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Determinants of relative bargaining power in monetary union

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Abstract

Using the example of France and Germany in the EMU, we estimate their degree of currency misalignment and FX pass-through from EMU dissolution to determine the impact of EMU exit on their growth and inflation outcomes. EMU dissolution is the outside option in a bargaining game we propose and the payoffs under the EMU break-up scenario determine the relative bargaining powers. We show that debtor nations can take creditor nations hostage, with repeated stand offs and build-up of tail risks threatening macroeconomic stability.

Keywords: Bargaining power, competitiveness, disagreement cost, European Monetary Union, internal devaluation, transfer union

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POLICY STATEMENT

The research underlying this paper has its origins in a highly policy-oriented initiative: the European Solidarity Manifesto (see http://european-solidarity.eu/). This document, signed by academic economists and policymakers from nine European countries calls for the controlled segmentation of the European Monetary Union in order to preserve the core achievements and benefits of the European Union and the single market.

The paper provides a game theoretical framework in which to view the Manifesto's principal recommendation – which is that Germany (together with the other more competitive countries that use the Euro) should leave the monetary union. In addition to showing the negative consequences for the participants in the bargaining process stemming from the Euro area's present 'transfer union' arrangements, the paper models the impacts on inflation, exchange rates, external trade and net foreign assets that would result from the core countries exiting the Euro area.

The paper has therefore contributed a fundamental and theoretical underpinning to the case for dismantling the Euro area – a case that is becoming an increasing focus of discussion among policymakers and the mainstream political class in all the less competitive countries of the Euro area. This is particularly true of Italy, where earlier versions of this paper have been presented at two conferences – in September and December 2013 – organised by the Italian economic association a/simmetrie and attended by senior Italian politicians. The conference in December heard a presentation based on this paper and one other presentation on potential modalities for breaking up the monetary union by Jacques Sapir of the Ecole des hautes études en sciences sociales – after which an open and constructive discussion of the subject took place involving former Italian Finance Minister Gianni Alemanno and a leading member of the dominant party in Italy's present governing coalition, Stefano Fassina.

Determinants of relative bargaining power in monetary unions

BY BRIGITTE GRANVILLE AND DOMINIK NAGLY[*]

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their degree of currency misalignment and FX pass-through from
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JEL: C79, E02, E42, E58, E61

We study the bargaining power of the debtors versus the creditors in Europe's Economic and Monetary Union (EMU). We propose a game theoretical lens to help understand why the debtor nations may be perceived as being in a stronger bargaining position than the creditors. Crawford (1982) argues that "if the

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outcome of a commitment process is both uncertain and irreversible, it can be rational for bargainers to take actions that imply a positive probability of disagreement". The situation is reminiscent of a hostage-kidnapper 'reversal' of roles scenario and the relative bargaining power is captured by the existence of a credible outside option and economic costs of choosing it. The superficial picture is that Germany is frequently depicted as the economic evil man of Europe (the kidnapper) in popular media in Greece, Ireland, Spain, and Portugal. Is it plausible to assume that the bargaining power of the debtors is similar to or greater than that of Germany in our game of transfers?

In fact, Germany has chosen to have less bargaining power than the large debtor nations by ignoring that the actual cost of the transfer union in the long-run could outweigh the benefits of this union whereas the debtors, especially the large ones such as France, are very alert to the costs of the transfer union on their side (that is, respecting the conditions formally attached to the transfers – something that is all the more difficult and unpalatable given the social and political tensions generated by policies designed to meet those conditions). The result is that Germany has no choice (or gives itself no choice) but to continue providing transfers to countries that do not make a credible commitment to structural reforms. This bargaining advantage for the debtor countries could be disturbed by a radical change such as a German political party that challenged the above mentioned non-bargaining position gaining a substantial share of voter support.

The next section discusses the bargaining power of Germany versus France in a game theoretical model. Perceived as unacceptable, the short-term costs of EMU exit lead to debtor France taking Germany creditor hostage and forcing Germany into a costly and inefficient transfer union. This is because in the short to medium term Germany would suffer a substantial exports and net foreign assets loss following EMU dissolution whereas France would see a relatively muted inflation

impact and the most significant exports boost among all the debtor nations. This line of reasoning ignores the long-term costs of the transfer union.

The Germany-France bargaining game is: at the present time, a virtual proxy for the actual bargaining that has been going on in recent years between Germany and those peripheral countries that have already lost market access (Greece, Portugal, Ireland) and those on the brink of losing access (Spain, Italy); at a future time, assuming that the present infinite bargaining game continues, this virtual Germany-France bargaining will become a real-life negotiation the outcome of which will be decisive for the future of the Euro.

We see the current bargaining process in the Eurozone as an example of a multi-step bargaining game (in the spirit of Neelin, Sonnenschein, and Spiegel, 1987) with fiscal transfers from Germany (the creditor) to France (the debtor nation) at stake. The approach owes much to Rubinstein (1982), where two-agent bargaining was modeled as a game in extensive form with alternating offers, complete information, infinite horizon and time discounting. Rubinstein demonstrated that there exists a unique pair of bargaining strategies constituting a Subgame Perfect Nash Equilibrium (SPNE) concept, as in Selten (1975), as a decision rule. Stahl (1972) presented a simplified version of the framework with a finite (5-period) horizon. We introduce a breakdown probability, following Zwick, Rapoport, Howard (1992) and disagreement cost, as in Crawford (1982). In our case, at any point in time if disagreement occurs there is a non-negligible probability of EMU breakdown unless the ECB intervenes and sets the inflation rate higher by monetizing the debtors' liabilities. The bargaining powers are determined by growth and inflation performances should EMU dissolution take place (the outside option). We assume that the only choice for both Germany and France are transfers and internal devaluation short of exiting the euro. France cannot trade off increased output with higher inflation thereby reducing her debt, and can only raise revenue through distorting taxes or issuing more debt (given

there exists a political-economy lower bound on public spending). We see the French predicament as the decisive factor determining the outcome of the Euro crisis.

1. The Model

We argue that both France (debtor) and Germany (creditor) would benefit from the break-up of the EMU. The bargaining powers of the two sides in the fiscal transfer game are depicted in figure 1. We present the relative bargaining powers as fairly balanced. Policymakers have a different view, by overestimating the cost of EMU exit and ignoring the costs of a transfer union in the long term, they lead to a situation where creditors are taken hostage by their debtors. In this section we will demonstrate what drives the perceived bargaining power of debtor versus creditor economies.

[Insert Figure 1 Here]

If the bargaining breaks down, there is a non-negligible risk of EMU dissolution. In this infinite bargaining game with breakdown risk as in the Binmore (1986) model, Germany decides on a portion of its own GDP to share with France. The bargaining power of each of the players is determined by the severity of economic outcomes in case of the disagreement i.e. growth and inflation outcomes in case of EMU exit.

Figure 2 describes the various stages of the game. The bargaining process could in theory continue ad-infinitum. There are two players, France and Germany, respectively indexed i= F, G. In stage 1 Germany makes an offer to France, between 0 and 100% of its GDP, in exchange for structural reforms and fiscal austerity. The size of the 'pie' can be thought of as fixed, a standard assumption

in the literature, as in Muthoo (1999). France accepts the offer or makes a counter-offer that Germany considers. In the next stage Germany is the side making the offer again. At any point in time if disagreement occurs there is a non-negligible probability of EMU breakdown.

