

# The Political Geography of the Eurocrisis

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## *Abstract*

The European Union (EU) provided a two-faced response to the 2008 financial crisis: on the one hand, it refused to pursue fiscal integration through a common budget; on the other, it introduced significant horizontal transfers designed to produce financial stabilization. We analyze this response as the outcome of a *democratic constraint* on EU leaders. Given the EU's current institutional structure, citizens' preferences pose a binding constraint on what leaders can do, as they determine the scope of risk pooling among members and the degree of political tolerance for different courses of action. We show that these preferences reflect both differences in the geography of income and differences in production regimes and their institutional organization. The heterogeneity of constituencies' redistribution preferences associated with a diverse economic geography helps explain why the political constraints on national governments prevent them from engaging in further fiscal integration. By contrast, cross-unit externalities shift the preferences of citizens who are potentially exposed to negative side effects and open up the possibility of efforts towards international redistribution. We analyze these two mechanisms and present novel empirical results on the determinants of preferences for fiscal integration and international redistribution in the aftermath of the eurocrisis.

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# 1 Introduction

Politicians and pundits generally agree that the EU's institutional response to the 2008 financial crisis was both insufficient and asymmetric. It was insufficient because it failed to translate recurring discussions about various forms of risk pooling into reforms that led to a common budget. And it was asymmetric because the steps taken to create financial stabilization systems clearly reflected the priorities of Northern (creditor) countries, ultimately at the expense of the economies hit hardest by the shock (largely the Southern members of the eurozone). A similarly shared view regards these choices as deeply consequential across the union. Austerity and the zeal to minimize the scope of cooperative, redistributive solutions have arguably laid the foundations for major transformations of European party systems (Stiglitz 2011; Blyth 2013; Hobolt and Tilley 2015; Hobolt and de Vries 2016; Kriesi and Hernández 2016; Guiso et al. 2019).<sup>4</sup>

This paper focuses on the political foundations of the European Union (EU) response to the crisis. In the peculiar institutional architecture of the union, nationally elected governments remain the core political actors. As such, to the extent that European democracies are minimally responsive, leaders heavily weight the preferences of their national electorates when negotiating policy (Schneider 2018). This *democratic constraint* is balanced against a second motive—the functional needs triggered by the crisis itself, which were often linked to members' economic externalities. We focus on citizens' preferences for fiscal integration and transfers between countries (such as bailouts) as the central elements of the *democratic constraint* on EU leaders. During crises, these two motives may be at odds: as preferences become more polarized, coordination efforts that could benefit the union as a whole lack support in parts of the polity. We study this tension in the context of the EU and analyze the importance of political and economic geography in shaping the *democratic constraints* on union leaders' ability to implement a fundamental institutional reform in response to the 2008 financial crisis.

Like any other outcome of a political process, policy responses to crises are determined by a number of factors, including preferences and institutions. Our analysis of preferences helps us measure the level of support for alternative courses of action. We argue that the distribution of preferences depends on the scope of risk sharing between EU members—i.e. the extent to which citizens' social and economic circumstances are linked. During an economic crisis, “the key issue is whether the negative socio-economic effects associated with the common shock spanned across regions (i.e., members) or remained geographically concentrated. If the latter, the redistributive and institutional contentions among citizens in different regions will exacerbate. The polarizing effects of the geography of risks will be enhanced by the shock” Beramendi (2012: p.37). By contrast, if the social consequences of the crisis cut across regional boundaries, the political dynamics change dramatically, and common pool solutions become more feasible.<sup>5</sup>

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<sup>4</sup>For detailed overviews of the electoral consequences of the eurocrisis, especially in the periphery, see the symposium in *Electoral Studies* edited by Bellucci, Lobo, and Lewis-Beck (2012) and the special issue of *South European Society and Politics* edited by Bosco and Verney (2012).

<sup>5</sup>This is in line with Rehm's ((Rehm 2016)) recent account of crises and their implications for the distribution of risks: when the crisis is so broad that the risks affect a majority of the population across the income spectrum, major institutional innovations become possible.

To unpack the *democratic constraints* on member states' actions, we analyze the structural and institutional sources of conflict regarding the nature of the response to the crisis. Our study analyzes the tension between the economic logic of currency unions and the democratic logic of partial political unions by focusing on the link between the political and economic geography of the union and individual preferences. We systematically analyze the connection among domestic economic conditions, cross-national interdependencies, and political preferences—and how these shape politicians' dual strategy of (1) resisting further fiscal integration while (2) adopting major steps to achieve financial stabilization, which have significant inter-country distributional implications. We integrate insights from the study of endogenous fiscal integration, the comparative institutional analysis of responses to the crisis (Scharpf 2011; Iversen and Soskice 2013; De Grauwe 2012, 2013; Hall 2014; Walter 2016; Frieden and Walter 2017), and the analysis of preferences for international redistribution and political grievances regarding integration (Bechtel, Hainmueller, and Margalit 2014; Cederman, Gleditsch, and Buhaug 2013).

Our analysis reveals several findings. First, the infeasibility of fiscal integration reflects the constraints that (under electoral democracy) a very uneven politico-economic geography imposes on office-seeking leaders. Second, the pattern of potential economic externalities across EU members creates incentives for voters and leaders in core EU countries to support partial forms of international risk pooling (and associated redistribution).

We carefully examine how the institutional setup of the EU conditions the link between geography and preferences. Political unions vary in the extent to which they privilege the voices of citizens versus territories.<sup>6</sup> In Europe, the representation of individual countries trumps the representation of citizens as members of a common polity. Constituent members retain veto power over any institutional development that threatens their material and/or political status quo. This in turn reinforces a particular design of economic governance within the union. The eurozone is a currency union operating without a fully developed political and fiscal union (Sargent 2012; McNamara 2015). The preservation of a fragmented fiscal authority within a common currency area generates macro-economic imbalances and policy consequences that ultimately worsen economic and social outcomes (Krugman 1991; Eichengreen, Frieden, and Von Hagen 1995; De Grauwe 2013; Bordo, Jonung, and Markiewicz 2013). In the absence of forces to create a common pool of risks, such as wars or significant cross-border externalities, heterogeneous preferences act as a politically binding constraint on cooperative solutions; when those factors are present, however, partial cooperation becomes politically feasible. In such a politico-economic environment, national leaders' decisions *not* to integrate fiscally while adopting horizontal transfers towards financial stabilization reflect the distribution of preferences within their national electorates. This is the link we establish in this paper: Europe's *perpetual stasis* has clear and traceable democratic origins.

Third, examining this mechanism helps explain why, in contrast to other historical experiences, the crisis did not lead to greater EU fiscal integration. Major crises have historically created political opportunities for the EU to pursue greater fiscal and regulatory integration,<sup>7</sup> which would

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<sup>6</sup>In some countries, like Spain, the polity evolves from a previously centralized regime, and territories have very little impact on the formation of the common will. In true federations, by contrast, subnational units enjoy constitutionally protected powers to shape federal policy.

<sup>7</sup>If all members are hit by a common shock, coordinating an institutional response to the crisis can generate economies of scale, which can ease the political path towards integration (Riker 1964; Alesina and Perotti 1998; Cremer and

suggest that the 2008 financial crisis would have motivated the development of an institutional context that was better able to facilitate adjustments when needed within the union. Yet before and after the crisis, the EU failed to realize the potential efficiency and insurance gains associated with fiscal integration. Our empirical findings suggest that the preferences of citizens in various member states helped constrain individual governments from implementing reforms that would have deepened the EU's monetary union.<sup>8</sup>

Finally, our analysis illuminates an important driver behind the specific nature of state formation within the EU (Kelemen and McNamara 2017). In the absence of war as a motivation to integrate, and to the extent that national preference distributions reflect differences across markets and their institutional organizations, *democratic constraints* have a major influence over the institutional architecture of an eventual European federation. Our paper contributes to an informed discussion of current proposals on a common European budget by analyzing how the union's politico-economic geography conditions the political implications of the crisis.

The rest of the paper is organized as follows. Section II briefly reviews the EU's institutional response to the financial crisis. Section III presents the theoretical framework. Section IV outlines the main empirical implications following from the analysis and introduces our key measures of political and economic geography. Section V focuses on the determinants of support for fiscal integration by linking patterns of cross-national differences in economic geography to the variation in support for the delegation of fiscal authority to Brussels during the period 1995–2011. Section VI discusses the relationship between economic externalities and the observable transfers between member states after the crisis. We conclude by discussing the central implications of our analysis for ongoing debates on the ways forward after the European debt crisis.

## 2 The EU's Response to the Crisis: A Brief Overview

A significant number of proposals to adjust the institutional architecture of the EU, including the development of a fiscal federal union, emerged in response to the crisis. These proposals varied in terms of their ambition, design, and redistributive impact, but they tended to share a similar political fate (Pisani-Ferry, Vihriälä, and Wolff 2013; De Grauwe 2014): a limbo in between media attention and political inaction.

One very ambitious proposal, which was never seriously considered, involved a common European budget containing a standard system of automatic stabilizers and large-scale redistributive transfers across member states. The Tommaso Padoa-Schioppa group proposed a more realistic automatic cyclical adjustment insurance fund to make internal devaluations through inter-temporal, counter-cyclical management palatable (Enderlein et al. 2012): the core idea was to accumulate buffers in good times and use them automatically (i.e., despite political controversies) in bad times. In addition, a European Debt Agency that would manage—according to clear

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Palfrey 1999; Persson and Tabellini 1996). For example, the Great Depression triggered an unprecedented increase in the federal governments' fiscal control in Canada and the United States.

<sup>8</sup>The idea that “all successful monetary unions have eventually been associated with a political and fiscal union” (Nouriel Roubini, *Financial Times*, 13 June 2011 “The Eurozone heads for breakup”) has a long pedigree in political economy (Popitz 1927; Dixit 1998; Perotti 2001; Drazen 2000; Casella 2005).

criteria and strict procedures—the trade-off between access to bailouts and the preservation of budgetary sovereignty. Again, the adoption of such a system would imply a major step towards fiscal federalism and redistribution between EU member states.

None of these proposals was ever implemented, largely because there is no consensus on creating a common fiscal policy that would provide automatic stabilizers across the eurozone (Hall 2012; Krugman 2012). Instead, the defining feature of the institutional response to the crisis has been to “muddle through” by other means. In an illustration of what Kelemen and Pavone (2018) call “failing forward,” euro-zone members have taken incremental steps to enhance “economic governance” in the eurozone. They have devised a number of mechanisms, such as the European Stabilization Mechanism (ESM),<sup>9</sup> the Securities Market Program,<sup>10</sup> or an outright monetary transaction from the ECB,<sup>11</sup> which, jointly, constitute a significant step towards stabilizing the euro area.

