International Integration and Social Identity*

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Abstract

We study the interplay between identity politics and international integration when identities are endogenous. Contrary to widespread perceptions, we find that a union is not necessarily more robust when all members share a common identity. Nor is a common identity likely to emerge because of integration. In general, a union is more fragile when periphery countries have high ex-ante status. Low-status countries are less likely to secede, even when between-country differences are large and although equilibrium union policies impose significant economic hardship. Using recent data, we trace the model's implications for the future of the European Union and the Eurozone.

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1 Introduction

International integration has long been a central concern for economists. Benefits of integration have been studied since the time of Adam Smith and are fairly well understood. Costs often stem from having to satisfy divergent needs with a 'one size fits all' policy. For example, the literature on optimal currency unions starting with Mundell (1961), emphasizes that the loss of independent monetary policy Makes it hard to address idiosyncratic shocks. A major lesson is that integration should take place when fundamental differences between the candidate countries are small relative to the benefits (see Alesina, Spolaore and Wacziarg 2005 for a review).

But integration is often shaped by additional forces. Economic considerations were clearly not the only driving force behind European integration (Schuman, 1950). Economists writing in the 1990s about the looming European Monetary Union also recognized that the decision would not depend on the economic advantages and disadvantages. The prospects of developing a European identity that might transcend the bitter national identities of the past, as well as notions of national pride and status, appeared no less central than pure economic considerations (Feldstein, 1997).[1] Why did southern European countries like Spain, Portugal, and Greece join—and remain—in the monetary union despite significant fundamental differences from the core northern countries, which require different monetary policies? Why did the UK vote to leave the EU despite a near-unanimous objection from economists? While many factors were obviously at play, most economists believe this decision was largely due to non-economic reasons (Den Haan et al. 2016. See Section 2 for evidence supporting this view). "Identity politics" is widely discussed as a prominent factor. But this discussion is often based on intuitions. We still lack an explicit framework to help think through the implications of identity, given that identities not only shape but also respond to economic circumstances. This paper proposes a first step. We do not aim at an exhaustive and final answer, but rather at developing a conceptual tool for thinking about these difficult issues.

Our formulation of social identity builds on accumulated research in social psychology and economics. A social identity is commonly defined as "that part of the individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1981, p. 251). In economic terms, people gain utility not only from their personal payoffs

[1] As we show in Section 7, the composition of the Eurozone is hard to understand using the framework of optimal currency areas alone. Countries such as Sweden, Denmark and Switzerland did not join, although they appeared like natural candidates based upon trade and co-movement in output and prices relative to the core euro countries (Alesina, Barro and Tenreyro, 2002). On the other hand, countries more likely to require different monetary policy, like Greece, Portugal and Spain, did join.

but also from the status of the group they associate themselves with. If my group does well, my utility increases. It is important to stress that while identity is sometimes studied using survey responses, this formulation is more fundamental. Identity is not just something people say: it is part of their preferences and can be revealed by their choices. However, an individual cannot easily identify with *any* group she belongs to, and incurs a cognitive cost for identifying with a group that is very different from her.

Note that to maximize utility, individuals in this framework can engage in two different strategies. First, they can seek to increase the status of their group (e.g. by supporting its goals, possibly vis-a-vis other groups) or to reduce their perceived distance from that group (e.g. by speaking its language or consuming its typical bundle). They can also, however, switch their identities. A German citizen, for example, may identify as a German but may, to some extent, also identify as a European. If the status of Europe is high relative to the status of Germany alone (perhaps due to its history), this may raise that citizen's utility.

We study the implications of this framework in a simple bargaining model between two regions or countries: a Core and a Periphery. The Core sets a common policy for the union (e.g. monetary, debt , regulation, or immigration policy). The Periphery then chooses whether to join the union or leave and set its own policy. Replicating classic results, unions in this model are less likely to be sustained in equilibrium the larger the differences in fundamental economic and political conditions between potential members. The question is then: what policies does the union adopt, and at what point does the union disintegrate? We say that a union is more *accommodating* if its adopted policies better suit the needs of the politically weaker Periphery (at some economic cost to the Core). We say that a union is more *robust* if it is sustained under larger fundamental differences between members.

While the framework is relevant to many settings in which minority regions may seek secession (Canada, Spain, UK), for concreteness we use Europe as the running example. Thus, France and Germany may be thought of as the Core, politically dominant countries within the union, while countries like Denmark, Spain, the UK and Greece are Periphery countries that may consider whether to join or remain in the union. Members of each country may identify nationally (i.e. with their country) or they may identify with Europe as a whole. Accordingly, there are four possible identity profiles: (C, P), (C, E), (E, P) and (E, E), where the first entry in each pair denotes the identity of members of the Core and the second denotes the identity of members of the Periphery. For example, (C, E) denotes the situation in which members of the Core identify nationally and Periphery members identify with Europe.

Consider the subgame perfect Nash equilibrium (SPNE) under a given profile of social identities. Consistent with common views as well as survey data, a union is more accommodating when citizens of the Core identify with Europe. This is because the Core then effectively internalizes some of the goals of the Periphery. However, a union is *less* accommodating when the Periphery identifies with Europe, essentially because in this case the Core can preserve the union with smaller concessions. Interestingly, under fairly broad conditions, a union is most robust under the (C, E) profile, i.e. when individuals from the Core identify with their country, while individuals from the Periphery identify with the union as a whole. Thus, contrary to common perceptions, the profile (E, E) in which everyone identifies as European is not necessarily the most robust. Intuitively, when fundamental differences between the countries are very large and the Periphery identifies with Europe, the union can still be sustained, but at a high cost to European status. This cost of maintaining the union is partly internalized when the Core identifies with Europe, but not when it identifies nationally.

This analysis, however, takes social identities as given. During the past three decades it has become clear across the social sciences that ethnic, national or other social identities are changeable, and respond to the social environment in systematic ways (see reviews in Chandra 2012; Shayo 2009). Implicit in such a perspective is the idea that individuals choose (consciously or unconsciously) to identify in a meaningful way with some of the social categories they belong to, but not with others – and that economic and political processes and institutions can affect the incentives individuals face when forming social identity attachments. Indeed, the founders of the European Union were aware of this possibility, and believed that economic integration would promote European solidarity (Schuman 1950). So while in principle we can analyze the policies under *any* specific profile of social identities, it is unclear whether such an identity profile can in fact be sustained. People are unlikely to identify with groups that are very different from them or have low status. But perceived differences can be endogenous to whether the regions are part of a common union. Furthermore, the status of both the union and of the potential member states is endogenous to the economic policy. And as we have just argued, SPNE policies depend on the identity profile. Following Shayo (2009) we therefore employ an equilibrium concept—Social Identity Equilibrium (SIE)—in which both identities and policies are mutually consistent.

Consider first the simplest case, in which similarity to the group does not affect identification decisions and the countries are ex-ante symmetric in status. In this case, in almost any equilibrium in which the union is sustained, the identity profile is (C, E). Given any other identity profile, and fundamental differences sufficiently small such that the union can be sustained in SPNE, equilibrium policies lead to a status advantage for the politically dominant Core. This means that non-(C, E) profiles would not in fact be chosen by individuals. From this perspective, the expectation that unification *by itself* would lead to the emergence of a common identity across the union seems misplaced: the very success of a union works to enhance national identification in the union's dominant Core countries. This last conclusion extends to the more general case. National identification is of course shaped by many forces, but it is a mistake to expect unification per se to act as an automatic antidote.

The main result (Proposition 7) is that under fairly general conditions, when the Periphery has lower status than the Core, unification can be sustained in SIE despite high fundamental differences between the countries. The basic reason is that if agents are allowed to choose their identity, members of a low-status Periphery will tend to identify with the union, which in turn permits it to be sustained under larger differences. This happens despite—and to some degree because of—the unaccommodating policies of the union vis-a-vis the Periphery, which accentuate the Periphery's inferiority. Furthermore, we find that when the Periphery has equal or higher status than the Core, disintegration can occur at relatively low levels of fundamental differences. Such equilibria are always characterized by national identification in the Periphery (but not necessarily in the Core).

We also consider policies that alter the salience of inter-regional differences. We find that when people care less about such differences, the union can be sustained at higher levels of fundamental differences. Moreover, this (weakly) increases the set of circumstances in which both unification and an all-European (E, E) identity profile can be sustained in equilibrium.

In Section 7 we compile data from several sources to gauge the main theoretical variables in the model for European countries: fundamental differences and country status. This serves two purposes. First, it shows that adding social identity to an otherwise standard model helps better account for the composition of the EU and of the Eurozone. In particular, using our model, pre-1999 data can help explain subsequent decisions whether or not to adopt the euro. Second, applying insights from the model to more recent data allow us to reevaluate the stability and challenges facing the European project going forward. With respect to the EU, for example, the UK and Sweden appear to be at the highest risk of breakup. Portugal is at a lower risk of breakup than Spain, Ireland and Greece. The union with Austria, Belgium, the Czech Republic, Slovenia, Slovakia, and Hungary appears quite solid, despite expressed Euroscepticism in some of these countries. In terms of entry, Iceland currently seems to be the most likely candidate to join the EU. Switzerland and Norway are unlikely to join, despite low fundamental economic and political differences from the core European countries. Turkey is unlikely to become a member, in large part due to high political differences. We similarly evaluate the evolution and risks facing the Eurozone.

The paper relates to several strands of literature. The first studies economic integration. A prominent result here is that highly dissimilar countries should maintain policy independence (e.g. De Grauwe, 2014). We build particularly on the work in political economy—starting with Alesina and Spolaore (1997) and Bolton and Roland (1997)—on the breakup and unification of countries, which highlights the tradeoff between economic gains to unification and the costs of heterogeneity. We start with a simple model that features this tradeoff and examine both how the introduction of social identity modifies the political equilibrium and how the political equilibrium affects identification patterns.

A second literature studies public attitudes towards integration. Many explanations focus on economic factors, but non-economic factors clearly play an important role (Mayda and Rodrik, 2005). A burgeoning literature focuses on the European case. The general conclusion is that identity-related concerns are as important as, if not more important than, economic factors in explaining support for European integration (the seminal paper is Hooghe and Marks 2004; Hobolt and de Vries 2016 provide a review). This is consistent with data we collected around the Brexit referendum (see Section 2). However, less is known about how such attitudes affect policies, and, especially, about the properties of the equilibrium. Does a common identity necessarily produce a more stable union? And what identity patterns can we plausibly expect to emerge?

Third, we build on the growing economic literature on identity and how group membership shapes behavior (Akerlof and Kranton 2000; Bénabou and Tirole 2011; Benjamin, Choi and Strickland 2010; Bisin, Topa and Verdier 2004; Carvalho 2013; Chen and Li 2009; Hett, Kröll and Mechtel 2017; Holm 2016; Shayo and Zussman 2011, 2017) as well as on the endogenous formation of preferences (Bisin and Verdier 2001; Rotemberg 1994). The most closely related is Grossman and Helpman (2018) who use the Shayo (2009) framework to study how social identity shapes trade policy. Grossman and Helpman (2018), however, focus on how the identity profile *within* a country affects that country's policy, whereas we focus on the interaction *between* countries.

Fourth, several studies show that cultural affiliation is associated with economic exchange. As in our model, the influence appears to run in both directions. Thus, Guiso, Sapienza and Zingales (2009) and Falck et al. (2012) show that trade, investment, and immigration flows are associated with cultural similarities, while Maystre et al. (2014) argue that trade reduces cultural distance. Note however that while *culture* is often conceptualized as a set of norms and beliefs that evolve very slowly (e.g., Guiso, Sapienza and Zingales 2006; Spolaore and Wacziarg 2013; Tabellini 2008), a large body of research shows that *identities* are quite flexible and can adjust to changes in the social environment even in the short run (see Chandra 2012; Shayo 2009, and the literature cited there). Using food consumption data in India, Atkin, Colson-Sihra and Shayo (2019) find that ethnic and religious identity choices respond systematically to changes in prices, in the salience of group membership, and in group status.[2] In what follows we examine whether these insights might help us better

[2]The last two factors have also been studied intensively in the social psychology literature. With respect

understand the political economy of integration.

2 Empirical Patterns

We begin by documenting some patterns in economic and survey data. It should be stressed that at present, we do not have revealed-preference measures of social identity as defined in the model: the survey measures are proxies at best. Even more importantly, we have *no* measures of identification with the Core—which in the European case includes both France and Germany. A French or a German citizen saying she identifies with "Europe", may well refer primarily to the core north European countries. Thus, we only examine European vs. national identification in the Periphery.

Before turning to identity, Figure 1 shows within-country changes in support for "a European Monetary Union with one single currency, the euro" from 2008 to 2012 (the peak of the debt crisis), against within-country changes in economic conditions. The figure includes the members of the Eurozone as of 2008, excluding France and Germany (the Core). During this period, several Eurozone countries experienced very slow or even negative growth—notably in southern Europe—and probably required more expansionary monetary policies than the ECB administered during these years.[3] Contrary to what a standard political economy model would predict, however, there is little evidence that popular support for the monetary union declined significantly more in these countries (left panel).

As a more direct measure of the gap between the country's optimal monetary policy and the union's policy, the right panel in Figure 1 uses the absolute difference between the ECB rate and the country-specific optimal rate using the Taylor rule. Again, there is little evidence that countries that moved closer to the ECB rate (a negative change in the absolute difference) came to support the monetary union more. Appendix figures C.1-C.2 show these relationship across all EU countries (including those that were not in the Eurozone but were still asked the above question), as well as for different time windows surrounding the crisis.

to status, the basic argument is that low group status results in unfavorable comparisons between the ingroup and relevant other groups. As a result, members of lower status groups tend to show less social identification than members of groups with higher status, other things equal. See Ellemers, Kortekaas and Ouwerkerk (1999). Empirically, identification is measured using either observed allocation decisions between ingroup and outgroup members or self-reported feelings and attitudes. A meta-analysis of 92 experimental studies (including 145 independent samples) with high-status/low-status manipulation confirms that high status group members favor their ingroup significantly more than do low status group members (Bettencourt et al., 2001). Similar results emerge from field studies. Double-major university students identify more with their higher-status department, and are more likely to identify with a given department the lower is the status of the other department they major in (Roccas, 2003). Winning sports teams have long been shown to generate more identification (e.g. Cialdini et al. 1976).

[3]The ECB has famously *raised* its interest rates in April and July 2011. In subsequent years the ECB gradually reduced rates, reaching historically low levels in late 2013 and in 2014.

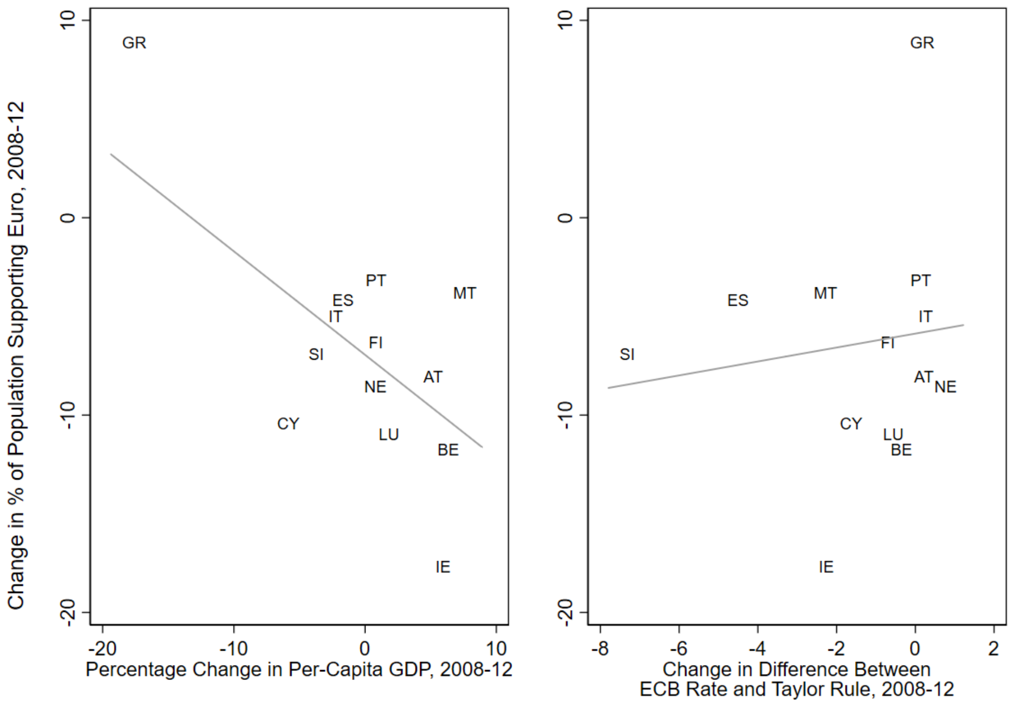

Figure 1: Support for the Monetary Union and the Financial Crisis

Note: The figure includes countries that were members of the Eurozone in 2008. All variables are within-country changes from 2008-2012. Share supporting the euro (vertical axis) from the Eurobarometer. GDP per capita from the IMF (USD, current prices). Right panel shows the change in the absolute difference between ECB main refinancing operations (MRO) interest rate and country-specific optimal rate using Taylor (1993). A positive value implies the absolute difference between the ECB and the country rates increased between 2008 and 2012, and a negative value means it shrank. The ECB rate is the mean annual rate. The Taylor-rule rate for country i is $r_i^* = p + .5y + .5(p-2) + 2$, where p is the rate of inflation over the previous year, $y = 100(Y - Y^*)/Y^*$ where Y is real GDP and Y^* is trend real GDP. Data on p, Y, Y^* from the IMF.

The patterns again reveal no clear association between gaps in optimal monetary policy and support for the monetary union.

Figure 2 shows Eurobarometer data on national versus European identification in the UK and southern Europe in the years preceding the Brexit referendum. Specifically, it shows the proportion of the population that reports seeing itself as *British [or other nationality] only* rather than *British and European*; *European and British*; or *European only*. Note that since the early 2000's, the British have tended to identify much more with their country than with Europe, despite relatively accommodating policies: from the design of the single market to the EU's "special status" deal for the UK. At the same time, Italians, Spaniards, Greeks and Portuguese have tended to identify more with Europe. This was true even at the height of the debt crisis and despite unaccommodating monetary policies (and, in the case of Greece,

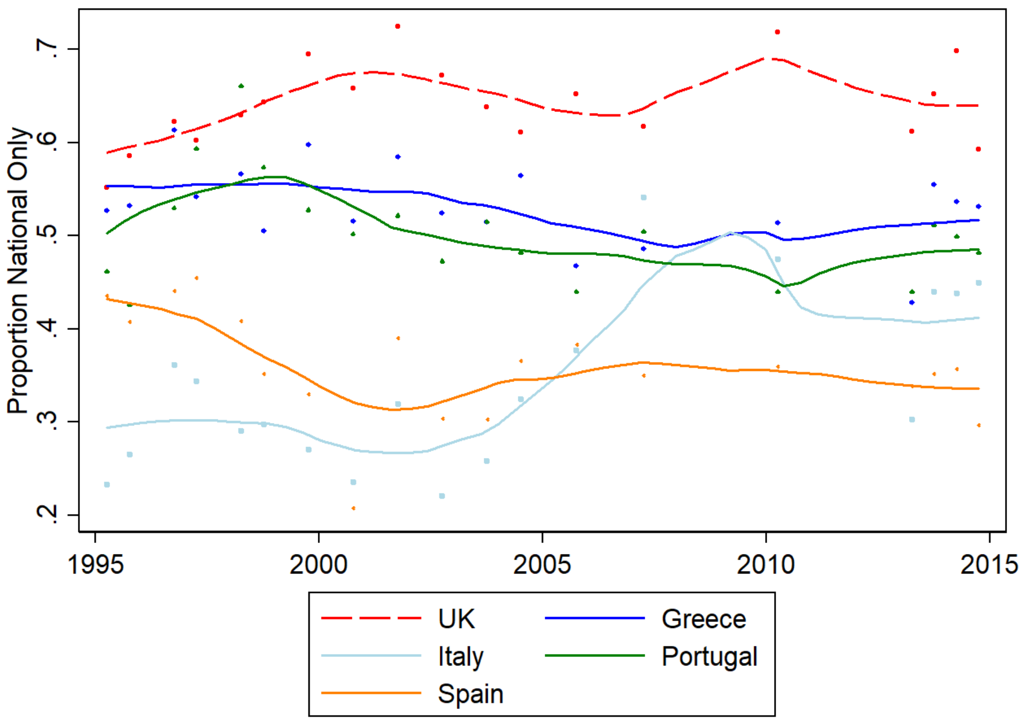

Figure 2: National vs. European Identity in Southern Europe and the UK
Note: Eurobarometer data. Each dot is a nationally representative sample. Lines are kernel-weighted local polynomial regressions. The figure shows the proportion choosing the first answer from the following question: *Do you see yourself as...1.[Nationality] only; 2. [Nationality] and European; 3. European and [Nationality]; 4. European only*. We thank Franz Buscha for sharing the data.

harsh austerity measures and strong disapproval with EU policy, see Stokes, 2016).

Data we collected in the UK in May 2016 similarly indicated a very low level of European identification, compared to British identification. A month later we asked the same respondents whether and how they voted in the Brexit referendum on June 23. As Figure 3 shows, voting to leave the EU is strongly associated with British identification. Of voters who saw themselves as "British only", 66% voted Leave, 28% voted Remain and the rest did not vote. In contrast, only 24.5% of voters who saw themselves as "British but also European" voted Leave (71% voted Remain).

Table 1 shows this relationship using a linear probability model (cols 1-5) and a probit (col 6). The association is highly significant both statistically and economically. Relative to those who see themselves as British only (the omitted category), individuals who see themselves as both British and European are more than 40 pp less likely to vote Leave (col 1). The difference appears even larger among those who place a higher weight on being European. In columns 2-5 we progressively add controls for demographics (age, gender and

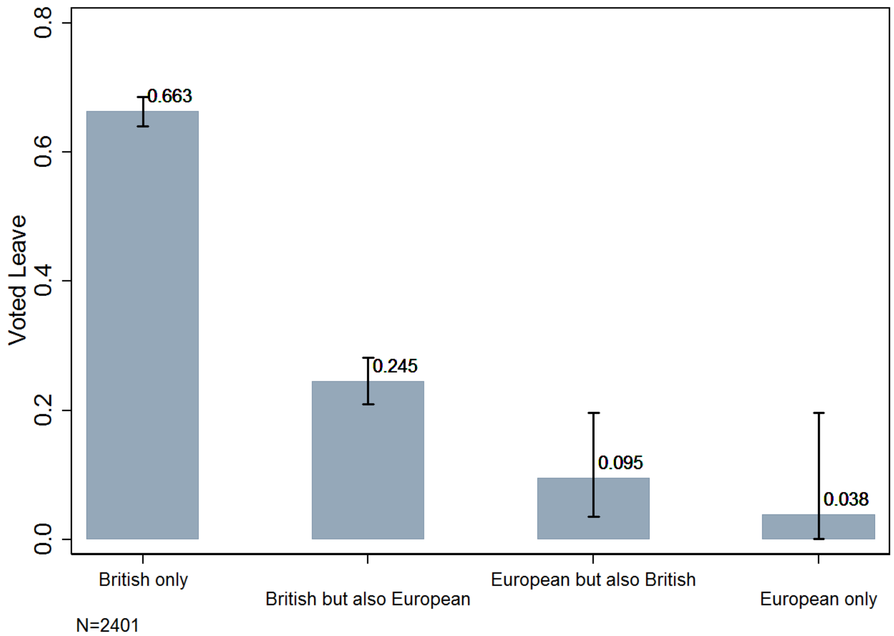

Figure 3: British Identification and Voting to Leave the EU

Note: Data collected by the authors from a representative sample of voters residing in England (i.e. excluding Scotland, Wales and Northern Ireland). A month prior to the referendum (in May 16-22, 2016), voters were asked the following question: *Do you see yourself as...? British only*; *British but also European*; *European but also British*; *European only*; *Neither European nor British.* For each of the first four respondent groups, the figure shows the proportion (and 95% CI) who voted "Leave" in the referendum on June 23, 2016.

an indicator for being born in the UK), income and education. Consistent with other studies, older, less-educated, and native voters were more likely to support Brexit (see Becker, Fetzer and Novy, 2017). Higher income individuals and females appear less likely to vote Leave, but these associations are imprecisely estimated and weaken once we control for education (cols 4-6). To account for geographical variation in voting patterns, column 5 further controls for 49 counties of residence. The association between voting and British/European identification remains very strong in all specifications. Indeed, adding variables such as income, age and education does not dramatically increase the explanatory power of the regression beyond what is explained by the identity variable alone, measured a month before the referendum.

To sum up, economic differences by themselves are not sufficient to explain which countries join—or support—the euro and the EU. Britain not only stayed out of the Eurozone but voted to leave the EU, despite the latter being relatively accommodating to British demands and with the overwhelming view among economists that leaving is a bad idea.[4] At the same time, large fundamental differences between northern and southern European countries have

[4]See Ipsos-MORI, Bloomberg and Financial Times surveys of economists prior to the vote.