[Insert Figure 2 Here]

1.1 Methodology

After a proposal is rejected, there is an exogenous probability $q > 0$ that the bargaining breaks down completely, leading to EMU dissolution, in which case the players' payoffs are b_G and b_F for Germany and France respectively, and $b_G + b_F = 1$. We assume without the loss of generality that no time-discounting takes place, since the possibility of EMU breakdown puts pressure to reach an agreement. Payoffs under the EMU dissolution scenario effectively reflect the relative bargaining powers of Germany and France, as the equilibrium solution demonstrates. Germany's SPNE proposal when it is her move to make an offer is $(G, 1 - G)$, and France's SPNE counter-offer is $(1 - F, F)$. G and F are the proportions of Germany's GDP to be transferred to the debtors.

In this setting France accepts Germany's offer when:

$$(1) \qquad 1 - G = q b_F + (1 - q)F.$$

Similarly, for Germany to accept France's counter-offer, we must have

$$(2) \qquad 1 - F = q b_G + (1 - q)G.$$

Solving (1) and (2) simultaneously, we get

(3)
$$G = \frac{1 - b_F + (1-q)b_G}{2-q}$$

And

(4)
$$F = \frac{1 - b_G + (1-q)b_F}{2-q}$$

The SPNE for Germany is to offer the payoff split $(G, 1 - G)$ and for France to accept. The above solution illustrates the importance of estimating disagreement that is the costs of exiting the EMU from which we derive the set of possible agreements:

(5)
$$X = \{(G, F) \in \ R^2 : G + F = 1 \ and \ G \geq 0, F \geq 0$$

At the end of each period, after an offer has been rejected, there is a chance that the negotiation ends with the breakdown. This event occurs independently with exogenous probability $0 < q < 1$. Let (ε, τ) be a pair of strategies that leads to the outcome (x, t) in a sequential infinite bargaining game. In the game $\theta(q)$ the probability the bargaining breaks down in any period is q. (ε, τ) leads to (x, t) with probability $(1 - q)^t$ and to the breakdown event with probability $1 - (1 - q)^t$. The players are indifferent to the timing of the outcome. The strategy pair relevant to a country's choice is the lottery in which some agreement occurs with probability $(1 - q)^t$, and the breakdown event occurs with probability $1 - (1 - q)^t$. The lottery only depends on x and t. It can be denoted by $\ll x, t \gg$.

Each country has a complete transitive reflexive preference ordering over lotteries on X and the breakdown event. Each preference ordering is represented by a utility function satisfying the following conditions: desirability of the pie, breakdown being the worst attainable outcome and aversion to risk. These assumptions are sufficient to deduce the character of the unique subgame perfect equilibrium of $\theta(q)$ for any $q \in (0,1)$. For every lottery $\ll x, t \gg$ there is an agreement $y \in X$ such that $\ll y, 0 \gg \sim \ll x, t \gg$.

Every bargaining game of alternating offers in which the players' preferences satisfy basic axioms (as they do in our case) has a unique SPNE. The outcome is that player 1 proposes x^* in the initial period and player 2 immediately accepts the offer, as per Osborne and Rubinstein (1990).

Take a unique pair of agreements $(x^*(q), y^*(q))$ satisfying $\ll x^*(q), 0 \gg \sim \ll y^*(q), 1 \gg$ and $\ll y^*(q), 0 \gg \sim \ll x^*(q), 1 \gg$. An equivalent statement about utilities is:

$$(6) \qquad u_1\big(y_1^*(q)\big) = (1-q)u_1\big(x_1^*(q)\big)$$

And

$$(7) \qquad u_2\big(y_2^*(q)\big) = (1-q)u_2\big(x_2^*(q)\big)$$

Assuming the EMU dissolution probability if a transfer proposal is rejected to be $q = 0.5$, the equilibrium result of the game is represented by a matrix of numerical solutions for different relative bargaining powers between Germany (b_G) and France (b_F). For $G = \frac{1-b_F+(1-q)b_G}{2-q}$ and $F = \frac{1-b_G+(1-q)b_F}{2-q}$ presented in Table 1.

[Insert Table 1 Here]

The absolute magnitudes are not as important as the fact that bargaining power in the fiscal transfer game and the payoffs (transfers of German GDP) are directly proportional to the perceived estimates of disagreement cost i.e. EMU exit costs. If Germany's bargaining power is 1/3 of that of France, its payoff in the fiscal transfers game will be 3 times as painful. It is easy to see how costly the continuation of the European monetary project can be to Germany and other creditor economies.

We have been assuming exogenous probabilities and exogenous order of play. If these variables are endogenised, the conclusions remain broadly unchanged, as in Applebaum (2008). To be more precise, breakdown threats are used strategically by the players with seemingly lower bargaining power, breakdown probabilities are strictly positive and the countries willing to use breakdown threats move first in the bargaining game, resulting in what in effect is greater bargaining power.

2. Results: Relative bargaining powers in the fiscal transfer game

We first measure the degree of currency adjustment, then the inflation implications, and finally we concentrate on the degree of exports boost such currency weakness could provide.

We prefer a simultaneous equation approach by applying vector autoregressive models to a sample of EMU economies to allow for the likely endogeneity between the variables of interest. The modeling framework allows us to trace the dynamic responses of variables to exogenous shocks. The common approach in the literature is to use single equation models for a set of countries (Choudhri and Hakura, 2006, among others) or a simultaneous equations framework focused on

a single economy. Our approach, by contrast, is to apply the same set of equations and timeframe to our sample of economies to ensure comparability of results. The model covers the longest possible horizon (subject to structural break testing) to maximize the precision of pass-through estimates. Our dataset encompasses quarterly data between 1983 and 2013. The analysis is conducted using a standard VAR framework:

$$(8) \qquad\qquad X_t = a + \sum_{i=1}^{n} \nabla_i X_{t-1} + \varepsilon_t$$

Where X_t is our vector of endogenous variables, a is a vector of constants, ∇_i represents a matrix of autoregressive coefficients, ε_t denotes white noise processes.

2.1 – FX Adjustment

Based on the evolution of the unit labour cost since the euro started trading in January 1999, we measure the degree of currency adjustment post EMU dissolution (table 2) following Collignon (1994) and Chinn (2006).

We define the real exchange rate as:

$$(9) \qquad\qquad e_t \equiv n_t - p_t + p_t^*,$$

where n_t represents long exchange rate in units of domestic currency per units of foreign currency and * denotes the foreign economy.

We assume that price indices are averages of prices of tradable and non-tradable goods and services:

(10)
$$p_t = \theta p_t^N + (1 - \theta)p_t^T$$

(11)
$$p_t^* = \theta^* p_t^{N*} + (1 - \theta^*)p_t^{T*}$$

Assuming that the weights of tradables in the price baskets are equal, we introduce inter-country relative indices of tradables and non-tradables in the real exchange rate equation:

(12)
$$e_t = n_t - p_t + p_t^* - \theta(r_t^N - r_t^T)$$

where r_t^N and r_t^T denote the inter-country log differences in price levels.