Although the initial goal of all these interventions was financial stabilization rather than redistribution *per se*, their design implies a major struggle regarding the allocation of adjustment and stabilization efforts between donors and debtors (Schimmelfennig 2015; Jones, Kelemen, and Meunier 2016). The controversy surrounding each institutional tool under discussion centered on three issues: (1) the amount that net contributors commit to bailout efforts,<sup>12</sup> (2) the extent to which countries in need of a bailout commit to repay these funds as part of the stabilization efforts (i.e. the scope of the mutualization of debt across all members of the eurozone), and (3) the degree of fiscal autonomy to be sacrificed by recipient nations. Every step of the way, donor countries worked to limit the scope of the contribution, demanded more stringent fiscal reforms from recipient countries (thus limiting their autonomy), and secured a commitment for the bailouts to be annotated as debt to be repaid by national taxpayers. Recipient countries, in turn, sought as much automatic mutualization as possible through mechanisms such as Eurobonds, which would involve a significant transfer of resources between member states.

Overall, the EU response to the crisis featured two dominant aspects: preserving the status quo of fiscal decentralization and a contest over the scope and design of horizontal financial stabilization transfers—a contest largely won by Northern creditor countries. We argue that the nature of these efforts largely reflects a democratic constraint: EU member governments were bound by the distribution of preferences over how to cope with the crisis within their domestic electorates.

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<sup>9</sup>A successor to the European Financial Stability Facility, the ESM provides financial assistance to euro-area member states experiencing or threatened by financing difficulties.

<sup>10</sup>The SMP is defined by the European Central Bank (ECB) as interventions in public and private debt securities markets in the euro area to ensure depth and liquidity in dysfunctional market segments.

<sup>11</sup>This type of transaction refers to the potentially unlimited purchase of euro-area sovereign bonds on the secondary market by the ECB. Introduced in September 2012 with the purpose of “maintaining the integrity of the euro area,” outright monetary transactions benefit countries previously under the ESM that are experiencing particularly acute financial stress.

<sup>12</sup>For instance, Greece received about 197.5 billion euros in 2010–2016 from the ESM. And Spain received a credit of up to 100 billion euros, approximately 57 billion of which it used to bail out its banks. By contrast, Germany contributes 27% of the reserves of the ESM, Spain 11% and Greece 2.8%. Sources: [esm.europa.eu/about/publications/index.htm](http://esm.europa.eu/about/publications/index.htm); [ec.europa.eu/economy\\_finance/assistance\\_eu\\_ms/index\\_en.htm](http://ec.europa.eu/economy_finance/assistance_eu_ms/index_en.htm)

### 3 Argument: Risk Sharing and the Democratic Constraint

To study the determinants of preferences regarding fiscal integration and international transfers (bailouts), we develop an analytical framework that analyzes the expected pattern of support for these two policies across member states in a hypothetical union with market and institutional characteristics resembling those of the EU. We begin by discussing the politico-economic context in which preferences are formed. This helps anchor the key premises of the model regarding market differences and the process of preference aggregation within the union. We then analyze the determinants of institutional preferences by focusing on the role of income, the geography of production, and externalities. Finally, we return to the EU context to introduce the measures associated with the key parameters of the model and outline the empirical implications for preferences regarding fiscal integration and international transfers emerging from our argument.

#### *3.1 Politico-Economic Context and Model Set-Up*

The EU's politico-economic architecture is characterized by a high degree of market integration and relatively lower levels of political integration (Moravcsik 1998; Hooghe and Marks 2001, 2009). This combination reflects the legacy of a long unique process of institutional development. In contrast to other historical experiences of state formation, war has not been a major driver of fiscal centralization in the EU Kelemen and McNamara (2017). In the absence of the tax requirements imposed by external conflict, the union's institutional evolution has largely been determined by two other factors: supranational actors, such as the European Commission and the European Court of Justice (Stone Sweet and Sandholtz 1997, 1998; Kelemen and Pavone 2018), and markets (Gancia, Ponzetto, and Ventura 2016). Neither factor (by itself or in combination) provides a substitute for war as an engine of fiscal and political integration.

This is particularly visible in the persistence of the heterogeneous set of national identities and the comparative weakness of a common European identity. This balance also explains why the EU is neither a traditional nation state nor a fully developed federation with a strong center. It features policy areas with high levels of market, legal, and regulatory integration (e.g., circulation of goods and services, monetary policy), but important political functions (e.g., security and fiscal policy) remain fundamentally fragmented. This asymmetric integration impacts the economic realm: the EU lacks the institutional pillars of an optimal currency area. Instead, the combination of a monetary union of economies with very heterogeneous fundamentals and fiscal fragmentation creates a tension between the push for coordination to reap the benefits of economies of scale and the democratic logic by which national incumbents respond, from very different positions of relative power, to the preferences of their domestic constituencies (McNamara 2015; Schimmelfennig 2014, 2015; Jones, Kelemen, and Meunier 2016; De Vries 2018).

This conspicuous institutional evolution sets the stage for the politics of the crisis and substantiates our model's central assumptions related to preferences for integration and international redistribution within the EU. Our core assumptions are described below.

The organization of politics:

1. The centrality of national identities within the union places the nexus between each national government and its median voters at the center of the analysis. Despite the increasing role of

the EU Parliament and the European Commission, European nation states retain the ability to both set their own policy (except monetary policy for eurozone members) and veto any common proposal perceived to be against their core interests (Hix and Høyland 2011). We assume that no incumbent can remain in office if she deviates from the preferences of her national median voter. Thus, the fortune of any EU policy proposal depends on the distance in preferences between member states' median voters. The median voter with the EU as a whole has far less influence over proposals for institutional reform than median voters from individual member states.

2. To unpack the national median voter's preferences, we consider just two regions,  $A$  and  $B$ , where individuals care about their final consumption and differ in their pretax income. Region  $A$  is poorer than  $B$ , i.e., has a lower aggregate income per capita ( $W^A < W < W^B$ ). As a result, income varies along two dimensions: among individual median voters (denoted by  $w_m$ ) and among regions ( $w_r$ ). Furthermore, we denote the overall average income of the union by subscript  $u$ .

The organization of markets: As argued above, the EU economies differ considerably in the nature of their economic production, the organization of their labor markets, and the incidence of labor market risks. We make two assumptions to capture these differences in our framework:

1. To explore the impact of cross-unit differences in economic structure and production at the *national* level, we assume there is a direct link between the level of economic specialization in each EU member state and the perceived implications of losing one's job. By specialization we refer to the extent to which employment in a particular region is concentrated in a very small number of industries.<sup>13</sup> During economic downturns, individuals will find it harder to overcome unemployment spells in highly specialized regions than in more economically diverse and dynamic ones. Through this channel, the territorial distribution of risk and risk aversion becomes a primary mechanism through which the geography of economic production conditions preferences. We approximate these differences using the parameter  $\delta_r$  in equation (1). We assume that the levels of economic specialization and risk aversion are higher in region  $A$  than  $B$ .
2. In each national economy, at any given time, *individuals* are employed with probability  $\alpha$  (the first term in eq. 1 below) or unemployed with probability  $1 - \alpha$  (the second term in eq. 1). The final income of those who are employed is defined as their post-tax work earnings, while the income of those without jobs equals their unemployment benefits. Citizens are also affected by an interregional transfer ( $T$ ) that, when in place, is a function of the regional average income vis-à-vis the union.

Given these assumptions, each median voter has a utility function over final consumption,  $u(c_m)$ , which we parametrize as exhibiting (Arrow-Pratt) constant relative risk aversion,  $c_i^{1-\delta}/1-\delta$ .

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<sup>13</sup>The political economy literature repeatedly identifies risk, i.e., the possibility of future income loss, as a key factor driving people's redistributive preferences (Atkinson 1995; Moene and Wallerstein 2001; Iversen and Soskice 2001).

Accordingly, individual utility is defined as:

$$V_{mr} = \alpha \frac{(w_{mr}(1-t) - T(w_r - w_u))^{1-\delta_r}}{1-\delta_r} + (1-\alpha) \frac{\left(\frac{\alpha}{1-\alpha}tw_u - T(w_r - w_u)\right)^{1-\delta_r}}{1-\delta_r}. \quad (1)$$

In this setting, each national median voter derives welfare from the common market as a private actor, and must decide on their preferred levels of interpersonal redistribution ( $t$ ) and interregional redistribution ( $T$ ) (i.e., interregional transfers of resources among member states). It is advantageous for a wealthy region ( $B$ ) to remain in the union as long as the net balance between its private returns from the market and the redistributive system is higher inside the common market than outside.

Thus, a relatively wealthier median voter can be a net contributor in terms of redistribution *and* have incentives to remain in the union. Both policy tools ( $t$ ,  $T$ ) are insurance programs covering individual- and national-level risks, respectively. They generate redistribution since a share of members of a given reference group enjoys better coverage/transfers than they could otherwise afford, but their primary purpose is to insure against risks.<sup>14</sup> As a result, decisions about the integration of fiscal programs designed to insure against individual risks ( $t$ ) or international transfers designed to insure against national risks ( $T$ ) ultimately depend on the scope of risk sharing between members of the union. This is what determines the conditions under which political integration or international redistribution become feasible.

