Who Invokes the Escape Clause: The Political Determinants of the European Monetary System Realignments

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Abstract

The European Monetary System (EMS) was set up in 1979 as a step in the monetary integration of the European Community. At its core, the EMS worked as fixed but adjustable exchange rates and, despite its success in retaining country membership, it experienced a series of currency realignments against the German currency. This paper links the use of realignments to escape clauses in a monetary cooperation agreement and derives hypotheses about who and when is more likely to invoke such clauses. I argue that realignment behaviour is driven by credibility considerations for domestic monetary policy; implications for European trade; the institutional structure of the EMS and its centrality to the larger process of European integration; as well as the behaviors of the core nations – Germany and France. Using monthly data on exchange rate realignments for all EMS member countries from 1979 to 1993, I find strong support for the hypotheses.

1. Introduction

In addition to the common market, monetary and exchange rate cooperation has been at the forefront of European integration. Currently, the common currency, the euro accounts for close to thirty percent of the stock of global foreign exchange reserves and about forty percent of the daily foreign exchange trading (ECB 2010). The currency was introduced in 1999 and has become the common money for 17 countries in the European Union. Prior to the euro, the European Monetary System (EMS) and its Exchange Rate Mechanism (ERM) were the most successful attempts at monetary integration in the European Community (EC).[1] The EMS was set up in 1979 and, at its core, it worked as fixed but adjustable exchange rates among the participating countries. While most research regards the EMS as generic fixed exchange rates, the system suffered a series of realignments. The use of realignments was allowed under the EMS rules and they functioned as escape clauses from strict monetary cooperation. This paper first explains why we should understand such escape clauses and does so by linking their extensive use to a decline in the substance of cooperation. Subsequently, the paper uses the political economy of monetary integration to derive empirical hypotheses regarding the likelihood that EMS currencies are realigned against the de facto anchor currency – the German Deutsche Mark. The hypotheses are tested using monthly data on exchange rate realignments for all EMS members from 1979 to 1993.

Analyzing compliance with international treaties is often difficult because required behavior under the agreements that actually get ratified is not very different from what states would have done anyway (Downs et al. 1996). One issue with endogenous treaties is that country selection accounts partly for the cooperation of signatory nations (von Stein 2005). However, for some international agreements, including the EMS, the consequence of endogenous negotiations is

[1]The EMS and the ERM are used interchangeably, although strictly speaking it should be called the exchange rate mechanism of the European Monetary System.

a balance of substantive goals and flexibility provisions in the treaty itself (e.g. Rosendorff and Milner 2001). That is, countries sign agreements pledging to curtail their behavior, but allow escape mechanisms that offer relief from treaty clauses while remaining broadly in compliance. In the case of the EMS, the exigencies of exchange rate cooperation without the use of the escape clause of realignment were constraining and costly. The constraints imposed by fixed exchange rates were binding both because European countries were not an optimum currency area that would benefit from a single monetary policy and because capital controls were inefficient and were later abandoned (Frieden 2002, Eichengreen 2008). The costs of exchange rate cooperation resulted from the need to adjust domestic economic policy and a loss of external competitiveness.

One way to avoid the constraints of the EMS was to abandon the system. This was not the preferred solution, however, and the EMS has been quite a success in this respect, with countries remaining in the system for more than thirteen years. Rather, countries chose to use the escape clause allowed under the system in order to deflect pressure from exchange rate commitments. This resulted in a significant number of realignments against the German Deutsche Mark and several currencies lost close to fifty percent of their value while in the EMS. This paper suggests that, for treaties allowing escape clauses, the critical way to gauge the depth of international cooperation is to study the use of such relief clauses.

The origins of the EMS are largely viewed as political rather than economic (Frieden 2002) and its management continued to be a highly political enterprise, as reflected in the rules of the 1978 Brussels European Council Resolution. The Resolution required that exchange rate realignments be treated as a matter of common concern and decided with the agreement of all the countries participating in the exchange rate mechanism. The realignments of the EMS have been studied extensively by economists in the 1980s and early 1990s. Despite the deeply argued nature

of the ERM realignments, however, such studies fail to consider fundamental questions about political economy constraints and cooperation in international organizations.

Theoretically this paper argues that understanding the calculus of governments realigning their country's exchange rates involves looking at the costs and benefits of such action. Furthermore, I suggest that taking a comprehensive stock of the benefits and costs of currency realignments in the EMS requires a broad examination of the political economy of monetary integration, incorporating four interconnected approaches: (i) The literature on the credibility of fixed exchange rates (ii) The international relations research studying treaty obligations and compliance; (iiii) The research on the real consequences of monetary integration; and (iv) The domestic politics approach to fixed exchange rates. Following, I hypothesize that the risk of realignment is lower for countries with more left wing representation; when there is more left wing representation at the EMS level; for governments with more pro-European views; and post elections. I also suggest that realignments are less likely when the institutional structure of the EMS is strengthened, and that German economic policy and French politics matter distinctly. The key findings in the empirical section lend robust support to the hypotheses.

The contribution to the literature is twofold. First, the paper extends our understanding of why countries choose to cooperate in the European institutions. A key claim of neoliberal institutionalist theories is that institutions alter state interests, creating incentives for further cooperation (Keohane 1984, Moravcsik 1998, Pauly 1992, Martin 2001). I find substantial evidence for this position in a core area of European integration: The paper shows that in the case of the EMS, where exchange rate commitments were based on an international treaty, realignments were a matter of joint decision, influenced by the political make-up of EMS level decision makers. It also shows that country membership in the EMS changed the calculus of the European left, by becoming a tool for the left to deliver an acceptable level of price stability. In

addition, strengthening the institutional core of the EMS via the Basel-Nyborg Agreement (1987) and increased trade integration significantly affected the pattern of realignments. There are two qualifications to these findings. One is that the escape clause of realignment was used extensively in the EMS, especially in the first years, to the detriment of strict monetary cooperation. The other is that power politics was important: Germany, even if unwittingly, had an asymmetric influence on the economics of the EMS; and the commitment of France to monetary integration diverged from the average, consistent with its status as a key member in the EC.

Second, the paper explains events that make de jure fixed rate arrangements become de facto a variant of a floating regime (Reinhart and Rogoff 2004). Flexibility via the use of realignments has been important for the longevity of the EMS (Canavan and Rosendorff 1997). Still, explaining these events is important, because research shows that following through on exchange rate commitments has the greatest influence on inflation and inflation credibility, a key reason for fixing the exchange rate in the first place (Guisinger and Singer 2010, Ghosh et al. 2007).

The paper proceeds as follows: Section 2 describes the EMS and country realignment behavior; Section 3 links the use of exchange rate realignments to a decline in the substance of cooperation; Section 4 develops the theoretical argument about the causes of exchange rate realignments and derives testable hypotheses; Section 5 describes the data and methods; Section 6 describes the results of the econometric analysis; Section 7 concludes.

2. Background: Monetary integration and the European Monetary System

The idea of monetary integration was present already in the Treaty of Rome (1957), asking member countries to regard their exchange rates as a "matter of common concern" (Article 108). At the end of the 1960s and beginning of the 1970s, the Barre plan and the resulting Werner report proposed to create an economic and monetary union by 1980. This attempt at monetary integration included an arrangement that placed limits on exchange rate fluctuations known as the

"Snake" (1972) and the European Monetary Cooperation Fund (1973) which was supposed to monitor the Community's exchange rate system and insure multilateral intervention to support currency parities. Monetary integration, however, lost momentum in the 1970s as member states started to withdraw from the "Snake", the European Monetary Cooperation Fund never really took off and countries had divergent responses to economic shocks (McNamara 1998, Dyson 1994). For example, in what is emblematic country behavior in the arrangement, France joined the "Snake" in 1972, withdrew in 1974, returned in 1975 and then left the system a year later in 1976.