Chinn (2006) argues that changes in the relative prices of non-tradables are small for most economies while according to Engel (1999), equalising prices of tradable goods would not be an appropriate assumption to make. As such, the relative exchange rate may be adequately represented by:

(13)
$$e_t = n_t - p_t + p_t^*.$$

It is the exchange rate that achieves external balance in trade in goods and services. We now use the framework to introduce the concept of cost competitiveness, as in Marsh and Tokarick (1996). We use a mark-up model of pricing:

$$(14) \qquad p_t^T = \log[(1 + \alpha_t)\left(\frac{W_t}{A_t}\right)]$$

where W_t is nominal wage rate, A_t is hourly productivity and α_t is percentage mark-up. Substituting into the real exchange rate equation and assuming constant mark-up, we get:

$$(15) \qquad e_t = n_t - (w_t - a_t) + (w_t^* - a_t^*)$$

The real exchange rate is the nominal exchange rate adjusted by wage and productivity (unit labour cost) differentials. Our definition of the real exchange rate is therefore in line with the Ricardian model of trade, as per Golub (1994).

The results based on the relative evolution of broad-economy price indices are in line with the results given by the relative labour costs. As the currency reference point for each country we take a basket of its 10 largest trading partners.

[Insert Table 2 Here]

Table 2 shows that on the basis of this model, the debtor economies would see a significant degree of currency depreciation versus its trading partners following EMU break up.

2.2 Inflation Impact

The inflation impact of these currency adjustments is made by estimating the exchange rate pass-through to inflation in both debtor and creditor economies. We

follow the simultaneous-equation frameworks proposed by McCarthy (2000) and Hahn (2003).

The structural shock is identified by careful ordering of the variables of interest and the use of Cholesky decomposition to the covariance matrix of the reduced form residuals. Our VAR model is similar to the frameworks proposed by McCarthy (2000) and Hahn (2003).

Our model incorporates (in the following order of exogeneity) an oil price variable $crude_t$, a real output variable y_t, an exchange rate variable e_t, a consumer price index variable cpi_t, an EMU money market rate variable i_t and a country-specific front-end interest rate r_t. The oil price variable and the output variable capture the effects on the real economy. The order of exogeneity is crucial given that in a recursive identification scheme the shocks we identify contemporaneously affect their corresponding variables and the variables ordered at a later stage.

$crude_t, y_t, e_t, cpi_t, i_t, r_t$

Sensitivity analysis does not alter the results meaningfully for other specifications. The key results remain consistent across identification schemes. Moreover, a standard structural break test validates our view that pass-through can be estimated for the full 1983-2013 period, as opposed to focusing solely on the euro existence time.

Johansen cointegration tests provide no conclusive evidence of long-run relationships among the variables of our choice. Given that all of our variables are likely to be non-stationary (based on PP, ADF and KPSS testing), a VAR in the first differences is the appropriate specification. Marcet (2005) argues that VECM and VAR in levels may not be superior to VAR in the first differences. The lag length of the model for each country is determined by looking at a range of information criteria as well as specification tests. The optimal lag length for the economies in our sample is generally between 2-3 quarters. Based on our

estimates of currency over/undervaluation, we expect the following incremental inflation impact following EMU break-up (table 3):

[Insert Table 3 Here]

Germany (a nation of savers) would see a period of disinflation. The inflationary impact on Italy and Spain seems particularly dramatic whereas that on France reasonably muted, highlighting France's relatively greater bargaining power in the process. Based on our analysis of inflation outcomes following the Eurozone break-up, the bargaining powers of debtors and creditors should be fairly balanced.

Our alternative model specification includes modifications to the variables and proposes an alternative ordering of the variables in the Cholesky decomposition. We use domestic price developments ppi_t captured by producer price indices to account for supply side effects. Also, following Meese and Rogoff (1983) on the limited explanatory power of macro variables for exchange rate determination, we place it first in the order of variables, followed by ppi_t instead of the oil price variable. The results of the alternative identification scheme do not differ by a great margin from the primary specification (see Appendix for details).

2.3 Exports Impact

We use the framework proposed by Ito and Sato (2008) and Shioji (2012). Similarly to our work on the inflation impact, we apply vector-autoregressive models to take into account a possible bilateral dependence between the relevant variables and the exchange rate. We use the following mix of variables (in the following order of exogeneity): oil price index $crude_t$, exchange rate e_t, general price level cpi_t, exports price level $cpix_t$, real exports x_t (data sources are listed

in the Appendix) for the period 1983 to 2013. VAR in first differences is estimated, subject to non-stationarity and cointegration tests; specification and structural break tests have been conducted (see the Appendix for details).

$crude_t, e_t, cpi_t, cpix_t, x_t$

Based on our estimates of the currency adjustments required, table 4 reports the impact on exports of the exchange rate movements following the EMU dissolution.

[Insert Table 4 Here]

The short-term bargaining power imbalance from both inflation and exports picture gives France as the biggest beneficiary of EMU break-up and Germany as the biggest loser. However, the true bargaining power can only be determined by assessing both short and long-term consequences of the EMU dissolution.

3. True bargaining power

In our intuitive framework, the credibility of the outside option fully determines the outcome of the bargaining game. The agreement reached in a negotiation is determined by how a conflict resulting from disagreement would be resolved. The outcome of the game is the limit of a sequence of partial agreements; these in turn are a function of the relative bargaining power at any point in time. In this model, bargaining power is equivalent to power itself in the fully non-cooperative scenario i.e. EMU exit by one of the agents. The unique and efficient equilibrium can be interpreted as agreement in the shadow of conflict. If in the non-cooperative scenario Germany loses its competitive advantage (REER undervaluation) and the value of its foreign assets declines whereas France sees a nominal exchange rate depreciation, and decline in the value of foreign liabilities,

it is clear that the debtors' bargaining power may appear to be greater than that of the creditor nations. What the still euro-optimistic German public needs to appreciate is that the outcome of the bargaining process in its current form will mean an inefficient and costly transfer union followed by a disorderly break-up at a later stage, likely triggered by France's economic weakness. The assessment of the cost of disagreement must be augmented by long-term considerations.

The threat of a German EMU exit would increase the country's bargaining power. However, even more balanced bargaining powers in the game lead to sub-optimal choices as taking part in the transfers union game continues to promote a transfer union with limited likelihood of success in the long term.

France's political class dreams of getting more money from the ECB in a cheap and painless way by wresting a relaxation of the present OMT conditionality on the grounds that the alternative would be the "unthinkable disaster" of France leaving the euro – meaning the end of the euro. This threat (in game-theoretical sense) dramatically increases France's bargaining power. The problem with this scenario, even assuming Germany acquiesced, is that it would ultimately lead to a build-up of debt that would eventually topple the euro in any case – and in a most disorderly fashion. More likely in the end would be German agreement to leave the Euro prompted either by an explicit request from its core French partner or by economic developments in France pointing to an inevitable exit from the euro as now constituted.