Table 1: Voting for Brexit and British/European Identity

	OLS					Probit
	(1)	(2)	(3)	(4)	(5)	(6)
Identity						
British but also European	-0.419***	-0.412***	-0.406***	-0.372***	-0.365***	-0.394***
	(0.021)	(0.021)	(0.021)	(0.022)	(0.023)	(0.023)
European but also British	-0.568***	-0.518***	-0.515***	-0.481***	-0.463***	-0.526***
	(0.039)	(0.044)	(0.045)	(0.045)	(0.046)	(0.050)
European only	-0.625***	-0.535***	-0.527***	-0.491***	-0.474***	-0.587***
	(0.039)	(0.047)	(0.047)	(0.049)	(0.047)	(0.062)
Neither European nor British	-0.116**	-0.094*	-0.105*	-0.085	-0.085	-0.080
	(0.056)	(0.054)	(0.054)	(0.054)	(0.053)	(0.057)
Age		0.020***	0.021***	0.019***	0.019***	0.023***
		(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Age Square		-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female		-0.025	-0.032*	-0.025	-0.032*	-0.031
		(0.018)	(0.018)	(0.018)	(0.019)	(0.022)
Born in UK		0.089**	0.090**	0.084**	0.075**	0.121**
		(0.038)	(0.038)	(0.037)	(0.038)	(0.050)
ln(HH Income)			-0.038***	-0.020	-0.021	-0.022
			(0.013)	(0.013)	(0.013)	(0.016)
Education						
GSCE, GNQV or equivalent				-0.010	-0.004	-0.013
				(0.044)	(0.045)	(0.054)
A-Levels or equivalent				-0.028	-0.030	-0.029
				(0.046)	(0.046)	(0.055)
Professional qualifications				0.026	0.030	0.032
				(0.048)	(0.048)	(0.058)
Academic degree				-0.146***	-0.138***	-0.166***
				(0.046)	(0.047)	(0.055)
County FE	No	No	No	No	Yes	No
Observations	2,485	2,485	2,462	2,462	2,462	2,462
R-squared / Pseudo R-squared	0.154	0.187	0.190	0.205	0.224	0.162

Notes: Dependent variable equals 1 if voted "Leave" and 0 if voted "Remain" or did not vote in the Brexit referendum on June 23, 2016. The Identity variable was measured in May 16-22, 2016, the omitted category is "British only". The omitted category for education is no formal qualifications. Column 5 controls for 49 counties. Column 6 reports marginal effects from a probit regression. Robust standard errors in parenthesis.

*** is significant at 1%; ** is significant at 5%; * is significant at the 10% level.

not prevented the latter from joining the monetary union, and unaccommodating policies have not led any of them to exit, nor to a systematic drop in popular support for the euro. To be sure, leaving the euro could have enormous costs, but unlike Brexit, in the case of southern Europe there is genuine debate among economists regarding the balance of costs and benefits.[5] As we have shown, at the individual level identity is a strong predictor of support for European integration. But since identity is itself endogenous to economic and political conditions, a theoretical analysis is needed.

[5] This is probably most prominent with respect to Greece, where economists like Joseph Stiglitz argued that "leaving the euro will be painful, but staying in the euro will be more painful" (Stiglitz, J., The Future of Europe, UBS International Center of Economics in Society, University of Zurich, Basel, January 27, 2014).

3 Model

There are two countries: a "Core" of an economic union, denoted C, and a "Periphery" country P that considers joining or exiting the union. Each country has its own natural endowments, economic and legal institutions, culture, etc. Differences across countries translate to different ideal policies. As in Alesina and Spolaore (1997), unification entails economic gains to both countries (e.g. from increased trade), but means they need to share a common policy (e.g. same immigration or monetary policy). For concreteness, we use the Eurozone and the European Union as the running examples of a union, but the model could also apply to other unions such as the United Kingdom or Spain. Denote by E the super-ordinate category which includes both the Core and the Periphery (e.g. Europe as a whole). Let $\lambda \in (0.5, 1)$ be the proportion of the total population of E who are members of the Core.[6]

Members of the Core and the Periphery countries have preferences over a compound policy instrument, which we denote r_i for $i \in \{C, P\}$. This may include macroeconomic policy instruments such as the interest rate set by the monetary authority, the exchange rate regime, or various fiscal tools. It could also represent other policies that are jointly set in case of unification, such as legal authority, human rights, regulation and immigration policy. Let r_i^* be country i's ideal policy, from a standard economic perspective. That is, it is the policy the country's citizens would most prefer in the absence of any identity concerns. Thus, differences in r_i^* capture fundamental differences in economic conditions and preferences across countries. In Section 7 we compute measures of these differences. Without loss of generality, assume that $r_C^* \geq r_P^*$. For example, Germany wants higher interest rates than Greece or more regulation than the UK.

The Core moves first and sets the policy instrument at some level $r_C = \hat{r}$. The Periphery then either accepts or rejects this policy.[7] If it accepts then $r_P = r_C = \hat{r}$. If it rejects then it is free to set its own policy. The assumption that the Core is politically more powerful is important: it is meant to capture the inherent asymmetry present in almost any union. This is essential for understanding some of the fundamental difficulties in the vision of a union that automatically engenders solidarity among its members.

Unification entails a per-capita benefit to both countries (or equivalently, breakup entails a cost) of size $\triangle$. This can come from, e.g., gains from trade, economies of scale in

[6] We take the social categories themselves ("Europe", the various nations) as given. We do not model the historical-cultural process by which they evolved. Naturally, over the long run these categories may change. Indeed, our model suggests one avenue for studying this evolution: categories that do not engender identification in equilibrium may over time become meaningless and die out.

[7] Equivalently, all citizens of the union vote over the common policy, and the periphery subsequently holds its own referendum on whether to stay in the union. Since $\lambda > 0.5$ this yields the same results.

the production of public goods, or reducing the risk of conflict. The material payoff of a representative agent in country i is:

$$V_i(r_i, breakup) = -(r_i - r_i^*)^2 - \Delta * breakup \tag{1}$$

where *breakup* is an indicator variable taking the value 1 if the two countries do not form a union and zero otherwise. Abusing notation slightly, we use i to denote both a country and a representative agent of that country.[8]

Social identity. Think of an individual that belongs to several social groups. An individual i that *identifies* with group j cares about the standing, or status, of group j. Thus, i's preferences are to some degree aligned with group j's. Furthermore, the individual seeks to be similar to group j. Another way to think about it is that i pays some cognitive cost for identifying with a group that is very different from her.[9] Let S_j be the *status* of group j and let d_{ij} be the *perceived distance* between individual i and group j. We then define social identification as follows.

Definition 1. Individual i is said to *identify* with group j if her utility over outcomes is given by:

$$U_{ij}(r_C, r_P, breakup) = V_i + \gamma S_j - \beta d_{ij}^2 \tag{2}$$

where $\gamma > 0, \beta \geq 0$.

The status of a group, S_j, is affected by the material payoffs of its members, but we also allow for other, exogenous factors. Thus, the status of country j is:

$$S_j = \sigma_j + V_j, \text{ for } j \in \{C, P\} \tag{3}$$

where σ_j captures all exogenous factors that affect the status of country j such as its history, cultural influence, international prestige, etc. Such factors may well be the predominant determinants of a country's status. For many years, both German and British status have probably been more influenced by their history than by their contemporary economic performance. Section 7 develops empirical measures of the status of different European countries. The status of Europe is given by:

$$S_E = \sigma_E + \lambda V_C + (1 - \lambda) V_P \tag{4}$$

[8] Notice that we assume policy is "sticky": once the Core sets the policy, it remains in place even if the Periphery rejects it. This makes sense if union policies are complex and cannot be changed overnight. E.g., even if the UK leaves the EU, it may take time for the EU to revise all features of the Single Market as well as other regulations that were put in place to accommodate British interests. In Appendix B we provide an analysis of the case where the Core is fully flexible in setting its policy once the Periphery leaves the union. Conclusions are qualitatively similar.

[9] Shayo (2009) provides a detailed discussion of this conceptualization of social identity as concisely capturing the main empirical regularities in social identity research. See also Atkin, Colson-Sihra and Shayo (2019) for evidence.

where σ_E captures exogenous sources of European status and lies between σ_C and σ_P. We shall sometimes refer to σ_j as the *ex-ante* status of group j and to S_j as its *ex-post* status.

The perceived distance d_{ij} between individual i and group j is a function of the differences between i and the average—or "prototypical"—member of group j on various dimensions. We also allow perceived distance from Europe to vary depending on whether or not one's country is a member of the European union. Specifically:

$$d_{ij}^2 = (r_i^* - \overline{r}_j^*)^2 + w(q_i - \overline{q}_j)^2 + k \cdot \mathbf{1}\left[j = E \; \& \; breakup = 1\right] \text{ for } i \in \{C, P\}, j \in \{i, E\} \quad (5)$$

where $\overline{r}_j^*$ is the average ideal policy of members in group j; $q_i = \mathbf{1}\left[i \in C\right]$ is an indicator for being a member of the Core; and $\overline{q}_j$ is the average across members of j (i.e. the proportion of group j who are members of the Core).[10] $w, k \geq 0$ are parameters capturing the relative salience of the different dimensions. The first term in equation (5) captures fundamental economic differences between i and j. The second term captures differences between the countries that are *not* reflected in the ideal policies (e.g. cultural or linguistic differences). The third term captures a potential additional cognitive cost of $k \geq 0$ for identifying as European despite not being part of the union.

3.1 Remarks

Before proceeding to the analysis, several remarks are in order.

1. Do people really choose their identity? Individuals clearly do not identify with *all* the groups that they belong to, and it is well-documented that they can switch the groups they identify with in response to changes in the environment (see references in the introduction). Such choices are not necessarily made consciously and deliberately. Nonetheless, optimization assumptions can cleanly capture the major empirical regularities documented in the literature: that people are more likely to identify with those groups that have higher status and that are more similar to them. This has two important implications. First, not all identity profiles can be sustained. Second, identities respond to economic forces.

2. We abstract from within-country heterogeneity. Such heterogeneity is clearly relevant. As pointed out by Bolton and Roland (1997), differences in income distributions across countries can lead to differences in the ideal policies of the median voters. Furthermore, within-country heterogeneity is important for understanding identification patterns. This question has been analyzed in Shayo (2009), that showed that the poor are generally more likely than the rich to identify nationalistically, and that the tendency towards nationalism increases with the immigration of foreign workers and possibly with income inequality. Grossman and Helpman (2018) and Holm (2016) provide further analyses. Here, we focus

[10] Specifically, $\overline{r}_i^* = r_i^*$ and $\overline{q}_i = q_i$ for $i \in \{C, P\}$. $\overline{r}_E^* = \lambda r_C^* + (1 - \lambda) r_P^*$. $\overline{q}_E = \lambda$.

on factors such as changes in national status, that affect both the elites and the poor in the same direction. Accordingly, one can think of the identity profiles we study as reflecting the identity of the decisive players in each country (be they the elites or the median voters), rather than as the complete distribution of identities.

3. European integration is more complicated. Entire academic journals and numerous books are devoted to European integration alone. It is an immensely complicated process, involving many countries, many agencies, protracted negotiations and multidimensional policies. And France and Germany may not always be quite as powerful within the EU as the Core is in our model. Similarly, vast literatures in Political Science, Psychology, Sociology and History document numerous factors and historical contingencies that can affect identification patterns. As a first step to understanding the basic logic of integration and identity, our model incorporates only the factors that would be crucial to any such understanding. On the political economy side: the trade-off between gains to unification and costs to heterogeneity, and some asymmetry in power between core and periphery. On the social identity side: the fact that people care about groups, and the two fundamental factors entering identification decisions: status and distance. Adding specific features of, e.g., the formation of the Eurozone, the Greek debt negotiations, or the Brexit affair, could further enrich the picture.[11]

4. Benefits from unification vary across countries and over time. For example, it seems plausible that smaller countries (like Denmark, Greece, or Switzerland) have more to gain from unification due to economies of scale in the production of public goods. Note however that this in itself does not easily explain the composition of the Eurozone (footnote 1 above). Similarly, while fiscal transfers vary across EU members, they cannot explain decisions to join or leave the *monetary* union. Even regarding EU membership, attempts to adjudicate which countries gain or lose income flows are very contentious, depending e.g. on whether foreign property income is taken into account.[12] The more general point is that ex-post we can explain *any* pattern of unification with the "right" country-specific benefits (Δ in our model). To see the implications of identity, it is probably useful to examine how far the model can go without appealing to different (or time-varying) Δ's.

[11]For example, the tortuous Brexit negotiations may have themselves made more salient the differences between the UK and the EU, or may have affected British status. Another possibility is that the negotiations revealed to other countries information that $\triangle$ (the cost of breakup) is higher than previously thought. As for adding more countries, note that both the number of potential identity profiles and the number of political configurations increase exponentially with the number of countries. Thus, we can extend the model to the case of two cores (or two peripheries), but even in the simplest case where the two cores are run by a common central planner the analysis of SIE relies on numerical solution methods (and in practice yields few additional insights).

[12]See e.g. piketty.blog.lemonde.fr/2018/01/16/2018-the-year-of-europe.

5. The model takes fundamental differences between countries as given. However, at least in the long run these differences may be endogenous to both integration and identification choices. The direction of such a process is theoretically and empirically ambiguous. On the one hand, integration can lead to specialization (Ricardo 1817; Krugman 1993; Casella 2001). On the other hand, closer trade links may lead to more closely correlated business cycles (Frankel and Rose 1998), and unions may actively seek to homogenize their populations (Weber 1976; Alesina and Reich 2013). The evidence for the European case is mixed. Since the 1980's there appears to have been some economic convergence across EU countries, at least until the 2008 financial crisis. But there is little evidence that EU countries became more similar in fundamental values or in major institutional features (Alesina, Tabellini and Trebbi 2017). At this stage we thus take fundamental differences as fixed, but we do analyze changes in the importance that individuals attach to inter-country differences, which arguably can vary even in the short run.

4 Integration Under Fixed Social Identities

We begin by characterizing the Subgame Perfect Nash Equilibrium (SPNE) under any given profile of identities. SPNE is the first building block of our proposed solution concept (SIE, defined in Section 6). It is appropriate for situations where the Core has the political power, i.e., where the Periphery cannot commit to reject offers that are in fact in its interest, thereby forcing its desired policies on the union. Throughout, we impose that in case of indifference unification occurs. Denote by (ID_c, ID_P) the social identity profile in which Core members identify with group $ID_c \in \{C, E\}$ and Periphery members identify with group $ID_P \in \{P, E\}$.

Proposition 1. ***Subgame Perfect Nash Equilibrium (SPNE).*** *For any profile of social identities (ID_c, ID_p), there exist cutoffs $R_1 = R_1(ID_c, ID_p)$ and $R_2 = R_2(ID_c, ID_p)$ and policies $\widehat{r}_C = \widehat{r}_C(ID_c, ID_p)$ and $\widehat{r}_P = \widehat{r}_P(ID_c, ID_p)$, such that $R_1 \leq R_2$, $\widehat{r}_P < \widehat{r}_C$ and:*

a. if $r^*_C - r^*_P \leq R_1$ then in SPNE unification occurs and $r_C = r_P = \widehat{r}_C$;

b. if $R_1 < r^*_C - r^*_P \leq R_2$ then in SPNE unification occurs and $r_C = r_P = \widehat{r}_P$;

c. if $r^*_C - r^*_P > R_2$ then in SPNE breakup occurs and $r_C = r^*_C$, $r_P = r^*_P$.

Proofs are in Appendix A. Figure 4 illustrates. $\widehat{r}_C$ reflects the Core's chosen policy when there is no threat of secession. This may or may not be equal to r^*_C, depending on the Core's identity. When fundamental differences between the countries $(r^*_C - r^*_P)$ are small relative to the cost of dismantling the union, the Periphery country would rather accept $\widehat{r}_C$ than set its own ideal policy and suffer the cost of breakup. As a result, the Core sets the policy to

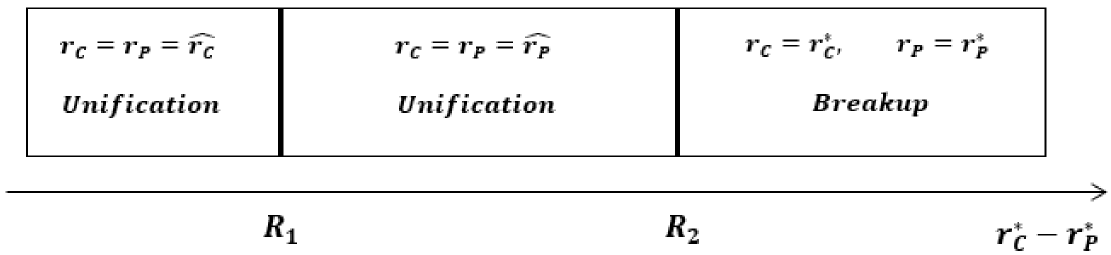

Figure 4: General Characterization of SPNE

$\widehat{r}_C$. For larger fundamental differences between the countries (or lower costs of breakup), i.e. when $r_C^* - r_P^* > R_1$, the Core cannot set the policy to $\widehat{r}_C$ while keeping the Periphery inside the union. However, as long as these differences are smaller than R_2, the Core can set its policy at a lower level $\hat{r}_P$ which would keep the Periphery in the union and still be preferable to breakup. In equilibrium the Periphery country is exactly indifferent between staying in the union and exiting. Finally, when $r_C^* - r_P^*$ is sufficiently large relative to Δ, i.e. when $r_C^* - r_P^* > R_2$, the cost required to keep the Periphery in the union exceeds the benefits to the Core. In this case breakup occurs and policies are set to r_C^* and r_P^*.

We define two basic properties of unions.

Definition 2. A union is (strictly) more *robust* if it is sustained under (strictly) larger fundamental differences $r_C^* - r_P^*$.

Definition 3. A union is (strictly) more *accommodating* if the policy implemented is (strictly) closer to r_P^*, for any level of fundamental differences such that the union is sustained.

We can now state two preliminary but important results.

Proposition 2. ***Robustness.*** *If βk is not too high, then the union is strictly more robust under the (C, E) profile than under any other identity profile, i.e, $R_2(C, E) > R_2(ID_C, ID_P)$ for all $(ID_C, ID_P) \in \{(C, P), (E, P), (E, E)\}$.*

Recall that βk is the extra cost of identifying with Europe despite not being a member of the union. If this cost is prohibitively high, then the all-European identity profile (E, E) is trivially the most robust, since everyone would then be very reluctant to break the union. Indeed, this is implicitly assumed in many public discussions. Proposition 2, however, indicates that this is not true in general. The next result points out that a union is also not the most accommodating under a common (E, E) identity.

Proposition 3. ***Accommodation***

a. For any given Periphery identity, the union is more accommodating if Core members identify with Europe rather than with their nation.

b. For any given Core identity, the union is less accommodating if members of the Periphery identify with Europe rather than with their nation.

To see the mechanisms underlying these results, we briefly discuss each of the four possible social identity profiles. The complete characterization of these cases is given in Lemmas 1-4 in Appendix A. Figure 5 provides an illustration.

Case 1 (C, P)**: Both Core and Periphery identify with their own country.** This case serves as a convenient benchmark. It essentially replicates the standard analysis of economic integration, in which each country is only interested in its economic payoffs. At low fundamental differences, when there is no threat of secession policy is simply r_C^*. Breakup takes place when the material concessions needed to keep the periphery in the union are larger than the material gains, regardless of what this does to perceived distances and to European status.

Case 2 (C, E) **: Core Identifies with own Country and Periphery with Europe.** Comparing this case to Case 1 provides some basic insights into the workings of social identity. First, $R_1(C, E) > R_1(C, P)$. Because the Periphery now sees itself as part of Europe, it prefers r_C^* to breakup at relatively high levels of fundamental differences. Second, $\widehat{r}_P(C, E) > \widehat{r}_P(C, P)$: even when the Core makes concessions in order to sustain the union, these concessions are smaller than what was needed when the Periphery identified nationally. The basic reason is, again, that the Periphery sees itself as part of Europe and hence both pays a cognitive cost for not being a member of the union and gains utility from a stronger European status. Finally, the union can be sustained under larger fundamental differences: $R_2(C, E) > R_2(C, P)$. The difference between $R_2(C, E)$ and $R_2(C, P)$—i.e the range of fundamental differences over which the union is sustained under (C, E) but not under (C, P)—depends on several factors: the economic cost of breakup $\triangle$, the cognitive cost of breakup k, the size of the Core λ, and the weights β and γ that the Periphery places on distance from Europe and on European status. An increase in any one of these tends to make breakup more costly for a Periphery that identifies with Europe. This allows the union to be sustained under larger differences.

Case 3 (E, P)**: Core identifies with Europe and Periphery with own Country.** Again, it is instructive to compare this case to Case 1. First, $\widehat{r}_C(E, P) < \widehat{r}_C(C, P)$. That is, at low levels of fundamental differences, the union is more accommodating since the Core now internalizes the effects of its policies on European status. Thus, policy is set as some

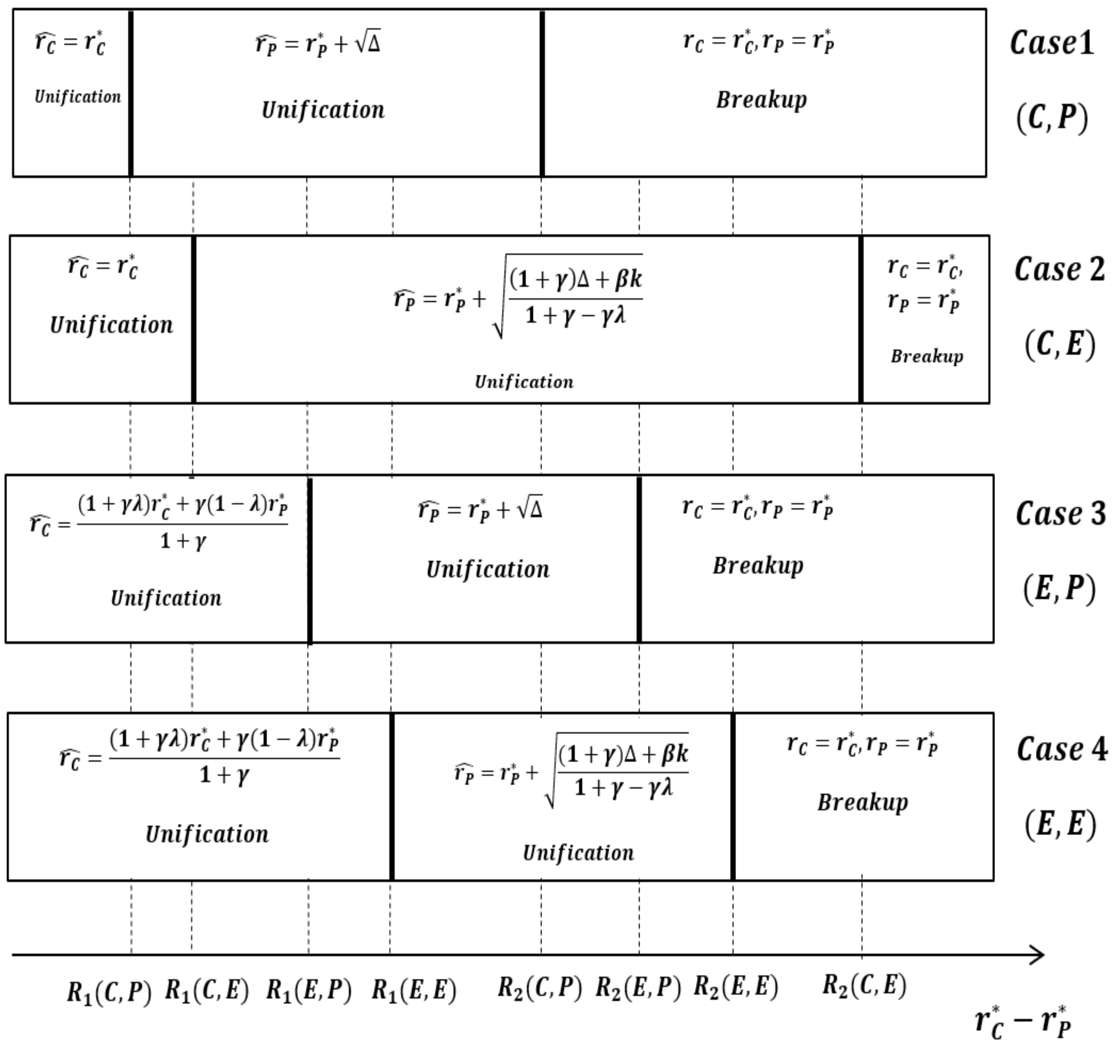

Figure 5: SPNE under Different Social Identity Profiles

Note: This figure does not cover all possible regions of the parameter space. See Lemmas 1-4 in Appendix A for a complete characterization.

weighted average between the ideal policies of the two countries. At some point, however, this policy which takes into account wider European considerations—$\widehat{r}_C(E, P)$—is not sufficient to keep the Periphery in the union and some concessions are needed.[13] Since the Periphery cares only about its material payoffs, the policy required to keep it in the union is the same as in Case 1. Finally, $R_2(E, P) \geq R_2(C, P)$. Thus, European identity in the Core can delay (though not prohibit) breakup. This happens if $\beta k > 0$ and hence a core identifying as European suffers an extra cost from dismantling the union.[14]

[13]The reason is that the Core cares about *Europe*, and not about the Periphery per se. Since European status depends on both Core and Periphery material payoffs, $\widehat{r}_C(E, P)$ is *not* the ideal policy from the Periphery's perspective, even if the Core places a very high weight on European status.