By comparison, the European Monetary System has been substantially more successful (McNamara 1998, Frieden 2001).[2] In particular, the EMS became operational in 1979 by Resolution of the Brussels European Council and all founding members (France, Denmark, Belgium/Luxembourg, Ireland, Netherlands and Italy) stayed in the system for the following thirteen years. The core feature of the EMS was the Exchange Rate Mechanism (ERM) which worked as fixed but adjustable exchange rates among the participating countries.[3] To defend the stability of exchange rates, countries were required to use foreign exchange interventions, domestic monetary policy and adjustments to economic policy.[4] One reason for the EMS being

[2] Frieden (2002) gives a more nuanced evaluation of the EMS, tracking closely the pattern of exchange rate realignments, with an early period of little success followed by a "cycle of optimism, crisis and renewed optimism in the run-up to EMU" (p. 832).

[3] Each participating currency had a bilateral central rate vis-à-vis all other ERM currencies, with an obligation to intervene once a bilateral rate moved by more than 2.25% in either direction (up to 6% for Italy and the new entrants: the UK, Spain and Portugal).

[4] Gros and Thygesen (1998) argue that the goals of the EMS were less ambitious than those of the Werner Report (1969). They note that the EMS lacked prescriptions for moving to narrower

more successful than the "Snake" is that member countries were better at implementing domestic policies necessary to maintain exchange rate commitments.[5] Frieden (2001), for example, discusses in detail the explanations advanced for why there was more convergence in domestic policies in the 1980s versus the 1970s. The other reason the EMS proved to be so durable was that realignment to countries central parities was a sanctioned way to deflect pressure on the ERM.

In these realignments the weak currencies were devalued and the strong ones were revalued, resulting in the member currencies losing value against the de facto anchor currency - the German Deutsche Mark (DM). The size of the individual devaluations varied from the smallest one of 1% (Belgian franc, 1987/1) to the largest one of 10.6% (French franc, 1982/6), but their overall size and significance is non-trivial: Over their participation in the ERM, the Italian lira lost 63% against the German currency, the French franc lost 45.2% and the Irish pound 41.4%. Table SI1 in the supplementary information to the paper shows the exchange rate realignment timing for each country in the ERM, for a total of 54 realignments against the German DM.

The origins of the EMS are largely viewed as political rather than economic. Frieden (2002) points out that, in general, Europeans pursued monetary integration despite the fact that labor mobility was low in Europe and countries suffered from asymmetric shocks, i.e. European countries did not form an optimum currency area (see also Eichengreen and Frieden 2001). More specifically for the case of the EMS, Gros and Thygesen (1998) emphasize the political circumstances and the personal interaction of the leaders of the two core European countries –

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margins for exchange rate fluctuations, and, ultimately for abolishing realignments altogether, and was less stringent with regards to budget policy centralization and economic policy convergence.

[5] Convergence is not very clear in the first years of the EMS (Frieden 2001). Fratianni and von Hagen (1992) argue that disinflation in the EMS was part of a global process, rather than the result of system membership.

Germany and France. In their account, Chancellor Schmidt and President Giscard benefited from a stronger domestic political position as a result of growing support for the coalition of German Social Democrats and Liberals, and, respectively, the results of the parliamentary elections in France in 1978, which allowed them to push strongly and informally for monetary integration.[6]

The management of the EMS and in particular the ensuing currency realignments continued to be a highly political enterprise. Specifically, the Resolution required that exchange rate realignments be treated as a matter of common concern, in that "adjustments of central rates will be subject to mutual agreement by a common procedure which will comprise all countries participating in the exchange rate mechanism and the Commission" (Art. 3.2). Because capital controls were still largely prevalent in the EMS countries until the late 1980s, realignments were de facto decided for the most part, and especially when they were comprehensive, in a joint fashion through negotiation, rather than unilaterally under market pressure (Gros and Thygesen 1998, p. 73-79). Illustratively, the first EMS exchange rate realignment (September 1979) involved only the Danish krone and the German DM, but the negotiations were protracted, signaling the joint nature of the decision. The following two realignments were initiated by the Denmark (November 1979) and Italy (March 1981), involved only one currency and were substantially less formal in procedure, but still followed the consultation procedure and were operated preemptively to counter competitiveness pressures and higher inflation rates.

[6] The undertone was also a desire for more independence from the volatility of the US dollar (Dyson 1994) and the inclusion of the Communist Party in the governing coalition in Italy (Gros and Thygesen 1998). Oatley (1997) suggests that Chancellor Schmidt pursued monetary integration to circumvent the conservatism of the Bundesbank.

3. Cooperation and escape clauses to fixed exchange rates

As shown in the previous section, the EMS was not a seamless fixed exchange rate regime. Rather it experienced a large number of realignments that devalued some currencies significantly over the years. On the other hand, realignments were allowed under the Resolution of the Brussels European Council and the system was successful at keeping its membership. Given this contradiction showing both success and failure, I argue that it is useful to focus on the substance of an exchange rate treaty and analytically distinguish the concept of "strict" cooperation.

The conditions under which states comply with commitments made in international treaties have generated much interest in political science (Simmons 2000, Von Stein 2005, Simmons and Hopkins 2005). Assessing compliance, however, is difficult because treaty provisions are endogenous to the interests of the countries signing them.[7] One consequence of endogenous treaties is that agreements will be flexible by allowing escape clauses from treaty provisions (Abbott and Snidal 2000). In the political economy literature, the major work on the use of escape clauses has been on the GATT/ WTO (Rosendorff and Milner 2001, Kucik and Reinhardt 2008, Pelc 2009). However, exchange rate treaties have also included such relief clauses. In the Bretton Woods period, for example, International Monetary Fund (IMF) members were asked to maintain fixed exchange rates, but were allowed to realign their exchange rates with IMF's approval.

Below, I argue that we can distinguish analytically between cooperation and "strict" cooperation, by assigning different weights to two core features of international treaties - flexibility and substance. Cooperation occurs when countries stay within the bounds of the treaty, including by taking advantage of specifically sanctioned opt-out mechanisms. Cooperation weighs

[7] Von Stein (2005) and Simmons and Hopkins (2005) account for the selection of countries into particular treaties. Simmons and Hopkins (2005) show that even if countries select themselves into IMF's Article VIII, signing the treaty both screens and constrains.

flexibility and the ability of treaties to keep their membership relatively more heavily. In their excellent treatment of the topic, Peter Rosendorff and Helen Milner (2001) suggest that escape clauses increase cooperation defined in this manner by making the initial agreement on the treaty easier and increasing the overall stability of treaties. In their account, pre-negotiated costs of temporary deviations from a trade treaty insure that escape clauses are used in an optimal fashion. In addition, defining the circumstances that justify appeals to exception in trade deals can also help moderate the use and time duration of escape clauses (Pelc 2009). As shown in the previous section, the EMS has been a quite successful instance of cooperation because until 1992 it has not lost any of its members and many of the realignments were decided in a coordinated fashion.

"Strict" cooperation, on the other hand, weighs more the substance of cooperation and asks both that countries remain within the treaty and that escape clauses be used sparsely in favor of domestic policy adjustments. A focus on this analytical limit makes sense for exchange rate treaties for several reasons: First, exchange rate realignments, unlike trade escape clauses, are not temporary and are not reversed at a later point in time. At the limit, then, their use makes the ERM fully endogenous, i.e. accommodating all inflation in excess of German inflation and de facto lacking credibility because of a failure to constrain (Gros and Thygesen, p. 147). Second, while countries sometimes agreed to domestic reforms in the eve of realignment, this was done in an ad-hoc manner because the EMS involved no pre-negotiated costs to the use of realignments. As, I show in the next section, countries certainly faced costs when realigning EMS exchange rates, but these costs were not a known and agreed quantity when the treaty was signed. Third, the conditions under which the realignment clause could be invoked were deliberately left unspecified in the Brussels Council Resolution because of speculation fears. Because of these three features, an optimal use of realignments was hard to define and achieve in the EMS. Eloquently, Obsfeld

(1991) notes that "while well-designed rules with escape clauses can raise welfare in principle, limited credibility makes it difficult for governments to implement them in practice" (p. 1).