3.1 Germany's true bargaining power

We argue that Germany has deprived itself of bargaining power in the fiscal transfer game it plays with the debtor nations especially France. On the surface, it may appear natural for the debtors to enjoy greater bargaining power in the

sharing game as in case of an EMU exit they would see the value of their net foreign liabilities decline and REER adjustment improving competitiveness. The result of the relative changes in bargaining power is the decision by the European Commission in 2013 to extend France's Excess Deficit Procedure deadline by another 2 years.

Table 5 compares the short and long term impact on Germany of exiting the EMU versus continuing the fiscal transfer game.

[Insert Table 5 Here]

German EMU exit. We saw in table 4 that the decrease in German exports is expected to reach 12% (equivalent to a one-off GDP loss of 6%); we also expect a lower long-term equilibrium contribution of net exports to GDP estimated as costing about 0.6% of annual GDP.

The appreciation of the new currency – say the Deutschmark – would also lead to a decline in Germany's net foreign assets. By the beginning of 2013, Germany's NFAs exceeded USD 1tn, according to Bundesbank figures (April 2013). 90% of these assets belong to the Bundesbank and 70% of them are in the form of Target 2 imbalances i.e. claims on the banking sectors of the debtor nations. Deutschmark's adjustment against Eurozone currencies of the magnitude we estimate would result in a net foreign assets loss equivalent to 16% of German GDP.

But a stronger currency would also bring benefits. Germany's fiscal position would improve as euro denominated debts would be lower in value relative to budget revenues denominated in the stronger currency. The fiscal advantage gained from introducing the new regime could then be used to re-capitalise the banking sector. However, the scale of required recapitalization is likely to be manageable. German banks' net foreign assets stood at a manageable EUR 8bn as

of the end of 2012, as the bulk of the burden had been moved to the public sector balance sheet.

A persistently undervalued currency – while benefiting Germany's exporting industries – has arguably reduced the real international purchasing power of German households and led to significant declines in the economy's productivity. A stronger currency following EMU exit would limit Germany's price competitiveness and decrease its contribution of net exports to GDP growth. Germany is currently running current account surpluses of around 6.5% of GDP, well above the levels seen in China and Japan and a stronger currency could be seen as Germany's contribution to global macroeconomic rebalancing. The IMF's multilateral surveillance policy framework recommends current account surpluses of no more than 4% of GDP and Germany's refusal to abide by these recommendations started to become a subject of public international debate in 2013 (as, for example, at the Spring and Annual Meetings of the IMF and World Bank). Germany is now the source of the largest macroeconomic imbalance in the international community. Furthermore, growth in Germany's output per worker has been in decline since Germany became part of the EMU. In the decade prior to 1999, Germany's constant GDP per worker growth was on average 2% per year, versus 0.55% in the decade following the inception of the EMU[†]. A stronger currency would motivate German businesses to generate productivity gains. It would also allow Germany's households to benefit from greater international purchasing power without the need for wage inflation.

Fiscal Transfers game continues As regards France alone, we estimate the cost for Germany at 2% of German GDP transfers to France each year (financing public and private sector dis-savings), assuming that no major reforms take place

[†] Source: Eurostat Statistics Database, August (2013)

in France and taking the current account deficit as the direct proxy for the dissaving in both the public and the private sectors. In the event that France fell out of favour with its bondholders, its net debt that would require off-market financing stood at about 52% of German GDP as of the end of 2012. Worryingly, the average maturity of France's government debt stock is no more than 7 years (as of the end of March 2013, according to France's Trésor[‡]), compared to 15 years in the UK. The average maturity of as much as EUR 420bn (16% of Germany's GDP) of France's debt is 2 years and 11 days as of April 2013. Should France's economic difficulties translate into bondholders' worries, Germany would be forced to make even greater transfers to its neighbour.

We conclude that a one-off 6% GDP loss and 16% of GDP reduction in net foreign assets are a lower price to pay than underwriting France's economic difficulties in a few years down the road and the long-term financing of public and private sector savings shortages in the debtor economies.

3.2 France's true bargaining power

We see France as a free rider in fiscal policy issuing too much debt raising the risk of default. We take the view that "even with excellent monetary policy, bad national fiscal policies can eventually endanger the stability of the Eurosystem" (Ulhig, 2002: 22). This free rider problem cannot be solved by imposing "union-wide constraints on non-monetary policies" (Chari and Kehoe, 2007, 2008: 1330) such as fiscal constraints on French debt as France is "too big to fail" and/or Germany "too afraid to constrain". We argue that Germany has less bargaining power than France as it is unwilling to consider the true cost of the transfer union in the long-run whereas the blockages to reform in France owing to social and political factors force Germany to acquiesce in transfers of one sort or another

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[‡] http://www.aft.gouv.fr/rubriques/duree-de-vie-moyenne_166.html

(including last-resort lending from the ECB under its Outright Monetary Transactions (OMT) scheme) without a credible commitment to structural reforms. The recent extension of Excess Deficit Procedure deadlines to 2015 for France, Spain and Portugal demonstrates the dynamic well.

Table 6 repeats Table 5's exercise for France.

[Insert Table 6 Here]

France EMU exit. In the past decade France has faced a sharp loss of global export market share. This loss of exports has been accompanied by low profit margins of enterprises, which constrain their capacity to invest, innovate and create jobs. Given the consequent current account deficit, an exit from the euro – whether voluntarily or forced – would mean that France's currency would depreciate relative the euro.

The French debt crisis might initially deepen as interest payments costs on the French debt would likely increase. Until the autumn of 2011 interest rates on French and German government bonds tended to move together and be quite close (Figure 3).

[Insert Figure 3 Here]

French 10Y bond yields would be pressured higher upon exit due to the market asking for risk premia for inflation, currency depreciation and default. However, as central bank balance sheet expansion to purchase French government debt is the natural monetary policy support in case of France's EMU exit, the market impact is likely to be contained. French bond yields may tighten further in expectation of Bank of France participation in the bond market. Financial repression, as defined by Reinhart (2012), may be the natural means of smoothing the process of the exit from the currency union and preventing financial turmoil.

Credible commitment to structural reforms (with monetary easing to compensate for the near-term aggregate demand losses that such reforms would entail) would also help to gain trust of the financial markets.

Bank of France balance sheet expansion should not be considered as an EMU exit-only type of a response. The ECB's current monetary stance is too tight for France. According to Euromonitor (December 2012) consumer and mortgage credit (in gross terms) have been in decline in France since 2009. However, given that credit demand is depressed, monetary loosening may be the necessary but insufficient policy response and a degree of fiscal-monetary coordination may be needed. A Bank of Ireland survey (Holton, Lawless and McCann, 2012) demonstrated that France's credit growth weakness has been largely driven by subdued credit demand. The private sector's appetite for credit was the weakest across the Eurozone.

Therefore a credible fiscal-monetary effort at stimulating credit demand, made possible by the euro exit would be preferable than being forced into precipitate action as the Eurozone crisis deepened further and fiscal and monetary policy in effect became a part of a single public sector budget constraint. The fiscal theory of the price level (FTPL) developed by Leeper (1991), Sims (1994), Woodford (1995, 1996, 2001) and Cochrane (1998, 2001) questions central banks' and governments' efforts at conducting tight monetary policies with an interest rate rule, but without creating expectations of a Ricardian fiscal policy; this not only may prove unsuccessful as total government liabilities play a role in price determination, but may counter-productively end up in an inflation spiral.