[14]If $\beta k = 0$ then $R_2(E, P) = R_2(C, P)$. The reason is that once fundamental differences are above

Case 4 (E, E): Both Core and Periphery identify with Europe. On the face of it, the case where everyone identifies with the union might seem like the most favorable for integration. Our model suggests this is not necessarily the case, at least in terms of robustness. In fact, as long as the psychological costs of breakup βk are not very high relative to the economic costs $\triangle$, then the union is strictly *less* robust when everyone identifies with Europe than when only the Periphery does, i.e. $R_2(E, E) < R_2(C, E)$. The basic reason is that when fundamental differences between the countries are very large, European status would be higher if the Periphery were kept outside the union and conducted its own policy. If the Core identifies nationally it has no problem sustaining the union even if this damages European status. But if the Core identifies with Europe, it takes these effects into account. Regarding policy, as in Case 3, at low levels of fundamental differences, policy is accommodating. Furthermore, the Periphery's identity means the union is less accommodating in the middle range between R_1 and R_2, which makes it more robust than under either the (C, P) or (E, P) profiles.

In Appendix A.4 we compare the point at which the union disintegrates in SPNE to what a social planner interested in maximizing aggregate material payoffs would do. We find that national identification in the Periphery tends to produce a less robust union than what material payoff maximization implies. This echoes the common reaction of economists to the Brexit vote, which in turn was associated with strong national identification and weak identification with Europe (Section 2). A shared identity, however, does not always enhance overall material payoffs. There exist situations where it is materially optimal to dismantle the union, and yet the union is sustained if the Periphery identifies with Europe.

5 Choice of Social Identity

We now turn to the determination of social identity. This is the second building block of our proposed solution concept. We assume that an individual chooses to identify with the group that yields the highest utility. That is, an individual from country i chooses identity j to solve:

$$\max_{j \in \{i, E\}} U_{ij}(r_C, r_P, breakup)$$

Accordingly, an individual in the Core identifies with her own country if $U_{CC} > U_{CE}$. Recall from equation (2) that $U_{ij} = V_i + \gamma S_j - \beta d_{ij}^2$. For any given policy, own material payoff V_i

$R_1(E, P)$, the Periphery's utility is held constant at the utility obtained under breakup. Hence the only factor shifting European status is Core material payoffs. Since there is no cognitive cost to breakup, once fundamental differences are such that Core material payoffs are higher under breakup than under unification, breakup takes place.

does not depend on the choice of identity. Hence identification with own country takes place if $\gamma S_C - \beta d_{CC} > \gamma S_E - \beta d_{CE}$. Using equations 3-5 this condition can be written as:

$$S_C - S_P > \frac{\sigma_E - \lambda\sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (r_C^* - r_P^*)^2\right] - \sigma_P - \frac{\beta k}{\gamma(1-\lambda)}\mathbf{1}(breakup = 1). \quad (6)$$

In other words, a Core individual identifies with her own country when the (ex-post) status gap between the two countries, $S_C - S_P$, is high and when the distance between the countries is large. This is more likely to happen when the exogenous sources of Core status, captured by σ_C, are high while those of Europe (σ_E) are low; when cultural or linguistic differences are salient (w is high); and when fundamental differences are large. Finally, if $\beta k > 0$, identifying with one's nation is also more likely under breakup (as in this case there is an additional cognitive cost of identifying with Europe). Similarly, a Periphery individual identifies with her own country if:

$$S_C - S_P < \frac{(1-\lambda)\,\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (r_C^* - r_P^*)^2\right] + \sigma_C + \frac{\beta k}{\gamma\lambda}\mathbf{1}(breakup = 1). \quad (7)$$

Figure 6 illustrates how the identity profile is determined. On the horizontal axis we continue to have fundamental differences. On the vertical axis we have the status gap between the Core and the Periphery. The dashed curves represent "identity indifference curves" (IIC) for the Core (downward sloping and red) and the Periphery (upward and blue). These curves depict the combinations of $r_C^* - r_P^*$ and $S_C - S_P$ such that individuals are exactly indifferent between identifying with their own nation and with the union. Combinations of $r_C^* - r_P^*$ and $S_C - S_P$ which are located above and to the right of the Core's IIC (denoted $U_{CC} = U_{CE}$) imply that $U_{CC} > U_{CE}$. Hence, individuals in the Core identify nationally in this region. At points below and to the left of this IIC, the Core identifies with Europe. Similarly, the Periphery identifies nationally at points below and to the right of its IIC ($U_{PP} = U_{PE}$) curve, and with Europe above and to the left.

Consider Panel A, in which ex-ante European status is relatively high.[15] At low differences between the countries, three identity profiles are possible. If the ex-post status gap is sufficiently high, then the only possible identity profile is (C, E). Conversely if $S_C - S_P$ is sufficiently low, then the only possible profile is (E, P). In the intermediate range both the Core and the Periphery identify with Europe. However, larger differences between the countries make a common European identity harder to sustain. Thus, even when ex-ante European status is relatively high, an all-European identity profile cannot be sustained if differences between the countries are too large. The flip side is that large inter-county differences permit

[15] That is, above the threshold $\sigma_E^* \equiv \lambda\sigma_C + (1-\lambda)\sigma_P + \frac{\beta w\lambda(1-\lambda)}{\gamma} + \frac{\beta k}{\gamma}\mathbf{1}(breakup = 1)$.

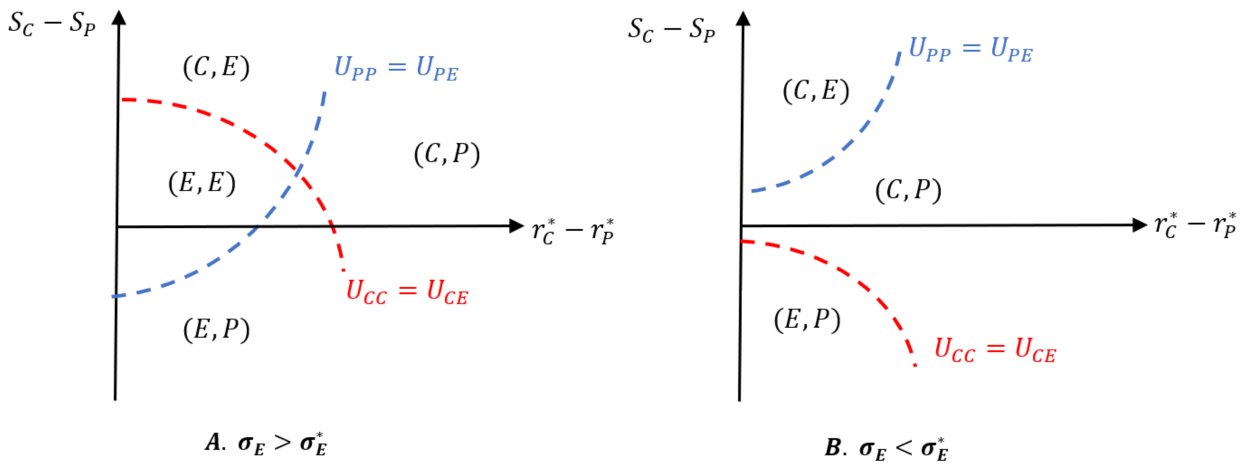

Figure 6: Choice of Social Identity

the (C, P) profile. Panel B shows the situation when ex-ante European status is relatively low. In this case, the all-European profile (E, E) cannot be sustained, but (C, E),and (E, P) are possible. Finally note that breakup shifts both the IIC curves inward, making European identification less likely.

In practice, of course, the ex-post status gap is a function of the fundamental differences between the countries, and the policies chosen given these differences (Appendix A.5 characterizes this function). Since these policies themselves depend on the identity profile, we need a concept of equilibrium.

6 Social Identity Equilibrium

We are now in a position to address our main question: what configurations of social identities and policies are likely to hold when both are endogenously determined? We employ a concept of *Social Identity Equilibrium (SIE)*, adapted from Shayo (2009). SIE requires that the policies implemented in both countries be a SPNE given the social identity profile, but also that the social identities themselves be optimal given these policies.

Definition 4. A *Social Identity Equilibrium (SIE)* is a profile of policies $(r_C, r_P, breakup)$ and a profile of social identities (ID_c, ID_p) such that:

i. $(r_C, r_P, breakup)$ is the outcome of a SPNE given (ID_c, ID_p);

ii. $ID_i \in \underset{ID_i \in \{i,E\}}{argmax}\, U_{i,ID_i}(r_C, r_P, breakup)$ for all $i \in \{C, P\}$.

Section 6.1 analyzes SIE when perceived distances do not affect identification decisions, starting with the simplest case where there are no ex-ante differences in status, and gradually introducing status differences. Section 6.2 discusses the general case.

6.1 SIE without perceived distance

We start by shutting down perceived distance effects, i.e. assuming $\beta = 0$. This is a strong assumption but it facilitates the exposition. Graphically, it means that the only thing determining identification decisions is status and so all the IIC's are flat and do not depend on unification. Start with the case of no ex-ante status differences between the countries. A special case is when status is completely determined by material payoffs so that $\sigma_j = 0$ for all $j \in \{C, P, E\}$.

Proposition 4. *Suppose $\beta = 0$ and $\sigma_C = \sigma_P = \sigma_E$. Then:*

a. An SIE exists.

b. In almost any SIE in which the union is sustained, the social identity profile is (C,E). The only exceptions are when $(r_C^* - r_P^*) \in \{0, R_2(C, P)\}$.

c. For any fundamental differences $(r_C^* - r_P^*) \in [R_2(C, P), R_2(C, E)]$, there exist SIE with both unification and breakup.

d. The profile (E, E) can be sustained either when $r_C^* = r_P^*$ or under breakup.

The main flavor of this Proposition is illustrated in Figure 7. Given the parameter restrictions, all the IIC's coincide (the dashed line). At points strictly above the IIC, C identifies nationally and P identifies with Europe. At points strictly below the IIC the profile is (E, P). The solid red curve depicts the status gap that emerges in the SPNE under the (C, E) profile. Note that at any level of fundamental differences below $R_2(C, E)$, the status gap is above the IIC. This is because the SPNE policies under this profile—Case 2 in Section 4—privilege Core economic interests over the Periphery's, and there are no exogenous differences in status. Hence, the (C, E) profile is indeed chosen by individuals in the Core and the Periphery. Thus, for any level of fundamental differences in this range, there exists an SIE with unification and (C, E).

For all other identity profiles it can be shown that SPNE implies a status gap which is strictly above the IIC as long as fundamental differences are greater than zero and below the respective R_2's. Thus, if unification is sustained in SPNE, the identity profile underpinning this SPNE cannot be an SIE. If fundamental differences are above the relevant R_2, the status gap is zero and the profile can be sustained in SIE, but the underlying SPNE must involve breakup.

In a sense, Proposition 4 complements Proposition 2. Not only is the union most robust when the social identity profile is (C, E), in this baseline case (C, E) is the unique identity

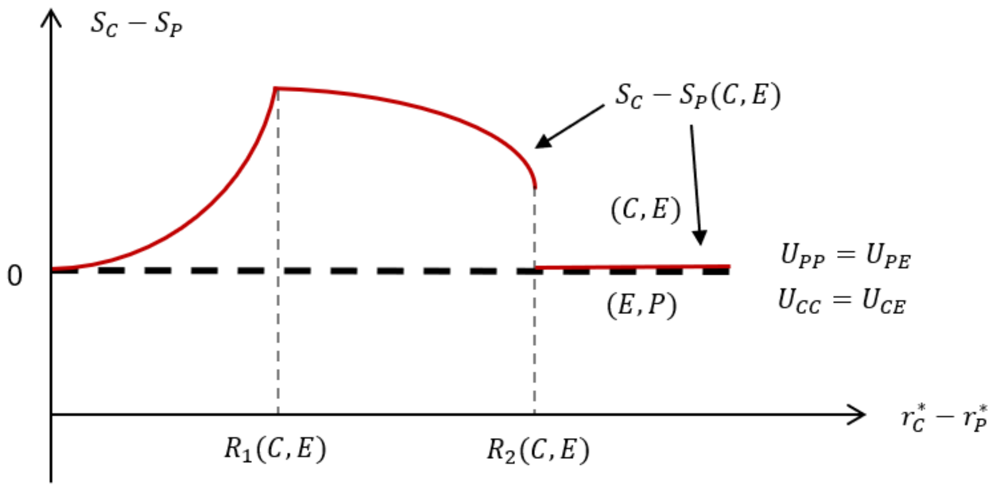

Figure 7: SIE under No Ex-Ante Differences in Status and $\beta = 0$

profile that holds in any SIE in which the union is sustained, except for very special cases. But even in this simple case, there is a wide range of fundamental differences—from $R_2(C,P)$ to $R_2(C,E)$—in which both unification and breakup can occur.

It is worth noting that in this baseline an SIE with the social identity profile (E,E) is unlikely to be sustained under unification. This already indicates a force that works against the idea of an "ever-closer union" which suggests that joining the union itself ultimately brings the member countries closer together (see discussion in Spolaore, 2015). In fact, the very success of the union tends to push Core countries towards more exclusionary identities. Furthermore, a union with a (C,E) profile is unlikely to be very accommodating to the needs of the Periphery (Proposition 3).

We now relax the assumption of equal ex-ante status. A rather stark case is when the Periphery has relatively low ex-ante status:

Proposition 5. ***Low-Status Periphery.*** *Suppose $\beta = 0$ and $\sigma_C > \sigma_E > \sigma_P$. Then there exists a unique SIE; the social identity profile is (C,E); and the union is sustained if and only if $(r_C^* - r_P^*) \leq R_2(C,E)$.*

As in the previous case, if the union is sustained the political power of the Core pushes towards a (C,E) profile. In the present case however, the Core's political advantage is reinforced by its higher ex-ante status, and the (C,E) profile holds even without unification.

The more important lesson is that the union is more stable in this case. From Proposition 4.c we know that under equal ex-ante status there exists a range of fundamental differences in which both unification and breakup can take place. Proposition 5 however shows that differences in ex-ante status can push the countries towards a unique SIE in which unification occurs. This is due to the fact that identity is endogenous. Consider fundamental differences larger than $R_2(C,P)$ – the point at which the union disintegrates if the periphery identifies nationally. Since agents are allowed to choose their identity, the Periphery in this case will choose to identify *with Europe*, which in turn permits the union to be sustained under larger differences. Recall also that under (C,E) the union is least accommodating (Proposition 3). As a result, the status gap $(S_C - S_P)$ between the Core and the Periphery widens, and members of the Periphery are further motivated to identify with Europe.

Consider however the Social Identity Equilibrium when the ex-ante status of the Periphery is higher than the Core's. Contrary to the unambiguous nature of Proposition 5, this setting implies a richer set of possibilities. While the Core continues to enjoy more political power, it no longer has an (ex-ante) status advantage. In the setting of Proposition 5, even if some shock drove the Core to temporarily identify with Europe, such an identity would not be sustainable. However, in the present case political power is counterbalanced by lower exogenous status and hence European identity in the Core may be sustained. This may then translate to equilibria in which the union is sustained and policy is relatively accommodating (e.g. SIE's with (E,P) and (E,E) identities). And while (C,E) equilibria may still exist, they are no longer unique.

Proposition 6. ***High-Status Periphery.*** *Suppose $\beta = 0$ and $\sigma_C < \sigma_E < \sigma_P$. Then:*

a. An SIE exists.

b. In any SIE in which breakup occurs, the social identity profile is (E,P).

c. There exists a subset $I^* \subseteq [R_2(C,P), R_2(C,E)]$ such that if $(r_C^* - r_P^*) \in I^*$ both unification and breakup can occur. However, in any SIE in I^* in which unification occurs, the Periphery identifies with the union.

Two lessons are worth highlighting. First, the union is more fragile in this case. In contrast to the previous case, in which unification necessarily takes place as long as fundamental differences are below $R_2(C,E)$, in this case breakup can occur below this threshold. This is illustrated in Figure 8, Panel A. The figure depicts the status gap curve consistent with the identity profile (E,P). When this curve lies below both IIC's, the (E,P) profile holds in SIE. However, for fundamental differences above $R_2(E,P)$ the SIE involves breakup. But we know from Section 4 that $R_2(E,P) < R_2(C,E)$. The conclusion is that unification is not assured when the Periphery has higher status, even under relatively mild fundamental differences: the status differences can support an identity profile which does not allow for unification in the face of these differences.

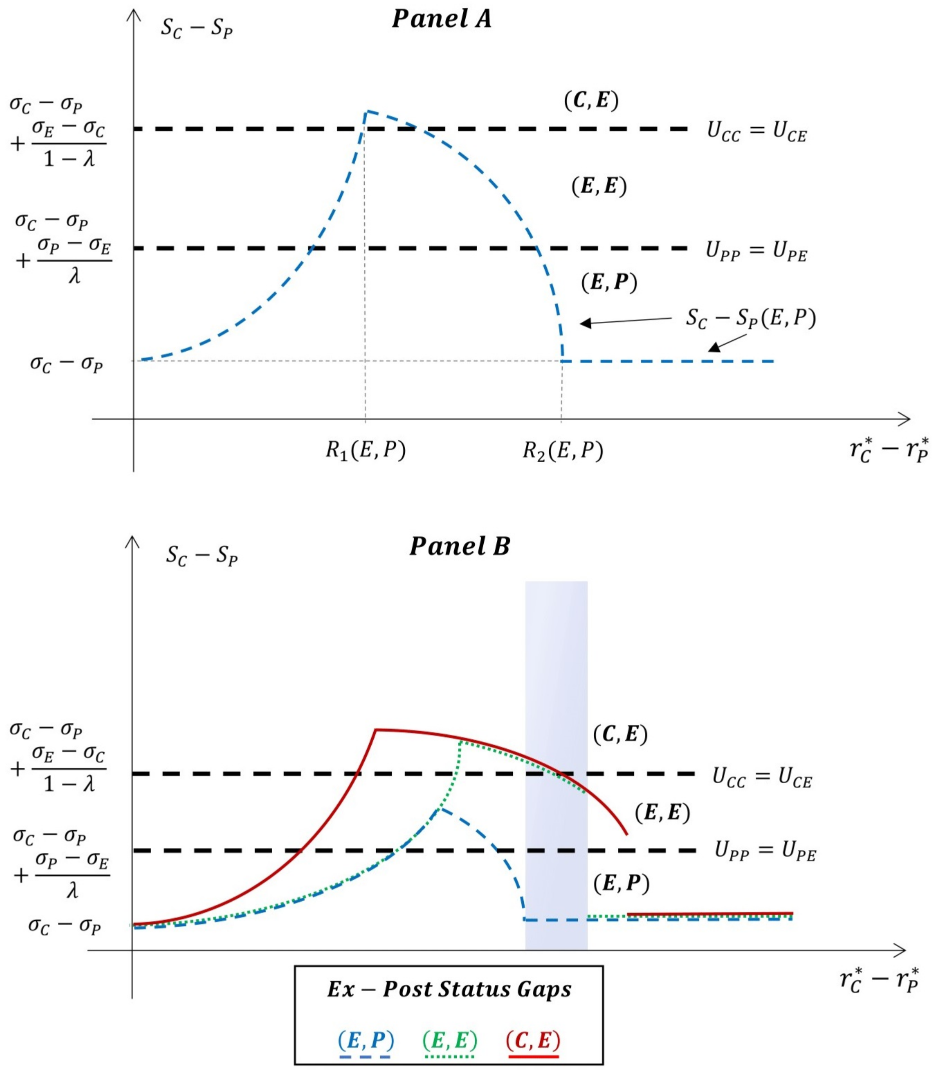

Figure 8: SIE when the Periphery has Higher Ex-Ante Status and $\beta = 0$

Note: The Figure is drawn for the case in which $\sigma_E > \sigma_E^*$.

Second, consider levels of fundamental differences such that multiple SIE exist where some involve breakup and others unification. Proposition 6 says that any SIE in this region that involves unification must have the Periphery identify with Europe. This can be seen in Figure 8, Panel B. The figure depicts the status gap functions under three identity profiles.[16] The shaded area shows a region of fundamental differences in which multiple equilibria exist, with different identity profiles. Thus, there exists an SIE with breakup and the Periphery identifying nationally (the (E, P) profile – dashed blue curve). But for the same levels of fundamental differences, there also exist SIE's with unification. Furthermore, in all of these

[16]The figure is drawn for the case when European status is high, and hence (C, P) cannot be part of an equilibrium. The intuition for the result is similar in the case when European status is low.

SIE's the Periphery identifies with Europe. However, unlike the case of a low-status Periphery (Proposition 5), a high-status periphery may identify nationalistically in equilibrium, and this equilibrium is characterized by breakup even at low levels of fundamental differences.

6.2 General characterization of SIE

Let $\boldsymbol{p} = (\beta, k, w, \gamma, \triangle, \lambda, \sigma_E)$ be a vector of parameters. Let $\overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P)$ be the *maximal* level of fundamental differences under which an SIE with unification exists given $\boldsymbol{p}$ and ex-ante status σ_C, σ_P. Let $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P)$ be the *minimal* level of fundamental differences such that an SIE with breakup exists for any level of fundamental differences larger than $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P)$, given $\boldsymbol{p}, \sigma_C, \sigma_P$.

To begin, consider what happens when σ_E, the exogenous part of European status, is not too high. Specifically:

Condition 1.

$$\sigma_E < \min \left\{ \begin{array}{c} \sigma_C + \frac{\beta(1-\lambda)^2}{\gamma} \left(w + 2\triangle + 2\sqrt{\triangle^2 + \frac{\beta \triangle k}{1+\gamma\lambda}} + \frac{\beta k}{1+\gamma\lambda} - \frac{\gamma k}{(1+\gamma\lambda)(1-\lambda)} \right) \quad , \\ \lambda\sigma_C + (1-\lambda)\sigma_P + \frac{\beta w \lambda(1-\lambda)}{\gamma} \end{array} \right\}$$

We can then characterize the SIE as follows.

Proposition 7. *Robustness in SIE.* *Assume Condition 1. Then for any given parameter vector* $\boldsymbol{p}$*,*

a. $\overline{M}\left(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C\right) \leq \overline{M}\left(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C\right)$*, and there exist* $(\boldsymbol{p}, \sigma_C, \sigma_P)$ *such that the inequality is strict.*

b. $\underline{M}\left(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C\right) \leq \underline{M}\left(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C\right)$*, and there exist* $(\boldsymbol{p}, \sigma_C, \sigma_P)$ *such that the inequality is strict.*

This result generalizes the patterns discussed in Section 6.1. A union can be sustained at higher levels of fundamental differences when the Periphery has relatively low status; and disintegration can occur at lower levels of fundamental differences when the Periphery has equal or higher status than the Core. The basic reason is that members of a low-status Periphery will tend to identify with Europe, which in turn permits the union to be sustained under larger differences. This happens despite—and to some degree because of—the unaccommodating policies of the union, which accentuate the Periphery's status disadvantage and makes European identity more attractive. In contrast, a high-status Periphery is more likely to adopt a nationalistic identity, which in turn requires a more accommodating policy under unification. As a result, the union breaks up under smaller differences between the countries.

The next two results modify the conclusions from Section 6.1, and provide more insight regarding the identification patterns that emerge under breakup and under unification.

Proposition 8. ***Identification in SIE with Breakup.*** *Assume Condition 1.*

a. If $\sigma_P < \sigma_C$ then in any SIE with breakup the Core identifies nationally but the Periphery may identify with Europe.

b. If $\sigma_P > \sigma_C$ then in any SIE with breakup the Periphery identifies nationally but the Core may identify with Europe.

Part (a) says that even countries that are not part of the union might still in equilibrium identify as European, so long as they are low-status. In contrast, high-status countries always identify nationally under breakup. To see the intuition, consider for a moment what happens when $\sigma_C = \sigma_E = \sigma_P$. Under breakup, each country sets its own policy and there is clearly no status gain from identifying as European. But identifying with Europe entails a cost in terms of perceived distance. Hence, in any SIE with breakup both the Core and the Periphery must identify nationally. Now, if the Periphery has low ex-ante status, the status gain from identifying with Europe may in principle compensate it for the loss in similarity, even at (relatively high) levels of fundamental differences such that breakup occurs. Nonetheless, unlike the special case of $\beta = 0$ (Proposition 5), the identity profile under breakup is not necessarily (C, E), as the Periphery may also identify Nationally.

Conversely, if the Periphery has high ex-ante status, then it identifies nationally in any SIE with breakup. However, the special case of $\beta = 0$ (Proposition 6) again needs modification, as the Core does not necessarily identify with Europe.

Next, consider the identity profile in SIE with unification.

Proposition 9. ***Identification in SIE with Unification.*** *Assume Condition 1.*

a. If $\sigma_P < \sigma_C$ then in any SIE with unification the Core identifies nationally.

b. If $\sigma_P > \sigma_C$ then the Core may identify with Europe under SIE with unification.

This proposition confirms the point we alluded to earlier: that unification by itself does not guarantee the emergence of a common identity throughout the union. Most notably, if the Core has high status, then unification tends to push it towards a more exclusionary identity.[17]

[17]If $\sigma_C = \sigma_P$ there are more possibilities, depending on β. If $\beta > 0$ then like Proposition 9.*a*, in any SIE with unification the Core must identify nationally. If $\beta = 0$, this is true in *almost* any SIE with unification (Proposition 4).

Next, consider shocks to β. The thought experiment could be some policy that alters the salience of inter-country differences.

Proposition 10. *Assume Condition 1. Then* $\overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P)$ *and* $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P)$ *are both weakly decreasing in* β.

Thus, reducing the salience of inter-country differences—or making people care less about them—would tend to allow the union to be sustained at higher levels of fundamental differences. Moreover, as we show in Appendix A.13, a fall in β would allow new SIE in which the Periphery identifies with Europe and unification takes place. However, it is important to note that when $\sigma_C \geq \sigma_P$ the Core identifies nationally in any new SIE which involves unification. Basically, the gain from identifying with Europe following a decrease in β is offset by the loss in status.