Depending on the degree of capital freedom, exchange rate cooperation implies some loss of monetary policy independence and requires domestic reform. Therefore strict cooperation is costly and rare. The Gold Standard before World War I is one such example, with two features that stand out: First, the system was self enforcing because "there was no question about the authorities commitment" to the gold parity of their currency (Eichengreen 2008 p. 31). Second, because the system was so credible, capital flows were equilibrating rather than disturbing and countries could violate rules repeatedly in the short run without much consequence. In the EMS, however, governments faced pressure to pursue other goals than exchange rate stability and made extensive use of realignments until 1987. The failure to approach "strict" cooperation presents a problem because it can lead to low credibility of the system and, therefore, explain a related series of disappointing economic outcomes. This includes a slow pace for disinflation stretching economic costs for a long time and costs of disinflation in terms of unemployment not better than for countries outside the EMS (Gros and Thygesen 1998, Fratianni and von Hagen 1992).[8] In fact, Obsfeld (1991) notes that while the EMS rules and the political costs implied by realignments may lead to an optimal use of the relief clause, it is more likely that the outcome is inferior from a welfare point of view to irrevocably fixing the exchange rates.

Short of never using the relief clause, the practical delineation of "strict" cooperation in exchange rate treaties is not completely clear cut. However, the analytical discussion above has underlined some of the problems involved in invoking the escape clause in exchange rate agreements, including the fact that their use was not necessarily optimal, and has shown the

[8] The EMS achieved nominal exchange rate stability (Gros and Thygesen 1998, Oatley 1997).

importance of studying their determinants. The next section derives theoretical hypotheses about who invokes the escape clause of exchange realignment and under what conditions.

4. Explaining Realignments in the European Monetary System

The decision to realign an EMS fixed exchange rate entails a government calculation of the benefits and costs of the devaluation against the German DM. The most important benefit of realignment is less real appreciation of the exchange rate, a temporary increase in competitiveness and a (partial) incorporation of higher domestic inflation in the relative price of currencies. That is, adjusting the exchange rate via regular realignments allows policy makers an escape valve in the lack of flexibility presumed under fixed exchange rates and can postpone the need for domestic adjustment of monetary and fiscal policies. Furthermore, while realignments do not necessarily occur because of a domestic currency sell-off, a realignment that follows substantial pressure from foreign exchange markets can have the benefit of stopping the outflow of foreign reserves and the need to maintain high interest rates that harm economic activity. On the other hand, realignments can have substantial costs: For one, large realignments have significant economic costs related to the sudden change in the relative prices of tradable goods, affecting the patterns of intra-EMS trade. In addition, realignments generate political costs associated with back-tracking on a visible policy with distributional consequences, and, specifically, for the case of the EMS there are costs associated with yielding on a policy linked to the more general thrust for integration in the EC.

ERM realignments have been studied previously, but this work ignores political economy considerations, except indirectly via the effect that macroeconomic variables have on the optimizing calculus of governments.[9] I argue that taking a comprehensive stock of the benefits and

[9] See e.g., Ozkan (2003), Siklos and Tarajos (1996) for determinants of ERM realignments; Edin and Vredin (1993) for early work on realignments in the Nordic countries; Chen and Giovannini (1997) for determinants of realignment expectations.

costs of currency realignments in the EMS requires a broad examination of the politics of monetary integration, incorporating four interconnected approaches: (i) The literature on the credibility of fixed exchange rates (ii) The international relations research studying treaty obligations and compliance, including linkage politics; (iii) The research on the real consequences (on trade and investment) of monetary integration; and (iv) The domestic politics approach to fixed exchange rates. Below I trace key arguments from previous research and derive four testable hypotheses about country realignment behavior.

Broadly, Simmons (2000) argues that signing international agreements changes countries' incentives to comply because it raises the reputational costs of reneging. Also, Abbott and Snidal (2000) suggest that legalization of international commitments should be especially beneficial for the credibility of "sincerely committed states" (p. 429) like the ones in the EU, because making legal commitments sorts out the countries with a low propensity to defect. Credibility accounts more specific to the set-up of the EMS have also been abundant. Fischer (1987) suggests that the EMS was an "arrangement for France and Italy to purchase a commitment to low inflation by accepting German monetary policy" (Fischer 1987). Giavazzi and Pagano (1988) extend this explanation, showing the credibility logic of joining the EMS in more detail: By joining the monetary union, countries face a modified set of incentives vis-à-vis inflation. In particular, while in the ERM, inflation generates real exchange rate appreciation, making inflation a less attractive domestic policy option and therefore, making the ERM a credibility enhancing mechanism.[10]

[10] Kremers (1990) links lower inflation expectations in Ireland to credibility from the country's exchange rate policy in the EMS. Frieden (2001) cites a former Banca D'Italia Governor: "…A fixed exchange rate is the firmest guarantee of monetary stability when the authorities do not have the ability to impose a responsible monetary policy for political reasons" (p. 42).

The benefits of having a fixed exchange rate, however, depend on the degree to which policymakers need credibility, or their inflation aversion credentials. Theories predicting partisan differences in macroeconomic policy suggest that right wing parties have a preference for low inflation, and are more likely to tolerate variation in employment in order to reduce inflation (Hibbs 1977, Alesina et al. 1997). As a consequence, the left has more incentives to choose fixed rates because it suffers from a relatively larger credibility problem than the right.[11] In the particular case of the EMS, the left could also be expected to prefer a fixed exchange rate because, by the 1980s, EC countries had reached a strong consensus on neo-liberal policies. This consensus emerged from the failed policies of the 1970s, by a process of imitation of Germany's successful policy and by learning from the stark return to orthodox policies by the French socialist government in 1982-1983 (McNamara 1998, Woolley 1992, Dyson 1994, Oatley 1997). In the absence of institutions like the EMS, this consensus was harder to achieve by the left: For example, Boix (2001) and Ross (2001) suggest that in the 1980s both the Spanish and the French Left had lost wage bargaining as a tool to deliver an acceptable level of price stability.

Moreover, the ERM provided the added benefit of joint interventions to defend pegged rates and, more importantly, the political benefit of deferring to a multilateral decision making process. Before the Basle-Nyborg agreement in 1987, joint intervention to support the system of exchange rate parities was weak, with the Bundesbank being clear that it would not act against its mandate of low domestic inflation. Even if that was the case, however, the joint decision making process as opposed to unilateral pegging, allowed left wing governments more leeway in balancing the

[11] See on this point Milesi-Ferretti (1995). Simmons (2004) shows that more left wing representation leads to higher likelihood of staying in the gold standard; Garrett (1998) shows that globalization constrains the policy options of the left. On the other hand, Oatley (1999) and Bearce (2003) suggest that the left is able to behave as an agent for the preferences of its constituency.

demands of its core constituencies (demanding more accommodative monetary policy) and its external constraints.[12] For example, Niels Thygesen argues that "the continued EMS membership prompted the adoption of domestic policies of budgetary consolidation and deindexation which are anyway desirable, but would have been more controversial in the absence of the EMS" (cited in McNamara 1998, p. 162). Both measures were significant, because expansionary fiscal policy and wage indexation are key sources of inflationary pressure.