The return to growth is the key to investor confidence, mainly because the fact of restored growth will underpin the credibility of sound macroeconomic and structural reform policies. By creating in this way the basis for confidence, it would be easier to overcome the financing problem resulting from a Euro exit.

This problem arises from the devaluation (for sure) and (possibly) the redenomination of existing debt contracts into a new currency.

Roger Bootle (2012: 67) points out that: "an analysis of past sovereign defaults shows that a combination of debt reduction and devaluation has often provided a strong foundation upon which governments can re-establish the credibility of their fiscal policy and re-enter international capital markets surprisingly soon after a default." Historically as well there is "little historical evidence that default had led to significant denial of access to external financing" (Aggarwal and Granville, 2003: 3).

In these circumstances, any initial capital flight would be controllable through central bank balance sheet expansion and the commitment to fiscal-monetary coordination. And the risk of redenomination priced into bond prices might quickly become perceived as a source of greater value in French sovereign debt. It follows that the disruption to commercial and financial activity from any modification of debt contracts might not be so severe. The main problem instead would be the banking system, which would be insolvent as a result of its bond holdings; but here again as long as the French central bank is ready to step in quickly through provision of liquidity and overt monetary financing, panic could be avoided.

Fiscal Transfers game continues. France' situation fits well the scenario described by Buiter and Rahbari (2013: 22): Fiscal tightening is resisted "as each interest group tries to minimize its share of the total burden of adjustment" […] "Fiscal adjustment could possibly be delayed for long enough to trigger an eventual sovereign debt crisis." Bibow (2013: 18) estimates "a roughly 20 percentage point differential in national unit-labor cost" between France and Germany. The main reason has to be found in the way the French welfare system is financed that is by increasing public debt and payroll taxation: Egert (2011:26) estimates that "The effective tax rates on labour and capital (calculated as receipts

over the base) in France are each among the highest in OECD countries". As a result of this heavy taxation of labour (through employers and employees social security contributions and other forms of taxation), the social costs of labour borne by French employers are among the highest in the euro zone while French households enjoy lower tax rates on consumption and personal incomes. High payroll taxes and heavy labour-market regulation make it difficult – or at least prohibitively expensive – for firms to increase/reduce their workforce when business conditions improve/worsen. France's "tax wedge" (income taxes plus employee and employer social-security contributions minus cash transfers as a percentage of total labor costs) was at least 15 percentage points above the OECD average at every level of household income (OECD, 2012).

The delusion that taxing companies is a painless way of financing welfare and public services is now laid bare: Households and especially the young and older workers are faced with chronic high unemployment. Youth unemployment has recently reached 22.1% (April 2013, World Bank WDI) and joblessness among those above the age of 49 is now at 7.4% (March 2013, INSEE). They are now also faced with higher taxes and (ironically) with public services cuts because the negative effects of high payroll taxes on competitiveness have weakened economic growth and hence the public finances.

The damaging effects of this method of financing costly welfare/public services is aggravated by the excessive state regulation of the labour market and distorting state interference in product and service markets. Services remain more regulated in France than in most other OECD countries, notably in transport, professional services, and retail trade. The counterpart tends to be higher prices (for households and enterprises), owing to lower productivity or higher rents. By raising the purchasing power of households, deregulation of services would also support labour market reforms. The burden of social charges and employment regulation will continue to deter building businesses by the cost of hiring and the

difficulty of firing. France will not be able to rebalance within the existing EMU structures.

As things stand, France would prefer to have its lack of competitiveness cushioned by transfers from surplus countries rather than pursue "internal devaluation" which has been shown by Weisbrot and Ray (2011) to have dramatic social and economic costs especially in terms of unemployment. Internal devaluations also result in risky democratic deficits. If voters have limited influence on the macroeconomic policy of their governments, they become prone to populism or in some cases even dissatisfied with the democratic model. Beylin (2013) notes that as a result of the economic malaise 87% of Portuguese citizens are dissatisfied with the country's democratic regime and 50% of them positively assess the dictatorship overthrown in 1970s.

Moreover, by compressing output, internal devaluation causes public debt ratios to deteriorate further, leading to increased yields and, ultimately, questions about the sustainability of the public debt path. Despite enjoying benign conditions in debt capital markets up to the time of writing, France clearly faces this risk – that is, of investors asking how France will grow its way out of the crisis when demand in Europe is flat and French goods are becoming ever less competitively priced in export markets. Indeed, the facility with which France was and is still able to borrow had the effect of loosening the budget constraints and therefore to postpone structural reforms leaving the country much more vulnerable to a change in market conditions (Fernández-Villaverde, J., L. Garicano, and T. Santos, 2013). We estimate that if the current snail's pace of reforms persists, France's public debt to GDP ratio will follow an explosive trajectory (figure 4):

[Insert Figure 4 Here]

In order to arrive at the debt sustainability projections, we use a standard debt accumulation equation. Assuming the government budget constraint takes the following form:

(16) $$b_t = \frac{1+i_t}{1+g_t} b_{t-1} - pb_t + sf_t$$

where b_t is the government debt to GDP ratio, i_t is the nominal interest rate, g_t is the nominal growth rate of GDP, pb_t is the primary balance of the general government budget and sf_t captures all the transactions affecting the stock but not the flow of debt.

Simple arithmetic gives the debt-accumulation equation derived from the government budget constraint:

(17) $$\Delta b_t = \frac{i_t - g_t}{1+g_t} b_{t-1} - pb_t + sf_t$$

France's government debt to GDP at 93.5% of GDP (IMF WEO October 2013), hardly-existent economic growth, subdued inflation dynamics and structural deficit of 2% of GDP (IMF WEO October 2013) do not bode well for debt sustainability. In our analysis we assume that neither the potential growth rate nor the primary deficit dynamic improve as the government fails to embark on the necessary reforms. When global interest rates rise as the US Federal Reserve eventually normalizes monetary policy, debt accumulation may further accelerate. As such, we assume a 2% wedge between debt servicing costs and nominal GDP over the long term.

The problem is that the old model of transfers will no longer be painless (in the sense of being an alternative to internal devaluation) – as was the case in the years before the 2008 financial crash when such transfers (that is, the financing of current account deficits) took the form of cross-border private sector lending to governments and, especially, to banks which in many cases lent the money to borrowers offering real estate as collateral. Since the credit bubble burst in 2008, these private financial flows have been replaced by state budget transfers and, therefore, ballooning budget deficits and implicit liabilities of peripheral countries in the ECB Target 2 (Trans-European Automated Real-time Gross settlement Express Transfer system). As a result, the fiscal position in many of the less competitive Eurozone economies has become unsustainable without transfers from the more competitive Eurozone economies led by Germany. Such transfers will be of taxpayers' money – provided either directly through the European Stability Mechanism (ESM), or indirectly via the banks in the creditor countries which have lent money to the troubled countries under strict conditionality. For in the event of creditor banks having to agree to some form of sovereign debt restructuring, and unless in the meantime a much more radical version of a European banking union had been installed than the one under discussion at time of writing, those banks would have to be recapitalized with money provided by taxpayers in their home countries.