### 3.2 Analysis: Risk Sharing and Institutional Preferences

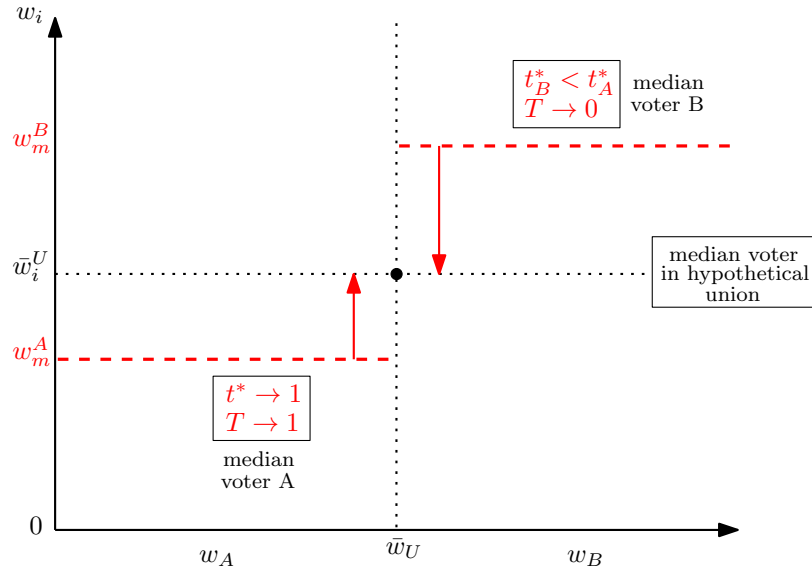
To decompose the determinants of risk sharing, we first consider a benchmark situation in which preferences are driven exclusively by income ( $\delta_r=0$ ). Second, we introduce variation across regions in  $\delta_r$  and analyze the implications of a diverse geography of production for preferences regarding interpersonal ( $t$ ) and international redistribution ( $T$ ). Finally, we consider the implications of potential cross-regional economic externalities on preferences related to international redistribution. Figure I displays the core implications of the analysis. The formal analysis underpinning the core results discussed in the next section are included in Appendix A.

#### 3.2.1 Geography of Income

The first step involves analyzing preferences exclusively in income terms. We solve the decision problem of the median voter in each region by assuming there are no differences in production across regions and no externalities between them. Figure I displays four distinctive groups of citizens. At the bottom left, poor citizens in poor region  $A$  support both types of redistribution. They want both transfers from the rich in their region and a larger tax base to draw from. At the top right, rich citizens in rich region  $B$ , in the absence of mobility and insurance motives, oppose all forms of redistribution. The other corners feature voters with mixed preferences: in the top left, the rich in a poor region oppose redistribution within the region, but support receiving a share of the resources of other members of the union (perhaps to grease their own political machines); in

<sup>14</sup>For a discussion of the link between redistributive taxation and social insurance, see Varian (1980).





**Figure I**  
**The Key Argument**

the bottom right, poor citizens in a rich region support their welfare state but refuse to share their tax base with their class comrades in other regions.

The relevant political positions are those of the respective median voters in both *A* and *B*. In the poorer region (*A*) the median voter falls below the union mean, whereas the median voter in the wealthier region falls above the union median. As a result, the former supports a relatively higher level of interpersonal redistribution via *t* than the latter. In addition, the median voter in the poor region supports direct transfers from the rich to the poor region ( $T \rightarrow 1$ ), whereas his counterpart in the rich region opposes them ( $T \rightarrow 0$ ). These results tap into two channels through which differences across regions in average income and levels of inequality lead to diverging preferences over interpersonal and interregional redistribution. Accordingly, as inequality between and within regions grows, political integration and interregional redistribution become less feasible.

### 3.2.2 Geography of Production

This map of preferences changes when we allow regions to vary in their degree of economic specialization. Most countries have three or four areas of economic development that attract large masses of workers, which alters their social and economic geography. Economic production tends to be concentrated in specific areas or regions due to increasing returns and the reduction of transportation costs (Hoover 1948; Krugman 1991; Venables 2001; Cai and Treisman 2005).<sup>15</sup> Economic concentration makes capitalist economies geographically unbalanced. Thus, some regions may pursue a growth strategy based on R&D investments and high labor productivity, whereas others rely on activities based on current consumption as the main driver of aggregate

<sup>15</sup>Examples of concentrations of economic activity include fishing, farming, mining, manufacturing of particular goods (e.g., cars), or IT-specialized industries such as hardware and software development.

demand (e.g., tourism). The former tend to be more heterogeneous in terms of employment structures and opportunities than the latter, as high-productivity, high-skilled industries require support from lower-productivity industries and services while low-productivity, consumption-oriented industries do not require nearby pools of high-skilled workers.

In very specialized areas, it will be harder for workers to find alternative employment opportunities during an economic downturn.<sup>16</sup> By implication, a higher degree of specialization in region *A* implies that workers and employers are more risk averse (i.e., they have a greater fear of losing their job). All workers, including high-income ones, support some form of insurance ( $t$ ), whereas the optimal level of insurance for the rich in a region with no economic specialization is necessarily lower (at the extreme,  $t = 0$ ). Accordingly, preferences over  $t$  within *A* become less polarized and the median voter is willing to accept a marginally higher level of redistribution for any given level of her income ( $t_{mA}/(\delta = 0) < t_{mA}/(\delta > 0)$ ); see Appendix A for the proof.<sup>17</sup>

The median voter in highly specialized areas becomes particularly sensitive to what Alesina and Perotti (1998) referred to as “political risks,” namely the possibility that delegating authority to the center would increase the likelihood of a common, dysfunctional policy, distorting the workings of the local labor market (see also Perotti 2001). Thus, the median voter in the highly specialized region will be wary of any process that endogenously delegates fiscal capacity upwards. Empowering the center imposes too great a risk on the efficient working of their local economy, rendering fiscal integration an undesirable prospect.

Critically, the connection between the geography of production and labor markets on the one hand and political coalitions on the other directly contributes to a distributive conflict over fiscal resources ( $T$ ) between *A* and *B*. To the extent that differences in productive systems and risk profiles constrain the feasibility of endogenously creating a centralized tax and insurance policy ( $t$ ), political conflict will center around the size of interregional transfers ( $T$ ). As derived from the model and shown in Figure I, the median voter in *B* continues to have no incentive to share their tax base with the rest of the union. In this, she agrees with both the wealthy and the poor within her own region: the former because they are bound to become taxpayers for a much larger pool of dependents, and the latter because they have no incentive to share their (larger) tax base with their fellow class members from other nations. As a result, differences emerging from an uneven geography of production and risk reinforce the polarizing effects of an uneven geography of income on interregional redistribution.

### 3.2.3 Shocks and Externalities

The third and final step in the analysis involves exploring how a common external shock, such as a financial crisis, interacts with the underlying economic geography of the union. The key distinction here is whether the crisis brings members of the union closer in terms of resources and

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<sup>16</sup>Krugman (1991) argues that localization provides locational insurance when increasing returns are at work. This mechanism explains why previously advantageous areas for employment relocation become traps in bad economic times. As the expectations of downfall spread, the speed of the crisis and the decline in the employment prospects of specialized workers reinforce each other.

<sup>17</sup>A direct implication of this result is that the risk differentials associated with the geography of production facilitate the formation of intraregional cross-class coalitions in defense of the dominant economic sectors and, conversely, undermine the likelihood of interregional class coalitions.

risk profiles or generates asymmetric effects that exacerbate pre-existing differences. This, in turn, depends on whether the negative socioeconomic effects associated with the common shock of the financial crisis span across regions or remain geographically concentrated. If the impact is concentrated, the crisis will polarize regions in terms of redistributive preferences and institutional tensions. Yet if the social consequences cut across regional boundaries, the crisis may motivate political and fiscal integration. The degree of concentration depends in large part on the scope of socio-economic externalities across regions.

Economic externalities depend primarily on the extent to which labor and capital travel across borders, and their implications for countries' risk profiles. Labor flows work as a transmission mechanism of labor markets and social insurance risks between territories.<sup>18</sup> Capital cross-border linkages within a common economic and monetary area increase exposure to financial risk, resulting from the pattern of internal lending and borrowing (Hale and Obstfeld 2014). The geography of debt flows serves as a mechanism to transmit financial risks between territories.

Our analysis so far has assumed no externalities of either type. To the extent that this remains the case, in the presence of an uneven geography of production, economic shocks have differential effects on regional economies and polarize institutional preferences across member states. By contrast, to the extent that cross-regional externalities exist, such as cross-country exposure to financial risks, preferences will change to favor some level of interregional redistribution.

For instance, consider the case of high levels of mobility among the unemployed. In such a case, the region expelling unemployed poor people increases its employment rate and average output, whereas the recipient region experiences drops in both. As a result, both regions converge in the nature of the distributive conflict among their citizens. More importantly, as the poor travel across regional boundaries, net welfare recipients in wealthier regions lose their ability to protect their tax base by keeping a decentralized insurance system and reducing interregional redistribution.<sup>19</sup> A similar process unfolds in relation to capital and debt flows. If the geography of debt is such that wealthier areas are exposed to a negative shock via the risk of poorer areas defaulting on their payments, then the risks associated with economic collapse are no longer concentrated territorially.

By acting as a multiplier of social shocks across territories, labor and capital/debt flows thus become a new source of risk against which wealthier members of the union have incentives to create some form of insurance. This scenario is captured by the two arrows in Figure I, which show the partial convergence of preferences across regions as a result of externalities. In anticipation of negative economic externalities, rich *and* poor citizens of the wealthier region *B* will coalesce with rich citizens of the poorer region *A* on an exchange in which interregional transfers ( $T$ ) are used to ensure the status quo in terms of fiscal integration and interpersonal redistribution ( $t$ ), even

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<sup>18</sup>We use labor flows to refer to the mobility of workers and potential dependents across borders. For analyses in which increasing labor mobility facilitates the adoption of common social policies, see Bolton and Roland 1996; Perotti 2001 and Morelli, Yang, and Ye 2012.

<sup>19</sup>By definition, the interregional mobility of dependents from economically depressed to economically prosperous areas involves the interregional transfer of resources between the regions of the union.

if this is at the expense of the poorest members of society.<sup>20</sup> The goal is to contain the scope of negative economic consequences associated with migration and capital/debt flows, which would undermine the viability of regionalized labor markets and welfare states.