Furthermore, the EMS has been one of the most visible symbols of European cooperation and a focal point for exchange rate stability (Woolley 1992, Bernhard 2002). And frequent adjustments damaged the ERM by de facto abandoning it (Giavazzi and Giovannini 1987). First, and foremost, if realignments become an accepted policy strategy, domestic inflation ceases to become unattractive by punishing international competitiveness. Second, realignments to a policy of announced fixed parities signal that politicians consider the announcement of fixed rates as a non-binding, de facto adjustable commitment. Therefore, the policy makers who would prefer a fixed exchange rate for credibility reasons (i.e. the left) should also realign fixed exchange rates infrequently (see also Author 2010). Moreover, as explained earlier, in a significant number of cases realignment decisions have been taken in a cooperative fashion. Therefore, partisanship should be an influencing factor not just in individual countries but also at the aggregate level of the EMS. This leads to the first hypothesis:

Hypothesis H1: More left wing representation (national level and average EMS level) makes exchange rate realignments less likely.

As opposed to unilateral fixing of exchange rates, the EMS was embedded in the larger process of European integration which allowed for issue linkages across the other areas of EC

[12] On this point, Oatley (1997) notes that, in France and Italy, the EMS allowed both scapegoating and the linking of price stability to European integration.

cooperation. Martin (2001) argues persuasively that EC's institutional structure "enhances the value of members' reputations for living up to agreements, allowing them to construct deals that would be more difficult to sustain if undertaken outside the institutional context" (p. 88). Frieden (2001) further suggests that in the 1980s European nations looked to further integration as a solution to stagnation and unemployment and that monetary cooperation was at the heart of this integration effort. He also argues that in France and Italy monetary cooperation was possible in large part because of linkages made with other EC agenda items. Following, I suggest that domestic actors most favorable to further European integration in general also value monetary integration relatively more and are less likely to use the escape valve of realignment.

Already in 1979 the EMS had some explicit mechanisms for the financing of balance of payment deficits. Frieden (2001) points out that the size of the financing facilities was not substantial in the beginning. Still, the EMS had an evolving institutional set-up and in September 1987 member countries signed the Basle-Nyborg Agreement which increased the required levels of monetary policy coordination and the scope of the use of the financing facilities (Gros and Thygesen 1998). More than just increasing monetary coordination, Abdelal (2007) makes the case that Basle-Nyborg was in fact a clear case of quid pro quo linkage exchange between France and Germany: France changed its position and supported for the European Commission's capital movement directive (June 1988) which advanced Germany's preference for capital liberalization in the EC. Germany, at the same time, agreed to a more symmetric management of the EMS, via the Basle-Nyborg Agreement. Following, I suggest that a stronger institutional set-up will tend to reduce the use of exchange rate realignments.

While the EMS aimed to move the whole EC on the integration path, at its origins it was a distinctly Franco-German initiative. For both realist and neoliberal institutionalist scholars of international relations, the nature of cooperation is influenced by the interests and behavior of the

most powerful players: Although the EMS was supposed to work as a balanced system with interventions to support the fixed exchange rates from both weak and strong currency countries, its de facto economic anchor was the German currency (Gros and Thygesen 1998, McNamara 1998). Also, while President Giscard of France was personally involved in the set-up of the EMS, his successor, President Mitterrand was not committed to monetary integration and in the early 1980s the Socialists had a split view of the EMS (Oatley 1997). The position of France was partly afforded by its key role in the EC, and was also a likely result of the French Socialists being out of power during the 1970s when the Keynesian demand stimulating policies were largely discredited (McNamara 1998). Furthermore, while other countries were part of the negotiations, in many of the EMS comprehensive realignments a Franco-German deal preceded the discussion of the details (size of devaluation, additional austerity measures) with the wider membership. In some cases (e.g. the 1981/10 realignment), the French and the Germans pressed the rest of the EMS membership to accept their bilateral agreement. Following, the second hypothesis is:

Hypothesis (H2): Parties with strong pro-European views (at national and EMS level) are less likely to realign their exchange rates; Realignments are less likely in the period after the Basle-Nyborg agreement; German economic policy and French domestic politics matter distinctly.

A third view of monetary integration in Europe traces the real sources of exchange rate policy. This view emphasizes that exchange rate level and volatility influence international trade, and that a key reason behind the drive for monetary integration in Europe was boosting the common market. Most influential, Frieden (2002) argues that when making exchange rate decisions, countries consider the impact of their choices on national trade and investment interests. While Frieden acknowledges the difficulties of neatly delineating the sectors that stand to lose or gain

from exchange rate movements and the data scarcity to proxy them, his account relates exchange rate levels and volatility to their distributional impact and interest group pressure.[13]

Frieden argues that "support for monetary integration from cross-border investors and exporters of specialized manufactures who stand to lose from currency volatility" and "opposition from those, especially import competers, who stand to lose from the inability of national governments to engage in depreciations to gain international competitiveness" (p. 832). For Frieden's theory, the relevant dependent variable is de facto changes in exchange rates. However, because EMS realignments directly generate exchange rate depreciation and volatility, the size of the sectors identified by Frieden should have similar effects on realignment risks. That is, countries with large exports of manufactured goods to Germany should be more interested in currency stability. Also, negative changes in a country's trade balance (controlling for the state of the current account), reflecting difficulties in the import and export markets, should lead to more exchange rate depreciation. This leads to the third hypothesis:

Hypothesis (H3): A larger volume of exports to the German currency bloc will raise support for stable exchange rates and decrease the chances of realignment. A deterioration of a country's trade balance should increase the interest in a depreciated currency and increase the likelihood of realignment.

Finally, there is substantial evidence from unilateral exchange rate pegging that governments tend to postpone devaluations until after elections (Bloomberg et al. 2005). For the EMS in particular, the evidence also suggests that realignments are politically costly especially because the EMS was the focal point for exchange rate stability (Bernhard 2002, Clarke, Ho, and Stewart 2002). For example, William Bernhard (2002) argues that the EMS provided domestic audiences with a yard-stick against which to evaluate economic policy. Because generally EMS

[13] Bearce (2003) notes that exchange rate lobbying is relatively infrequent. The effect of trade and investment on exchange rate policy is then related to the relative importance of these sectors in the economy.

country inflation rates have been above inflation in Germany, fixed exchange rates implied a real exchange rate overvaluation and a loss of domestic competitiveness. Exchange rate realignments offered temporary relief for this loss of competitiveness, but at the same were a clear indication that the government had carried out expansionary policies, leading governments to lose some political support. That is, realignments in the proximity of elections are interpreted by voters as a sign of incompetence (Meon 2004). Also, Bernhard and Leblang (2006) show that unanticipated depreciation of the British pound clearly hurt the popularity of the incumbent government. EMS realignments have been in many cases unanticipated events, so they can be expected to hurt the support for the government. This leads to the fourth hypothesis:

Hypothesis (H4): Realignments will be postponed until after elections. Pre-election periods will see less realignment of exchange rate parities.

5. Data, methods, research design

The data covers monthly observations for the nine members of the EMS' Exchange Rate Mechanism: Belgium, Denmark, France, Ireland, Italy, the Netherlands, Portugal, Spain and the UK. The data stretches from EMS' inception in March 1979 (or subsequent country entry) until the widening of the fluctuation margins to +/- 15% in August 1993 The *dependent variable* codes currency realignments against the de facto anchor currency the German DM. There are 54 realignments against the German currency coded based on Gros and Thygesen (1998) and Ozkan (2003). Realignments represent close to 5% of the total number of observations in the sample.