A more specific question then is what happens to the set of $(r_C^* - r_P^*)$ such that there exists an SIE with *both* unification *and* an all-European (E, E) profile. This question has been quite central to the European integration project. We find that in the case of a high status periphery ($\sigma_C \leq \sigma_P$), a fall in β tends to expand this set but this set is unchanged when $\sigma_C > \sigma_P$ (Proposition 12.b in Appendix A.13).

When ex-ante European status is very high

To complete the analysis we consider what happens when we relax Condition 1. A very high European status makes European identity attractive for a low-status Core. Now, if identifying with Europe implies an extra cognitive cost of breakup (i.e. $\beta k > 0$), then, as discussed in Section 4, this generates an additional incentive for the Core to maintain the union. Together, these two forces can offset the destabilizing effects of a high-status periphery highlighted in Proposition 7. In particular, consider a union with a very high status. Post-WWII USA might be a possible example. In this case, even if the periphery has relatively high status ($\sigma_P > \sigma_C$), the (E, E) identity profile can be sustained at relatively high fundamental differences. Everyone still identifies as American. But recall from the discussion of Case 4 in Section 4 that if βk is sufficiently large then $R_2(E, E) > R_2(C, E)$. If $\sigma_C > \sigma_E > \sigma_P$, identification with E in the Core might not be sustainable at high fundamental differences. Hence, there exist parameter values such that $\overline{M}\left(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C\right) > \overline{M}\left(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C\right)$. See Appendix A.14 for details.

7 Predictions

> *"We always must make statements about the regions that we haven't seen, or there's no use in the whole business"* (Richard Feynman, 1964).[18]

This section uses the model to ask how social identity considerations modify the picture of countries likely to join, remain, or leave the EU and the euro. We attempt to map the current position of European countries along the two major dimensions identified in Section 6: fundamental differences and status. The measures we use here are far from perfect and are at least partly endogenous to membership in the EU or in the euro. Nonetheless, they provide a first step towards approximating the theoretical variables. We do need to make a judgment call, however, regarding the current status of Europe. We shall assume that, in the period we study, ex-ante European status is not very high and satisfies Condition 1.

We focus on integration, rather than the identification profile, as the main outcome of interest. As explained in Section 2, we face significant data limitations in measuring identity, and particularly Core identity. But we believe integration itself is a first-order concern. Throughout we take France and Germany as the Core.

7.1 Gauging fundamental differences

To obtain a measure of fundamental differences, we begin with a set of indicators suggested by the economic literature on optimal unions. These are meant to capture major differences in ideal economic policy across countries. However, since the European Union also sets non-economic policies, we augment the economic differences with a central non-economic policy dimension: human rights and civil liberties. All differences are measured relative to France and Germany (the Core).

For economic differences we use three indicators, building on Alesina, Barro and Tenreyro (2002) and Alesina, Tabellini and Trebbi (2017):

1. Differences in the current level of economic development are captured by the difference in log GDP per-capita between country i and France and Germany, treated as one country. Specifically, let $\delta_y^i = |\ln \overline{y}_i - \ln \overline{y}_{Core}|$, where $\overline{y}_i$ is mean real GDP per capita in 2015-2017.

2. Moving to differences at the business cycle frequency—especially relevant for monetary unions—we use the correlation coefficient ρ_i between the yearly growth rate of GDP of

[18] Messenger Lectures 3, The great conservation principles <https://youtu.be/a6n0HSJ5jEE?t=2390>, 39:36-42:25.

country i and the combined GDP growth rate in Germany and France. The correlation is calculated over the period following the introduction of the euro i.e., 1999-2017. We then define the business cycle difference as $\delta^i_{BC} = 1 - \rho_i$.[19]

3. Finally, we examine trade with the Core, which also captures some of the major benefits to unification. Let T_{it} be country i's trade with Germany and France in year t, as a percentage of i's GDP. Our measure of distance on the trade dimension is then $\delta^i_{Trade} = 1 - T_i$ where T_i is the average T_{it} in 1999-2017.

In Table 2, Columns 1-3, we report these indicators for the set of European countries, where we also include Russia and Turkey. As the table shows, Austria, Belgium and the Netherlands are very close to the Core on all three dimensions; while Denmark, Finland, Italy, Sweden and the UK are very close to the Core in terms of both income per-capita and GDP co-movement, but trade with Germany and France takes up a smaller share of their GDP relative to the first three countries. Conversely, the Czech Republic, Hungary and Slovakia trade heavily with the Core but are not as close on income per-capita and co-movement. Greece is very far from the core in terms of both co-movement and trade, as are Turkey, Albania and Kosovo.

Beyond differences in economic policy, countries differ on other policies which are set at the union level. Arguably a very prominent dimension is civil liberties (CL) which includes freedoms of expression, assembly, association, education, and religion, a fair legal system and equality of opportunity. To measure differences on this dimension, we use the CL scores from the Freedom in the World report, published annually by Freedom House.[20] Define $\delta^i_{CL} = |\overline{CL}_i - \overline{CL}_{Core}|$, where $\overline{CL}_i$ is the average civil liberties score over the last three years of data, 2015-2017, and $\overline{CL}_{Core}$ is the average $\overline{CL}_i$ of France and Germany. This is shown in Column 4 in Table 2.

As a way of further summarizing the data, we construct two indices of fundamental differences. The index of *economic* differences (col 5) is the simple unweighted average of the three economic differences $(\delta^i_y, \delta^i_{BC}, \delta^i_{Trade})$, divided by their standard deviation. Economic differences are highly correlated with CL differences (col 4). Nonetheless, some countries (notably Hungary) are quite close to the Core economically but not so close in terms of CL (and it is possible these political difference have been increasing since 2015-17). Other countries (notably Cyprus) are very close to the Core on CL but rather far from it economically.

[19] δ^i_{BC} could be greater than 1, but this doesn't happen in our data.

[20] For details on the methodology, see https://freedomhouse.org/report/methodology-freedom-world-2018. A particularly useful feature of the Freedom House ranking is that it distinguishes Civil Liberties from Political Rights, which are primarily about the electoral process and political representation. The CL score ranges from 0 to 60, (10 to 60 for the countries in our data in 2015-2017).

The index of *overall* fundamental differences (col 6) is the unweighted average of all four (standardized) differences ($\delta^i_y, \delta^i_{BC}, \delta^i_{Trade}, \delta^i_{CL}$).[21]

7.2 Gauging national status

To gauge country status we use the 2018 Best Countries Ranking (BCR) published by U.S. News & World Report.[22] This report provides an overall score for each of the 80 countries studied. It is based on a survey of over 21,000 people from across the globe who evaluate countries on a list of 65 attributes. The attributes are grouped in nine categories such as Cultural Influence, Entrepreneurship, Heritage, Openness for Business (and corruption), Power, and Quality of Life. For countries not included in the report, we impute a BCR score based on two indices: the Human Development Index (HDI)[23] and country status ranking developed in the field of international relations based on network analysis of diplomatic exchange (Renshon, 2016). These two measures explain more than 80% of the variation in BCR across European countries.[24]

This is obviously an imperfect measure of ex-ante status, as it might be influenced by policies endogenous to integration. But the ranking is pretty stable and can be treated as a good proxy for current, ex-ante, status when thinking about future decisions to secede or join the union. The status score is reported in column 7 of Table 2. Perhaps not surprisingly, Switzerland, the UK and Sweden enjoy the highest status whereas Moldova and Macedonia have the lowest status within our set of countries.

Appendix Table C.1 provides estimates of fundamental differences and status as of 1999, when the euro was just launched.[25]

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[21] The results are very similar when using the first principal component instead of the unweighted mean. We use unweighted means primarily for transparency and simplicity. As implied by the above discussion, significantly different weights on political versus economic differences may modify the conclusions regarding countries such as Hungary.

[22] The study and model used to score and rank countries were developed by Y&R's BAV Consulting and David Reibstein of the Wharton School. For details, see https://media.beam.usnews.com/ce/e7/fdca61cb496da027ab53bef37a24/171110-best-countries-overall-rankings-2018.pdf. The report was published in January 2018.

[23] The Human Development Index (HDI) is a summary measure of three dimensions: health, education and standard of living. See http://hdr.undp.org/sites/default/files/hdr2016_technical_notes_0.pdf.

[24] Specifically, we regress the BCR score (normalized to be in $[0, 1]$) of all available European countries on the country's HDI ranking in 2015 and on Renshon's (2016) international status ranking in 2005 (the latest data available). This regression has $R^2 = 85.8$. We then use the estimated coefficients to impute a BCR score for all European countries not included in the 2018 BCR report. Our measure of status reported in Table 2 is then simply $\exp(BCR\_score) - mean\,[\exp(BCR\_score)|Core]$. For Kosovo and Montenegro we cannot impute a BCR score as data on these countries‘ international status ranking are not available.

[25] There are two limitations to calculating these statistics for 1999. First, we use a shorter horizon (1992-1999) for computing δ^i_{BC} and δ^i_{Trade}, as we only use data for post-reunification Germany. The data for some indicators for some East European countries start even later. See Appendix Table C.1 for details. Second, we do not have a BCR score for any country in 1999, and hence we impute status for *all* countries using the

Table 2: Fundamental Differences and Status: Europe 2017

	Fundamental Differences						Status
	δ_y^i	δ_{BC}^i	δ_{Trade}^i	δ_{CL}^i	Economic Differences	Overall Differences	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Albania	2.27	0.75	0.98	15.17	7.40	5.91	-1.86 *
Austria	0.11	0.09	0.84	2.83	4.76	3.64	-0.53
Belarus	1.99	0.68	0.96	42.50	7.09	6.33	-1.52
Belgium	0.02	0.16	0.74	0.83	4.30	3.25	-0.27 *
Bosnia	2.13	0.63	0.94	19.83	6.94	5.68	-1.81 *
Bulgaria	1.69	0.54	0.92	8.50	6.52	5.09	-1.43
Croatia	1.19	0.48	0.95	5.17	6.39	4.91	-1.35
Cyprus	0.53	0.53	0.98	0.83	6.32	4.76	-1.39 *
Czech Republic	0.78	0.31	0.77	1.50	4.99	3.78	-1.25
Denmark	0.29	0.12	0.93	2.50	5.37	4.09	-0.17
Estonia	0.81	0.26	0.93	0.83	5.80	4.37	-1.40 *
Finland	0.07	0.11	0.95	4.83	5.39	4.16	-0.29
France							-0.05
Germany							0.05
Greece	0.81	0.79	0.97	6.83	6.80	5.26	-1.07
Hungary	1.09	0.37	0.79	7.17	5.29	4.14	-1.30
Iceland	0.39	0.45	0.96	4.50	6.05	4.65	-1.22 *
Ireland	0.48	0.59	0.94	2.17	6.20	4.70	-0.66
Italy	0.28	0.12	0.94	2.17	5.45	4.14	-0.49
Kosovo	2.41	0.81	0.97	26.83	7.46	6.24	
Latvia	1.05	0.37	0.94	4.17	6.13	4.69	-1.44
Lithuania	0.98	0.37	0.92	2.17	5.97	4.53	-1.45 *
Luxembourg	0.93	0.20	0.83	4.83	5.24	4.04	-1.24 *
Macedonia	2.07	0.60	0.91	19.17	6.73	5.50	-1.92 *
Malta	0.47	0.77	0.89	2.17	6.20	4.70	-1.60 *
Moldova	3.02	0.65	0.95	20.17	7.40	6.03	-2.14 *
Montenegro	1.76	0.28	0.97	11.83	6.43	5.11	
Netherlands	0.12	0.14	0.83	3.83	4.80	3.69	-0.15
Norway	0.58	0.34	0.95	4.83	5.95	4.57	-0.20
Poland	1.15	0.53	0.89	1.17	6.11	4.61	-1.18
Portugal	0.71	0.34	0.94	2.83	5.91	4.50	-0.93
Romania	1.44	0.61	0.92	6.17	6.51	5.03	-1.43
Russia	1.44	0.31	0.98	39.83	6.39	5.74	-1.01
Serbia	2.00	0.82	0.95	7.17	7.21	5.58	-1.54
Slovakia	0.89	0.44	0.81	2.17	5.41	4.11	-1.42 *
Slovenia	0.62	0.25	0.85	2.17	5.29	4.02	-1.42
Spain	0.42	0.43	0.94	1.17	5.92	4.47	-0.59
Sweden	0.24	0.14	0.94	4.50	5.46	4.21	0.00
Switzerland	0.68	0.18	0.89	1.83	5.42	4.11	0.16
Turkey	1.34	0.58	0.97	29.17	6.69	5.71	-1.26
Ukraine	2.88	0.44	0.97	18.83	7.11	5.78	-1.51
United Kingdom	0.02	0.26	0.96	0.50	5.65	4.25	0.05
Mean	1.05	0.42	0.92	8.64	6.06	4.75	-1.01
SD	0.80	0.22	0.06	10.57	0.79	0.77	0.64

Columns 1-4 show differences from Germany and France (as one combined economy). Suppressing superscripts, δ_y is the difference in log real GDP per capita in 2015-17. δ_{BC} is one minus the correlation in yearly GDP growth rate in 1999-2017. δ_{Trade} is one minus trade with France and Germany, as percentage of GDP, in 1999-2017. δ_{CL} is the difference in civil liberties score. Column 5 (6) shows the mean of the indicators in cols 1-3 (1-4) divided by their stnadard deviation. Status (col 7) is the (exp of) the Best Country Ranking score, relative to the mean status of France and Germany. * = Status imputed based on HDI (UN Development Programme) and country status ranking (Renshon 2016).

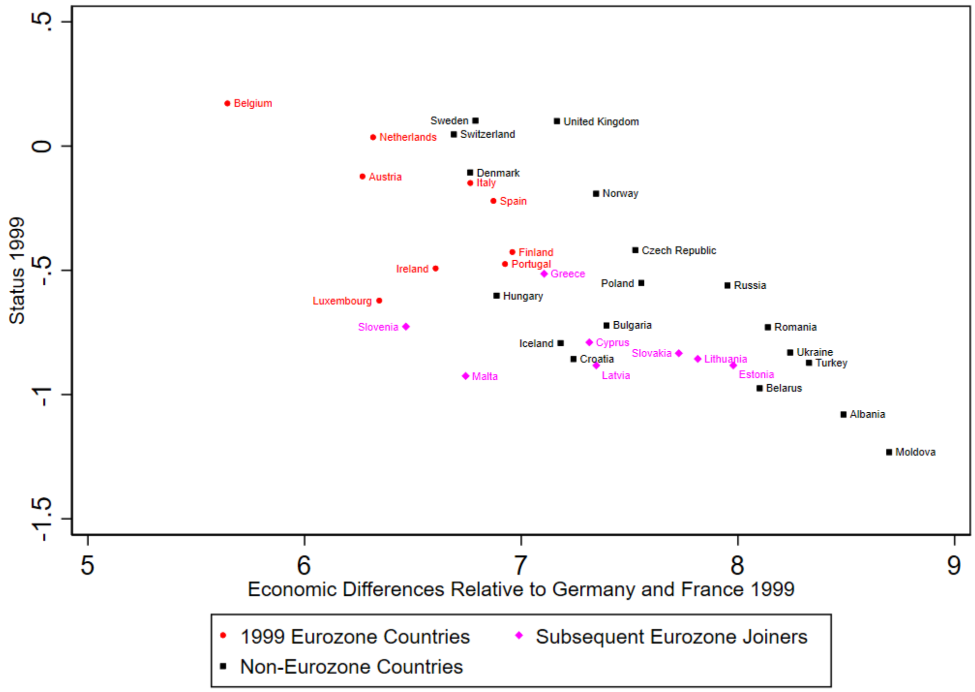
7.3 Whither Europe?

Figures 9 and 10 show the positions of European countries by status and differences from France and Germany. Classic models of international integration—even when generalized to take into account political differences—imply some cutoff on the horizontal axis: countries are expected to be union members if and only if fundamental differences are to the left this cutoff. Our framework generalizes this prediction: low-status countries are expected to be part of the union at higher levels of fundamental differences than are high-status countries (Proposition 7). We consider first the Eurozone and then the EU.

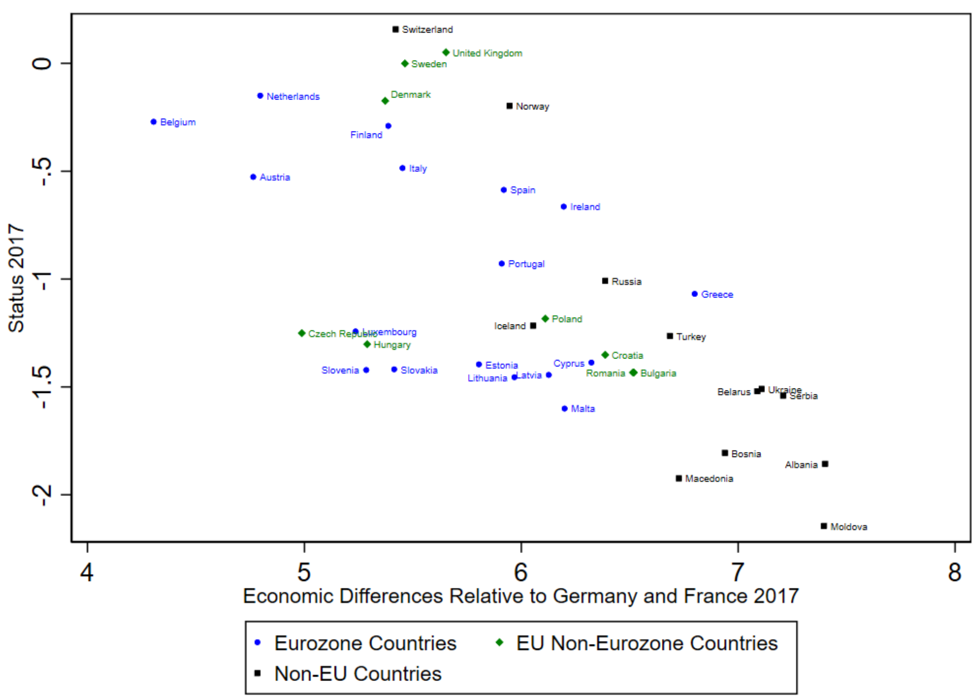
The Eurozone. For examining the monetary union, it makes sense to focus on purely economic differences, as the ECB does not directly set policies related to civil liberties. We start, in Figure 9a, with a plot of the economic differences and status *as of 1999*, when the euro was just launched. The figure shows (in red circles) the initial members of the Eurozone. Consistent with standard theory, this set included the countries with the lowest difference from the Core. However, at intermediate levels of economic differences, there is more interesting variation. Countries that had high status at the time—Sweden, Switzerland, Denmark—did not join the Eurozone (in Denmark despite closely pegging the Danish Krone to the euro). At the same time, lower status countries with similar and even larger differences did join (notably Spain and Portugal). Even more interesting is the set of countries that adopted the euro in *subsequent* years (pink diamonds). While high status countries stayed out, most of the joiners were relatively high-distance, low-status countries in 1999. As we show in Appendix Figure C.3, the results are similar when conditioning on pre-1999 inflation, which was arguably an important additional motive for joining the euro (possibly because it indicates bad domestic institutions), and is negatively correlated with status.

Thus, adding social identity to an otherwise standard model helps us better account for the stylized facts. We now employ the model to help us assess the future stability and the likelihood of various changes to the current composition of the Eurozone. The bottom panel of Figure 9 shows the position of European countries as of 2017. Greece, Ireland, Spain, Italy and Finland appear to be at relatively higher risk of breaking up with the euro (in the Finnish case despite low economic differences). Cyprus, on the contrary, does not appear likely to leave, despite relatively large economic differences. If any countries do join the euro, the Czech Republic, Hungary and Iceland appear like the most likely candidates. It is also interesting to note that on purely economic grounds, Turkey and Russia are not prohibitively distant from the Core Eurozone countries. However, as we show below, they are not likely

procedure just described. The status data are therefore also likely to be more noisy. For example, Belgium's high status is to a significant extent due to the very high presence of diplomatic delegations in Brussels, which place it very high in the international relations country status ranking.



(a)



(b)

Figure 9: Euro Membership, Economic Differences and Status in 1999 and 2017
Note: Panel (a): Fundamental economic differences computed using 1995-1999 data. Status imputed based on HDI and country status ranking (Renshon 2016). See Appendix Table C.1 for details. Panel (b): Data from Table 2, Columns 5,7.

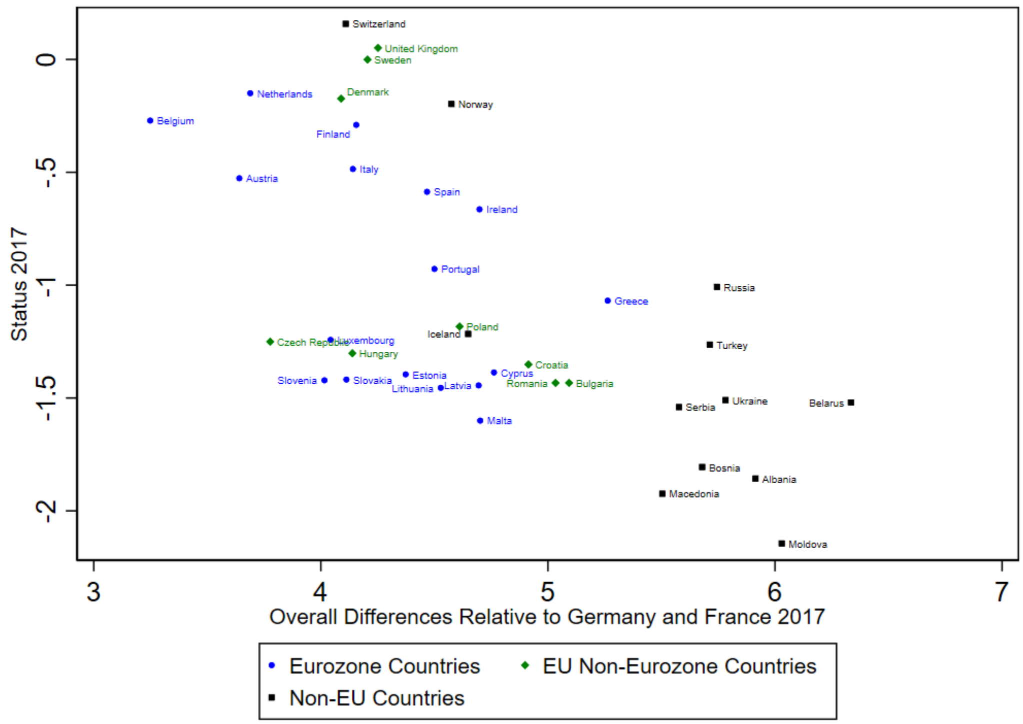


Figure 10: European Countries by Status and Overall Differences, 2017

Note: Data from Table 2, Columns 6,7.

members of the EU and hence are also unlikely to join the euro.

The EU. Figure 10 shows the current position of European countries by status and *overall* differences from France and Germany (including civil liberties). Consistent with our framework, low-status countries appear to be part of the union at higher levels of fundamental differences than are high-status countries. For example, the UK (at the upper-left region) may well leave the EU, while Greece (lower right) seems likely to remain. More generally, the EU countries (in blue and green) tend to be closer to the origin while non-members tend to be further out on both dimensions. Note that the set of *non*-members includes high-difference countries (e.g. Turkey, Ukraine, Belarus), but also low-difference high-status countries (Switzerland and Norway).

Consider next the current members of the EU and the risk of their breaking up with the union. The UK and Sweden appear to be at the highest risk of leaving, though a large enough shock may also destabilize the membership of Denmark, Finland and the Netherlands – all high-status countries.[26] At the same time, the union with several other countries (some

[26] It is worth reiterating the nature of the results in Section 6 concerning the fragility of a union with a high-status Periphery. In the case of a high or similar status Periphery, multiple equilibria can exist, at least over some range (recall e.g. the "gray area" in Figure 8). Hence, we do not know if Sweden will exit: an

of which may appear quite "eurosceptic" in surveys) seems quite solid from the perspective of the model. This, however, happens for different reasons. The union with Austria and Belgium seems durable due to low fundamental differences; whereas the union with the Czech Republic, Slovakia, Slovenia and Hungary appears solid due to the relatively low status of these countries. Spain, Ireland and Greece appear to be at a higher risk of breakup than Portugal which is relatively low on both the status and the difference dimensions.

Which countries are likely to become stable members of the EU (e.g. following a resurgence of EU status)? Iceland is rather close to the frontier but still seems like the most obvious candidate. Norway and Switzerland are unlikely to join, despite the relatively low fundamental differences. Less surprisingly, especially when taking into account political differences, Turkey is unlikely to become a member of the EU.

8 Conclusion

Social identity has been widely discussed as an important factor underlying economic and political integration. This paper takes a first stab at analyzing the implications. We first note that, contrary to widespread perceptions, a union is not necessarily more robust when all members share a common identity. A union may actually be most robust—and least accommodating—when people in the Core identify with their country, while the Periphery identifies with the union as a whole. Taking into account the fact that identities can adjust to economic conditions, we study a concept of Social Identity Equilibrium (SIE) in which both policies and identities are endogenously determined. A central finding is that a union with (ex-ante) high-status periphery countries tends to be more fragile and may break up at lower levels of fundamental differences than a union with low-status periphery countries. Furthermore, unification does not necessarily support the emergence of a common identity. Indeed, in the case of relatively high Core status, integration would tend to push the Core countries towards a more exclusionary identity.