Support for a combination of decentralized interpersonal redistribution and significant inter-regional transfers is likely to grow stronger only when (the expectation of) negative economic externalities and regional economic specialization co-exist. The resulting fiscal structure would be a combination of decentralized fiscal institutions with partial interregional transfers ( $T$ ).<sup>21</sup> The actual form of  $T$  will reflect the nature of the externality. If the concern is primarily about labor flows, it will take the form of funding infrastructure programs designed to enhance aggregate demand and the functioning of local labor markets in recipient areas (e.g., the various forms of EU Structural Funds). If the concern is primarily about financial risks and capital losses, it will take the form of targeted bailouts meant to rebalance financial institutions (both private and public).<sup>22</sup>

## 4 Context, Measurement Approach, and Empirical Implications

This section presents background information on the EU to help analyze the role of economic geography in the European debt crisis. We then use this information to derive empirical expectations from the model as applied to the crisis. The common currency area was created through the monetary integration of countries with very diverse economic strategies (production) and resources (income). These differences were exacerbated in several enlargement rounds, which entailed distributive compromises between the beneficiaries of larger markets and those facing steeper competition while giving up significant policy autonomy (Schneider 2009). These differences in income and production are important for understanding the nature of the eurozone crisis and its political implications. Growth strategies shape labor markets and distributive conflicts within countries. Income levels, and with them state resources, affect distributive conflicts within and between countries.<sup>23</sup>

### 4.1 *The Geography of Income and Production in the EU: Investment- versus Consumption-oriented Strategies*

The key distinction when examining the geography of income and production in the EU is between *investment* and *consumption* strategies.<sup>24</sup> An innovation-based strategy builds on

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<sup>20</sup>This will be the optimal strategy insofar as an additional marginal increase in interregional redistribution ( $T$ ) equates to a net loss due to changes in interpersonal redistribution ( $t$ ) motivated by higher levels of cross-regional mobility of dependents.

<sup>21</sup>This logic of prospective self-insurance is also at work in the international arena: the privileged prefer to pay to keep the poor away rather than risk allowing undesired dependents into their economies.

<sup>22</sup>Optimally, and to ensure political feasibility, these packages will feature large levels of conditionality, targeting, and intertemporal burden sharing with recipient countries. For empirical evidence on citizens' support for different forms of bailouts, see Bechtel, Hainmueller, and Margalit (2014).

<sup>23</sup>In terms of the formal model developed above, growth strategies speak directly to cross-national differences in the type of economic specialization  $\delta_i$ , while fiscal capacity relates to cross-national differences in the pool of resources necessary to undertake different types of redistribution ( $w$ ,  $t$ ,  $T$  in the model).

<sup>24</sup>These strategies are defined at the country level for national governments, which remain the key decision makers in the EU and control the design of domestic economic policy.

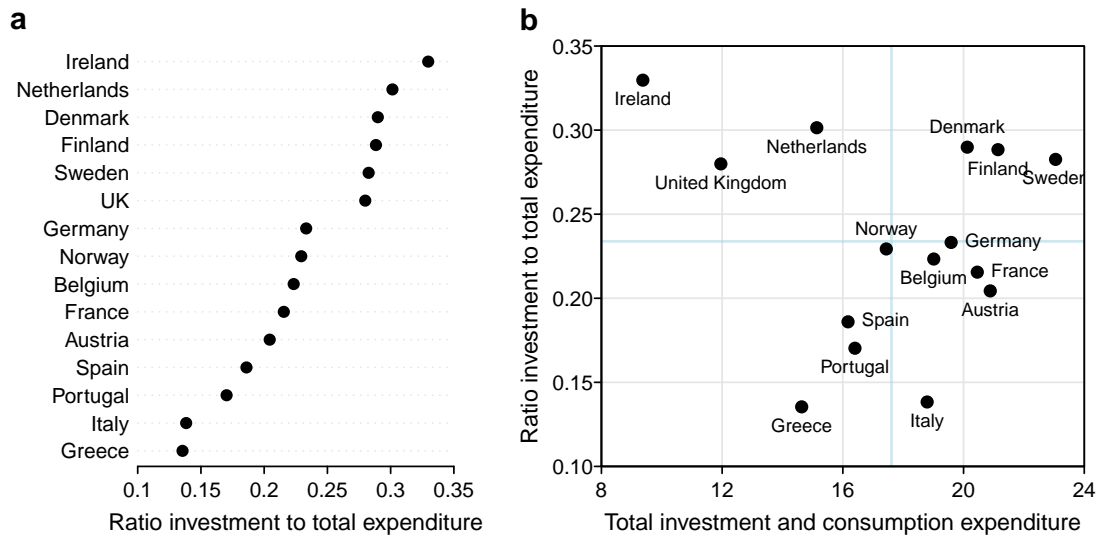
skills upgrading in the medium run, and aspires to increase productivity levels and sustain growth through what Aghion and Howitt (2006) terms “leading-edge innovations.” Yet for countries behind the technology frontier, growth occurs primarily via capital investments, the import of technologies developed elsewhere, and consumption-oriented policies aimed at sustaining high levels of aggregate demand (Acemoglu, Aghion, and Zilibotti 2006). Investment-oriented economies are export driven, whereas consumption-oriented ones are not (see Figure III below).<sup>25</sup> Governments’ choices reflect how much they privilege consumptive expenditure at the expense of future returns via investments in education, research and development, and childcare. The balance between these two sets of policy instruments is critical to understanding the political economy of growth and inequality in the postindustrial world (Beramendi et al. 2015).

Consider the origins of wealth differences among EU members at the onset of the crisis. The European Monetary Union brought together under a common currency multiple countries with very different levels of fiscal resources, as measured by the amount of revenue they are capable of collecting relative to the size of their economies. Some of these economies are more prone to compete in external markets and have developed well-institutionalized solidarity systems, while others are more domestically oriented and have much more limited labor market coordination and social protection systems (Thelen 2012; Iversen and Soskice 2019). Besley and Persson (2011) show convincingly how legal, political, and fiscal institutions are complements of each other, shaping economic development (affecting  $w_r$  in Figure I) in the long run. Fiscal capacity and revenue collection reflect the shadow of long-term processes, including the type of industrialization pursued, the age of democracy, and the pattern of state–society relations regarding strategies of political mobilization. Countries that implemented democracy and the rule of law early on industrialized first, and consolidated a set of political and economic institutions that are more conducive to investment. They are also more capable of forging political coalitions to expand public goods and raise the necessary revenues (Pincus and Robinson 2014), and are less tolerant of capture by special organized interests (North, Wallis, and Weingast 2006; Grossman and Helpman 1994). By contrast, late industrializers only achieved modernization via different forms of import substitution, which nurtured a core of well-organized interests (Altamirano, Rueda, and Wibbels 2015) that captured political control over state institutions and used them to secure political hegemony via patronage and clientelism rather than programmatic politics (Kitschelt and Wilkinson 2007). These states are thus weaker; their shadow economies grow larger (Schneider, Buehn, and Montenegro 2010), and both voters and parties privilege consumption over investment.

Following (Beramendi et al. 2015: 10), Figure II captures the relative importance that countries attributed to investment-oriented policies in the pre-crisis period. Using expenditure data from the Organisation for Economic Co-operation and Development from 2003 to 2007, we define consumption-oriented policy as the sum of per capita gross domestic product (GDP) expenditures on old-age pensions, survivors’ pensions, and unemployment benefits and incapacity pensions. We consider investment-oriented policy to be per capita GDP expenditures on public and private

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<sup>25</sup>In line with this logic, we broadly define *investment* as public expenditures that increase the overall productivity of the economy, particularly labor and capital. The term “investment” refers to the future orientation of these expenditures in the fields of education, research and development, childcare, and labor market activation (Esping-Andersen 2002). In turn, we define *consumption* expenditures as social transfers to beneficiaries that are needed to cover current needs and demands.



**Figure II**  
**Configuration of economic strategies in Europe.**

Panel (a) shows the relative weight of spending on investment compared to total expenditure. Panel (b) plots countries' total expenditure on the abscissa, and the relative weight of spending on investment in total expenditure on the ordinate. Light blue lines indicate average values.

research and development, tertiary education, childcare services, and active labor market policies. We use these two measures to calculate the ratio of investment-oriented expenditure to total expenditure (investment + consumptive expenditure).

Four distinctive groups emerge in the right panel of Figure II. Nations like Denmark and Sweden both make large budgetary efforts in investment and consumption, and privilege the former. A second group of nations, which includes Austria, Germany, France, and to a lesser extent Italy, traditionally engage in large-scale spending but privilege consumption over investment. Symmetrically, at the other end of the spending capacity spectrum, we find nations, like Ireland, that have privileged investment over consumption, whereas others, like Spain, Portugal, and Greece, spend relatively little and devote most of their budget to short-term, consumption-oriented transfers. With declining tax revenues, investment-oriented strategies become less viable and the economy concentrates in low-productivity, low-technology sectors, such as construction or tourism. These differences, which are quite persistent over time, shape both how different national economies reacted to the Great Recession and the potential patterns of economic externalities across territories. We analyze each of these in turn, thereby linking the EU experience to the key parameters in the model above.

#### 4.2 Economic Strategies and Post-crisis Outcomes

We start by analyzing how different types of national economies responded to the financial crisis. In investment-oriented political economies, we expect labor markets to be less elastic to economic downturns for three reasons. First, consumption and investment are not perfect

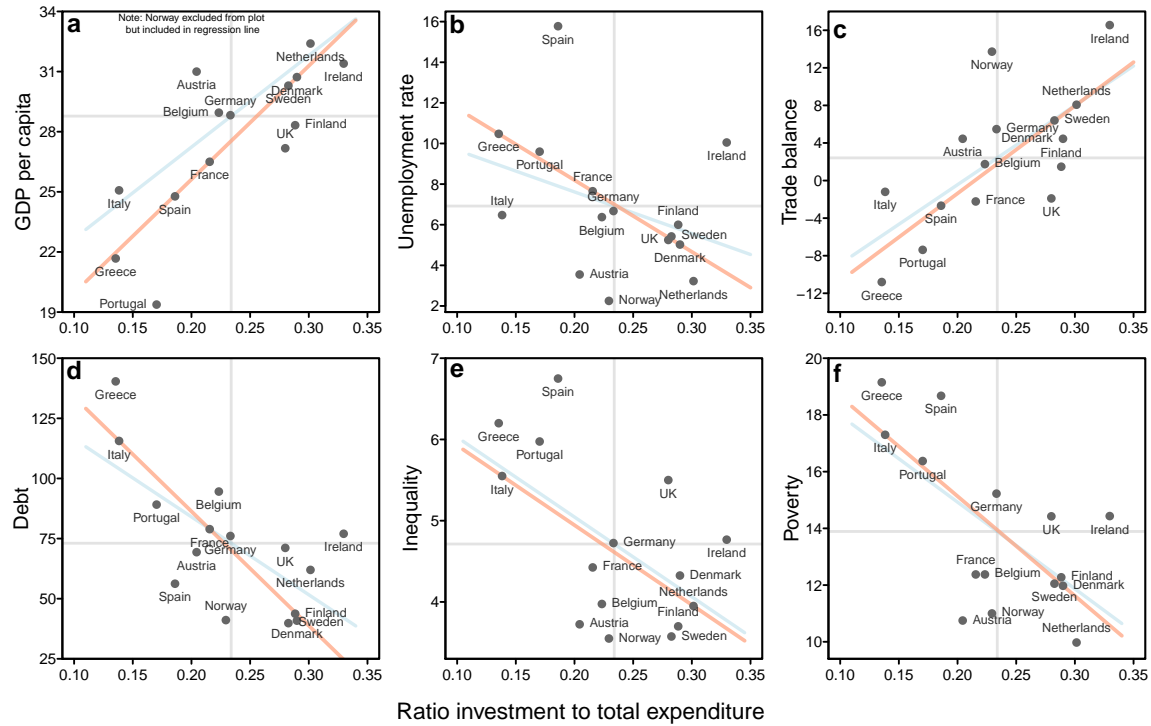
substitutes: economies may choose to prioritize one over the other, but the required minimum of consumption effort is higher than the required minimum of investment effort. This reflects the constraint that democracies and markets must meet current needs before thinking about future returns. Accordingly, once an economy decides to prioritize investment, its economic structure becomes more diversified; employment shares are allocated across a wider range of industries at any given level of overall effort. Given a minimum level of skills, this broadens the options for labor market transitions. The second reason is that the presence of well-developed systems of active labor market policies within less rigid labor markets speeds up the adjustment, and mutes the response, of the unemployment rate to economic slowdowns. Finally, countries with an innovation-based strategy and high levels of fiscal capacity (such as Sweden, Denmark, and to a lesser extent Germany) can better absorb the negative consequences of the shock not only because they have fewer demands for budgetary intervention, but also because their automatic stabilizers operate more effectively. Accordingly, aggregate demand remains steady fiscal sustainability is not in question, and international investors perceive these markets as safe targets for investment (Scharpf 2011).