For hypothesis (H1) I use several measures of left wing parties' strength based on the Comparative Manifesto Project data (Budge et al. 2001) for parties' ideological inclinations and electoral representation. The Manifesto Project codes political parties' programmatic statements with the purpose of quantifying the parties' ideas, policy goals and issue. For the purpose of this analysis, I am interested exclusively in the coding of parties' specific stance on economic policy

and partisan differences on economic issues. Suitably, the Manifesto Project codes favorable statements on planned economy and market economy.[14] Parties that are favorable to planned economy include in their manifestos statements supporting the need for government to control prices or wages, for the government to have a plan for the economy and regulate the economy. On the other hand, parties favorable to market economy emphasize in their platform the need for economic orthodoxy (reduce spending and deficits, support a strong currency, the banking sector and the stock market), the superiority of capitalism, private property rights and personal initiative. For the analysis I code the percentage of votes for left leaning parties in national legislatures. I also code the average for ERM countries (Germany not included) of the percentage of votes for left leaning parties in national legislature and the share of left leaning commissioners in the European Commission.[15] The expectation is that more left wing representation results in a lower realignment risk. Table 1 summarizes the key independent variables and their expected effect.

[Table 1 about here]

Furthermore, the Manifesto Project provides information to operationalize part of hypothesis (H2). It codes positive and negative party positions on the European Community. A positive view of the European Community includes favorable mentions in general, desirability of

[14] In the CMP, the spectrum of policy issues for left and right wing parties is large, ranging from external relations to freedom and democracy, the economy and welfare issues, for a total of 56 specific items. Planned economy adds codes 403, 404, 412 and market economy adds codes 401 and 414. Similar to Carrubba (2001), I subtract market positions from planned economy position, and parties are coded as left leaning if they have positive scores.

[15] Data in based on information from http://ec.europa.eu/commission_2010-2014/index_en.htm for the membership of the past European Commissions, and on Budge et al. (2001) for Commissioners' partisanship. I only look at the Commissioners from ERM countries.

expanding the community or increasing its competence and desire to remain a member. To the contrary, a negative attitude towards the community includes hostile mentions or opposition to specific European policies. I code the position of the government on European issues (percentage of seats in parliament as weights) and the average for ERM countries (Germany not included) for governments' position on EC issues.[16] To test the remaining parts of hypothesis (H2) I include: a dummy variable that take the value of 1 for the period post the Basle-Nyborg agreement; the one month lag of the German DM/US dollar exchange rate, German interest rate and inflation[17]; as well as a dummy variable for six months post French elections (presidential and parliamentary) and the percentage of votes for left leaning parties in the French National assembly.

To test the real causes of exchange rate policy (H3) I use the variables in Frieden (2002), lagged one year: manufactured exports to the German DM zone (Germany, Belgium, Luxembourg, and the Netherlands) as a percentage of GDP and the change in the balance of trade as a percentage of GDP (controlling for the state of the current account). Increases in the manufactured exports to the DM zone and a positive trade balance change are expected to reduce the risk of realignment.[18] Finally, to test hypothesis (H4) I include dummy variables for six months pre and post national elections (Beck et al. 2001, Strom et al. 2008).

[16] Expert surveys on party positions on European integration have been conducted by Marks et al. (2007), but are available only after 1984. The computation is similar to Carrubba (2001).

[17] Interest rates are central bank discount rates (IMF International Financial Statistics); The exchange rate shows the German DM for 1 USD (IMF International Financial Statistics). The inflation rate is computed as monthly changes in the consumer price index (OECD Statistics).

[18] Data for both variables is from Frieden (2002), obtained from the author. Data on manufactured exports to the DM zone is from United Nations Yearbook of International Trade Statistics, and trade balance change is from IMF's International Financial Statistics.

In addition to the core independent variables I include a series of additional relevant economic and political variables: The number of parties in government and whether the government has a minority support in the legislature (Strom et al. 2008); Trade union density (OECD Statistics); A measure of central bank independence[19]; A one year lagged measure of capital account openness (Chinn and Ito 2008); The one year lagged current account balance and trade openness (World Bank World Development Indicators); One year lagged unemployment (Frieden 2002); One year lagged fiscal deficit (Brender and Drazen 2005); The three month lagged percentage change in international reserves (IMF International Financial Statistics).

The empirical estimations testing the core hypotheses are logit models with country fixed effects and robust standard errors. Country fixed effects are required to control for unobservable factors that may bias the estimates. To account for the temporal relation among observations I also include the length of time between successive realignments and cubic splines (Beck et al. 1998). The alternative estimation of duration models produces substantively similar results.

6. Results and discussion

Table 2 shows the results of the econometric analysis for realignments against the German currency. Model 1 uses left party representation in the domestic legislature; Model 2 uses the average across EMS countries of left wing party representation in the domestic legislatures. Because of the potentially asymmetric role of France in the EMS, Models 3 and 4 add distinctly a

[19] In addition to fixed exchange rates, the literature identifies an independent central bank as another institutional mechanism used by governments to gain anti-inflationary credibility. Here, however, it is not clear that this argument should hold: In the EMS countries legal independence has been low and had little within country variation, except for France and Belgium who changed central bank legislation in 1993. Data is based on Cukierman, Webb, and Neyapti 1992.

measure of left wing representation in the French National Assembly and a measure for the post electoral period in France.

[Table 2 about here]

How well do these models explain exchange rate realignments? Table 3 uses Models 3 and 4 in (the models with the highest adjusted R square in Table 2) to construct average predicted probabilities for the months when realignments actually take place versus the months when there is no such realignment. Exchange rate events (e.g., realignments, speculative attacks) are notoriously difficult to predict, both because they are rare events and because they involve complex market sentiment and policy maker action. In the EMS sample, only 5% of observations are realignment events, and while some realignments have been operated under market pressure, many have been pre-emptive and aimed to restore competitiveness. As such, a model that would always predict a non-event would do very well. Table 3 shows that the model specifications do quite well. The average predicted probability when a realignment event actually occurs is between 0.26 and 0.30, more than seven times the average predicted probability for non-events.

[Table 3 about here]

Furthermore, all four models find strong support for hypothesis (H1). As expected, the coefficients of variables proxying left wing representation are negative and statistically significant. This means that more left wing representation in the domestic legislature (Models 1 & 3) and as an average at the EMS level (Models 2 & 4) decreases significantly the likelihood of realignment. A similar effect is found for the percentage of left wing country representatives in the European Commission (for EMS members). However, consistent with the idea that the power of member nations matter, in the case of France (Models 3 and 4), more left wing representation in the National Assembly actually increases the chance of currency realignment vis-à-vis the German

DM for all member countries. While the coefficients on the variables of interest are statistically significant, logit models do not directly show substantive effects. This is shown in Table 4.

[Table 4 about here]

Table 4 shows predicted probabilities when varying the key independent variables that have achieved statistical significance. Key variables are set at plausible levels in the sample, while keeping the remaining covariates at the average of their observed values. Predicted probabilities are shown for Models 3 and 4 in Table 1. Moving from a 30 percent share of votes for left wing parties in domestic legislatures (the 25^{th} percentile) to a majority (the 75^{th} percentile) reduces the risk of realignment by more than a half. The magnitude of the effect is similar for the average EMS vote share for left wing parties and the percentage of left leaning commissioners in the European Commission. In the case of France, however, the Socialist victory in June 1981 and the accompanying increase in left wing representation has increased the chance of an exchange rate realignment about three times for all member countries.

Regression results also generate partial support for Hypothesis (H2). In particular, governments with a more favorable view of European integration were expected to be less likely to realign their exchange rates. The coefficient on this variable is negative as expected, yet it does not reach conventional levels of statistical significance across Models 1 to 4. A dummy variable for the governments with the most favorable positions on European issues or the polarization of parties in the government (legislature) on European issues have a similarly negative coefficient that is not robustly statistically significant to the inclusion of French elections and partisanship. One explanation for this lack of robustness can be found in the explicit sanctioning of the Brussels Resolution on the use of realignments, so pro-European governments may not feel in all cases that realignments go against further integration. This is consistent with the view espoused by the European Commission, which was careful not to argue that the success of the EMS was be judged

by the frequency or realignments (Van Ypersele 1979). Another explanation is that the variable is not a very good proxy for the linkages that countries are actually able to forge.[20] For example, Dyson (1994) argues that financial transfers and subsidized loans for Ireland and Italy were a part of the negotiations for EMS.[21]

As discussed above, the election of the French Socialists in 1981 significantly increased the risk of exchange rate realignment. In addition, Models 3 and 4 show that the risk was higher more generally in the six month period following French parliamentary and presidential elections. The coefficients on the French domestic politics variables are positive as expected and highly statistically significant and the risk of a realignment in the post electoral period in France is about eight times higher than at other times (Table 4). Also, the dummy variable for the Basle Nyborg agreement is negative and statistically significant, showing a substantially lower risk of realignment in the period when countries decided to strengthen their cooperation in the ERM. That is, after the adoption of the Basle Nyborg agreement, the risk of realignment was about thirty times smaller.