Applying the model to the European context can provide useful insights. It helps understand *both* the strained relationship between Germany and Greece *and* Greece's (and other southern European countries') continued membership in the Eurozone. It suggests a potentially important factor for explaining why the second wave of entrants to the euro was not limited to the low-distance countries that an Optimal Currency Area analysis would point to, but mostly included relatively high-distance, low-status European countries. And it can

equilibrium in which the Swedes identify with Europe and remain in the union is also possible. Nonetheless, Sweden is at a higher risk of seceding than other countries with similar fundamental differences but lower status than France and Germany. We thank Katia Zhuravskaya for this point.

shed light on the puzzling Brexit phenomenon: Britons voting to leave the European Union despite the union being relatively accommodating and despite widely anticipated economic costs. Finally, combined with current data, the model allows us to see the implications of social identity considerations for the stability and challenges facing the EU and the Eurozone.

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Appendix for Online Publication

Contents

A Proofs and Additional Results

A.1 Proof of Proposition 1:

Lemma 1. *Suppose both Core and Periphery identify with their own country. Then:*

a. $R_1(C,P) = \sqrt{\triangle}, \quad R_2(C,P) = 2\sqrt{\triangle},$

b. $\widehat{r}_C(C,P) = r_C^*, \quad \widehat{r}_P(C,P) = r_P^* + \sqrt{\triangle}.$

Proof. Utilities in this case are:

$$U_{CC} = \gamma\sigma_C - (1+\gamma)\left((r_C - r_C^*)^2 + \Delta * breakup\right) \tag{8}$$

$$U_{PP} = \gamma\sigma_P - (1+\gamma)\left((r_P - r_P^*)^2 + \Delta * breakup\right) \tag{9}$$

Note that the Periphery's utility depends on whether it accepts or rejects r_C. If it rejects, it sets its policy optimally to r_P^*. Hence:

$$U_{PP} = \begin{cases} -(1+\gamma)(r_C - r_P^*)^2 + \gamma\sigma_P & \textit{if } P \textit{ accepts} \\ -(1+\gamma)\triangle + \gamma\sigma_P & \textit{if } P \textit{ rejects.} \end{cases}$$

Clearly, for $r_C \geq r_P^*$ the Periphery accepts r_C if and only if $r_C - r_P^* \leq \sqrt{\triangle} \equiv R_1(C,P)$. Since the Core identifies nationally, its chosen policy when there is no threat of secession is r_C^*, which we denote by $\widehat{r}_C(C,P)$. Thus, when $r_C^* - r_P^* \leq R_1(C,P)$ the Core is indeed able to set its policy to r_C^* without suffering the cost of breakup.
When $r_C^* - r_P^* > R_1(C,P)$, the Core decides between the following two options:

1. Set the policy that maximizes utility under breakup, which is r_C^*. Utility will then be:

$$U_{CC}|_{breakup} = -(1+\gamma)\triangle + \gamma\sigma_C$$

2. Set the policy that maximizes utility subject to the constraint that the union is sustained (i.e choose among the policies that would be accepted by the Periphery). This policy is $r_C = min\{r_C^*, r_P^* + \sqrt{\triangle}\} = r_P^* + \sqrt{\triangle}$, since $r_C^* - r_P^* > \sqrt{\triangle}$ in this case. Denote this policy by $\widehat{r}_P(C,P)$. Utility is then:

$$U_{CC}|_{unification} = -(1+\gamma)(r_P^* - r_C^* + \sqrt{\triangle})^2 + \gamma\sigma_C$$

Since $r_C^* - r_P^* > \sqrt{\triangle}$, we have $U_{CC}|_{breakup} > U_{CC}|_{unification}$ if and only if $r_C^* - r_P^* > 2\sqrt{\triangle} \equiv R_2(C,P)$.
In summary, the SPNE for the (C,P) social identity profile is given by:

1. if $r_C^* - r_P^* \leq R_1(C,P)$ unification occurs and $r_C = r_P = \widehat{r}_C(C,P)$.

2. if $R_1(C,P) < r_C^* - r_P^* \leq R_2(C,P)$ unification occurs and $r_C = r_P = \widehat{r}_P(C,P)$.

3. if $r_C^* - r_P^* > R_2(C,P)$ breakup occurs and $r_C = r_C^*$, $r_P = r_P^*$.

Finally, we have that $R_1(C,P) < R_2(C,P)$, $\widehat{r}_P(C,P) < \widehat{r}_C(C,P)$ and that both $R_1(C,P)$ and $R_2(C,P)$ are strictly increasing functions of the breakup cost $\triangle$.

This completes the proof of Lemma 1. To characterize the SPNE for the remaining social identity profiles, use equations (2) and (4), to obtain the following utilities:

$$U_{PE} = \gamma\sigma_E - (1+\gamma-\gamma\lambda)(r_P - r_P^*)^2 - \gamma\lambda(r_C - r_C^*)^2 - [(1+\gamma)\triangle + \beta k] * breakup - \beta\lambda^2\left[w + (r_C^* - r_P^*)^2\right] \quad (10)$$

$$U_{CE} = \gamma\sigma_E - (1+\gamma\lambda)(r_C - r_C^*)^2 - \gamma(1-\lambda)(r_P - r_P^*)^2 - [(1+\gamma)\triangle + \beta k] * breakup - \beta(1-\lambda)^2\left[w + (r_C^* - r_P^*)^2\right] \quad (11)$$

Next, apply the same steps as in the proof of Lemma 1, using the appropriate utility functions from equations (8)-(11). This yields Lemmas 2-4.

Lemma 2. *Suppose Core identifies with own Country and Periphery identifies with Europe. Then:*

a. $R_1(C,E) = \sqrt{\frac{(1+\gamma)\triangle+\beta k}{1+\gamma-\gamma\lambda}}$, $\quad R_2(C,E) = \sqrt{\triangle} + \sqrt{\frac{(1+\gamma)\triangle+\beta k}{1+\gamma-\gamma\lambda}}$,

b. $\widehat{r}_C(C,E) = r_C^*$, $\quad \widehat{r}_P(C,E) = r_P^* + \sqrt{\frac{(1+\gamma)\triangle+\beta k}{1+\gamma-\gamma\lambda}}$.

Lemma 3. *Suppose Core identifies with Europe and Periphery identifies with own Country. Then:*

a. $R_1(E,P) = \frac{1+\gamma}{1+\gamma\lambda}\sqrt{\triangle}$, $\quad R_2(E,P) = \sqrt{\triangle} + \sqrt{\triangle + \frac{\beta k}{1+\gamma\lambda}}$,

b. $\widehat{r}_C(E,P) = \frac{(1+\gamma\lambda)r_C^* + \gamma(1-\lambda)r_P^*}{1+\gamma}$, $\quad \widehat{r}_P(E,P) = r_P^* + \sqrt{\triangle}$.

Lemma 4. *Suppose both Core and Periphery identify with Europe. Then:*

a. $$R_1(E,E) = \begin{cases} \frac{1+\gamma}{1+\gamma\lambda}\sqrt{\frac{(1+\gamma)\triangle+\beta k}{(1+\gamma-\gamma\lambda)}} & \text{if } \gamma(1-\lambda) \leq \sqrt{1+\gamma\lambda} \\ \\ \sqrt{\frac{(1+\gamma)^2\triangle+(1+\gamma)\beta k}{\gamma(1-\lambda)(1+\gamma\lambda)}} & \text{if } \gamma(1-\lambda) > \sqrt{1+\gamma\lambda} \end{cases}$$

$$R_2(E,E) = \begin{cases} \sqrt{\frac{(1+\gamma)\triangle+\beta k}{(1+\gamma-\gamma\lambda)}} + \sqrt{\frac{(1+\gamma)\triangle+\beta k}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)}} & \text{if } \gamma(1-\lambda) \leq \sqrt{1+\gamma\lambda} \\ \\ \sqrt{\frac{(1+\gamma)^2\triangle+(1+\gamma)\beta k}{\gamma(1-\lambda)(1+\gamma\lambda)}}, & \text{if } \gamma(1-\lambda) > \sqrt{1+\gamma\lambda} \end{cases}$$

b. $\widehat{r}_C(E,E) = \frac{(1+\gamma\lambda)r_C^* + \gamma(1-\lambda)r_P^*}{1+\gamma}, \quad \widehat{r}_P(E,E) = r_P^* + \sqrt{\frac{(1+\gamma)\triangle + \beta k}{(1+\gamma-\gamma\lambda)}}.$

From Lemmas 1-4 we obtain Proposition 1. $\square$

Remark. Note that in the (E,E) case (Lemma 4), R_1 may coincide with R_2. This happens in particular when γ is sufficiently large. Intuitively, if γ is very large, both Core and Periphery have similar preferences (as they both mainly care about European payoffs). Once the Periphery prefers breakup to unification under $\widehat{r}_C(E,E)$ (the policy that maximizes these same preferences under unification), then so does the Core. Hence there is no region where the Core makes concessions to keep the Periphery in the union.

A.2 Proof of Proposition 2:

From Lemmas 1-4 and some algebra it is easy to show:

1. $R_2(C,E) > R_2(C,P)$
2. $R_2(C,E) > R_2(E,P)$
3. $R_2(C,E) > R_2(E,E)$ iff $\gamma^2\lambda(1-\lambda)\triangle > \beta k$.

If βk is sufficiently small, the union is hence strictly more robust under the (C,E) profile than under any other identity profile, i.e, $R_2(C,E) > R_2(ID_C, ID_P)$ for all $(ID_C, ID_P) \in \{(C,P),(E,P),(E,E)\}$.$\square$

A.3 Proof of Proposition 3:

a. From Lemmas 1,3 we obtain:

1. $r_P^* \leq \widehat{r}_c(E,P) \leq \widehat{r}_c(C,P)$ for any given level of fundamental differences such that $r_C^* - r_P^* < min\{R_1(C,P), R_1(E,P)\} = R_1(C,P)$;
2. $r_P^* < \widehat{r}_c(E,P) \leq \widehat{r}_p(C,P)$ for $R_1(C,P) < r_C^* - r_P^* \leq R_1(E,P)$;
3. $r_P^* < \widehat{r}_p(E,P) = \widehat{r}_p(C,P)$ for $R_1(E,P) < r_C^* - r_P^* \leq min\{R_2(C,P), R_2(E,P)\} = R_2(C,P) = R_2(E,P)$.

Hence the union is more accommodating in the (E,P) than in the (C,P) case. From Lemmas 2,4 and simple algebra we obtain:

4. $r_P^* \leq \widehat{r}_c(E,E) < \widehat{r}_c(C,E)$ for $r_C^* - r_P^* < min\{R_1(C,E), R_1(E,E)\} = R_1(C,E)$;
5. If $R_1(E,E) < R_2(E,E)$ then:

(a) $r_P^* < \widehat{r}_c(E,E) \leq \widehat{r}_p(C,E)$ for $R_1(C,E) < r_C^* - r_P^* \leq R_1(E,E)$

(b) $r_P^* < \widehat{r}_p(E,E) = \widehat{r}_p(C,E)$ for $R_1(E,E) < r_C^* - r_P^* \leq min\{R_2(C,E), R_2(E,E)\} = R_2(E,E)$;

6. If $R_1(E,E) = R_2(E,E)$ then $r_P^* < \widehat{r}_c(E,E) \leq \widehat{r}_p(C,E)$ for $R_1(C,E) < r_C^* - r_P^* \leq min\{R_2(C,E), R_2(E,E)\} = R_2(E,E)$.

Hence the union is more accommodating in the (E,E) than in the (C,E) case. This proves part a of the proposition.

b. Similarly, from Lemmas 3,4:

1. $r_P^* \leq \widehat{r}_c(E,P) = \widehat{r}_c(E,E)$ for $r_C^* - r_P^* < min\{R_1(E,P), R_1(E,E)\} = R_1(E,P)$
2. If $R_1(E,E) \leq R_2(E,P)$ then:

   (a) $r_P^* < \widehat{r}_p(E,P) \leq \widehat{r}_c(E,E)$ for $R_1(E,P) < r_C^* - r_P^* \leq R_1(E,E)$

   (b) $r_P^* < \widehat{r}_p(E,P) < \widehat{r}_p(E,E)$ for $R_1(E,E) < r_C^* - r_P^* \leq min\{R_2(E,P), R_2(E,E)\} = R_2(E,P)$

3. If $R_1(E,E) > R_2(E,P)$ then $r_P^* < \widehat{r}_p(E,P) \leq \widehat{r}_c(E,E)$ for $R_1(E,P) < r_C^* - r_P^* \leq min\{R_2(E,P), R_2(E,E)\} = R_2(E,P)$.

And from Lemmas 1,2:

4. $r_P^* \leq \widehat{r}_c(C,P) = \widehat{r}_c(C,E)$ for $r_C^* - r_P^* < min\{R_1(C,P), R_1(C,E)\} = R_1(C,P)$
5. $r_P^* < \widehat{r}_c(C,P) \leq \widehat{r}_p(C,E)$ for $R_1(C,P) < r_C^* - r_P^* \leq R_1(C,E)$
6. $r_P^* < \widehat{r}_p(C,P) < \widehat{r}_p(C,E)$ for $R_1(C,E) < r_C^* - r_P^* \leq min\{R_2(C,P), R_2(C,E)\} = R_2(C,P)$

This proves part b of the proposition.□

A.4 Is unification optimal from a material-payoff maximizing perspective?

From a pure material payoff perspective, robustness is not necessarily desirable: if differences are large, the countries may be better-off splitting. In this section we compare material payoffs in the SPNE under different identities to what a social planner interested in maximizing aggregate material payoffs would do. Note that this is a rather narrow exercise, as it does not take full account of individual utility, which includes identity-driven costs and benefits. Let $V_E(r_C, r_P, breakup) = \lambda V_C(r_C, breakup) + (1-\lambda)V_P(r_P, breakup)$ be the aggregate material payoff.

Definition 5. A union is *materially optimal* if it is sustained if and only if $\underset{r_C,r_P}{max} V_E(r_C, r_P, 0) \geq \underset{r_C,r_P}{max} V_E(r_C, r_P, 1)$.

Proposition 11. ***Material Optimality and Robustness.***

a. When the Periphery identifies nationally and βk is sufficiently small, the union is not materially optimal, regardless of Core identity. The union is less robust than what an aggregate-material-payoff maximizer would choose.

b. When the Periphery identifies with Europe, then for any Core identity the union may or may not be materially optimal. If λ is sufficiently small the union is more robust than what an aggregate-material-payoff maximizer would choose.

Thus, there exists a range of fundamental differences $r_C^* - r_P^*$ for which it would be materially optimal to form a union, and yet if the individuals in the Periphery identify with their nation then the union cannot be sustained. This echoes proposition 2: achieving unification primarily requires bolstering the common (European) identity in the Periphery. A common identity, however, does not always enhance overall material payoffs. There exist situations where it is materially optimal to dismantle the union, and yet if the Periphery identifies with Europe the union is sustained nonetheless. The basic reason is that when the Periphery identifies with Europe, the union can be sustained at the expense of the Periphery's material payoff. This could be optimal if the Periphery is relatively small (λ large) but when the Periphery is large, this implies a high aggregate cost.

Proof of Proposition 11:

a. Note first that under breakup it is materially optimal to set $r_C = r_C^*$ and $r_P = r_P^*$. Thus:

$$\underset{r_C,r_P}{max} V_E(r_C, r_P, 1) = -\triangle. \tag{12}$$

Under unification, $V_E(r_C, r_P, 0) = V_E(\widetilde{r}, \widetilde{r}, 0) = -\lambda(\widetilde{r} - r_C^*)^2 - (1-\lambda)(\widetilde{r} - r_P^*)^2$. This is maximized when the common policy is set to $\widetilde{r} = \lambda r_C^* + (1-\lambda) r_P^*$. Thus:

$$\underset{r_C,r_P}{max} V_E(r_C, r_P, 0) = -\lambda(1-\lambda)(r_C^* - r_P^*)^2. \tag{13}$$

From equations (12), (13) and Definition 5, a materially optimal union will be sustained if and only if $r_C^* - r_P^* \le \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$. But from Lemmas 1 and 3, $R_2(C,P) = 2\sqrt{\triangle} < \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ (since $\lambda \in (0.5,1)$) and $R_2(E,P) = \sqrt{\triangle} + \sqrt{\triangle + \frac{\beta k}{1+\gamma\lambda}} < \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ if and only if $\beta k < \frac{1+\gamma\lambda}{\lambda(1-\lambda)}(1 - 2\sqrt{\lambda(1-\lambda)})$. This proves part a of the proposition.

b. When the Periphery identifies with Europe, then for any given Core identity ID_C there exist $\lambda \in (0.5,1)$ and $\gamma > 0$ such that $R_2(ID_C, E)$ may be larger, smaller or equal to $\frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$.[27]

Finally, we show that if λ is sufficiently small then $R_2(ID_C, E) > \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ for any given Core identity ID_C. First, note that for a fixed $\triangle > 0$ and $\gamma > 0$ we have:

$$\begin{aligned}\lim_{\lambda\to 0.5}\left(R_2(C,E) - \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}\right) &= \lim_{\lambda\to 0.5}\left(\sqrt{\triangle} + \sqrt{\frac{(1+\gamma)\triangle + \beta k}{1+\gamma-\gamma\lambda}} - \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}\right) \\ &\ge \lim_{\lambda\to 0.5}\left(\sqrt{\triangle} + \sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}} - \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}\right) = \sqrt{\triangle}\left(\sqrt{\frac{(1+\gamma)}{1+\gamma/2}} - 1\right) > 0.\end{aligned}$$

Thus, for sufficiently small λ, $R_2(C,E) > \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$.

To see that $R_2(E,E) > \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ for small λ, recall from Lemma 4:

$$R_2(E,E) = \begin{cases} \sqrt{\frac{(1+\gamma)\triangle+\beta k}{(1+\gamma-\gamma\lambda)}} + \sqrt{\frac{(1+\gamma)\triangle+\beta k}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)}} & \text{if } \gamma(1-\lambda) \le \sqrt{1+\gamma\lambda} \\ \\ \sqrt{\frac{(1+\gamma)^2\triangle+(1+\gamma)\beta k}{\gamma(1-\lambda)(1+\gamma\lambda)}}, & \text{if } \gamma(1-\lambda) > \sqrt{1+\gamma\lambda} \end{cases}$$

Note that $\lim_{\lambda\to 0.5}\sqrt{\frac{(1+\gamma)^2\triangle+(1+\gamma)\beta k}{\gamma(1-\lambda)(1+\gamma\lambda)}} > \lim_{\lambda\to 0.5}\sqrt{\frac{(1+\gamma)^2\triangle}{\gamma(1-\lambda)(1+\gamma\lambda)}} = \frac{(1+\gamma)\sqrt{\triangle}}{\sqrt{\frac{\gamma}{2}(1+\frac{\gamma}{2})}} > 2\sqrt{\triangle} = \lim_{\lambda\to 0.5}\frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ for every $\gamma > 0$.

For the region $\gamma(1-\lambda) \le \sqrt{1+\gamma\lambda}$, note that $\sqrt{\frac{(1+\gamma)\triangle+\beta k}{(1+\gamma-\gamma\lambda)}} + \sqrt{\frac{(1+\gamma)\triangle+\beta k}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)}} \ge \sqrt{\frac{(1+\gamma)\triangle}{(1+\gamma-\gamma\lambda)}} + \sqrt{\frac{(1+\gamma)\triangle}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)}}$. Thus, it is sufficient to show that $\sqrt{\triangle}\left(\sqrt{\frac{1+\gamma}{1+\frac{\gamma}{2}}} + \sqrt{\frac{1+\gamma}{(1+\frac{\gamma}{2})^2}}\right) > 2\sqrt{\triangle}$ if $\frac{\gamma}{2} \le \sqrt{1+\frac{\gamma}{2}}$. Indeed, in this region of γ, $\sqrt{\triangle}\left(\sqrt{\frac{1+\gamma}{1+\frac{\gamma}{2}}} + \sqrt{\frac{1+\gamma}{(1+\frac{\gamma}{2})^2}}\right) \ge \sqrt{\triangle}\left(\frac{\sqrt{1+\gamma}}{\frac{\gamma}{2}} + \frac{\sqrt{1+\gamma}}{(\frac{\gamma}{2})^2}\right) = \sqrt{\triangle}\frac{\sqrt{1+\gamma}}{\frac{\gamma}{2}}(1+\frac{2}{\gamma}) > 2\sqrt{\triangle}$. □

[27] For example, assume $k = 0$. Applying Lemmas 2 and 4, $R_2(C,E) > \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ if $(\lambda,\gamma) = (0.55, 0.1)$; $R_2(C,E) < \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ if $(\lambda,\gamma) = (0.8, 0.2)$; $R_2(E,E) > \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ if $(\lambda,\gamma) = (0.65, 0.7)$; $R_2(E,E) < \frac{\sqrt{\triangle}}{\sqrt{\lambda(1-\lambda)}}$ if $(\lambda,\gamma) = (0.9, 0.8)$. There are other examples where $k \ne 0$.

A.5 Ex-post Status Gaps

The ex-post status of the Periphery (S_P) and the Core (S_C) are endogenously determined in SPNE. This section details the ex-post status gap for any given identity profile. This will be used for deriving the results in Section 6.

Define $SG_{(ID_C, ID_P)}(r_C^* - r_P^*)$ as the ex-post status gap between the Core and the Periphery, i.e. $S_C - S_P$, in SPNE given identity profile (ID_C, ID_P) when the level of fundamental differences between the countries is $r_C^* - r_P^*$.

Case 1 (C, P): Both Core and Periphery identify with their own country

The ex-post status gap can be derived directly from equation (3) and Lemma 1:

$$SG_{(C,P)}(r_C^* - r_P^*) = \begin{cases} \sigma_C - \sigma_P + (r_C^* - r_P^*)^2 & if \quad r_C^* - r_P^* \leq R_1(C,P) \\ \sigma_C - \sigma_P - (r_C^* - r_P^*)^2 + 2\sqrt{\triangle}(r_C^* - r_P^*) & if \quad R_1(C,P) < r_C^* - r_P^* \leq R_2(C,P) \\ \sigma_C - \sigma_P & if \quad r_C^* - r_P^* > R_2(C,P) \end{cases} \tag{14}$$

Case 2 (C, E) : Core Identifies with own Country and Periphery identifies with Europe

Equation (3) and Lemma 2 imply:

$$SG_{(C,E)}(r_C^* - r_P^*) = \begin{cases} \sigma_C - \sigma_P + (r_C^* - r_P^*)^2 & if \quad r_C^* - r_P^* \leq R_1(C,E) \\ \sigma_C - \sigma_P - (r_C^* - r_P^*)^2 + 2\sqrt{\frac{(1+\gamma)\triangle + \beta k}{1+\gamma-\gamma\lambda}}(r_C^* - r_P^*) & if \quad R_1(C,E) < r_C^* - r_P^* \leq R_2(C,E) \\ \sigma_C - \sigma_P & if \quad r_C^* - r_P^* > R_2(C,E) \end{cases} \tag{15}$$

Case 3 (E, P): Core Identifies with Europe and Periphery identifies with own country

Equation (3) and Lemma 3 imply:

$$SG_{(E,P)}(r_C^* - r_P^*) = \begin{cases} \sigma_C - \sigma_P + \frac{1-\gamma+2\gamma\lambda}{1+\gamma}(r_C^* - r_P^*)^2 & if \quad r_C^* - r_P^* \leq R_1(E,P) \\ \sigma_C - \sigma_P - (r_C^* - r_P^*)^2 + 2\sqrt{\triangle}(r_C^* - r_P^*) & if \quad R_1(E,P) < r_C^* - r_P^* \leq R_2(E,P) \\ \sigma_C - \sigma_P & if \quad r_C^* - r_P^* > R_2(E,P) \end{cases} \tag{16}$$

Case 4 (E, E): Both Core and Periphery identify with Europe

Finally, equation (3) and Lemma 4 imply:

$$SG_{(E,E)}(r_C^*-r_P^*) = \begin{cases} \sigma_C - \sigma_P + \frac{1-\gamma+2\gamma\lambda}{1+\gamma}\left(r_C^* - r_P^*\right)^2 & if \quad r_C^* - r_P^* \leq R_1(E,E) \\ \sigma_C - \sigma_P - \left(r_C^* - r_P^*\right)^2 + 2\sqrt{\frac{(1+\gamma)\triangle+\beta k}{1+\gamma-\gamma\lambda}}\left(r_C^* - r_P^*\right) & if \quad R_1(E,E) < r_C^* - r_P^* \leq R_2(E,E) \\ \sigma_C - \sigma_P & if \quad r_C^* - r_P^* > R_2(E,E) \end{cases} \tag{17}$$

A.6 Proof of Proposition 4:

Assume $\sigma_C = \sigma_P = \sigma_E$.

a. The Core identifies nationally if $U_{CC} > U_{CE}$ or, using equation (6), if $S_C - S_P > 0$. The Core identifies with Europe if $S_C - S_P < 0$. Similarly, from equation (7), the Periphery identifies nationally if $S_C - S_P < 0$ and with Europe if $S_C - S_P > 0$. When $S_C - S_P = 0$, both are indifferent between identifying nationally and identifying with Europe.