In conclusion, past economic strategies mediated the impact of the crisis and set EU countries on rather divergent politico-economic trajectories in terms of risks, fiscal weaknesses, and distributive outcomes in ways that speak directly to the parameters of the model above. To illustrate this point empirically, Figure III shows the link between country differences in economic strategies prior to the crisis (on the x-axis) and politico-economic outcomes after the collapse of Lehman Brothers. Panel (a) plots a country's GDP per capita on the y-axis, while panel (b) plots the national unemployment rate. Panel (c) shows the post-crisis balance in trade. Panel (d) illustrates levels of public debt as a percentage of GDP. The last two panels show the distributional effects of pre-crisis economic strategies. Panel (e) plots levels of inequality (the P90/P10 income ratio), while panel (f) shows the percentage of individuals below the poverty line.

The evidence conveyed in Figure III clearly shows that investment- and consumption-oriented economies pursued divergent responses to the crisis. European economies have grown apart in terms of both the incidence of risks and the financial capacity to cope with them. Panel (a) shows a fairly strong linear relationship between economic strategies and outcomes. Countries that privilege investment and trade over consumption have a markedly higher GDP (about 5,000 Euro per capita). In contrast, panel (b) of Figure III confirms that countries pursuing consumption-oriented economic growth had the highest unemployment rates in 2008–2011. Consistent with our model, in economies with higher shares of employment in low-skilled, low-productivity sectors oriented to short-term consumption, the incidence of labor market risks was more than twice that of investment-oriented economies.

When risks are realized, the fiscal burden associated with abrupt increases in budgetary demands in consumption-oriented states translated into rapidly increasing levels of public debt, as shown in panel (d) of Figure III. By contrast, investment-oriented economies faced the crisis from a stronger fiscal base and experience fewer increases in debt.

The social consequences of this process are quite stark. Panel (e) shows that countries pursuing consumption-oriented economic growth faced much higher levels of inequality: the income of the richest 10% of households is 5–7 times greater than that of the bottom 10%. In virtually every country that follows a more investment-oriented economic strategy, this ratio is considerably



**Figure III**

**Effect of economic strategies on politico-economic outcomes.**

Panel (a) shows GDP per capita [in 1,000s ppp-adjusted Euro], panel (b) unemployment rates [in percent], panel (c) trade balance (exports minus imports). Panel (d) shows debt [in percent of GDP], panel (e) inequality [P90/P10 ratio], and panel (f) the percentage of individuals below the poverty line. The linear relationship between each variable and economic strategies is indicated by an OLS fit (light blue line) and an outlier-robust median regression (light red line). Light gray lines show averages of variables.



lower. Consumption-oriented societies also experience higher levels of poverty; more than 15% live below the poverty line.

To summarize, by combining a common financial shock with a very heterogeneous geography of production, the euro crisis has increased the polarization of risks and income across EU members. Perceptions and aversion to unemployment risks ( $\delta_r$  in our model) have grown apart, as have the tax bases ( $w$ ) and the incidence of inequality within nations (the ratio of  $w_i$  to  $w$ ).

### 4.3 Externalities

The co-existence of investment- and consumption-oriented economies under the same currency also shapes the type and incidence of economic externalities within the union. Because of the split between consumption- and investment-oriented economies, European job markets were fairly isolated in terms of labor flows prior to the crisis, except for a very small share of the high-skilled labor force. To the extent that economic strategies among EU members continue to diverge, unskilled workers from the periphery have little future in Northern investment-oriented economies. As a result, labor flows remain limited to the upper ranks of the skill distribution and do not constitute a major source of economic externalities.<sup>26</sup>

By contrast, the geography of debt flows tightly links the fortunes of the investment-oriented economies of the core and the consumption-oriented economies in the periphery (Hale and Obstfeld 2014, Fernandez-Villaverde, Garicano, and Santos 2013). Prior to the crisis, investment-oriented economies borrowed at low rates from the ECB and invested in high-yield sovereign bond markets in the periphery, feeding short-term growth strategies and facilitating a sharp increase in net foreign liabilities by the periphery with respect to the core. As a result, countries with financial institutions that invested more aggressively in buying bonds and injecting liquidity into peripheral economies became more exposed to the risk of a potential default by the latter. To the extent that core investors are tied in bond markets in the periphery, their economic fortunes are no longer isolated: default in the periphery entails major financial risks for key financial institutions at the core, thereby feeding back into the political process<sup>27</sup>.

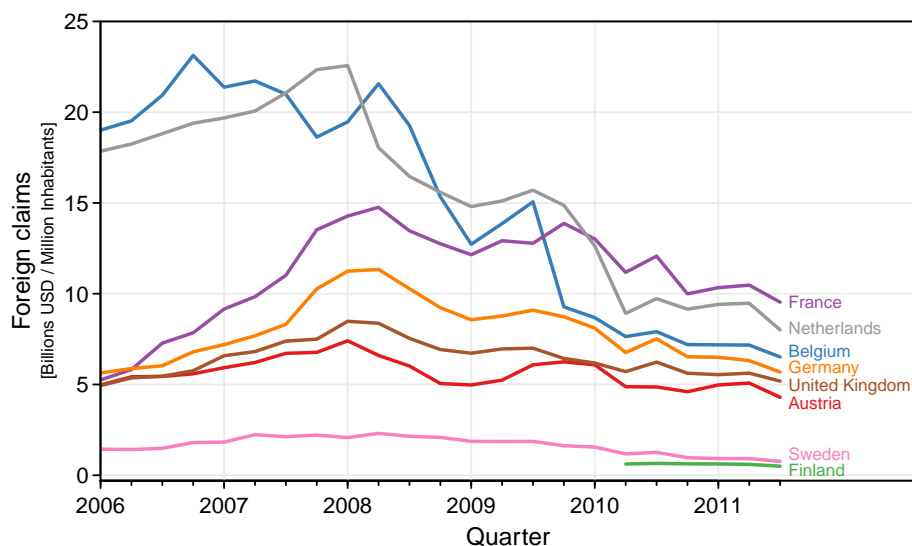
Figure IV illustrates the evolution of this externality between the first quarter of 2006 and the third quarter of 2011.<sup>28</sup> Throughout this period, several core economies experienced a substantial degree of financial exposure to the potential collapse of South European economies. Accordingly, a potential default by one or more of these economies constitutes a major financial risk for the economies at the core. As the externalities are a source of shared risk, the transfers ( $T$ , in this case large-scale bailouts financed unevenly) essentially serve as a form of insurance against the future realization of severe risks. Through the scope of potential externalities, financial linkages tie together the fortunes of the periphery and some members of the core in ways that create

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<sup>26</sup>The case of refugees fleeing out of Syria is a very different one though, which is beyond the scope of this paper.

<sup>27</sup>The feedback process works in the opposite direction as well: Walter et al. (2018) show, for instance, that bank closures in the run-up to the 2015 bailout referendum altered voters' expectations about the economic consequences of rejecting the bailout package, thus affecting the outcome

<sup>28</sup>Using data from the Bank of International Settlements, we capture the size of foreign claims (on an ultimate risk basis) of core European countries in domestic banks in Spain, Portugal, Ireland, Italy and Greece. Figure IV plots core banks' risk exposure in billions of constant US\$ relative to population expressed in millions.



**Figure IV**  
**Post-crisis economic externalities across the EU.**

Consolidated country risk exposure: Foreign claims (on ultimate risk basis) held by domestic banks [in billions of US dollars per million inhabitants].

political support for transfers between countries ( $T$ ) oriented to protect the financial system of core economies.

#### 4.4 Summary and Empirical Strategy

The euro crisis generated two distinctive patterns: (i) a polarization in the geography of income and risk within the union and (ii) significant economic externalities in the form of financial risks to the core from the periphery. Analyzing these patterns through the lens of the theoretical model described above yields two empirical implications, which we study below in a comparative analysis of Western European countries:

1. Since consumption- and investment-oriented countries diverge systematically in their post-crisis outcomes, the economic geography of the EU becomes more polarized, as do the preferences of its citizens: *The more a country relies on economic strategies that prioritize investment over consumption, the lower its citizens' support for fiscal integration (H1).*
2. *As the scope of economic externalities from the periphery to the core increases, the support for international transfers (international redistribution) increases (H2).*

Below we evaluate the empirical validity of these two claims. Our empirical strategy proceeds in three steps. First, we provide evidence of a key premise in our theoretical model. We show that areas in which economic activities are less heterogeneous and more focused on consumption-oriented economic strategies tend to have less polarized preferences over redistribution. Subsequently, we evaluate H1 by analyzing the relationship between economic strategies and citizens' preferences

for fiscal centralization. Finally, we evaluate H2 by examining how citizens' support for financial aid across countries (international redistribution) varies depending on their country's exposure to financial risks.