The German DM /US dollar exchange rate and the German discount rate are also found to significantly affect the risk of exchange rate realignment. As expected, a weaker German currency decreases the risk of realignment, while an interest rate increase in Germany generates more realignment. Table 4 shows the predicted probability changes when varying both variables from their levels in January 1987, the date of the last comprehensive EMS realignments, to September

[20] See Stasavage and Guillaume (2002) for a test of linkage politics in the African Currency Unions.

[21] Carrubba (2001) shows the relationship between financial transfers and being pro-integration is negative, positing that transfers are not rewards but, rather, compensate for the pain of integration.

1992, the date of UK and Italy exit from the ERM. Over that period, the German currency appreciated against the US dollar by about twenty-two percent, almost doubling the risk of exchange rate realignment. Also, during that time, German discount rate increased by 5.25 percentage points, leading to a realignment risk almost nine times higher. Higher German inflation does not consistently generate a lower risk of exchange rate realignment.

Real factors (hypothesis H3) also get support from the estimations. In particular, higher ratios of manufactured exports to the DM area scaled to GDP significantly reduce realignment risk. This is consistent with the view that a more developed common market increases the benefits of exchange rate stability and the predicted probabilities estimated in Table 4 show large substantive effects. That is, a country with Denmark's trade profile in 1979 is estimated to have twice the risk of a country like Italy which was more integrated in trade with the German currency area. On the other hand, changes in the trade balance to GDP ratios are not consistently related to exchange realignments, and, in fact, in Model 4, the estimated coefficient is statistically significant in the opposite direction to expectations.

Finally, the results in Table 2 also support the idea that realignments are strategically postponed until the period following elections (Hypothesis H4). Across all models the six month period following elections sees an increase in the likelihood of realignment. The risk is almost twice as high for post-electoral periods (Table 4). As discussed above, the periods following French elections are also particularly conducive to exchange rate changes.

Several other independent variables have a statistically significant effect. Market pressure, as evidenced by drops (negative changes) in international reserves, significantly increases the risk of realignment. The coefficient on capital account openness is positive and generally statistically significant. This shows that many EMS realignments have addressed competitiveness issues in a preemptive fashion, while the trade balance remained positive. Also, more open economies see

fewer realignments and central bank independence and unemployment increases the likelihood of realignment. These last variables, however, are not consistently statistically significant.

The results in Table 2 are robust across a series of different specification. First, I have included in the models additional variables: the one month lagged value of the trade weighed real effective exchange rate index (Bank for International Settlements); the lagged domestic industrial production (replacing the one year lagged unemployment) and German industrial production; the domestic interest rate and inflation differentials to the German quantities; the six month, rather then 3 month change in international reserves; a dummy variable coding speculative pressure based on Eichengreen et al. (1994); the average inflation in the past ten years; a dummy variable for the period before March 1983, when devaluations were far more prevalent. The inclusion of additional/alternative independent variables does not change the substance of the findings, and the added variables generally do not achieve statistical significance. The exceptions are the variable coding speculative pressure (positive and highly statistically significant), the average inflation in the past ten years (negative and highly statistically significant) and the period before March 1983 (positive and highly statistically significant).

Second, Table 5 shows regression results from alternative specifications of Model 4 in Table 2, the model with the highest adjusted R square. The dependent variable is realignment against the Germany currency. Country self-selection into the EMS may bias the estimates in the realignment model. So Model 1 shows the results from a selection probit, where the choice in the first stage is whether to join the ERM and the choice in the second stage is whether to realign the exchange rate. The selection stage includes all countries that were part of the European Union, but not part of the ERM (the UK, Greece from 1981, Spain and Portugal from 1986). The start year for the data is 1978. The variables in the selection equation are the country's fiscal balance, capital account openness, manufacturing exports to the German DM zone (all lagged one year),

the average inflation in the past ten years, the vote share of left leaning parties and the government's position on European issues.[22] Model 1 results show that the core findings on realignment risk are not affected by selection bias.

[Table 5 about here]

Models 2 and 3 limit the time in the sample to two relevant sub-periods: In Model 2 the time in the sample ends January 1987, the date of the last comprehensive EMS realignment before the 1992 crisis. The period after 1987/1 experienced substantially less realignment and, for some countries, policy convergence justified the lack of exchange rate change. For others, however, the last years of the EMS saw much fewer realignments due to excessive rigidity and a perception that realignments were becoming politically too costly (Gros and Thygesen 1998, Canavan and Rosendorff 1997). In Model 3 the time in the sample ends September 1992 when Italy and the UK end their exchange rate commitment in the EMS. For both samples, the core results remain robust. Finally, Model 4 shows the results when I code the partisanship of the government rather than the vote share of left leaning parties in the legislature. Partisanship is computed as a weighted sum (weights are shares of seats in the legislature) of the policy positions of government parties on planned and market economy (Comparative Manifesto Project). As shown, a more left leaning average EMS government partisanship reduces the risk of realignment and a left wing French government increases the likelihood of realignment for all participating currencies.

[22] Except for the vote share for left leaning parties, all variables included in the selection equation are statistically significant: Financial liberalization, fiscal deficits and a history of inflation makes it less likely to join ERM. Larger foreign reserves, more exports to the DM zone and a government more favorable on Europe all in crease the likelihood of joining the ERM. Also, based on the likelihood ration test we cannot reject the hypothesis that the selection into the ERM and the realignment equations are not related.

7. Conclusion

This paper uncovers the patterns of cooperation in the European Monetary System, as revealed by countries' use of realignments in the Exchange Rate Mechanism. Realignments are appeals to escape clauses sanctioned by the Brussels European Council Resolution of 1978. As suggested most prominently by Rosendorff and Milner (2001), the use of such relief clauses has allowed the EMS to de jure continue to exist and keep its membership intact for up to thirteen years. Undoubtedly nominal cooperation has been important for European integration, by allowing flexibility and the possibility that countries proceeded with integration at the same pace. This is reflected starkly in the debates of the French Socialists in the early 1980s, when they decided to preserve such cooperation by staying in the EMS and the common market while realigning the Franc by around twenty-five percent in three successive realignments. Very likely in the absence of the relief clause, France would have been forced out of the EMS, with stark implications for the European Community as a whole. On the other hand, this paper emphasizes the view that the extensive use of the escape clause dilutes the substance and credibility of cooperation, and argues that this makes realignments important to understand.

To identify who uses the escape clause, I look at the costs and benefits to policy-makers from using realignments as a policy tool and derive testable hypotheses based on the political economy literature on monetary integration. The empirical models show that political calculations have played an important role for the risk of currency realignment in the EMS. In particular, consistent with the credibility view of the EMS, more left wing representation reduces the likelihood of realignments vis-à-vis the de facto anchor, the German Deutsche Mark. Because the EMS implied treaty based obligations and many times realignments were negotiated at the level of the Council of Ministers, average left wing representation in the EMS countries and left wing representation in the European Commission also reduce the risk of realignment.