Given these choices of social identities, by Definition 4, an SIE in which the social identity profile is (C,E) exists if and only if $SG_{(C,E)}(r_C^*-r_P^*) \geq 0$. (The function $SG_{(ID_C,ID_P)}(r_C^*-r_P^*)$ is defined in section A.5). But under $\sigma_C = \sigma_P = \sigma_E$, it turns out that $SG_{(C,E)}(r_C^* - r_P^*) \geq 0$ for *any* level of fundamental differences $r_C^* - r_P^*$. To see this, notice that from equation (15) and Lemma 2:

- $SG_{(C,E)}(r_C^* - r_P^*) = 0$ when $r_C^* - r_P^* = 0$ and when $r_C^* - r_P^* > R_2(C,E)$;
- $SG_{(C,E)}(r_C^* - r_P^*)$ is increasing for $r_C^* - r_P^* \leq R_1(C,E)$;
- $SG_{(C,E)}(r_C^* - r_P^*)$ is decreasing for $R_1(C,E) < r_C^* - r_P^* \leq R_2(C,E)$;
- $SG_{(C,E)}(R_2(C,E)) > 0$.

We conclude that an SIE exists for any level of fundamental differences between the countries.

b. Suppose the union is sustained in SIE. From the proof of part *a* we know that the (C,E) profile is sustained in SIE under any level of $r_C^* - r_P^*$. And from Lemma 2, under the (C,E) profile unification takes place when $r_C^* - r_P^* \leq R_2(C,E)$.

Consider now other identity profiles $(ID_C, ID_P) \neq (C,E)$ under the assumed ex-ante status restrictions. From equation (17), $SG_{(E,E)}(r_C^* - r_P^*) > 0$ when $0 < r_C^* - r_P^* \leq R_2(E,E)$. Since the Core identifies with Europe only if $S_C - S_P \leq 0$, the social identity profile (E,E) cannot hold in SIE when fundamental differences are such that $0 < r_C^* - r_P^* \leq R_2(E,E)$. Similarly, from equations (14) and (16), $SG_{(ID_C,P)}(r_C^*-r_P^*) > 0$ when $0 < r_C^*-r_P^* < R_2(ID_C,P)$. Since the Periphery identifies nationally only if $S_C - S_P \leq 0$, any social identity profile (ID_C, P) cannot hold in SIE when $0 < r_C^* - r_P^* < R_2(ID_C,P)$. Finally, since unification can only be sustained under profile (ID_C, ID_P) when $r_C^* - r_P^* \leq R_2(ID_C, ID_P)$, we conclude that in almost any SIE in which the union is sustained, the social identity profile is (C, E). There are two exceptions:

1. When $r_C^* - r_P^* = 0$. From Proposition 1 we know that unification takes place in SPNE under any identity profile. And from equations (14)-(17) it is clear that under the assumed ex-ante status restrictions $SG_{(ID_C,ID_P)}(0) = 0$ for all (ID_C, ID_P). Hence, all social identity profiles can hold in SIE with unification.

2. When $r_C^* - r_P^* = R_2(ID_C, P)$. In this case both the (C, P) and (E, P) profiles can hold in an SIE with unification.

c. From the proof of Proposition 2, $R_2(C, E) > R_2(C, P)$. Thus, from the proof of part *b* above, when $r_C^* - r_P^* \leq R_2(C, P)$, SIE implies unification.
Next, note that for any identity profile (ID_C, ID_P), if $r_C^* - r_P^* > R_2(ID_C, ID_P)$ then equations (14)-(17) imply $SG_{(ID_C,ID_P)}(r_C^* - r_P^*) = 0$. Hence, there exists an SIE in which breakup occurs and the social identity profile is (ID_C, ID_P). Moreover, for fundamental differences such that $R_2(C, P) = R_2(E, P) \leq r_C^* - r_P^* \leq R_2(C, E)$, multiple SIE's exist, with and without unification.
d. This statement follows directly from the discussion of the (E, E) case in part *b* above and from the discussion of the case $r_C^* - r_P^* > R_2(ID_C, ID_P)$ in part *c* above. $\square$

A.7 Proof of Proposition 5:

Assume $\sigma_C > \sigma_E > \sigma_P$. Thus, $\frac{\sigma_E - \sigma_C}{1-\lambda}, \frac{\sigma_P - \sigma_E}{\lambda} < 0$. From Equation (15) and Lemma 2 it then follows that

$$SG_{(C,E)}(r_C^* - r_P^*) > max\left\{\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}, \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}\right\}$$

for any level of fundamental differences $r_C^* - r_P^*$. But from Definition 4 and equations (6) and (7), this implies that an SIE in which the social identity profile is (C, E) exists for any level of fundamental differences between the countries.
Furthermore, from equations (14), (16) and (17) it follows that for every social identity profile $(ID_C, ID_P) \neq (C, E)$, we have that

$$SG_{(ID_C,ID_P)}(r_C^* - r_P^*) > max\left\{\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}, \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}\right\}$$

for every $r_C^* - r_P^*$. Hence, either the Core would not identify with ID_C or the Periphery would not identify with ID_P in the SPNE given (ID_C, ID_P). Thus, no social identity profile

$(ID_C, ID_P) \neq (C, E)$ can hold in SIE. It follows that for every $r_C^* - r_P^*$ there exists a unique SIE in which the identity profile has the Core identifying nationally and the Periphery identifying with Europe. From Lemma 2 we know that unification occurs in this SIE if and only if $r_C^* - r_P^* \leq R_2(C, E)$.□

A.8 Proof of Proposition 6:

Assume $\sigma_P > \sigma_E > \sigma_C$. Furthermore, we provide here the proof for the case in which $\sigma_E > \lambda\sigma_C + (1-\lambda)\sigma_P$, corresponding to Panel B in Figure 6. The proof is similar for the case $\sigma_E \leq \lambda\sigma_C + (1-\lambda)\sigma_P$.

a. Consider an SIE in which the social identity profile is (E, P). From Definition 4 and equations (6) and (7), such an SIE exists if and only if

$$SG_{(E,P)}(r_C^* - r_P^*) \leq min\left\{\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}, \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}\right\} = \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}. \tag{18}$$

From equation (16), it immediately follows that condition (18) holds when $r_C^* - r_P^* = 0$ and when $r_C^* - r_P^* \geq R_2(E, P)$.

Next, focus on the intermediate level of fundamental differences $r_C^* - r_P^* \in (0, R_2(E, P))$. By contradiction, suppose that there exists some $r_C^* - r_P^*$ in this region such that there does not exist an SIE. Denote this level of $r_C^* - r_P^*$ by $\overline{r}$. Then, from condition (18) it follows that $SG_{(E,P)}(\overline{r}) > \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$. In addition $SG_{(C,E)}(\overline{r}) < \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}$, since given Definition 4 and equations (6) and (7), an SIE in which the social identity profile is (C, E) holds if and only if $SG_{(C,E)}(r_C^* - r_P^*) \geq \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}$. Finally, note that $SG_{(E,P)}(r_C^* - r_P^*) \leq SG_{(E,E)}(r_C^* - r_P^*) \leq SG_{(C,E)}(r_C^* - r_P^*)$ for every $r_C^* - r_P^*$ (this can be algebraically verified from equations (15)-(17) and Lemmas 2-4). Thus, it must be the case that $\sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} < SG_{(E,E)}(\overline{r}) < \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}$. But by Definition 4 and equations (6) and (7), this means that an SIE in which the identity profile is (E, E) exists when $r_C^* - r_P^* = \overline{r}$. We therefore conclude that an SIE exists for every level of $r_C^* - r_P^*$.

b. From equations (14)-(17) it follows that for any (ID_C, ID_P),

$$SG_{(ID_C,ID_P)}(r_C^* - r_P^*) < \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} = min\left\{\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}, \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}\right\}$$

whenever $r_C^* - r_P^* \geq R_2(ID_C, ID_P)$. Equations (6) and (7) then imply that for any (ID_C, ID_P), whenever $r_C^* - r_P^* \geq R_2(ID_C, ID_P)$ in SIE the Core identifies with Europe while the Periphery identifies nationally. Thus, in any SIE in which breakup occurs, the social identity profile must be (E, P).

c. From Proposition 1 and the proof of Proposition 2, we know that when $r_C^* - r_P^* < R_2(E,P)$ unification occurs in any SIE (since $R_2(E,P) \leq R_2(ID_C, ID_P)$ for every (ID_C, ID_P)). Similarly, when $r_C^* - r_P^* \geq R_2(C,E)$ breakup occurs in any SIE (since $R_2(C,E) > R_2(ID_C, ID_P)$ for every (ID_C, ID_P)). Consider then the intermediate region of fundamental differences such that $R_2(E,P) < r_C^* - r_P^* \leq R_2(C,E)$.

From the proofs of parts a and c above, for every level of fundamental differences in this region there exists an SIE with an (E,P) social identity profile in which breakup occurs. Furthermore, since $SG_{(ID_C,P)}(r_C^* - r_P^*) < \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$ throughout this region for every Core identity ID_c, it follows that in any SIE in this region in which the Periphery identifies nationally, breakup must occur. We are thus left to show that there exist levels of fundamental differences in this intermediate region for which an SIE with unification exists.

To see this, recall that an SIE in which the social identity profile is (C,E) holds if and only if $SG_{(C,E)}(r_C^* - r_P^*) \geq \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}$. Since $SG_{(C,E)}(r_C^* - r_P^*)$ is continuous at $R_2(E,P)$, if $SG_{(C,E)}(R_2(E,P)) > \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}$ then there exist levels of $r_C^* - r_P^*$ throughout this intermediate range for which this SIE holds (i.e., there exists an $\epsilon > 0$ such that for every $R_2(E,P) \leq r_C^* - r_P^* < R_2(E,P) + \epsilon$ we have that $SG_{(C,E)}(r_C^* - r_P^*) \geq \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda}$). It is easy to verify that this can indeed be the case. From the proof of Proposition 2 we know that $R_2(E,P) < R_2(C,E)$ so unification occurs in this SIE. We have thus shown that there exists a subset I^* of $[R_2(C,P), R_2(C,E)]$ such that if fundamental differences are in this subset, both unification and breakup can occur. However, in any SIE in I^* in which unification occurs, the Periphery identifies with the union. Note that this does not imply an SIE with unification is possible throughout the $[R_2(C,P), R_2(C,E)]$ interval. For this to be the case, it is required that $S_C - S_P(R_2(C,E)) \geq \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda} \iff \sigma_E - \sigma_C \leq \frac{\gamma\lambda(1-\lambda)\triangle}{1+\gamma-\gamma\lambda}$. This is more likely when σ_C, γ, $\triangle$, and λ are high, and σ_E is low. $\square$

A.9 Proof of Proposition 7:

Throughout the proof we assume that Condition 1 holds. Note that in particular this implies that the (E,E) identity profile cannot be sustained in SIE.

Suppose first that $\beta = 0$. From Propositions 4 and 5 we know that when $\sigma_C \geq \sigma_P$ there exists an SIE with unification as long as $r_C^* - r_P^* \leq R_2(C,E)$. Part (c) of Proposition 6 tells us that when $\sigma_C < \sigma_P$ there exists a subset $I^* \subseteq [R_2(C,P), R_2(C,E)]$ such that if $r_C^* - r_P^* \in I^*$, both unification and breakup can occur. As apparent from the proof, $R_2(C,E)$ might or might not be part of this subset, depending on the parameter specification. Thus, we have that $\overline{M}\left(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C\right) \leq \overline{M}\left(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C\right)$, and there exist parameter values such that the inequality is strict.

Turning to part (b), Propositions 4 and 6 imply that when $\sigma_C \leq \sigma_P$ there exists an SIE with breakup $r_C^* - r_P^* > R_2(C,P)$. Furthermore, Proposition 5 tells us that when $\sigma_C > \sigma_P$ breakup occurs in SIE if and only if $r_C^* - r_P^* > R_2(C,E)$. We therefore conclude that $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C) \leq \underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C)$.

Next, consider the $\beta > 0$ case.

For any given $(\beta, w, \gamma, \triangle, \lambda, \sigma_E)$ define $\overline{M}_C \equiv \overline{M}(\cdot | \sigma_P < \sigma_C)$ as the maximal level of fundamental differences under which an SIE with unification can be sustained under $\sigma_P < \sigma_C$. Similarly, define $\overline{M}_P \equiv \overline{M}(\cdot | \sigma_P \geq \sigma_C)$. We break down by two cases according to the various values $\overline{M}_P$ can take in the range of $[R_2(C,P), R_2(C,E)]$. Since condition 1 holds, both $\overline{M}_C$ and $\overline{M}_P$ lies in this range. For each case we then show that $\overline{M}_C \geq \overline{M}_P$.

1. Consider first the trivial case where $\overline{M}_P = R_2(C,P)$. Since $\overline{M}_C \in [R_2(C,P), R_2(C,E)]$ then we have that $\overline{M}_C \geq \overline{M}_P$.

2. Next, assume $\overline{M}_P \in (R_2(C,P), R_2(C,E))$. In this case $\overline{M}_P$ is the solution of $SG_{(C,E)}(\overline{M}_P / \sigma_P \geq \sigma_C) = \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (\overline{M}_P)^2\right]$. Simple algebra shows that $SG_{(C,E)}(\overline{M}_P / \sigma_P < \sigma_C) > \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (\overline{M}_P)^2\right]$ .This implies that $\overline{M}_C$ has to be the solution of $SG_{(C,E)}(\overline{M}_C / \sigma_P < \sigma_C) = \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (\overline{M}_C)^2\right]$ and that $\overline{M}_C > \overline{M}_P$.

3. Finally, assume $\overline{M}_P = R_2(C,E)$. It then follows that $SG_{(C,E)}(R_2(C,E)/\sigma_P \geq \sigma_C) \geq \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + (R_2(C,E))^2]$.This in turn implies that $SG_{(C,E)}(R_2(C,E)/\sigma_P < \sigma_C) \geq \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + (R_2(C,E))^2]$ and therefore $\overline{M}_C = \overline{M}_P$

This gives us $\overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C) \leq \overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C)$ when $\beta > 0$, which completes the proof of part (a) of the proposition.

We now proceed to the proof of part (b) for the case $\beta > 0$. Denote $\sigma_E^* = \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + (r_C^* - r_P^*)^2]$. Condition 1 implies that

$SG_{(ID_C, ID_P)}(r_C^* - r_P^*) \in \left(\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}[w + (r_C^* - r_P^*)^2], \sigma_E^*\right)$ for any identity profile (ID_C, ID_P) and $(r_C^* - r_P^*) \geq R_2(ID_C, ID_P)$.

The definition of SIE then implies that there exists an SIE with breakup for every $(r_C^* - r_P^*) > R_2(ID_C, ID_P)$, i.e. $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C) = \underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C) = R_2(C,P)$. Note that if $\sigma_E^* < \sigma_E < \sigma_C + \frac{\beta(1-\lambda)^2}{\gamma}\left(w + 2\triangle + 2\sqrt{\triangle^2 + \frac{\beta\triangle k}{1+\gamma\lambda}} + \frac{\beta k}{1+\gamma\lambda} - \frac{\gamma k}{(1+\gamma\lambda)(1-\lambda)}\right)$ then there exist parameter values such that the inequality is strict, i.e. $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C) < \underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C)$. This follows from the observation that when $\sigma_E^* < \sigma_E$ the identity indifference curves intersect. Consider then parameter values such that

$SG_{(C,P)}(R_2(C,P)) > \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + (R_2(C,P))^2]$ for $\sigma_P < \sigma_C$, but

$$SG_{(C,P)}(R_2(C,P)) \in (\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (R_2(C,P))^2\right],$$
$$\sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (R_2(C,P))^2\right]$$

for $\sigma_P \geq \sigma_C$. According to our definition of SIE, This implies$\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C) > \underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C) = R_2(C,P)$. □

A.10 Proof of Proposition 8:

a. Consider the case where $\sigma_P < \sigma_C$. Proposition 5 states that whenever $\beta = 0$ any SIE (with either breakup or unification) must involve the (C,E) profile. To complete the parameter state space, consider $\beta > 0$. In this case, we verify that $SG_{ID_C,ID_P}(r_C^* - r_P^*) > \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (r_C^* - r_P^*)^2\right]$ for any (ID_C, ID_P) and $(r_C^* - r_P^*)$ such that $r_C^* - r_P^* > R_2(ID_C, ID_P)$. In other words, the Core must identify nationally in any SIE that involves breakup.

The Periphery might also identify nationally under breakup. To see why this can be the case, consider (for example) the case where $SG_{(C,P)}(R_2(C,P)) \in [\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + R(C,P)^2\right], \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + R(C,P)^2\right]]$. This is possible when $\sigma_E < \sigma_C + \frac{\beta w(1-\lambda)^2}{\gamma}$. Based on Definition 4 and equations (6) and (7) this condition implies the existence of an SIE with breakup and a (C,P) profile. Thus, if $\sigma_P < \sigma_C$ then in any SIE with breakup the Core must identify nationally but the Periphery can identify either nationally or with Europe.

b. Consider the case where $\sigma_P > \sigma_C$. Proposition 6 tells us that whenever $\beta = 0$ any SIE with breakup must involve the (E,P) social identity profile. To complete the parameter state space, consider $\beta > 0$. In this case $SG_{(ID_C,ID_P)}(r_C^* - r_P^*) < \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (r_C^* - r_P^*)^2\right]$ for any (ID_C, ID_P) and $r_C^* - r_P^* > R_2(ID_C, ID_P)$. Thus, in any SIE with breakup the Periphery must identify nationally. The Core might also identify nationally. For example, this would in fact be the case when $\sigma_E < \sigma_C + \frac{\beta(1-\lambda)^2 w}{\gamma}$. Under this parameterization, $SG_{(C,P)}(r_C^* - r_P^*) \in (\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (r_C^* - r_P^*)^2\right], \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (r_C^* - r_P^*)^2\right])$ for any $r_C^* - r_P^* > R_2(C,P)$, which implies existence of an SIE with breakup and a (C,P) identity profile. Thus, if $\sigma_P > \sigma_C$ then in any SIE with breakup the Periphery must identify nationally but the Core can identify either nationally or with Europe. □

A.11 Proof of Proposition 9:

Suppose $\sigma_P < \sigma_C$. For the $\beta = 0$ case, Proposition 5 states that any SIE (with breakup or unification) must involve the (C, E) profile. For the $\beta > 0$ case, it is enough to note that under Condition 1, $SG_{ID_C,ID_P}(r_C^* - r_P^*) > \sigma_C - \sigma_P + \frac{\sigma_E-\sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (r_C^* - r_P^*)^2\right]$ for any (ID_C, ID_P) and $(r_C^* - r_P^*)$ such that $r_C^* - r_P^* \leq R_2(ID_C, ID_P)$. In other words, the Core must identify nationally in any SIE that involves breakup. Part (a) is therefore immediate.

Next, suppose $\sigma_P > \sigma_C$ and $\beta = 0$. The proof of Proposition 6 shows that the (E, P), (C, E) and (E, E) profiles can be sustained under an SIE with unification. To see that the (C, P) profile can also be sustained under unification, consider (for example) the case where $\sigma_E < \sigma_E^*$. For an SIE with unification and a (C, P) profile to exist, it has to be the case that $\frac{\sigma_E-\sigma_C}{1-\lambda} < SG_{(C,P)}(r_C^* - r_P^*) - (\sigma_C - \sigma_P) < \frac{\sigma_P-\sigma_E}{\lambda}$ for some $r_C^* - r_P^* < R_2(C, P)$. It is easy to verify that the set of parameters for which this inequality is satisfied is non-empty.

Finally, assume that $\sigma_C < \sigma_P$ and $\beta > 0$, and consider the following parameter specifications:

- When $\sigma_E < \sigma_C + \frac{\beta(1-\lambda)^2 w}{\gamma}$ we have that $SG_{(C,P)}(r_C^* - r_P^*) \in (\sigma_C - \sigma_P + \frac{\sigma_E-\sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (r_C^* - r_P^*)^2\right], \sigma_C - \sigma_P + \frac{\sigma_P-\sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (r_C^* - r_P^*)^2\right])$ for $r_C^* - r_P^* \to 0$, which implies existence of an SIE with unification and a (C, P) identity profile. It is also easy to verify the existence of parameter values such that $SG_{(C,E)}(r_C^* - r_P^*) > \sigma_C - \sigma_P + max\left\{\frac{\sigma_E-\sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (r_C^* - r_P^*)^2\right], \frac{\sigma_P-\sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (r_C^* - r_P^*)^2\right]\right\}$ for some $r_C^* - r_P^* < R_2(C, E)$. This in turn implies the existence of an SIE with unification and a (C, E) identity profile.

- When $\sigma_E > \sigma_C + \frac{\beta(1-\lambda)^2 w}{\gamma}$ we have that $SG_{(E,P)}(r_C^* - r_P^*) < \min\{\sigma_C - \sigma_P + \frac{\sigma_E-\sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (r_C^* - r_P^*)^2\right], \sigma_C - \sigma_P + \frac{\sigma_P-\sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (r_C^* - r_P^*)^2\right]\}$ for $r_C^* - r_P^* \to 0$, which implies existence of an SIE with unification and a (E, P) identity profile.

This completes the proof of part (b). $\square$

A.12 Proof of Proposition 10

First, we focus on $\underline{M}(\beta, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)$. Fixing $(k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)$ we denote $\underline{M}_0(\beta) = \underline{M}(\beta, k, w, \gamma, \triangle, \lambda | \sigma_C = \sigma_P)$. Similarly, $\underline{M}_C(\beta) = \underline{M}(\beta, k, w, \gamma, \triangle, \lambda | \sigma_C > \sigma_P)$ and $\underline{M}_P(\beta) = \underline{M}(\beta, k, w, \gamma, \triangle, \lambda | \sigma_C < \sigma_P)$. Suppose first that $0 < \beta_1 < \beta_2$. As part of the proof of Proposition 7, we have shown that $\underline{M}_0(\beta) = \underline{M}_P(\beta) = R_2(C, P)$ for any β. Thus, $\underline{M}_0(\beta_1) \geq \underline{M}_0(\beta_2)$ and $\underline{M}_P(\beta_1) \geq \underline{M}_P(\beta_2)$. We will now show that $\underline{M}_C(\beta_1) \geq \underline{M}_C(\beta_2)$. To do so, consider the following characterization of $\underline{M}_C(\beta)$, which can be derived directly from the ex-post status gap equations (14)-(17), the IIC's (6) and (7) and the definition of SIE.

Remark 1. **Characterization of $\underline{M}_C(\beta)$ for $\beta > 0$.**
a. $\underline{M}_C(\beta) = R_2(C,P)$ if and only if $SG_{C,P}(R_2(C,P) \leq \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + R_2(C,P)^2]$.
b. $R_2(C,P) < \underline{M}_C(\beta) < R_2(C,E)$ if and only if $SG_{C,P}(R_2(C,P) > \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + R_2(C,P)^2]$ and $SG_{C,P}(R_2(C,E) < \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + R_2(C,E)^2]$. In this case $\underline{M}_C(\beta)$ is given by the solution to $SG_{C,P}(\underline{M}_C(\beta)) = \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + \underline{M}_C(\beta)^2]$.
c. $\underline{M}_C(\beta) = R_2(C,E)$ if and only if $SG_{C,P}(R_2(C,E) \geq \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + R_2(C,E)^2]$.

Consider first the case where $\underline{M}_C(\beta_2) = R_2(C,P)$. Since $\underline{M}_C(\beta) \geq R_2(C,P)$ for any $\beta > 0$ we get $\underline{M}_C(\beta_2) \leq \underline{M}_C(\beta_1)$. Next, consider the case where $R_2(C,P) < \underline{M}_C(\beta) < R_2(C,E)$. Recall that the $SG_{C,P}(\cdot)$ is not a function of β, implying that $SG_{C,P}(\underline{M}_C(\beta_2)) > \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta_1\lambda}{\gamma}[w + \underline{M}_C(\beta_2)^2]$. Furthermore, since $SG_{C,P}(\cdot)$ is a constant function for $r_C^* - r_P^* \geq R_2(C,P)$, Remark 1 implies that $\underline{M}_C(\beta_2) < \underline{M}_C(\beta_1)$. Finally, consider the case where $\underline{M}_C(\beta_2) = R_2(C,E)$. Applying the same arguments, it is straightforward to see that $\underline{M}_C(\beta_1) = R_2(C,E)$. To conclude, we have shown that $\underline{M}_C(\beta_2) \leq \underline{M}_C(\beta_1)$ for $0 < \beta_1 < \beta_2$. We will now proceed to show that this is also the case when $\beta_1 = 0$. As mentioned above $\underline{M}_0(\beta) = \underline{M}_P(\beta) = R_2(C,P)$ for every $\beta > 0$. This is also the case when $\beta_1 = 0$ (see Propositions 4 and 6). Indeed $\underline{M}_0(\beta_2) = \underline{M}_0(\beta_1)$ and $\underline{M}_P(\beta_2) = \underline{M}_P(\beta_1)$. Since $\underline{M}_C(\beta) \leq R_2(C,E)$ for any β (Proposition 2) and $\underline{M}_C(\beta_1) = R_2(C,E)$ (Proposition 5) we conclude that $\underline{M}_C(\beta_2) \leq \underline{M}_C(\beta_1)$. We have thus proved that $\underline{M}(\beta, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)$ is weakly decreasing in β.