## 5 Empirics

We first note some general points about the empirical analyses to follow. Our analyses are observational, relying on cross-sectional survey items collected after the onset of the financial crisis. We look for empirical patterns in the data that are (in-)consistent with our theoretical model's predictions. Thus, we focus less on the usual statistical hypothesis tests and more on a visual, descriptive exploration of relationships. Cleveland (1993) provides an excellent discussion of how visualization can supplement (or even replace) statistical inference. Especially in (often 'data-limited') comparative analyses, Bowers and Drake (2005) urge scholars to present "compelling description of the patterns within a given dataset" by using "graphical presentations [...] rather than formal hypothesis testing."

Since our population of interest is the set of 14 (Western) European countries, our sample size is naturally limited.<sup>29</sup> This raises two related issues: (i) we will be analyzing all available country cases, rather than working with a sample from a larger population and (ii) the limited information contained in small data sets makes it difficult to precisely estimate the effects of the variables. Both issues imply that the application of classical statistical inference "based on the long-run behavior of some repeatable data mechanism" (Jackman and Western 1994: 412) is questionable. Thus, all our statistical analyses are conducted in a fully Bayesian framework (e.g., Gill 2014). This has the advantage that inferences are conditional on the observed data only, instead of trying to generalize to some (hypothetical) super-population (cf. Gill 2001; Jackman 2009: ch.1), so our estimates and measures of uncertainty are more credible in small samples.

The next two subsections directly examine *H1* and *H2*. Appendix C provides empirical evidence to support the fundamental micro-logic underlying our argument, namely that countries that rely more on investment-oriented economic strategies experience greater income polarization of redistribution preferences.

### 5.1 Support for a European Tax System

*H1* relates citizens' average preferences regarding a common European fiscal policy (i.e., the centralization of *t*) to countries' economic strategies. We expect that citizens of countries that privilege investment-oriented policies are less likely to support the "Europeanization" of fiscal politics. We study this expectation using data from the EU's Eurobarometer survey, wave 74.2,

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<sup>29</sup>Our sample includes non-euro-area countries such as Sweden and the United Kingdom for two reasons. First, they make (and are affected by) decisions in the council that are relevant to the problem we are studying. Second, even non-eurozone countries are *de facto* part of the same currency union, as shown by Plümper and Troeger (2008). Both considerations suggest that their citizens' preferences regarding redistributive arrangements are relevant. Nonetheless, we also show in Appendix G that our results remain substantively unchanged when excluding non-eurozone countries (cf. panel A of Table F...z 1).

fielded in autumn 2010.<sup>30</sup> Our sample is limited to countries for which we have data on investment- and consumption-oriented policy choices – Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom. This sample consists of 14,079 respondents. We discard 679 cases due to missing values on covariates for a final sample size of 13,400.

Our dependent variable is an item probing whether respondents think tax policy should be set exclusively by national governments, or jointly within the EU.<sup>31</sup> We create an indicator variable equal to 1 if respondents prefer EU involvement in tax policy. The share of citizens in favor of fiscal centralization ranges from around 10% in Denmark and Finland to about 40 to 50% in Spain, Italy, and Portugal.

In order to account for compositional differences between countries, we include as covariates individuals’ gender, age, and years of education, as well as their subjective perception of income, and indicator variables for current labor force status (unemployment, retirement).

We start with a model describing country differences in average levels of support for centralized European fiscal policy after accounting for compositional differences in citizens’ characteristics listed above. This is done by estimating a hierarchical probit model (e.g., Gelman and Hill 2007) in which we regress tax preferences on individual-level covariates and country-specific constants or intercepts. For the tax preferences  $y_{ij}^*$  of individual  $i$  ( $i = 1, \dots, n_j$ ) in country  $j$  ( $j = 1, \dots, J$ ), we specify  $y_{ij}^* = \alpha_j + \mathbf{x}_i \boldsymbol{\beta} + \epsilon_{ij}$ , where  $\mathbf{x}_i$  are individual-level covariates, and  $\alpha_j$  are country-specific effects. Residuals  $\epsilon_{ij}$  are white noise with unit variance to identify the probit model.<sup>32</sup> We treat country effects in two different ways. In the first variant, we specify a ‘random-effects’ structure, where  $\alpha_j$ s are drawn from a common distribution (e.g., Hsiao 2003: 255),  $\alpha_j \sim N(0, \sigma_a^2)$ . This induces the well-known shrinkage property of random-effects models (Poirier 1995: ch.6, Jackman 2009: 309). Our second variant specifies country-specific effects akin to ‘fixed’ coefficients. In the Bayesian framework this amounts to specifying that  $\forall j : \alpha_j \sim N(0, \nu_j)$  where the hyperparameter value for  $\nu_j$  is set to a large value (Rendon 2012). This produces independent draws of  $\alpha_j$  without inducing any shrinkage. Furthermore, it allows country-specific effects  $\alpha_j$  to be correlated with individual-level variables.<sup>33</sup>

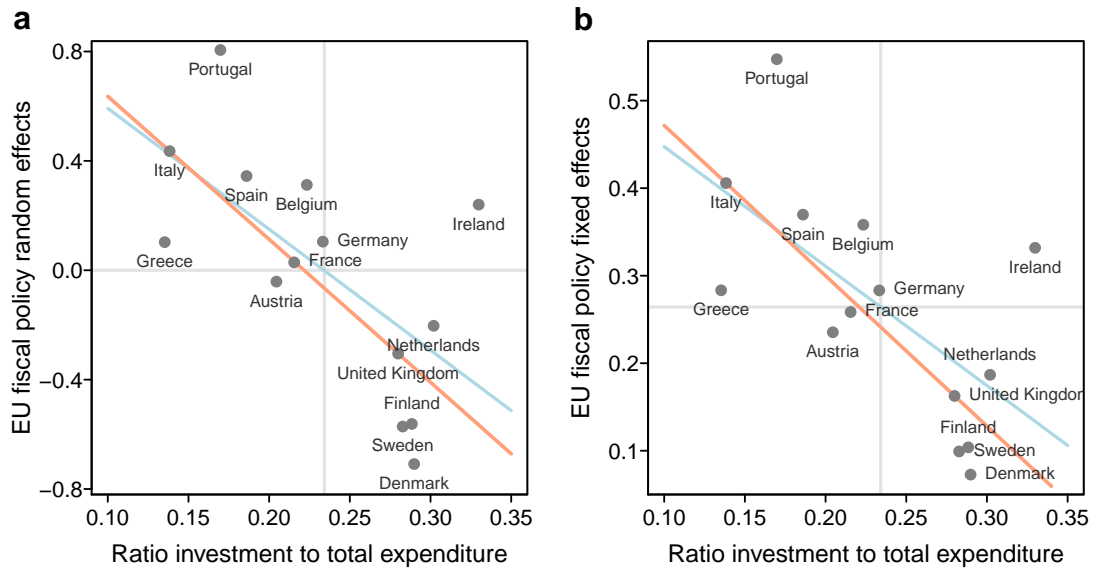
As an initial visual examination of our hypothesis, we plot estimated country-specific intercepts,  $\alpha_j$ , against countries’ economic strategies (as suggested by Bowers and Drake 2005 and Gelman and Hill 2007). Figure V does this for both our ‘random’ and ‘fixed’ country-effects specifications. Our results clearly show that citizens in countries that focus on investment-oriented economic strategies exhibit systematically lower levels of support for fiscal centralization. In the six countries with an investment-to-total-effort ratio above the overall mean, five are inhabited by citizens who

<sup>30</sup>For more details, see Appendix B.

<sup>31</sup>The question is: “For each of the following areas, do you think that decisions should be made by the (*nationality*) Government, or made jointly within the European Union? 1 (*National*) Government, 2 Jointly within the EU.” “Don’t know” was an explicitly available option. We impute non-responses (including don’t know) as part of the Markov chain Monte Carlo (MCMC) algorithm when estimating our models.

<sup>32</sup>We use a latent variable version of the probit model, which generates observed outcomes using a threshold mechanism on the continuous latent variable  $y^*$ :  $y = 1$  iff  $y^* > 0$ , else  $y = 0$ .

<sup>33</sup>Our Bayesian model specification is completed by assigning vague priors to all free model parameters. We obtain the posterior distribution of all model parameters via MCMC sampling. For more details on estimation, prior choices, and robustness checks, see Appendix H.



**Figure V**  
**Europeans' support for centralized fiscal policy and its relationship to a country's economic strategies.**

Probit models of support for centralized fiscal policy with country-specific constants. Panel (a) shows country-specific random effects, while panel (b) shows country-specific fixed effects. Larger values indicate greater support for fiscal centralization. The linear relationship between centralization preferences and economic strategies is indicated by an OLS fit (light blue line) and an outlier-robust median regression (light red line). Gray lines show averages of variables.

prefer lower-than-average levels of tax centralization. Citizens of six of the seven countries with an investment-to-total-effort ratio below the overall mean prefer higher-than-average levels of tax centralization. The relationship between economic strategies and support for fiscal centralization holds in both types of model specifications (as shown by the similarity of patterns under fixed and random-effects models).

We extend our hierarchical model to include country-level variables in order to conduct a more direct statistical test of this relationship:  $\alpha_j \sim N(\mathbf{z}'_j \boldsymbol{\gamma}, \sigma_\alpha^2)$ . Here,  $\mathbf{z}_j$  contains country-level variables, most notably our measure of economic strategies. The parameter vector  $\boldsymbol{\gamma}$  captures how they shape citizens' support for fiscal integration (after adjusting for other individual- and country-level characteristics). Although this modeling strategy does not produce qualitatively different insights from those gained by studying Figure V, it does account for the fact that country effects are estimated with errors and provides a quantitative assessment of the uncertainty in the relationship between economic strategies and citizens' preferences for fiscal centralization. Table I shows the results from four specifications. We start with an 'empty' model *M0*, which accounts for compositional differences between countries, but does not include any country-level information. It serves as a useful point of comparison for other models. Its estimated country random effects variance of 0.16 shows substantial differences between average preferences for fiscal centralization: about 14% of the total variance in preferences is due to systematic (and unexplained) country differences. In *M1* we add two summary measures of countries' economic and budgetary performance.<sup>34</sup> Interestingly, while estimates for both variables are in the expected direction, they add little to our understanding of differences in citizens' preferences: the posterior credible interval for both is rather wide and spans zero. Furthermore, adding both summary measures (for no less than seven country characteristics) does not appreciably reduce the systematic country variation in preferences (which remains estimated as 0.16).