Further, the empirical models support the view that the behavior of the core EMS countries matters distinctly. In particular, the results show that Germany was the de facto anchor country for the EMS, in that German interest rate and the DM/USD exchange rate have had a significant effect on realignment behavior. Also, French politics (partisanship and elections) drive France' pattern of realignments to differ from the average and influence distinctly the realignments of all member countries. Finally, increased monetary coordination via the Basel-Nyborg Agreement and more trade integration with the countries at the core of monetary stability results in a lower likelihood of countries using the escape valve of realignment.

This analysis extends the research on both international cooperation and the political economy of exchange rates. First, it shows that in the area of monetary integration in Europe, the institutional context has altered the perceived interests of states. This is an important finding countering of the realist concern that narrow national interest are likely to prevail in how states deal with each other in the European Union. Having achieved monetary integration in the euro area, the EU currently faces stark choices regarding future integration of countries' fiscal policies. The implication from this research is that the integration achieved so far is a strong push factor for further cooperation, but that such cooperation is very likely contingent on a Franco-German unified position. Second, the paper unpacks de jure fixed exchange rates by looking at the determinants of de facto behavior. As shown, states have been members in the EMS for longer than a decade, yet during the period they availed themselves of the escape clause allowed in the original treaty and several currencies lost close to fifty percent of their value. This is important, because the extensive use of realignments very likely damaged the credibility of states commitment to low inflation and monetary integration.

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Tables

Table 1. Hypotheses, main independent variable and expected effect

Hypothesis	Variable	Expected effect on risk of realignment
H1	Vote share of left parties in legislature	Negative (-)
	Vote share of left parties in legislature – EMS average	Negative (-)
	Percentage of left leaning commissioners in the European Commission	Negative (-)
H2	Government position on European issues	Negative (-)
	Government position on European issues – EMS average	Negative (-)
	Post Basle-Nyborg Agreement	Negative (-)
	6 months post French elections	Positive (+)
	Vote share of left in French National assembly	Positive (+)/Negative(-)
	German DM/USD	Negative (-)
	German interest rate	Positive (+)
	German inflation	Negative (-)
H3	Manufactured exports to the German DM zone/GDP	Negative (-)
	Change in trade balance/GDP	Negative (-)
H4	6 months prior to elections	Negative (-)
	6 months post elections	Positive (+)

Table 2. Determinants of exchange rate realignments against the German DM (EMS: 1979-1993)

	Model 1	Model 2	Model 3	Model 4
Vote share of left parties in parliament	-3.574	-	-5.004	-
	(1.851)*		(1.954)**	
Government position Europe (positive if favorable)	-0.391	-	-0.252	-
	(0.396)		(0.497)	
Vote share of left parties in parliament – ERM average	-	-12.107	-	-23.551
		(4.959)**		(5.157)***
Government position Europe – ERM average	-	-2.398	-	-0.575
		(1.229)*		(1.683)
Percent left leaning European Commissioners	-	-0.148	-	-0.102
		(0.051)***		(0.060)*
6 months post elections - FRANCE	-	-	2.762	3.496
			(0.578)***	(0.745)***
Vote share of left parties in parliament - FRANCE	-	-	15.372	20.138
			(7.483)**	(8.770)**
Number of parties in government	0.202	0.116	0.142	-0.021
	(0.254)	(0.262)	(0.264)	(0.244)
Minority government	-1.200	-0.875	-1.118	-0.915
	(0.911)	(0.757)	(0.798)	(0.748)
6 months post elections	1.073	1.124	0.772	0.939
	(0.444)**	(0.427)***	(0.496)	(0.445)**
6 months pre elections	0.160	0.167	-0.241	-0.038
	(0.506)	(0.458)	(0.514)	(0.499)
Trade union density	-0.001	0.034	0.017	0.070
	(0.027)	(0.031)	(0.028)	(0.030)**
Basle Nyborg agreement (Sept. 1987)	-5.006	-4.322	-6.696	-8.571
	(1.380)***	(1.113)***	(1.343)***	(1.679)***
Central bank independence	5.864	4.062	3.645	2.717
	(3.391)*	(2.425)*	(3.083)	(2.436)
Manufactured exports to DM zone / GDP[a]	-1.299	-1.433	-1.742	-2.044
	(0.562)**	(0.581)**	(0.576)***	(0.674)***
Trade balance change / GDP[a]	0.0001	0.0001	0.0001	0.0002
	(0.0001)	(0.00008)*	(0.0001)	(0.00007)***
Capital account openness[a]	-0.941	-0.737	-1.247	-1.107
	(0.765)	(0.511)	(0.737)*	(0.497)**
Current account[a]	0.125	0.300	0.259	0.462
	(0.141)	(0.145)**	(0.151)*	(0.145)***
Trade openness[a]	-0.016	-0.054	-0.007	-0.088
	(0.036)	(0.051)	(0.043)	(0.052)*
Unemployment[a]	0.527	0.251	0.632	0.283
	(0.198)***	(0.213)	(0.235)***	(0.256)
Change in international reserves – three month change	-0.031	-0.032	-0.031	-0.025
	(0.013)**	(0.012)**	(0.014)**	(0.012)**
Fiscal balance[a]	0.081	0.085	0.073	0.117
	(0.119)	(0.133)	(0.128)	(0.147)
DM/USD exchange rate	-3.049	-6.131	-5.903	-10.703
	(0.842)***	(1.333)***	(1.474)***	(2.352)***
German interest rate - one month lag	0.348	0.644	0.225	0.684
	(0.171)**	(0.166)***	(0.223)	(0.232)***
German inflation - one month lag	-0.616	-1.198	0.102	0.269
	(0.608)	(0.686)*	(0.831)	(0.841)
Constant	0.455	21.587	-0.938	24.354
	(4.074)	(7.248)***	(4.295)	(7.952)***
Observations	1,091	1,091	1,091	1,091
Realignments	54	54	54	54
Pseudo-R square	0.25	0.29	0.33	0.37

Note: Table shows coefficients and standard errors in parentheses. Stars reflect levels of statistical significance: *** for 1%; ** for 5% and * for 10%. Estimations include country dummies, duration between successive realignments and cubic splines. [a]: variable has yearly values and is lagged one year;

Table 3. Predicted probabilities of realignment when an actual event occurred /did not occur

	Devaluation against DM (54 observations)	No devaluation against DM (1037 observations)
	Average predicted prob. of devaluation against the DM	
Model 3	0.261	0.037
Model 4	0.307	0.035

Table 4. Predicted probabilities of realignment when varying key variables

Key independent variables	Predicted probability of devaluation against the DM
Vote share of left = 0.3 (25th percentile) (Model 3)	0.10
Vote share of left = 0.55 (75th percentile) (Model 3)	0.04
Vote share of left (EMS average) = 0.4 (25th percentile)	0.17
Vote share of left (EMS average) = 0.49 (75th percentile)	0.07
France vote share of left prior to June 1981= 0.43	0.03
France vote share of left post June 1981= 0.53	0.10
Share of left leaning European Commissioners = 40% (25th percentile)	0.06
Share of left leaning European Commissioners = 53% (75th percentile)	0.02
Post-election = 1	0.07
Post-election = 0	0.04
Post-election France = 1	0.25
Post-election France = 0	0.03
Pre Basle-Nyborg	0.33
Post Basle-Nyborg	0.01
German DM / US dollar = 1.86 (1987/1)	0.3
German DM / US dollar = 1.45 (1992/9)	0.5
German discount rate = 3.5 (1987/1)	0.02
German discount rate = 8.75 (1992/9)	0.17
Manufactured exports to DM zone = 2.15 (Denmark 1979)	0.46
Manufactured exports to DM zone = 3.3 (Ireland 1979)	0.33
Manufactured exports to DM zone = 4.5 (Italy 1979)	0.24

Note: All other variables are kept at average of observational values. Predictions are from Model 4 in Table1, except for national level vote share for the left (Model 3).