Many debtor governments would much like to avoid such tough conditionality by having their budget deficits financed by money printed by the central bank. Such a desire has been explicitly stated by senior officials in France who face deleveraging dynamics and a broken mechanism of monetary transmission at home. But the best that the Eurozone debtor countries can hope for is not the political control of the ECB that French officials dream of, but rather ECB purchases of short-term government bonds ("Outright Monetary Transactions")

which, if they happen at all, will be subject to the same tough fiscal conditions enshrined in IMF programmes as apply to transfers from the ESM.

The outlook for France therefore is one of relentless fiscal tightening and demand repression, combined with broken transmission of monetary policy, lasting several years – resulting in shrinking or, at best, stagnating output and living standards.

4. Concluding Remarks

We use a multi-step bargaining model with breakdown probability and disagreement cost to show that growth and inflation outcomes in a monetary union break-up scenario determine the members' bargaining power over time. Breakdown threats can be used strategically by the members with (seemingly) lower bargaining power forcing the (seemingly) stronger players into costly transfer unions.

We estimate the cost of a German EMU exit at 6% of GDP and 16% of GDP equivalent of net foreign assets held by the Bundesbank compared to financing the debtors' private and public sector dissaving at 2-4% of German GDP each year for an indefinite period of time. Moreover, the doubtful efficiency of structural and fiscal policies in boosting competitiveness in underdeveloped regions within a common currency area is well illustrated by the cases of East Germany and Southern Italy. In every year since reunification, East Germany has received transfers of 4% of German GDP equivalent to more than 25% of East Germany's GDP but convergence has not occurred (Kawalec and Pytlarczyk, 2013). Labour productivity in the East 20 years after reunification was still less than 75% of that in the West and unemployment 50% higher (Burda, 2011) –

resulting in young and educated people migrating to the West in search of better prospects.

France has always been opposed to a loss of fiscal sovereignty (Bibow, 2013). But even on the heroic assumption that it would be politically feasible to establish a fiscal union and thereby deal with the free rider problem whereby some countries practice irresponsible budget policy – and reducing the extent to which migration alone had to take care of divergences in competitiveness between participating states – that problem of, divergent competitiveness would remain. In any case, Germany cannot afford to bail out the largest debtors, whose debt maturity profiles suggest their economic difficulties are liable to trigger a financial market panic.

We follow Kawalec and Pytlarczyk (2013) in concluding that dismantling the EMU by means of Germany and the other creditor countries leaving the euro is the solution. By leaving the EMU, creditor countries will, *de facto*, provide substantial transfers to the indebted and less competitive countries in a way that will not cause anything like the same political bitterness or resistance. For the transfers would be effected by means of a revaluation of the German currency (or possible new common currency shared between Germany and the other creditor countries) making Germany less competitive and increasing German imports from the hitherto less competitive countries. Another form of *de facto* transfers in this scenario would be German-led banking groups writing off their claims on the governments of the indebted and less competitive countries. In short, this whole scenario would appear to keep the redistribution of German and other surplus countries taxpayers' money at an acceptable level, thereby removing the risk of an anti-Europe political explosion. Doubts are voiced on the pragmatic grounds that while this Euro exit conclusion may make sense in principle, the practical "real world" implications of leaving the present monetary union would be too traumatic to contemplate such a course. We argue the opposite – that if this path is not

taken, the build-up of tail risks and imbalances will lead to far higher economic costs down the line for all parties involved.

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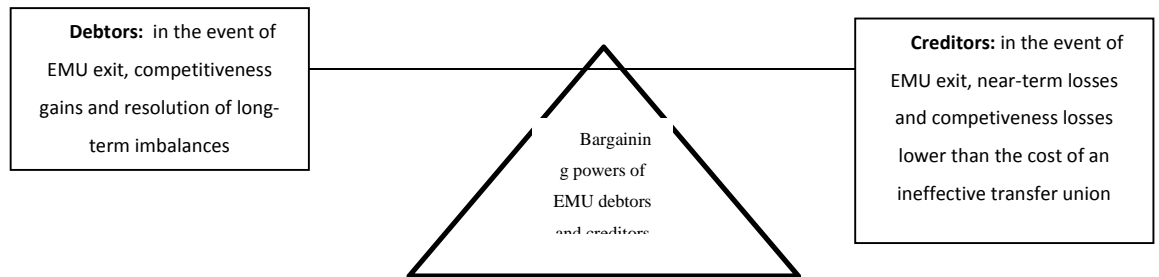
IV. Sample Figures

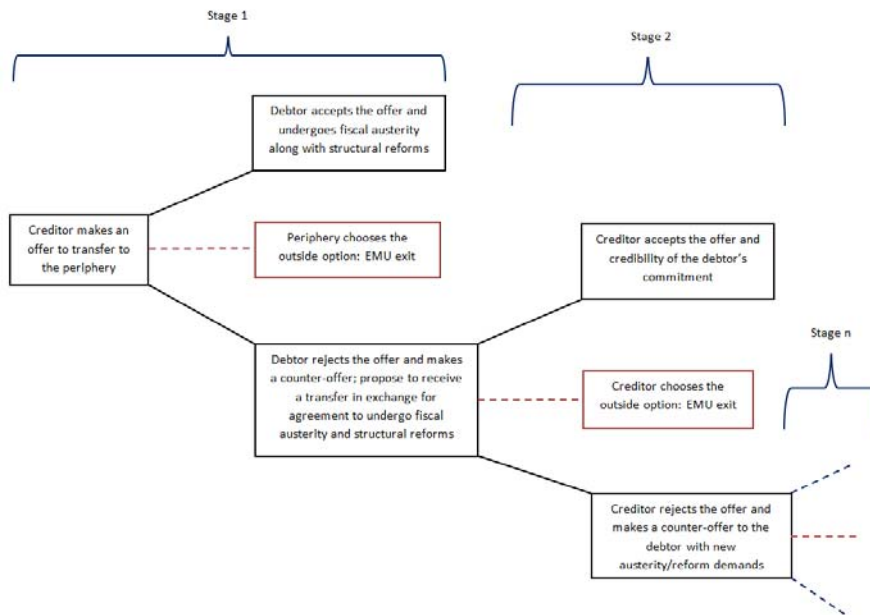FIGURE 1 – 'TRUE' BARGAINING POWER WITHIN EMU

