institutional set-up of the EU in a way that adds momentum to collective EU decisions. Regarding the credibility of the European fiscal governance framework, such reform may have contributed to mitigate 'a not so delicate sound of Europeanness'. Yet, the events during the Euro-crisis of 2011 strongly suggest that these reforms were not sufficient. In the future we will have the possibility to study with an approach similar to the one presented in this article what went wrong and what was somehow efficient in the attempts to rescue the common currency.

References

- Bachman D. (1992), The effect of political risk on the forward exchange bias: the case of elections, *Journal of International Money and Finance*, 11(2), 208–219.
- Baillie R.T., Osterberg W.P. (2000), Deviations from daily uncovered interest rate parity and the role of intervention, *Journal of International Financial Markets, Institutions and Money*, 10(3–4), 363–379.
- Bechtel M.M., Schneider G. (2010), Eliciting substance from 'hot air': financial market responses to EU summit decisions on European defense, *International Organization*, 64(2), 199–223.
- Blomberg S.B., Hess G.D. (1997), Politics and exchange rates forecasts, *Journal of International Economics*, 43(1–2), 189–205.
- Byrne J.P., Davis E.P. (2005), The impact of short- and long-run exchange rate uncertainty on investment: a panel study of industrial countries, *Oxford Bulletin of Economics and Statistics*, 67(3), 307–329.
- Chinn M.D. (2006), The (partial) rehabilitation of interest rate parity in the floating rate era: longer horizons, alternative expectations, and emerging markets, *Journal of International Money and Finance*, 25, 7–21.
- Christoffersen P., Jacobs K., Ornathanalai, C., Wang Y. (2008), Option valuation with long-run and short-run volatility components, *Journal of Financial Economics*, 90(3), 272–297.
- Ehrmann M., Fratzscher, M. (2007), Communication by central bank committee members: different strategies, same effectiveness?, *Journal of Money, Credit and Banking*, 39(2–3), 509–541.
- Engel C. (1996), The forward discount anomaly and the risk premium: a survey of recent evidence, *Journal of Empirical Finance*, 3(2), 123–192.

- Engle R.F., Lee G. (1999), A permanent and transitory component model of stock return volatility, in: R.F. Engle, H.L. White (eds.), *Cointegration, causality, and forecasting: a festschrift in honor of Clive W.J. Granger*, Oxford University Press, New York.
- Fahrholz C., Wójcik C. (2010), *The bail-out! Positive political economics of Greek-type crises in the EMU*, CESifo Working Paper, 3178.
- Faini R. (2006), Fiscal policy and interest rates in Europe, *Economic Policy*, 21(47), 443–489.
- Fama E. (1984), Forward and spot exchange rates, *Journal of Monetary Economics*, 14(3), 319–338.
- Freeman J.R., Hays J.C., Stix H. (2000), Democracy and markets: the case of exchange rates, *American Journal of Political Science*, 44(3), 449–468.
- Frenkel J.A., Mussa M.L. (1980), The efficiency of foreign exchange markets and measures of turbulence, *American Economic Review*, 70(2), 374–381.
- Froot K.A., Frankel J.A. (1989), Forward discount bias: is it an exchange risk premium?, *Quarterly Journal of Economics*, 104(1), 139–161.
- Froot K.A., Thaler R. (1990), Anomalies: foreign exchange, *Journal of Economic Perspectives*, 4(3), 179–192.
- Garfinkel M.R., Glazer A., Lee J. (1999), Election surprises and exchange rate uncertainty, *Economics and Politics*, 11(3), 255–274.
- Goldbach R., Fahrholz C. (2011), The euro area's common default risk and the relevance of credible fiscal institutions, *European Union Politics*, forthcoming.
- Gourinchas P.-O., Tornell A. (2004), Exchange rate puzzles and distorted beliefs, *Journal of International Economics*, 64(2), 303–333.
- Gray J. (2009), International organization as a seal of approval: European Union accession and investor risk, *American Journal of Political Science*, 53(4), 931–949.
- de Haan J., Berger H., Jansen D.-J. (2004), Why has the Stability and Growth Pact failed?, *International Finance*, 7(2), 235–260.
- Hodrick R. (1989), Risk, uncertainty, and exchange rates, *Journal of Monetary Economics*, 23(3), 433–459.
- Jansen D.-J., de Haan J. (2005), Talking heads: the effects of ECB statements on the euro-dollar exchange rate, *Journal of International Money and Finance*, 24(2), 343–361.
- Jansen D.-J., de Haan J. (2007), Were verbal efforts to support the euro effective? A high-frequency analysis of ECB statements, *European Journal of Political Economy*, 23(1), 245–259.
- Lewis K.K. (1995), Puzzles in international financial markets, in: G.M. Grossman, K. Rogoff (eds.), *Handbook of international economics*, Elsevier, Amsterdam.
- Lewis K.K. (1988), The persistence of the 'Peso problem' when policy is noisy, *Journal of International Money and Finance*, 7(1), 5–21.
- Lobo B.J., Tufté D. (1998), Exchange rate volatility: does politics matter?, *Journal of Macroeconomics*, 20(2), 351–365.
- MacKinlay A.C. (1997), Event studies in economics and finance, *Journal of Economic Literature*, 35(1), 13–39.
- Mussa M. (1979), Empirical regularities in the behavior of exchange rates and theories of the foreign exchange market, *Carnegie-Rochester Conference Series on Public Policy*, 11(1), 9–57.
- Taylor M.P. (1995), The economics of exchange rates, *Journal of Economic Literature*, 33(1), 13–47.

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