Table 5. Robustness checks: selection; time in sample; government partisanship

	Model 1	Model 2	Model 3	Model 4
Vote share of left parties in parliament – ERM average	-9.497	-24.311	-22.177	-
	(2.885)***	(7.757)***	(7.230)***	
Government position Europe – ERM average	-0.173	-4.721	-2.210	-1.004
	(0.559)	(3.167)	(2.392)	(1.668)
Percent left leaning European Commissioners	-0.040	-0.336	-0.214	-0.119
	(0.025)	(0.101)***	(0.083)**	(0.057)**
Government partisanship – ERM average	-	-	-	-0.404
				(0.133)***
6 months post elections - FRANCE	1.468	3.980	3.750	3.030
	(0.408)***	(1.134)***	(0.885)***	(0.579)***
Vote share of left parties in parliament - FRANCE	8.588	20.214	14.450	-
	(4.517)*	(11.270)*	(11.226)	
Government partisanship – FRANCE	-	-	-	0.156
				(0.077)**
Number of parties in government	-0.021	-0.096	0.013	0.121
	(0.130)	(0.285)	(0.243)	(0.247)
Minority government	-0.472	0.219	-0.615	-0.800
	(0.302)	(0.986)	(0.808)	(0.765)
6 months post elections	0.354	1.330	0.915	0.982
	(0.222)	(0.684)*	(0.537)*	(0.458)**
6 months pre elections	-0.010	0.273	0.395	-0.018
	(0.243)	(0.760)	(0.630)	(0.430)
Trade union density	0.034	0.125	0.112	0.041
	(0.014)**	(0.036)***	(0.034)***	(0.033)
Basle Nyborg agreement (Sept. 1987)	-3.704	-	-5.684	-5.111
	(0.995)***		(1.473)***	(1.375)***
Central bank independence	1.542	-	-	4.367
	(1.416)			(2.651)*
Manufactured exports to DM zone / GDP[a]	-0.880	-2.426	-2.245	-1.708
	(0.273)***	(0.872)***	(0.730)***	(0.618)***
Trade balance change / GDP[a]	0.000	0.000	0.000	0.000
	(0.000)**	(0.000)**	(0.000)***	(0.000)**
Capital account openness[a]	-0.379	-1.171	-1.391	-0.871
	(0.253)	(0.824)	(0.702)**	(0.538)
Current account[a]	0.182	0.846	0.637	0.401
	(0.082)**	(0.255)***	(0.193)***	(0.184)**
Trade openness[a]	-0.047	-0.186	-0.167	-0.054
	(0.021)**	(0.065)***	(0.066)**	(0.056)
Unemployment[a]	0.093	0.114	0.106	0.362
	(0.096)	(0.389)	(0.311)	(0.231)
Change in international reserves – three month change	-0.012	-0.026	-0.037	-0.034
	(0.006)**	(0.015)*	(0.014)***	(0.014)**
Fiscal balance[a]	0.058	0.017	-0.095	0.049
	(0.050)	(0.237)	(0.216)	(0.149)
DM/USD exchange rate	-4.070	-14.419	-11.144	-6.291
	(1.259)***	(4.318)***	(3.819)***	(1.954)***
German interest rate - one month lag	0.255	0.780	0.873	0.693
	(0.107)**	(0.320)**	(0.262)***	(0.254)***
German inflation - one month lag	-0.039	-0.187	-0.462	0.008
	(0.341)	(1.342)	(1.026)	(0.747)
Constant	9.967	49.824	36.400	10.728
	(3.729)***	(15.321)***	(13.172)***	(7.920)
Observations	1,604/1,091	536	1,035	1,091
Realignments	54	38	44	54
Pseudo-R square	-	0.45	0.44	0.34

Note: Table shows coefficients and standard errors in parentheses. Stars reflect levels of statistical significance: *** for 1%; ** for 5% and * for 10%. Estimations include country dummies, duration between successive realignments and cubic splines. [a]: variable has yearly values and is lagged one year. Dependent variable: realignments against the German DM. Model 1 selection stage not reported here.

Supplementary Information (SI)

Table SI1. Country membership in the ERM and the timing of realignments

Time	Belgium	Denmark	France	Ireland	Italy	Netherlands	Portugal	Spain	UK
1979/9	Yes	Yes	Yes	Yes	Yes	Yes			
1979/11		Yes							
1981/3					Yes				
1981/10	Yes	Yes	Yes	Yes	Yes				
1982/2	Yes	Yes							
1982/6	Yes	Yes	Yes	Yes	Yes				
1983/3	Yes	Yes	Yes	Yes	Yes	Yes			
1985/7					Yes				
1986/4	Yes	Yes	Yes	Yes	Yes				
1986/8				Yes					
1987/1	Yes	Yes	Yes	Yes	Yes				
1990/1					Yes				
1992/9					Exit			Yes	Exit
1992/11							Yes	Yes	
1993/1				Yes					
1993/5							Yes	Yes	
1993/8	+/- 15 % fluctuation band					+/- 15 % fluctuation band			

Note: The realignment count includes the August 1993 move to increase fluctuation margins to 15%. Following the literature, Luxembourg is not considered separately. The coding of exchange rate realignments is based on Gros and Thygesen (1998) and Ozkan (2003). The UK enters the ERM 1990/10, Spain 1989/6, and Portugal 1992/4. There are 41 realignments against the ECU. Based on the bilateral exchange rates, each currency had a central parity against ECU. There is a difference between the number of realignments against the DM and the ECU, because the ECU value was determined as a weighted average of all ERM member currencies and a country could maintain its parity to the ECU despite being devalued against the DM if other currencies were devalued by larger amounts against the DM.

Table SI2. Summary statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Devaluation against the DM	1091	0.0485793	0.2150854	0	1
Vote share of left parties in parliament	1091	0.4627231	0.2089251	0.0218	0.9333
Government position Europe (positive numbers if favorable)	1091	1.390811	1.054345	-0.8539156	5.359428
Vote share of left parties in parliament – ERM average	1091	0.4667991	0.0855299	0.3010667	0.6363834
Government position Europe – ERM average	1091	1.412616	0.5663667	0.6866274	2.457723
Six months post elections - FRANCE	1091	0.1255729	0.3315193	0	1
Vote share of left parties in parliament - FRANCE	1091	0.4769792	0.0408367	0.4099	0.527
Percent left leaning European Commissioners	1091	45.74661	7.595694	35.71	54.55
Number of parties in government	1091	2.670027	1.436487	1	6
Minority government	1091	0.3721357	0.483596	0	1
Six months post elections	1091	0.1741522	0.3794142	0	1
Trade union density	1091	44.19203	21.68766	9.8	80.8
Basle Nyborg agreement (Sept. 1987)	1091	0.4702108	0.4993407	0	1
Central Bank Independence	1091	0.3335655	0.1240362	0.17	0.87
Manufactured exports to DM zone / GDP	1091	5.611247	3.664543	1.43	15.1
Trade balance change / GDP	1091	-59.80999	2599.005	-8803.61	5144.29
One year lagged capital account openness	1091	0.5153663	1.139856	-1.8116	2.5318
One year lagged current account	1091	-1.094895	3.240137	-12.98	4.81
One year lagged trade openness	1091	79.71069	34.76546	35.39	144.62
One year lagged unemployment	1091	10.27489	3.07794	4.1	19.1
Three month percentage change in international reserves	1091	2.533329	14.01678	-43.76151	78.36662
Fiscal deficit	1091	-5.436544	4.452116	-15.75051	4.4525
DM/USD exchange rate	1091	2.033877	0.4620541	1.45	3.3
One month lag German interest rate	1091	5.50802	1.80131	2.5	8.75
One month lag German inflation	1091	0.2703713	0.3186738	-0.3367545	1.736975