FIGURE 2: DEBTORS – CREDITORS EMU FISCAL TRANSFERS GAME
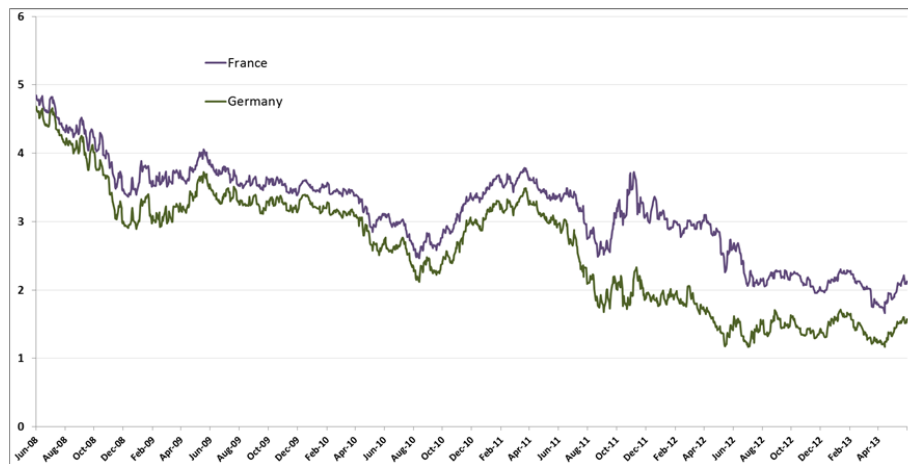
FIGURE 3 – FRENCH AND GERMAN 10 YEARS GOVERNMENT BONDS YIELDS

Source: Thomson Reuters

FIGURE 4 – PROJECTIONS OF FRANCE'S PUBLIC DEBT TO GDP RATIO, 2013-2038.
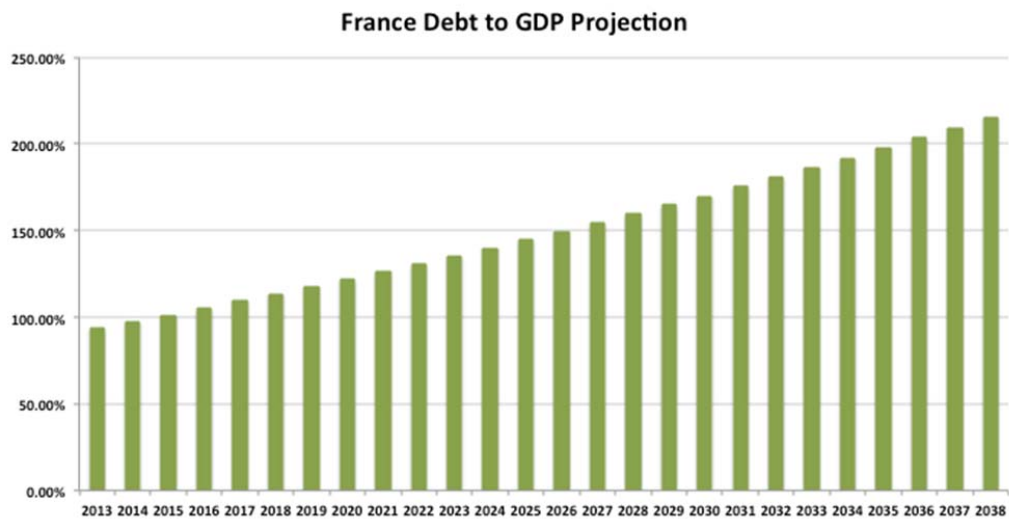
Notes: Standard debt-accumulation equation used. IMF WEO 2013 data used; adjusted by taking into account slow progress on structural reforms i.e. the current pace of debt accumulation is continued by means of unchanged structural deficits and a persistent wedge between debt-servicing costs and nominal growth. No debt monetisation assumed.

Source: Authors'calculations, data from Thomson Reuters.

V. Sample Tables

TABLE 1: THE IMPACT OF RELATIVE BARGAINING POWERS ON THE FISCAL TRANSFERS GAME PAYOFFS

(G, F)	b_G =0.25	b_G =0.5	b_G =0.75
b_F =0.75	(0.25, 0.75)		
b_F =0.5		(0.5, 0.5)	
b_F =0.25			(0.75, 0.25)

TABLE 2 – CURRENCY ADJUSTMENT REQUIRED DURING EMU DISSOLUTION

Economy	Degree of FX Over/Undervaluation
Germany	22% Under-valued
France	20.5% Over-valued
Spain	19.2% Over-valued
Italy	28.2% Over-valued
Portugal	19.1% Over-valued
Greece	17.9% Over-valued

Source: Authors' calculation, Eurostat's Relative ULC, Overall Economy data used. 1999-2013.

TABLE 3 – INCREMENTAL ANNUALIZED INFLATION IMPACT POST EMU DISSOLUTION BASED ON FX PASS-THROUGH

Economy	4 Quarters Cumulative Impact	8 Quarters Cumulative Impact
Germany	-2.99ppt	-4.74ppt
France	+1.14ppt	+2.31ppt
Spain	+4.87ppt	+8.62ppt
Italy	+2.08ppt	+4.39ppt
Portugal	+0.8ppt	+1.8ppt
Greece	+1.24ppt	+2.8ppt

Source: Authors' calculation, data sources in the Appendix, confidence interval bounds in the Appendix

TABLE 4 –IMPACT ON EXPORTS POST EMU DISSOLUTION BASED ON FX PASS-THROUGH

Economy	Exports Impact of EMU Break-Up (Annualized)
Germany	-12.32%
France	+8.4%
Spain	+0.4%
Italy	+6.1%
Portugal	+1.52%
Greece	+0.72%

Source: Authors' calculation, data sources in the Appendix, confidence interval bounds in the Appendix

TABLE 5 – GERMANY INSIDE OR OUTSIDE OF THE EMU?

Germany	Short to Medium Term Impact	Long-Term Impact
EMU exit	-6% of GDP exports loss -16% of GDP reduction in NFA (born by the Bundesbank)	-0.6ppts decline in GDP growth on the back of 10% loss in competitiveness
Fiscal Transfers game continues	Commit -16% to -20% of its GDP to underwrite near term maturities of French government debt	-2% to -4% of GDP each year to finance debtor imbalances

Source: Authors' calculations

TABLE 6 – FRANCE INSIDE OR OUTSIDE OF THE EMU?

France	Short to Medium Term Impact	Long-Term Impact
EMU exit	Sovereign financing becomes more expensive (but not punitive given central bank intervention) and private sector credit conditions loosen up; mixture of growth and inflation used to smooth out deleveraging. Near to medium term exports growth boost of 8.4ppts. Short term inflation increases by 1.14%, medium term by 2.4%. Overall debt sustainability impact neutral to positive.	Net exports boosted by at least 7%[§] as REER allowed to fall by 20%, labour market reforms assuming that euro exit would be accompanied by structural reforms
Fiscal Transfers game continues	Sovereign financing remains cheap whereas private sector credit conditions continue to tighten	Public debt continues to increase as a reflection of macroeconomic imbalances

Source: Authors' calculations

Appendix A: Data Sources (Bargaining Power Estimation)

France. CPI, Index, 1998=100: Oxford Economics. Exchange Rate: Bloomberg. Oil Price, WTI Current Contract: Bloomberg. Export deflator, goods, Index, 2005=100: Oxford Economics. Exports, goods & services, real, Constant Prices, SA, EUR, 2005 chained prices: Oxford Economics. GDP, constant price & exchange rate, SA, Constant Prices, SA, USD, 2005 prices: Oxford Economics.