Next, we shift our focus to $\overline{M}(\beta, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)$. Fixing $(k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)$ we denote $\overline{M}_0(\beta) = \overline{M}(\beta, k, w, \gamma, \triangle, \lambda | \sigma_C = \sigma_P)$, $\overline{M}_C(\beta) = \overline{M}(\beta, k, w, \gamma, \triangle, \lambda | \sigma_C > \sigma_P)$ and $\overline{M}_P(\beta) = \overline{M}(\beta, k, w, \gamma, \triangle, \lambda | \sigma_C < \sigma_P)$. Suppose first that $0 < \beta_1 < \beta_2$. We will prove that $\overline{M}_0(\beta)$ is weakly decreasing in β. The proof for $\overline{M}_C(\beta)$ and $\overline{M}_P(\beta)$ essentialy applies the same steps.

There are three cases to consider. First, suppose $\overline{M}_0(\beta_2) = R_2(C,P)$. Since $\overline{M}_0(\beta) \geq R_2(C,P)$ for any $\beta > 0$ we immediately have that $\overline{M}_0(\beta_2) \leq \overline{M}_0(\beta_1)$. Next, consider the case where $R_2(C,P) < \overline{M}_0(\beta_2) < R_2(C,E)$. This implies that $SG_{C,E}(\overline{M}_0(\beta_2)) > \frac{\beta_1\lambda}{\gamma}[w + \overline{M}_0(\beta_2))^2]$. Furthermore, since $SG_{C,E}(\cdot)$ is a strictly decreasing function for $r_C^* - r_P^* \in (R_2(C,P), R_2(C,E))$,we have that $\overline{M}_0(\beta_2) < \overline{M}_0(\beta_1)$. Finally, consider the case where $\overline{M}_0(\beta_2) = R_2(C,E)$. Applying the same arguments, it is straightforward to derive that in this case $\overline{M}_0(\beta_1) = R_2(C,E)$. To sum up, we have shown that $\overline{M}_0(\beta_2) \leq \overline{M}_0(\beta_1)$ for $0 < \beta_1 < \beta_2$.

To conclude the proof of part (a), we are left to show that $\overline{M}(\beta_1, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P) \geq \overline{M}(\beta_2, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)$ when $\beta_1 = 0$. First, note that $\overline{M}_0(\beta_1) = \overline{M}_C(\beta_1) = R_2(C,E)$ (see propositions 4 and 5). Since $\overline{M}_0(\beta)$ and $\overline{M}_C(\beta)$ are at most equal to $R_2(C,E)$ for any β, we are done for the $\sigma_C \geq \sigma_P$ case. Consider next the case of $\sigma_C < \sigma_P$. In what follows we provide the proof for the $\sigma_E \geq \sigma_E^*$ specification, while the proof for the alternative follows the same steps. It is useful to first characterize $\overline{M}_P$ for the $\beta = 0$ case. This is presented in the following Remark, which is an immediate application of the ex-post status gap equations, the social identity choice and the definition of an SIE.

Remark 2. **Characterization of $\overline{M}_P$ for $\beta = 0$ and $\sigma_E \geq \sigma_E^*$.**
a. $\overline{M}_P = R_2(C, P)$ if and only if $SG_{(C,E)}(R_2(C, P)/\sigma_C < \sigma_P) \leq \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$.
b. $R_2(C, P) < \overline{M}_P < R_2(C, E)$ if and only if $SG_{(C,E)}(R_2(C, P)/\sigma_C < \sigma_P) > \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$ and $SG_{(C,E)}(R_2(C, E)/\sigma_C < \sigma_P) < \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$. In this case $\overline{M}_P$ is given by the solution to $SG_{(C,E)}(\overline{M}_P/\sigma_C > \sigma_P) = \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$.
c. $\overline{M}_P = R_2(C, E)$ if and only if $SG_{(C,E)}(R_2(C, E)/\sigma_C < \sigma_P) \geq \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$. In this case $SG_{(C,E)}(\overline{M}_P/\sigma_C < \sigma_P) \geq \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$.

There are three cases to consider. First, suppose $\overline{M}_P(\beta_2) = R_2(C, P)$. Since $\overline{M}_P(\beta) \geq R_2(C, P)$ for any $\beta \geq 0$ we have $\overline{M}_P(\beta_2) \leq \overline{M}_P(\beta_1)$. Next, consider the case where $R_2(C, P) < \overline{M}_P(\beta_2) < R_2(C, E)$. This implies that $SG_{C,E}(\overline{M}_P(\beta_2)) > \sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda}$. Furthermore, since $SG_{C,E}(\cdot)$ is a strictly decreasing function for $r_C^* - r_P^* \in (R_2(C, P), R_2(C, E))$, Remarks 1 and 2 then together imply that $\overline{M}_P(\beta_2) < \overline{M}_P(\beta_1)$. Finally, consider the case where $\overline{M}_P(\beta_2) = R_2(C, E)$. Applying the same arguments, it is straightforward to derive that in this case $\overline{M}_P(\beta_1) = R_2(C, E)$. We therefore conclude that $\overline{M}_P(\beta_2) \leq \overline{M}_P(\beta_1)$ for any $0 \leq \beta_1 < \beta_2$.

A.13 Additional Comparative Statics on β:

Proposition 12. *Suppose European status satisfies Condition 1.*
a. Suppose $\beta_1 < \beta_2$. For every $r_C^* - r_P^* \in (\overline{M}(\beta_2, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P), \overline{M}(\beta_1, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)]$ there exists an SIE with unification in which the Periphery identifies with Europe. Furthermore, if $\sigma_C > \sigma_P$ and $\beta_1 > 0$ then in any SIE with unification in which:

$$r_C^* - r_P^* \in (\overline{M}(\beta_2, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P), \overline{M}(\beta_1, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)]$$

the Core identifies nationally.
b. Denote by $\widetilde{EE}(\beta)$ the set of all $(r_C^* - r_P^*)$ such that an SIE with unification and a (E, E) profile can be sustained. If $\sigma_C > \sigma_P$ then $\widetilde{EE}(\beta)$ remains unchanged when β changes. However when $\sigma_C \leq \sigma_P$ then for every $\beta_1 < \beta_2$ we have $\widetilde{EE}(\beta_2) \subseteq \widetilde{EE}(\beta_1)$ and there exist $\beta_1 < \beta_2$ such that $\widetilde{EE}(\beta_2) \subset \widetilde{EE}(\beta_1)$.

Proof.
a. Suppose $\beta_1 < \beta_2$ and $\overline{M}(\beta_2, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P) < \overline{M}(\beta_2, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)$. From Proposition 9 we know that when $\sigma_C > \sigma_P$ then in any SIE with unification the Core

identifies nationally. Specifically, this holds for any SIE with unification with fundamental differences in the range $r_C^* - r_P^* \in (\overline{M}(\beta_2, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P), \overline{M}(\beta_1, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)]$.

Next, we show that for every $r_C^* - r_P^* \in (\overline{M}(\beta_2, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P), \overline{M}(\beta_1, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)]$ there exists an SIE with unification in which the Periphery identifies with Europe. In what follows we specify in detail the proof for the $\sigma_C = \sigma_P$ and $\beta_1 > 0$ case. Similar steps apply for the alternative specifications. There are two cases to consider when $\overline{M}_0(\beta_2) < \overline{M}_0(\beta_1)$:

1. $\overline{M}_0(\beta_1) > R_2(C, P) = \overline{M}_0(\beta_2)$: In this case $SG_{(C,E)}(\overline{M}_0(\beta_1)/\sigma_C = \sigma_P) = \frac{\beta_1\lambda}{\gamma}\left[w + \overline{M}_0(\beta_1)^2\right]$. Since $SG_{C,E}(\cdot)$ is a strictly decreasing function for $r_C^* - r_P^* \in (\overline{M}_0(\beta_2), R_2(C, E))$, we have that $SG_{(C,E)}(r_C^* - r_P^*/\sigma_C = \sigma_P) > \frac{\beta_1\lambda}{\gamma}\left[w + (r_C^* - r_P^*)^2\right]$ for any $r_C^* - r_P^* \in (\overline{M}_0(\beta_2), \overline{M}_0(\beta_1)]$. From the definition of an SIE it then follows that throughout this region of fundamental differences there exists an SIE with unification in which the Periphery identifies with Europe.

2. $\overline{M}_0(\beta_1) > \overline{M}_0(\beta_2) > R_2(C, P)$: In this case $SG_{(C,E)}(\overline{M}_0(\beta_1)/\sigma_C = \sigma_P) \geq \frac{\beta_1\lambda}{\gamma}\left[w + \overline{M}_0(\beta_1)^2\right]$ and the same arguments apply.

b. First, note that when $\sigma_C > \sigma_P$ the (E, E) profile cannot be sustained in SIE, so $\widetilde{EE}$ remains unchanged ($\widetilde{EE}(\beta_1) = \widetilde{EE}(\beta_2) = \emptyset$). When $\sigma_C = \sigma_P$ then $\widetilde{EE}(\beta) = \emptyset$ for $\beta > 0$ and $\widetilde{EE}(\beta) = \{0, R_2(E, E)\}$ for $\beta = 0$ (Proposition 4). Thus, in the no ex-ante status differences case we have that $\widetilde{EE}(\beta_2) \subseteq \widetilde{EE}(\beta_1)$. Moreover, when $\beta_1 = 0$ we get $\widetilde{EE}(\beta_2) \subset \widetilde{EE}(\beta_1)$. Finally, we turn to the $\sigma_C < \sigma_P$ case, and provide the proof for the $\beta_1 > 0$ specification. The same steps apply when $\beta_1 = 0$.

Given parameters $(\beta, k, w, \gamma, \triangle, \lambda, \sigma_C, \sigma_P)$ the set $\widetilde{EE}(\beta)$ is characterized by all levels of fundamental differences $(r_C^* - r_P^*) < R_2(E, E)$ that satisfy the following inequality (see Definition 4 and the social identity choice given in equations (6) and (7)):

$$\frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}[w + (r_C^* - r_P^*)^2] \leq SG_{(E,E)}(r_C^* - r_P^*) - (\sigma_C - \sigma_P) \leq \frac{\sigma_C - \sigma_E}{1 - \lambda} - \frac{\beta(1-\lambda)}{\gamma}[w + (r_C^* - r_P^*)^2] \quad (19)$$

Now, simple algebra shows that any $(r_C^* - r_P^*)$ that satisfies this inequality when $\beta = \beta_2$, must also satisfy it when $\beta = \beta_1 < \beta_2$. Thus, $\widetilde{EE}(\beta_2) \subseteq \widetilde{EE}(\beta_1)$. $\square$

A.14 SIE when ex-ante European status is very high

Proposition 13. *If σ_E is sufficiently high and $\beta k > 0$, then there exist parameter values such that $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P > \sigma_C) \geq \underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C)$.*

Proof. Recall that $\sigma_E < \lambda\sigma_C + (1-\lambda)\sigma_P + \frac{\beta w \lambda(1-\lambda)}{\gamma}$. In this case the identity indifference curves do not intersect, as depicted in the right panel of Figure 6. Now, for the $\sigma_P < \sigma_C$

case, $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C) = R_2(C, P)$. This is due to the fact that

$$SG_{(C,P)}(r_C^* - r_P^*) \in [\sigma_C - \sigma_P + \frac{\sigma_P - \sigma_E}{\lambda} + \frac{\beta\lambda}{\gamma}\left[w + (r_C^* - r_P^*)^2\right] + \frac{\beta k}{\gamma(1-\lambda)},$$
$$\sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (r_C^* - r_P^*)^2\right] - \frac{\beta k}{\gamma(1-\lambda)}]$$

for any $r_C^* - r_P^* > R_2(C, P)$.
On the other hand, when $\sigma_P \geq \sigma_C$ and $\sigma_E > \sigma_C + \frac{\beta(1-\lambda)^2}{\gamma}\left(w + 2\triangle + 2\sqrt{\triangle^2 + \frac{\beta\triangle k}{1+\gamma\lambda}} + \frac{\beta k}{1+\gamma\lambda} - \frac{\gamma k}{(1+\gamma\lambda)(1-\lambda)}\right)$ then $SG_{(C,P)}(R_2(C,P)) < \sigma_C - \sigma_P + \frac{\sigma_E - \sigma_C}{1-\lambda} - \frac{\beta(1-\lambda)}{\gamma}\left[w + (R_2(C,P))^2\right] - \frac{\beta k}{\gamma(1-\lambda)}$. In other words, an SIE with breakup and a (C, P) identity profile cannot be sustained under this parameter specification. Finally, note that given $\beta k > 0$, we have that $R_2(ID_C, ID_P) > R_2(C, P)$ for any (ID_C, ID_P). Taken together, this implies $\underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P > \sigma_C) > \underline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C)$.□

Proposition 14. *If both σ_E and βk are sufficiently high then there exist parameter values such that $\overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C) > \overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C)$.*

Proof. If $\sigma_E > \lambda\sigma_C + (1-\lambda)\sigma_P + \frac{\beta w \lambda(1-\lambda)}{\gamma}$ we have that the identity indifference curves (IIC) intersect, as shown in the left panel of Figure 6. From the ex-post status gap equations 14-17, the identity indifference curves in equations 6-7 and the definition of SIE, the following statements can easily be algebrically verified:

- The (E, E) identity profile can hold in SIE under $\sigma_P \geq \sigma_C$. In particular, when $\sigma_P \geq \sigma_C$ there are parameter values $\boldsymbol{p}$ such that there exists an SIE with unification and a (E, E) identity profile at $r_C^* - r_P^* = R_2(E, E)$.

- The (E, E) identity profile cannot hold in SIE under $\sigma_P < \sigma_C$. This implies that the maximum value that $\overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C)$ can take is $R_2(C, E)$.

If $\gamma^2\lambda(1-\lambda)\triangle < \beta k$ then $R_2(E, E) > R_2(C, E)$. Thus, there exist parameter values such that $\overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P \geq \sigma_C) > \overline{M}(\boldsymbol{p}, \sigma_C, \sigma_P | \sigma_P < \sigma_C)$. □

B Integration when Policy is Flexible

The model we have discussed throughout the paper is a sticky policy model. Having set the policy for the union, the Core cannot adjust it in case the Periphery chooses to leave the union. This is reasonable when the compound policy is complex and cannot be changed immediately (e.g. laws and regulations or immigration policies). However, some policies (e.g. interest rates) might be more easily adaptable in the short run.

In what follows we analyze the case in which the Core's policy is flexible in the sense that it is able to freely adjust it in case of breakup. As in the sticky policy model, the Core moves first and sets the policy instrument at some level $r_C = \hat{r}$. The Periphery then either accepts or rejects this policy. If it accepts then $r_P = r_C = \hat{r}$. If it rejects then both countries (rather than the Periphery alone) are free to set their own policies. We restrict attention to the $\beta = 0$ case.

B.1 Integration given Social Identities

It is again useful to begin with a general characterization of the Subgame Perfect Nash Equilibrium (SPNE) outcome under any given profile of identities. The following Proposition replicates Proposition 1 for the case of a flexible policy (see discussion and analysis of this result in Section 4).

Proposition B.1. ***Subgame Perfect Equilibrium (SPNE).*** *For any profile of social identities (ID_c, ID_p) there exist cutoffs $\widetilde{R_1} = \widetilde{R_1}(ID_c, ID_p)$ and $\widetilde{R_2} = \widetilde{R_2}(ID_c, ID_p)$ and policies (functions of r_C^* and r_P^*) $\widetilde{r_C} = \widetilde{r_C}(ID_c, ID_p)$ and $\widetilde{r_P} = \widetilde{r_P}(ID_c, ID_p)$ such that $\widetilde{R_1} \leq \widetilde{R_2}$, $\widetilde{r_P} < \widetilde{r_C}$ and:*

a. If $r_C^* - r_P^* \leq \widetilde{R_1}$ then in SPNE unification occurs and $r_C = r_P = \widetilde{r_C}$.

b. If $\widetilde{R_1} < r_C^* - r_P^* \leq \widetilde{R_2}$ then in SPNE unification occurs and $r_C = r_P = \widetilde{r_P}$.

c. If $r_C^* - r_P^* > \widetilde{R_2}$ then in SPNE breakup occurs and $r_C = r_C^*$, $r_P = r_P^*$.

Proof. Taking the social identities as given, we solve the sequential bargaining game for each of the social identity profiles when the policy is flexible. From Lemmas B.1-B.4 we will then obtain Proposition B.1.

Case 1 (C, P): Both Core and Periphery identify with their own country.

Lemma B.1.

a. $\widetilde{R_1}(C, P) = \sqrt{\triangle}$, $\widetilde{R_2}(C, P) = 2\sqrt{\triangle}$

b. $\widetilde{r_C}(C, P) = r_C^*$, $\widetilde{r_P}(C, P) = r_P^* + \sqrt{\triangle}$

Proof. Given the (C, P) social identity profile, the solution is identical to the sticky policy case. When the Periphery identifies nationally, it accepts r_C to the same extent of fundamental differences between the countries, regardless of whether or not the Core is able to adjust its policy in the case of breakup (see proof of Proposition 1). When the Periphery is concerned only with its own material payoff, it does not care whether or not the Core is able to adjust its policy. This in turn leads the Core to set its policy exactly as it did when the policy was sticky. The proof is thus identical to the proof of Lemma 1. □

Case 2 (C,E) : **Core Identifies with own Country and Periphery identifies with Europe**

Lemma B.2.

a. $\widetilde{R_1}(C,E) = \sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$

$$\widetilde{R_2}(C,E) = \begin{cases} \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}} & if \quad 1+\gamma-2\gamma\lambda < 0 \\ \frac{(1+\gamma)\sqrt{\triangle}}{1+\gamma-\gamma\lambda} & if \quad 1+\gamma-2\gamma\lambda = 0 \\ 2\sqrt{\triangle} & if \quad 1+\gamma-2\gamma\lambda > 0 \end{cases}$$

b. $\widetilde{r_C}(C,E) = r_C^*$, $\widetilde{r_P}(C,E) = \frac{(1+\gamma-\gamma\lambda)r_P^*+\gamma\lambda r_C^*+\sqrt{(1+\gamma)^2\triangle-\gamma\lambda(1+\gamma-\gamma\lambda)(r_C^*-r_P^*)^2}}{1+\gamma}$

Proof. Recall that Core utility is given by equation (8) and that Periphery utility is given by equation (10).

When the Periphery identifies with Europe, utility depends on whether it accepts r_C or not (in which case it sets r_P to r_P^*). Clearly, whenever breakup occurs in the flexible policy model (i.e. the Periphery rejects r_C) the Core will set its policy to r_C^* in order to maximize own material payoffs. Thus, Periphery utility is:

$$U_{PE} = \begin{cases} -(1+\gamma-\gamma\lambda)(r_C-r_P^*)^2 - \gamma\lambda(r_C-r_C^*)^2 + \gamma\sigma_E & if \quad Accepts \\ -(1+\gamma)\triangle + \gamma\sigma_E & if \quad Rejects \end{cases} \tag{20}$$

Solving the game by backward induction, the Periphery is willing to accept r_C if and only if $U_{PE}|_{accepts} \geq U_{PE}|_{rejects}$. First note that when fundamental differences are such that $r_C^* - r_P^* > \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$, we have that $U_{PE}|_{accepts} < U_{PE}|_{rejects}$ for every r_C. Thus, breakup will occur throughout this range of fundamental differences, regardless of the policy set by the Core. Because the Periphery is aware of the Core being able to set its policy to r_C^* in case of breakup, and because it cares about the Core's material payoffs, breakup will occur when differences between the countries are sufficiently large.

When the Core identifies nationally, its chosen policy when there is no threat of secession is r_C^*, which we denote by $\widetilde{r_C}(C,E)$. Note that when $r_C^* - r_P^* \leq \sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$ the Core is indeed able to set its policy to r_C^* without suffering the cost of breakup (given $r_C = r_C^*$, $U_{PE}|_{accepts} \geq U_{PE}|_{rejects}$ if and only if $r_C^* - r_P^* \leq \sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$). We denote this cutoff by $\widetilde{R_1}(C,E)$.

When $\widetilde{R_1}(C,E) < r_C^* - r_P^* \leq \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$, the Core decides between the following two options:

1. Set the policy that maximizes utility under breakup, which is r_C^*. Utility will then be:

$$U_{CC}|_{breakup} = -(1+\gamma)\triangle + \gamma\sigma_C$$

2. Set the policy that maximizes utility under the constraint that the union is sustained (i.e choose among the policies that would be accepted by the Periphery). This policy, which we denote by $\widetilde{r_P}(C,E)$, solves the following maximization problem:

$$Max_{r_C} - (1+\gamma)(r_C - r_C^*)^2 + \gamma\sigma_C \quad s.t \quad U_{PE}|_{accepts} \geq U_{PE}|_{rejects}$$

The solution is:

$$\widetilde{r_P}(C,E) = \frac{(1+\gamma-\gamma\lambda)r_P^* + \gamma\lambda r_C^* + \sqrt{(1+\gamma)^2\triangle - \gamma\lambda(1+\gamma-\gamma\lambda)(r_C^*-r_P^*)^2}}{1+\gamma}.$$

Utility will then be:

$$U_{CC}|_{unification} - \frac{\left[(1+\gamma-\gamma\lambda)(r_P^*-r_C^*) + \sqrt{(1+\gamma)^2\triangle - \gamma\lambda(1+\gamma-\gamma\lambda)(r_C^*-r_P^*)^2}\right]^2}{1+\gamma} + \gamma\sigma_C.$$

In SPNE the Core sets the policy to $\widetilde{r_P}(C,E)$ if and only if $U_{CC}|_{unification} \geq U_{CC}|_{breakup}$. This condition is satisfied when one of the following holds:

1. $r_C^* - r_P^* \leq \frac{(1+\gamma)\sqrt{\triangle}}{1+\gamma-\gamma\lambda}$
2. $r_C^* - r_P^* > \frac{(1+\gamma)\sqrt{\triangle}}{1+\gamma-\gamma\lambda}$ and $r_C^* - r_P^* \leq 2\sqrt{\triangle}$

Recalling that breakup necessarily occurs whenever $r_C^* - r_P^* > \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$ (see above), we have that the cutoff for breakup, which we denote by $\widetilde{R_2}(C,E)$, is:

$$\widetilde{R_2}(C,E) = \begin{cases} \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}} & if \quad 1+\gamma-2\gamma\lambda < 0 \\ \frac{(1+\gamma)\sqrt{\triangle}}{1+\gamma-\gamma\lambda} & if \quad 1+\gamma-2\gamma\lambda = 0. \\ 2\sqrt{\triangle} & if \quad 1+\gamma-2\gamma\lambda > 0 \end{cases}$$

In summary, the SPNE in the flexible model for the (C,E) social identity profile is:

1. If $r_C^* - r_P^* \le \widetilde{R_1}(C,E)$ then unification occurs and $r_C = r_P = \widetilde{r_C}(C,E)$.
2. If $\widetilde{R_1}(C,E) < r_C^* - r_P^* \le \widetilde{R_2}(C,E)$ then unification occurs and $r_C = r_P = \widetilde{r_P}(C,E)$.
3. If $r_C^* - r_P^* > \widetilde{R_2}(C,E)$ then breakup occurs and $r_C = r_C^*$, $r_C = r_P^*$.

When the Periphery cares about the Core's material payoffs its reserve utility (i.e. the utility gained in case of breakup) is higher relative to the sticky model case. When the Core can respond to breakup by adjusting its policy to r_C^*, breakup is less costly from a material payoff perspective. Thus, the Periphery's utility from breakup is higher when the policy is flexible. As a result the concessions the Core has to make in the intermediate range of fundamental differences in order to keep the Periphery in the union are larger (i.e. $\widetilde{r_P}(C,E) < r_P(C,E)$) and the union is less robust (i.e. $\widetilde{R_2}(C,E) < R_2(C,E)$). □

Case 3 (E,P): Core identifies with Europe and Periphery identifies with own Country

Lemma B.3.

a. $\widetilde{R_1}(E,P) = \frac{1+\gamma}{1+\gamma\lambda}\sqrt{\triangle}$, $\widetilde{R_2}(E,P) = 2\sqrt{\triangle}$

b. $\widetilde{r_C}(E,P) = \frac{(1+\gamma\lambda)r_C^* + \gamma(1-\lambda)r_P^*}{1+\gamma}$, $\widetilde{r_P}(E,P) = r_P^* + \sqrt{\triangle}$

Proof. As in the (C,P) case, when the Periphery identifies nationally the SPNE in the flexible model is identical to the SPNE in the sticky model. The proof is thus identical to the proof of Lemma 3. □

Case 4 (E,E): Both Core and Periphery identify with Europe

Lemma B.4.

a. $\widetilde{R_1}(E,E) = \sqrt{\frac{(1+\gamma)^3\triangle}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)^2+\gamma^3\lambda(1-\lambda)^2}}$

$$\widetilde{R_2}(E,E) = \begin{cases} \sqrt{\frac{(1+\gamma)^3\triangle}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)^2+\gamma^3\lambda(1-\lambda)^2}} & if \quad \gamma^3\lambda^2(1-\lambda) \ge (1+\gamma)(1+\gamma^3\lambda-\gamma^2\lambda^2-\frac{1+2\gamma+\gamma^2}{4}) \\ & \quad and \quad \gamma^3\lambda^2(1-\lambda) \le (1+\gamma)(1-\gamma\lambda) \\ & \quad and \quad 1+\gamma-2\gamma\lambda > 0 \\ 2\sqrt{\triangle} & if \quad \gamma^3\lambda^2(1-\lambda) < (1+\gamma)(1+\gamma^3\lambda-\gamma^2\lambda^2-\frac{1+2\gamma+\gamma^2}{4}) \\ & \quad and \quad (1+\gamma)^2 > 4\gamma\lambda(1+\gamma-\gamma\lambda) \\ & \quad and \quad 1+\gamma-2\gamma\lambda > 0 \\ \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}} & if \quad Otherwise \end{cases}$$

b. $\widetilde{r_C}(E,E) = \frac{(1+\gamma\lambda)r_C^* + \gamma(1-\lambda)r_P^*}{1+\gamma}$

$\widetilde{r_P}(C,E) = \frac{(1+\gamma-\gamma\lambda)r_P^* + \gamma\lambda r_C^* + \sqrt{(1+\gamma)^2\triangle - \gamma\lambda(1+\gamma-\gamma\lambda)(r_C^*-r_P^*)^2}}{1+\gamma}$

Proof. Core utility is again given by equation (11). As in the (C,E) case, Periphery utility is given by equation (20).