We add our measure of investment-oriented economic strategies in *M2*. It shows again, quite unequivocally, the negative relationship between preferences for fiscal centralization and investment-oriented economic strategies. Our estimate for economic strategies is negative with a narrow credible interval, which does not include zero. To view the strength of the quantitative evidence for our argument from a different angle, we calculate the posterior probability that the relationship between fiscal preferences and economic strategies is of the opposite sign. Our results show that this probability is decisively low, an estimated 0.4%.

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<sup>34</sup>These two variables are a low-dimensional summary of the following country-level characteristics: GDP per capita, unemployment rate, inequality, poverty, debt-to-GDP ratio, and deficit. Simply including all these variables in our model is not sensible because of our limited country sample size. Furthermore, many variables might themselves be the result of countries' economic strategies (thus their inclusion could result in post-treatment bias). Instead, we use a singular value decomposition to create two principal components, representing latent measures of countries' economic and budgetary performance. Those two dimensions represent 88% of the total variation in all variables. The values on these two variables are constructed such that they represent the effect of economic and budgetary issues *net* of the influence of countries' economic strategies. See Appendix D for technical details.

**Table I**  
**Macro-micro models of preferences regarding centralization of EU tax policy.**

	<i>M0</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>	<i>M4</i>
Economic performance <sup>a</sup>	—	0.209 [−0.101 0.492] <i>Pr</i> ( $\theta < 0$ ): 0.114	0.210 [−0.017 0.432] <i>Pr</i> ( $\theta < 0$ ): 0.062	0.215 [−0.048 0.464] <i>Pr</i> ( $\theta < 0$ ): 0.077	0.018 [−0.198 0.210] <i>Pr</i> ( $\theta > 0$ ): 0.427
Budgetary performance	—	0.171 [−0.227 0.579] <i>Pr</i> ( $\theta < 0$ ): 0.230	0.174 [−0.127 0.482] <i>Pr</i> ( $\theta < 0$ ): 0.167	0.222 [−0.102 0.579] <i>Pr</i> ( $\theta < 0$ ): 0.133	0.045 [−0.151 0.242] <i>Pr</i> ( $\theta > 0$ ): 0.354
Investment oriented economic strategies	—	—	−0.446 [−0.702 −0.197] <i>Pr</i> ( $\theta > 0$ ): 0.005	−0.540 [−0.823 −0.242] <i>Pr</i> ( $\theta > 0$ ): 0.002	—
High-tech patents	—	—	—	—	−0.381 [−0.515 −0.250] <i>Pr</i> ( $\theta > 0$ ): 0.000
Individual controls	yes	yes	yes	yes	yes
Country random effects	yes	yes	yes	yes, robust <sup>b</sup>	yes, robust <sup>b</sup>
Var( $\xi$ )	0.19	0.20	0.12	0.08	0.05

Note: Bayesian hierarchical probit models. Estimates (posterior means), with 90% credible intervals in brackets, and Bayesian directional hypothesis tests:  $P(\theta > 0)$  if  $\text{sgn}(\theta) = -1$  and  $P(\theta < 0)$  if  $\text{sgn}(\theta) = 1$ . Based on 30,000 MCMC samples. All models include gender, age, years of education, income, and indicator variables for being unemployed or retired.

<sup>a</sup> Scores from an singular value decomposition of covariate matrix including GDP per capita, unemployment rate, inequality, poverty, debt, and deficit into two principal components. See Appendix D for technical details.

<sup>b</sup> Robust random effects,  $\xi \sim t(\mu_\xi, \sigma_\xi^2, \nu)$  with  $\nu = 4$ .

This finding is replicated in *M3*, which employs a random-effects distribution that is more robust to outliers (cf. Lange, Little, and Taylor 1989). These results again constitute clear evidence of a negative relationship between a country’s economic strategy and its citizens’ fiscal centralization preferences. Under this model specification, the probability that the effect is of the opposite sign evaluates to only 0.1%.

In the final specification, *M4*, we use an alternative measure of countries’ economic strategies. An observable implication of our argument is that countries that pursue more investment-oriented strategies are likely to produce more high-tech innovations than consumption-oriented countries. Thus, we calculate an alternative measure, the number of applications for high-tech patents to the European Patent Office and the US Patent and Trademark Office for each country, normalized by the size of its labor force. Our estimates in column *M4* confirm the pattern we found with our main measure. Citizens from countries that apply for more high-tech patents per inhabitant are less likely to support a centralized EU tax policy. While keeping model limitations and the small sample size in mind, we again find evidence that this relationship is statistically different from zero (Appendix F provides more details and a complete model table).

In Appendix E we provide additional evidence that our results are not likely to be driven by existing country differences in second-dimension politics. We use religious and ethno-linguistic fractionalization as relatively stable, structural characteristics that affect the importance of a second dimension of political competition. Accounting for differences in fractionalization does not negate the importance of countries’ economic strategies in shaping fiscal integration preferences.

## 5.2 Support for International Transfers

In the third step of our argument we examine *H2*, which argues that citizens’ support for international transfers (i.e., *T*) is shaped by their country’s exposure to financial risks. The key relationship studied in this section is between the level of exposure of the banking systems in the European core (measured as the log of the magnitudes reported in Figure IV) and the average level of citizens’ support for international transfers to countries in crisis. We test this argument using data from Eurobarometer 76.1, fielded in September 2011, which contains an item directly assessing support for interregional transfers. We only include countries for which we have measures of exposure – Austria, Belgium, Finland, France, Germany, the Netherlands, Sweden, and the United Kingdom.<sup>35</sup> This sample is comprised of 8,461 cases. After discarding 412 cases due to missing values on covariates, our final sample consists of 8,049 individuals.

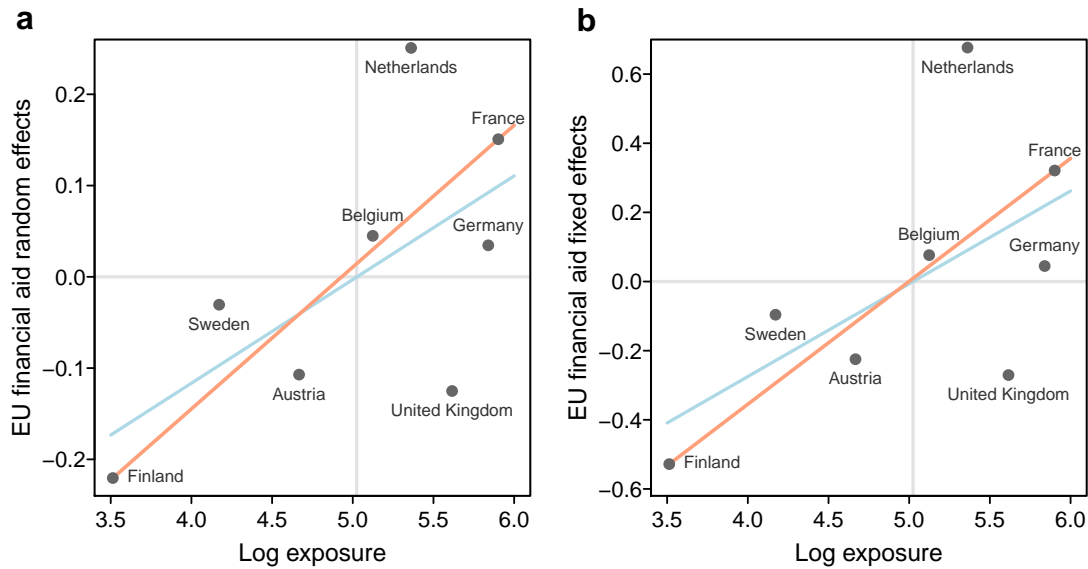
Our dependent variable is an item asking respondents about their degree of support for their country providing financial help to other EU member states in economic and financial difficulties. Answers are recorded on a four-point “agree–disagree” scale, from which we create an indicator variable equal to 1 if a respondent clearly agrees to such interregional transfers.<sup>36</sup> The share of

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<sup>35</sup>Note that this sample includes non-eurozone countries. In Appendix G we show that we find the same basic relationship when excluding them (cf. panel B of Table F1).

<sup>36</sup>The question is: “To what extent do you agree or disagree with the following statement: In times of crisis, it is desirable for [country] to give financial help to another EU Member State facing severe economic and financial difficulties.” Answer options are “1 Totally agree, 2 Tend to agree, 3 Tend to disagree, 4 Totally disagree.” An explicit ‘Don’t know’ option is present. We impute missing responses on the dependent variable as part of our MCMC sampler.





**Figure VI**

**Europeans’ support for interregional transfers and its relationship to countries’ exposure to risk.**

Probit models of preferences for international transfers with country-specific constants. The y-axis of panel (a) shows country-specific random effects, panel (b) displays country-specific fixed effects. Larger values indicate more support for transfers. The x-axis shows claims (on an ultimate risk basis) against “crisis countries” of a country’s financial sector. The linear relationship between transfer preferences and risk exposure is indicated by an OLS fit (light blue line) and an outlier-robust median regression (light red line). Gray lines show averages of variables.

citizens agreeing with interregional transfers ranges from about 9% in Finland and the United Kingdom to approximately 22% in the Netherlands.

We proceed in the same fashion as in the previous subsection: we estimate a hierarchical model of citizens’ support for interregional transfers, adjusting for compositional differences in age, gender, income, and labor market status, and visually inspect the correlation between country-specific intercepts and countries’ exposure to risk of debtors’ defaults. Figure VI shows the resulting relationship.

Although it is composed of only eight pieces of evidence (i.e., eight estimated country intercepts), Figure VI provides a rather clear picture. Since societies are more exposed to risks of default from their debtors, average support for international transfers increases. For example, Sweden and Austria both face a lower-than-average exposure to risk, while the opposite is true for Germany and France. In line with our argument, citizens in Sweden and Austria are, on average, less supportive of international transfers than those in Germany and, especially, France. This association holds for all cases except the United Kingdom, whose citizens are clearly opposed to transfers.<sup>37</sup> This pattern holds for both ‘random’ and ‘fixed’ effects specifications of country effects (shown in panels (a) and (b), respectively).