Germany. CPI, SA, Index, 2010=100: Oxford Economics. Exchange Rate: Bloomberg. Oil Price, WTI Current Contract: Bloomberg. Export Prices, Total, Index, 2005=100: Federal Statistics Office, Exports, goods, real, Constant Prices,

[§] http://www.banque-france.fr/uploads/tx_bdfdocumentstravail/DT-424_01.pdf

EUR, 2005 prices: Oxford Economics. GDP, constant price & exchange rate, SA, Constant Prices, SA, USD, 2005 prices: Oxford Economics.

Greece. Consumer Prices, Total, Index, 2009=100: National Statistical Service of Greece. Exchange Rate: Bloomberg. Oil Price, WTI Current Contract: Bloomberg. Export Prices, All commodities, Index, 2005=100: IMF IFS. Exports, goods & services, constant price & exchange rate, Constant Prices, USD, 2012 prices: Oxford Economics. GDP, constant price & exchange rate, SA, Constant Prices, SA, USD, 2005 prices: Oxford Economics.

Italy. Consumer Prices, By Commodity, All Items, Total, Index, 2010=100: National Institute of statistics. Exchange Rate: Bloomberg. Oil Price, WTI Current Contract: Bloomberg. Exports, Unit Value Index, EXPORT UNIT VALUE INDEX, Index, 2010=100: Oxford Economics. Exports, goods & services, constant price & exchange rate, Constant Prices, USD, 2012 prices: Oxford Economics. GDP, constant price & exchange rate, SA, Constant Prices, SA, USD, 2005 prices: Oxford Economics.

Portugal. Consumer Prices, All items, National, Index, 2012=100: National Institute of Statistics. Exchange Rate: Bloomberg. Oil Price, WTI Current Contract: Bloomberg. Exports, goods & services, constant price & exchange rate, Constant Prices, USD, 2012 prices: Oxford Economics. GDP, constant price & exchange rate, SA, Constant Prices, SA, USD, 2005 prices: Oxford Economics.

Spain. Consumer Price Index, By Commodity, All Items, Total Index, 2011=100: National Statistics Institute. Exchange Rate: Bloomberg. Exports, Unit Value Index, Total, Index, 2005=100: Ministry of the Economy and Finance. Oil Price, WTI Current Contract: Bloomberg. Exports, Total, Constant Prices, SA, EUR, 2005 prices: Bank of Spain. GDP, constant price & exchange rate, SA, Constant Prices, SA, USD, 2005 prices: Oxford Economics.

Appendix B: Confidence Intervals and Estimates for the Main Specification

Confidence Intervals and Estimates for the Main Specification

Economy	4 Quarters Cumulative CPI Impact	4 Quarters Cumulative CPI Impact (95% CI, U)	4 Quarters Cumulative CPI Impact (95% CI, L)
Germany	-2.99%	-1.23%	-5.02%
France	1.14%	-1.56%	3.87%
Spain	4.87%	1.34%	7.59%
Italy	2.08%	-1.88%	6.76%
Portugal	0.80%	0.10%	1.70%
Greece	1.24%	-0.20%	2.70%

Economy	8 Quarters Cumulative CPI Impact	8 Quarters Cumulative CPI Impact (95% CI, U)	8 Quarters Cumulative CPI Impact (95% CI, L)
Germany	-4.74%	-1.15%	-9.35%
France	2.31%	-2.54%	6.72%
Spain	8.62%	1.99%	14.61%
Italy	4.39%	-3.74%	12.97%
Portugal	1.80%	0.40%	3.50%
Greece	2.80%	1.20%	3.91%

Economy	Exports Impact of EMU Break-Up (Annualized)	Exports Impact of EMU Break-Up (Annualized) (95% CI, U)	Exports Impact of EMU Break-Up (Annualized) (95% CI, L)
Germany	-12.32%	-4.32%	-19.13%
France	8.40%	13.71%	3.15%
Spain	0.40%	1.20%	-0.90%
Italy	6.10%	9.15%	2.48%
Portugal	1.52%	2.65%	0.67%
Greece	0.72%	1.23%	0.10%

CONFIDENCE INTERVALS AND ESTIMATES FOR THE ALTERNATIVE SPECIFICATIONS

Economy	4 Quarters Cumulative CPI Impact	4 Quarters Cumulative CPI Impact (95% CI, U)	4 Quarters Cumulative CPI Impact (95% CI, L)
Germany	-3.31%	-1.37%	-5.43%
France	1.37%	-1.13%	2.45%
Spain	4.67%	1.00%	6.67%
Italy	1.49%	-2.04%	5.81%
Portugal	1.20%	0.70%	2.30%
Greece	1.33%	0.12%	3.10%

Economy	8 Quarters Cumulative CPI Impact	8 Quarters Cumulative CPI Impact (95% CI, U)	8 Quarters Cumulative CPI Impact (95% CI, L)
Germany	-5.46%	-2.26%	-8.96%
France	2.87%	-2.38%	5.15%
Spain	7.29%	1.57%	10.41%
Italy	2.13%	-2.92%	8.31%
Portugal	1.68%	0.98%	3.22%
Greece	1.73%	0.16%	4.03%

Economy	Exports Impact of EMU Break-Up (Annualized)	Exports Impact of EMU Break-Up (Annualized) (95% CI, U)	Exports Impact of EMU Break-Up (Annualized) (95% CI, L)
Germany	-10.32%	-3.62%	-16.02%
France	9.10%	14.85%	3.41%
Spain	1.27%	3.81%	-2.86%
Italy	5.32%	7.98%	2.16%
Portugal	1.70%	2.96%	0.75%
Greece	1.90%	3.25%	0.26%

CONFIDENCE INTERVALS AND ESTIMATES FOR THE MAIN SPECIFICATIONS WITH A STRUCTURAL CHANGE DUMMY
(EMU INCEPTION PERIOD)

Economy	4 Quarters Cumulative CPI Impact	4 Quarters Cumulative CPI Impact (95% CI, U)	4 Quarters Cumulative CPI Impact (95% CI, L)
Germany	-2.60%	-6.28%	-3.83%
France	0.70%	-0.84%	-0.47%
Spain	4.30%	20.01%	14.02%
Italy	1.80%	-1.31%	-0.34%
Portugal	1.50%	2.57%	1.34%
Greece	1.90%	21.06%	9.03%

Economy	8 Quarters Cumulative CPI Impact	8 Quarters Cumulative CPI Impact (95% CI, U)	8 Quarters Cumulative CPI Impact (95% CI, L)
Germany	-4.29%	-10.36%	-6.32%
France	1.47%	-1.77%	-0.99%
Spain	6.71%	31.21%	21.87%
Italy	2.57%	-1.87%	-0.48%
Portugal	2.10%	3.60%	1.88%
Greece	2.47%	27.38%	11.75%

Economy	Exports Impact of EMU Break-Up (Annualized)	Exports Impact of EMU Break-Up (Annualized) (95% CI, U)	Exports Impact of EMU Break-Up (Annualized) (95% CI, L)
Germany	-11.50%	-4.03%	-17.86%
France	8.40%	13.71%	3.15%
Spain	1.68%	5.04%	-3.78%
Italy	5.79%	8.69%	2.35%
Portugal	0.50%	0.87%	0.22%
Greece	0.60%	1.03%	0.08%