The Periphery is willing to accept r_C if and only if $U_{PE}|_{accepts} \geq U_{PE}|_{rejects}$. First note that, as in the (C,E) case, when fundamental differences are such that $r_C^* - r_P^* > \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$ we have that $U_{PE}|_{accepts} < U_{PE}|_{rejects}$ for every r_C. Thus, breakup will occur throughout this range of fundamental differences, regardless of the policy set by the Core.

When the Core identifies with Europe, its chosen policy when there is no threat of secession is $\frac{(1+\gamma\lambda)r_C^* + \gamma(1-\lambda)r_P^*}{1+\gamma}$ (see proof of Lemmas 3 and 4). We denote this policy by $\widetilde{r_C}(E,E)$. Note that when $r_C^* - r_P^* \leq \sqrt{\frac{(1+\gamma)^3\triangle}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)^2+\gamma^3\lambda(1-\lambda)^2}}$ the Core is indeed able to set its policy to $\widetilde{r_C}(E,E)$ without suffering the cost of breakup (given $r_C = \widetilde{r_C}(E,E)$, $U_{PE}|_{accepts} \geq U_{PE}|_{rejects}$ if and only if $r_C^* - r_P^* \leq \sqrt{\frac{(1+\gamma)^3\triangle}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)^2+\gamma^3\lambda(1-\lambda)^2}}$). We denote this cutoff by $\widetilde{R_1}(E,E)$.

When $\widetilde{R_1}(E,E) < r_C^* - r_P^* \leq \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$ the Core decides between the following two options:

1. Set the policy that maximizes utility under breakup, which is r_C^*. In this case utility is:

$$U_{CE}|_{breakup} = -(1+\gamma)\triangle + \gamma\sigma_E$$

2. Set the policy that maximizes utility under the constraint that the union is sustained (i.e choose among the policies that would be accepted by the Periphery). This policy, which we denote by $\widetilde{r_P}(C,E)$, solves the following maximization problem:

$$Max_{r_C} - (1+\gamma\lambda)(r_C - r_C^*)^2 - \gamma(1-\lambda)(r_C - r_P^*)^2 + \gamma\sigma_E \quad s.t \quad U_{PE}|_{accepts} \geq U_{PE}|_{rejects}.$$

The solution is:

$$\widetilde{r_P}(E,E) = \frac{(1+\gamma-\gamma\lambda)r_P^* + \gamma\lambda r_C^* + \sqrt{(1+\gamma)^2\triangle - \gamma\lambda(1+\gamma-\gamma\lambda)(r_C^*-r_P^*)^2}}{1+\gamma}.$$

Utility will then be:

$$U_{CE}|_{unification} = -(1+\gamma\lambda)\frac{\left[(1+\gamma-\gamma\lambda)(r_P^*-r_C^*)+\sqrt{(1+\gamma)^2\triangle-\gamma\lambda(1+\gamma-\gamma\lambda)(r_C^*-r_P^*)^2}\right]^2}{(1+\gamma)^2}$$
$$-\gamma(1-\lambda)\frac{\left[\gamma\lambda(r_C^*-r_P^*)+\sqrt{(1+\gamma)^2\triangle-\gamma\lambda(1+\gamma-\gamma\lambda)(r_C^*-r_P^*)^2}\right]^2}{(1+\gamma)^2}+\gamma\sigma_E.$$

In SPNE the Core sets the policy to $\widetilde{r_P}(E,E)$ if and only if $U_{CE}|_{unification} \geq U_{CE}|_{breakup}$. This condition is satisfied when one of the following holds:

1. $1+\gamma-2\gamma\lambda \leq 0$

2. $1+\gamma-2\gamma\lambda > 0$ and $r_C^* - r_P^* \leq 2\sqrt{\triangle}$

Recalling that breakup necessarily occurs whenever $r_C^*-r_P^* > \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}}$ (see above), we have that the cutoff for breakup, which we denote by $\widetilde{R_2}(E,E)$, is:

$$\widetilde{R_2}(E,E) = \begin{cases} \sqrt{\frac{(1+\gamma)^3\triangle}{(1+\gamma-\gamma\lambda)(1+\gamma\lambda)^2+\gamma^3\lambda(1-\lambda)^2}} & if \quad \gamma^3\lambda^2(1-\lambda) \geq (1+\gamma)(1+\gamma^3\lambda-\gamma^2\lambda^2-\frac{1+2\gamma+\gamma^2}{4}) \\ & and \quad \gamma^3\lambda^2(1-\lambda) \leq (1+\gamma)(1-\gamma\lambda) \\ & and \quad 1+\gamma-2\gamma\lambda > 0 \\ 2\sqrt{\triangle} & if \quad \gamma^3\lambda^2(1-\lambda) < (1+\gamma)(1+\gamma^3\lambda-\gamma^2\lambda^2-\frac{1+2\gamma+\gamma^2}{4}) \\ & and \quad (1+\gamma)^2 > 4\gamma\lambda(1+\gamma-\gamma\lambda) \\ & and \quad 1+\gamma-2\gamma\lambda > 0 \\ \sqrt{\frac{1+\gamma}{\gamma\lambda}}\sqrt{\frac{(1+\gamma)\triangle}{1+\gamma-\gamma\lambda}} & if \quad Otherwise \end{cases}$$

In summary, the SPNE in the flexible model for the (E,E) social identity profile is:

1. If $r_C^*-r_P^* \leq \widetilde{R_1}(E,E)$ then unification occurs and $r_C = r_P = \widetilde{r_C}(E,E)$.

2. If $\widetilde{R_1}(E,E) < r_C^*-r_P^* \leq \widetilde{R_2}(E,E)$ then unification occurs and $r_C = r_P = \widetilde{r_P}(E,E)$.

3. If $r_C^*-r_P^* > \widetilde{R_2}(E,E)$ then breakup occurs and $r_C = r_C^*$, $r_C = r_P^*$. $\square$

B.1.1 Robustness and Accommodation in the Flexible Model

Our main results regarding the robustness of unions and the degree to which they accommodate the Periphery continue to hold when the policy is a flexible one. They are stated in Propositions B.2 and B.3. Proofs rely on simple algebra and follow the proofs of the equivalent Propositions 2 and 3 from the sticky policy model (See Appendix A).

Proposition B.2. ***Robustness in the flexible model.***

a. The union is more robust when the Core identifies with the nation than when it identifies with Europe: $\widetilde{R_2}(C, ID_P) \geq \widetilde{R_2}(E, ID_P)$ *for all* $ID_P \in \{P, E\}$ *.*

b. The union is strictly more robust when the Periphery identifies with Europe than when it identifies with the nation: $\widetilde{R_2}(ID_C, E) \geq \widetilde{R_2}(ID_C, P)$ *for all* $ID_C \in \{C, E\}$*.*

Proposition B.3. ***Accommodation in the flexible model.***

a. For any given Periphery identity, the union is more accommodating if Core members identify with Europe rather than with their nation.

b. For any given Core identity, the union is more accommodating if members of the Periphery identify with their nation rather than with Europe.

As in the sticky policy model, an important corollary follows.

Corollary 1. *The union is most robust and least accommodating under the* (C, E) *profile.*

B.2 Ex-post Status Gaps in the Flexible Policy Model

The ex-post status of the Periphery (S_P) and the Core (S_C) are endogenously determined in SPNE. This section details the ex-post status gap for any given identity profile. This will be used for deriving the results in Section B.3.

Define $\widetilde{SG}_{(ID_C,ID_P)}(r_C^* - r_P^*)$ as the flexible policy model ex-post status gap between the Core and the Periphery (i.e. $S_C - S_P$) in SPNE, given identity profile (ID_C, ID_P) when the level of fundamental differences between the countries is $r_C^* - r_P^*$.

When the Periphery identifies nationally the policies and cutoffs in SPNE in the flexible model are identical to those in the sticky one (see Lemmas B.1 and B.3). Thus, $\widetilde{SG}_{(C,P)}(r_C^* - r_P^*)$ is given by equation (14) and $\widetilde{SG}_{(E,P)}(r_C^* - r_P^*)$ is given by equation (16). However, when the Periphery identifies with Europe the policies and cutoffs in SPNE in the flexible model are different, and as a result so are the ex-post status gaps. These are directly derived from equation (3) and Lemmas B.2 and B.4:

$$\widetilde{SG}_{(C,E)}(r_C^* - r_P^*) = \begin{cases} \sigma_C - \sigma_P + (r_C^* - r_P^*)^2 & if \quad r_C^* - r_P^* \leq \widetilde{R_1}(C, E) \\ \sigma_C - \sigma_P - \frac{1}{1+\gamma}(1 + \gamma - 2\gamma\lambda)(r_C^* - r_P^*)^2 + & if \quad \widetilde{R_1}(C, E) < r_C^* - r_P^* \leq \widetilde{R_2}(C, E) \\ \frac{1}{1+\gamma} 2(r_C^* - r_P^*)\sqrt{(1 + \gamma)^2 \triangle - \gamma\lambda(1 + \gamma - \gamma\lambda)(r_C^* - r_P^*)^2} & \\ \sigma_C - \sigma_P & if \quad r_C^* - r_P^* > \widetilde{R_2}(C, E) \end{cases} \tag{21}$$

$$
\widetilde{SG}_{(E,E)}(r_C^*-r_P^*) = \begin{cases} \sigma_C - \sigma_P + \frac{1-\gamma+2\gamma\lambda}{1+\gamma}\left(r_C^* - r_P^*\right)^2 & if \quad r_C^* - r_P^* \leq \widetilde{R_1}(E,E) \\ \sigma_C - \sigma_P - \frac{1}{1+\gamma}(1+\gamma-2\gamma\lambda)(r_C^*-r_P^*)^2 + & if \quad \widetilde{R_1}(E,E) < r_C^* - r_P^* \leq \widetilde{R_2}(E,E) \\ \frac{1}{1+\gamma}2(r_C^*-r_P^*)\sqrt{(1+\gamma)^2\triangle - \gamma\lambda(1+\gamma-\gamma\lambda)(r_C^*-r_P^*)^2} & \\ \sigma_C - \sigma_P & if \quad r_C^* - r_P^* > \widetilde{R_2}(E,E) \end{cases} \tag{22}
$$

B.3 Social Identity Equilibrium (SIE) in the Flexible Policy Model

We now allow social identities to be endogenous. Since the problem of choosing social identity (Section 5) is unaffected by the Core's ability to adjust its policy in case of breakup, we directly proceed to the analysis of Social Identity Equilibrium. Our main equilibrium results continue to hold in the flexible policy model. Propositions B.4, B.5 and B.6 state these results. Proofs are obtained by tracing the same steps introduced in the proofs for the equivalent Propositions 4, 5 and 6 from the benchmark sticky model.

Proposition B.4. *When there are no ex-ante differences in status, i.e. $\sigma_C = \sigma_P = \sigma_E$ then:*

a. *An SIE exists.*

b. *In almost any SIE in which the union is sustained, the social identity profile is (C, E). The only exceptions are when $r_C^* = r_P^*$ and when $r_C^* - r_P^* = \widetilde{R_2}(C, P)$; in these cases other identity profiles can also be sustained under unification.*

c. *When fundamental differences are smaller than $\widetilde{R_2}(C, P)$, SIE implies unification. When fundamental differences are larger than $\widetilde{R_2}(C, E)$, SIE implies breakup. For fundamental differences between $\widetilde{R_2}(C, P)$ and $\widetilde{R_2}(C, E)$, both unification and breakup can occur in SIE.*

d. *The profile (E, E) can be sustained either when fundamental differences are zero or under breakup and large fundamental differences.*

Proposition B.5. *When the Core has ex-ante higher status, and the Periphery has ex-ante lower status than Europe, i.e. $\sigma_C > \sigma_E > \sigma_P$, then there exists a unique SIE. Furthermore the social identity profile is (C, E), and the union is sustained if and only if fundamental differences are smaller than $\widetilde{R_2}(C, E)$.*

Proposition B.6. *When the Core has ex-ante higher status, and the Periphery has ex-ante lower status than Europe, i.e. $\sigma_P > \sigma_E > \sigma_C$, then:*

a. *An SIE exists.*

b. Breakup can occur when fundamental differences are smaller than $\widetilde{R_2}(C,E)$.

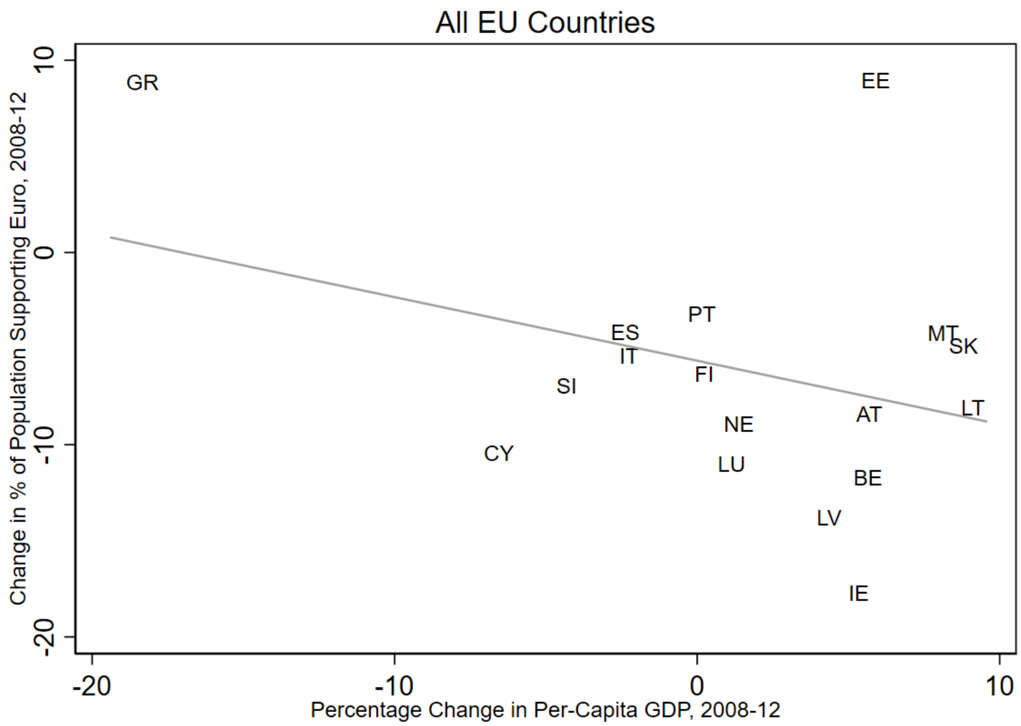
c. In any SIE in which breakup occurs, the social identity profile is (E,P).

d. There exists an intermediate range of fundamental differences in which both unification and breakup can occur. However, in any SIE in this range in which unification occurs, the Periphery identifies with the union.

e. The profile (E,E) can be sustained only when fundamental differences between the countries are at some intermediate range.

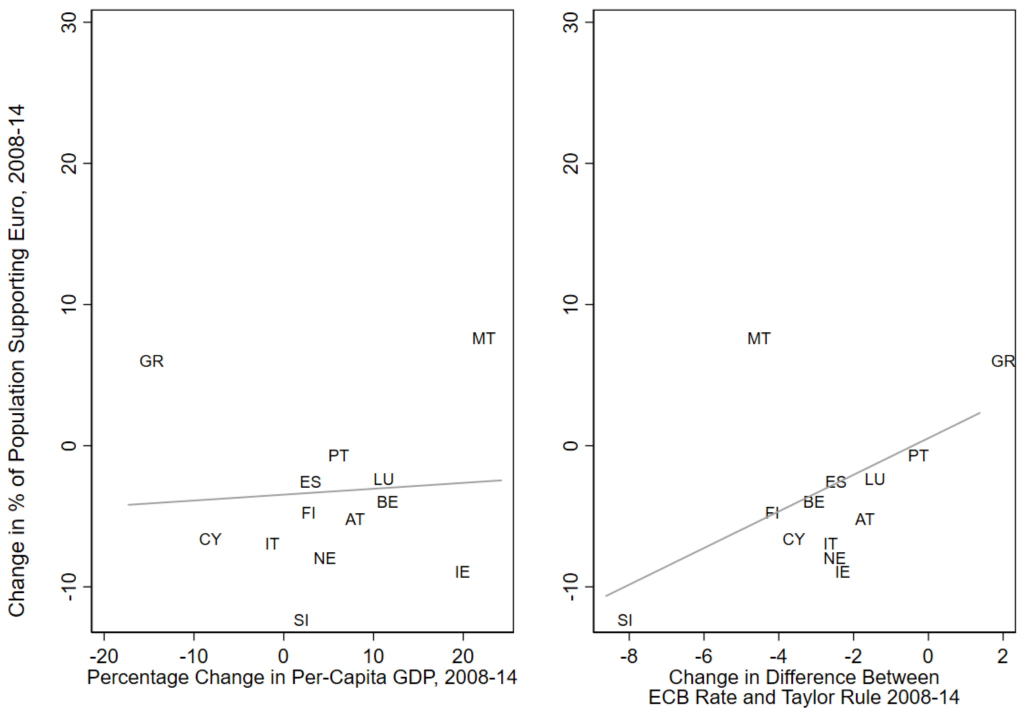
C Data Appendix

Figure C.1: Support for the Monetary Union and the Financial Crisis - EU Countries



Note: The figure includes countries that were members of the European Union in 2008. All variables are within-country changes from 2008-2012. Share supporting the Euro (vertical axis) from the Eurobarometer. GDP per capita from the IMF (USD, current prices).

Figure C.2: Support for the Monetary Union and the Financial Crisis - 2008-2014



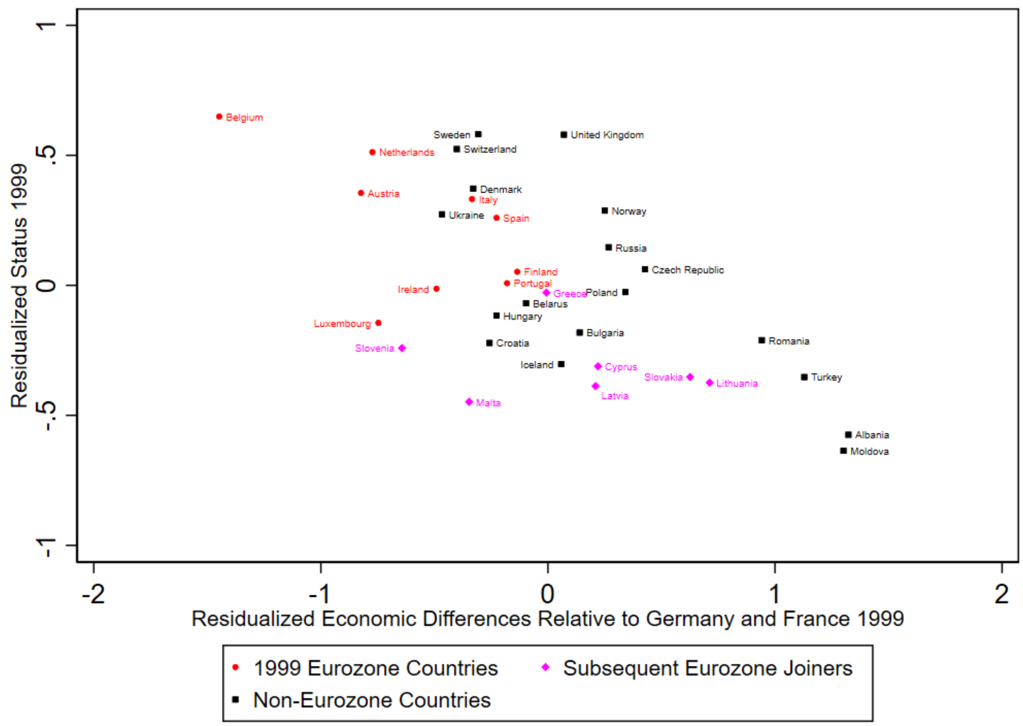
Note: The figure includes countries that were members of the Eurozone in 2008. All variables are within-country changes from 2008-2014. Share supporting the Euro (vertical axis) from the Eurobarometer. GDP per capita from the IMF (USD, current prices). Right panel shows the change in the absolute difference between ECB main refinancing operations (MRO) interest rate and country-specific optimal rate using Taylor (1993). A positive value implies the absolute difference between the country-specific rate and the ECB rate increased between 2008 and 2014, and a negative value means it shrank. The ECB rate is the mean annual rate. The Taylor-rule rate for country i is $r_i^* = p + .5y + .5(p-2) + 2$, where p is the rate of inflation over the previous year, $y = 100(Y - Y^*)/Y^*$where Y is real GDP and $Y^*$is trend real GDP. Data on $p, Y, Y^*$from the IMF.

Table C.1: Economic Differences and Status: Europe 1999

	Fundamental Differences, 1999				Status 1999
	δ_y^i	δ_{BC}^i	δ_{Trade}^i	Economic Differences	
	(1)	(2)	(3)	(4)	(5)
Albania	3.44	1.06	0.98	8.49	-1.08
Austria	0.02	0.12	0.88	6.27	-0.12
Belarus	3.00	0.71	0.97	8.10	-0.97
Belgium	0.05	0.10	0.79	5.64	0.17
Bosnia	2.94	1.97 ***	0.95 ****	8.76	
Bulgaria	2.87	0.17	0.92	7.39	-0.72
Croatia	1.61	0.33 *	0.94 *	7.24	-0.86
Cyprus	0.57	0.51	0.97	7.31	-0.79
Czech Republic	1.45	1.83 ****	0.85 ***	7.53	-0.42
Denmark	0.22	0.24	0.93	6.76	-0.11
Estonia	1.91	1.36 **	0.94 *	7.98	-0.88
Finland	0.03	0.39	0.95	6.96	-0.43
France					-0.06
Germany					0.06
Greece	0.67	0.19	0.97	7.11	-0.51
Hungary	1.73	0.35	0.88	6.89	-0.60
Iceland	0.13	0.66	0.96	7.18	-0.79
Ireland	0.09	0.34	0.91	6.60	-0.49
Italy	0.19	0.10	0.95	6.76	-0.15
Latvia	2.21	0.18 *	0.94	7.35	-0.88
Lithuania	2.17	1.16 ****	0.92 ***	7.81	-0.86
Luxembourg	0.56	0.66	0.82	6.34	-0.62
Macedonia	2.62	0.20 *	0.94 *	7.43	
Malta	1.02	0.95	0.83	6.74	-0.93
Moldova	4.11	1.21	0.97	8.70	-1.23
Netherlands	0.03	0.29	0.87	6.32	0.04
Norway	0.30	0.89	0.95	7.35	-0.19
Poland	1.82	0.79	0.93	7.55	-0.55
Portugal	0.79	0.27	0.93	6.92	-0.47
Romania	2.75	1.16	0.95	8.14	-0.73
Russia	2.53	0.71	0.97	7.95	-0.56
Slovakia	1.88	1.54 **	0.89 *	7.73	-0.83
Slovenia	0.88	0.31 *	0.86 *	6.47	-0.73
Spain	0.55	0.13	0.94	6.87	-0.22
Sweden	0.13	0.13	0.95	6.79	0.10
Switzerland	0.43	0.32	0.91	6.69	0.05
Turkey	1.84	1.57	0.97	8.33	-0.87
Ukraine	3.43	0.68	0.98	8.24	-0.83
United Kingdom	0.03	0.64	0.96	7.16	0.10
Mean	1.38	0.65	0.92	7.29	-0.51
SD	1.21	0.52	0.05	0.73	0.39

Columns 1-4 show differences from Germany and France (as one combined economy). Suppressing superscripts, δ_y is the difference in log real GDP per capita in 1997-99. δ_{BC} is one minus the correlation in yearly GDP growth rate in 1992-1999. δ_{Trade} is one minus trade with France and Germany, as percentage of GDP, in 1992-1999. * = Data available starting in 1993. ** = Data available starting in 1994. *** = Data available starting in 1995. **** = Data available starting in 1996. Column 4 shows the mean of the indicators in cols 1-3 divided by their standard deviation. Status (col 5) is the (exp of) the Best Country Ranking score, relative to the mean of France and Germany, imputed based on 1999 HDI (UN Development Programme) and country status ranking (Renshon 2016).

Figure C.3: Eurozone Membership, Economic Differences and Status in 1999, Conditional on Inflation in 1980-1999



Note: Fundamental economic differences and status from Table C.1, after controlling for the country's average inflation rate 1980-1999. For the following countries, IMF inflation data starts at year $t > 1980$ and we take the average inflation from year t to 1999. These countries (and first year t) are: Albania (1990); Belarus (1991); Croatia (1993); Czech Republic (1996); Latvia (1993); Lithuania (1996); Moldova (1993); Netherlands (1981); Russia (1990); Slovakia (1994); Slovenia (1993); Ukraine (1992).