<sup>37</sup>Cf. Rickard (2012), who shows that opposition in the UK to bailouts was much lower for Ireland than for other European economies.

**Table II**  
**Macro-micro models of average preferences: support for**  
**interregional transfers.**

	M1	M2
Exposure [logged]	0.116 [0.006, 0.223] $Pr(\theta < 0) : 0.042$	0.116 [0.009, 0.223] $Pr(\theta < 0) : 0.038$
Individual controls	yes	yes
Country random effects	yes	yes, robust <sup>a</sup>
Var( $\xi$ )	0.02	0.01

Note: Bayesian hierarchical probit models. Estimates (posterior means), with 90% credible intervals in brackets, and Bayesian directional hypothesis tests:  $P(\theta > 0)$  if  $\text{sgn}(\theta) = -1$  and  $P(\theta < 0)$  if  $\text{sgn}(\theta) = 1$ . Based on 30,000 MCMC samples.

<sup>a</sup> Robust random effects,  $\xi \sim t(\mu_\xi, \sigma_\xi^2, \nu)$  with  $\nu = 4$ .

Table II provides a stricter quantitative test of the relationship between support for transfers and financial risk exposure. Here we extend our hierarchical model to directly estimate the influence of exposure on citizens' preferences. Despite the small sample size, these results provide some statistical evidence of a link between exposure and support for transfers. The estimate in *M1* is positive with a credible interval that excludes zero. In addition, we calculate the probability that the relationship is of the opposite sign (i.e., exposure reduces support for transfers) and find that, given the data, this probability is only 4%. We obtain almost identical results in *M2*, where we employ a robust specification of the country random-effects distribution.

Our findings of a systematic country-level effect suggest a certain degree of homogeneity of support within countries. Arguably, the politics behind this process reflect a top-down process in which elites, who are aware of the potential risks, undertake the task of convincing voters of the need and desirability to support the union as a collective good. For example, in Germany, employers' organizations, trade unions, banking associations, and party elites advocated costly bailouts of economies where German financial institutions were especially exposed (Spain, Ireland, and Italy according to the Bank of International Settlements data reported in Figure 4). The head of a German employers' association (Dieter Hundt) criticized opposition to bailout efforts in the following way: "It's easy to demand that the rescue fund should not become bigger. But this avoids the crunch question: whether the volume is enough to clear a realistic path into the future for illiquid states."<sup>38</sup> A similar discourse was adopted by the main parties, which in September of that year supported the creation of the European Financial Stability Facility, a major fund to bail out European economies in need, by a majority of 523 out of 620 members of the Bundestag. By early October, the heads of the major trade unions (including Michael Sommer, Berthold Huber (IG Metall) and Frank Bsirske (Verdi)) had endorsed the approach. Elites' discourses trickled down to voters, who in turn demonstrated stronger support for international transfers to countries that could constitute a greater risk.

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<sup>38</sup>*Handelsblatt*, 8 March 2011.

Our results are in line with those of Bechtel et al. (2014), who conduct a conjoint experiment and find that German voters base their support for bailouts depending on who the recipient country is. Holding the degree of conditionality and cost sharing across EU members constant, they find that “bailouts face the strongest opposition when the recipient country is Greece and are most popular when the recipient country is Ireland, with Italy and Spain falling in the middle.”<sup>39</sup> These findings are clearly consistent with the patterns reported in Figure VI.<sup>40</sup>

## 6 Conclusion

This paper has studied the linkage among domestic economic conditions, cross-national interdependencies, and political preferences in the aftermath of the European debt crisis. We have distinguished between two dimensions in the politics of fiscal integration in the EU: the willingness to adopt a more integrated (centralized) system of taxes and transfers and the willingness to support large-scale transfers between countries that are implicitly associated with stabilization efforts. Regarding the former, we find that the growing spatial disparities in economic fortunes that resulted from the crisis reduced support for more integrated fiscal policy designs, thus nurturing what Hooghe and Marks (2009) define as a *constraining dissensus* among the different European *demoi*. Although EU member countries are bound together by a common monetary system, they consistently resist adopting a common fiscal system. At the same time, we have also established that donors’ initial resistance to inter-country stabilization transfers is muted when significant cross-national interdependencies are at work, in a manner consistent with *intergovernmentalist* predictions (Moravcsik 1998; Schimmelfennig 2015). The exposure to financial risks by the core underpins support for large financial stabilization packages with considerable distributive implications. The co-existence of these two political responses is interesting from the perspective of integration theory and political economy. Our analysis suggests that the key to unlocking this puzzle lies in the combination of a heterogeneous economic geography, exacerbated by the financial crisis, and the nature of the cross-regional economic externalities it generates.

In the absence of externalities, domestic economic interests indeed lead to higher levels of polarization and resistance to common pool solutions. By contrast, even where distributional conflict is exacerbated, the presence of significant cross-regional externalities moderates this relationship and points to a more nuanced picture of the relationship between mass politics and further European integration: where externalities matter, elites and citizens perceive a political rationale for taking further steps towards fiscal and regulatory integration. Those likely to be affected by the negative externalities of a potential default by financial institutions in debtor countries are relatively more likely to support transfers intended to support financial stabilization.

Our findings also yield political implications for the future. In the absence of a major shock, wealthy, investment-oriented economies have few incentives to pursue a fiscal integration agenda. Moreover, to the extent that bailouts have served to protect financial institutions in core countries,

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<sup>39</sup>Bechtel, Hainmueller, and Margalit 2014, p. 17. Similarly, Rickard (2012) argues that parties, interest groups and citizens in the UK were much more tolerant of the Irish bailout than to those favoring other European economies.

<sup>40</sup>Ultimately, though, modeling the specific mechanisms of the political process leading to greater support for inter-regional transfers in more exposed countries is beyond the scope of this paper.

political opposition to further transfers will increase. At the extreme, given the political and economic fundamentals of the union analyzed in this paper, if the periphery of Europe were to pursue a coordinated effort (possibly with France) to renegotiate the terms of the union, net contributing, investment-oriented members would have incentives to opt out altogether. Ultimately, political integration is only feasible and sustainable under sufficiently low levels of heterogeneity in the political and economic geography of the union or in the presence of a major shock that generates higher levels of risk sharing across units.

At the time of writing, the Covid-19 pandemic is extending its grip across the EU. The virus has spread quickly across borders, constituting more of a global risk than any challenge previously faced by EU governments. Needless to say, the potential externalities across members and the incidence of the disease are far stronger than the financial costs associated with potential defaults by Southern debtors in the aftermath of the Great Recession. Our analysis suggests that the risk-homogenizing impact of Covid-19 may pave the way for major initiatives that have thus far been politically unfeasible: the greater the scope of the risk, the stronger the incentives to coordinate and pool resources. Thus, the effort to pool resources has in April 2020 already surpassed what in 2008 took several years to articulate, and major initiatives to create a common fiscal and insurance tool are already under way. The ECB has opened a major line of credit (750 billion euros), Eurobonds are again being discussed as a solution to debt markets, and the prospect of extending an EU-wide unemployment insurance system to both workers and small businesses seems closer than ever. Of course, it is too soon to tell whether the shared risk implicit in Covid-19 will lead to major institutional shifts. Some of the measures adopted, such as population lockdowns, reduce externalities along the way, and states with different levels of capacity may absorb the shock differently. If this pattern consolidates, Northern, investment-oriented economies will return to their earlier objections to the permanent institutionalization of risk-pooling mechanisms. In the future, the agenda will necessarily focus on how shocks such as Covid-19 interact with heterogeneous markets and welfare systems to redefine the design and scope of social solidarity in Europe.

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# Supplementary Material

## “The Political Geography of the Eurocrisis”

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### Contents

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## A. Model details

Individual preferences respond to the following function:

$$V_{ir} = \alpha \frac{(w_{ir}(1-t) - T(w_r - w_u))^{1-\delta_r}}{1-\delta_r} + (1-\alpha) \frac{\left(\frac{\alpha}{1-\alpha} t w_u - T(w_r - w_u)\right)^{1-\delta_r}}{1-\delta_r}. \quad (1)$$

which, as stated in the text, in the case of each regional median voter translates into:

$$V_{mr} = \alpha \frac{(w_{mr}(1-t) - T(w_r - w_u))^{1-\delta_r}}{1-\delta_r} + (1-\alpha) \frac{\left(\frac{\alpha}{1-\alpha} t w_u - T(w_r - w_u)\right)^{1-\delta_r}}{1-\delta_r}. \quad (2)$$

### A.1. General result

Solving for the optimal tax rate of individuals across different regional income distributions yields a unique interior solution of the optimal tax rate,  $t^*$ :

$$(w_{ir}(1-t^*) - T(w_r - w_u)) \left(\frac{w_{ir}}{w_u}\right)^{-\frac{1}{\delta_r}} = \left(\frac{\alpha}{1-\alpha} t^* w_u - T(w_r - w_u)\right), \quad 1 > t^* > 0 \quad (3)$$

which would imply that the preferences of each regional median voter ( $w_m$ ) are driven by:

$$(w_{mr}(1-t^*) - T(w_r - w_u)) \left(\frac{w_{mr}}{w_u}\right)^{-\frac{1}{\delta_r}} = \left(\frac{\alpha}{1-\alpha} t^* w_u - T(w_r - w_u)\right), \quad 1 > t^* > 0 \quad (4)$$

To interpret this result, it is useful to break the analysis in two steps:

### A.2. Geography of Income

In the absence of risk aversion ( $\delta_r=0$ ), our model simplifies to one in which distributive concerns are dominant. This scenario is the one best capturing the distributive dimension of the problem. The following implications emerge from the analysis:

- (a) any citizen in any region with income above  $w_u$  will want a zero union-wide income tax rate;
- (b) any citizen anywhere with income at or below  $w_{ir} \leq \bar{w}_{ir} = -\frac{\beta}{\alpha}$  will want  $t^* = 1$ ; hence, if  $w_{mr} \leq \bar{w}_{ir}$  then  $t^* \rightarrow 1$ ;
- (c)  $\frac{\partial t}{\partial w_{ir}} < 0$  for  $w_u \geq w_{ir}$ ;
- (d) the more citizens below  $w_u$ , the greater the demand for redistribution;
- (e) Last but not least, it is also clear that all citizens in regions with  $w_r < w_u$  will support the highest value of  $T$  feasible, and those where  $w_r > w_u$  will prefer  $T = 0$ . This applies to the median voters of both regions, as depicted in Figure 1.

### A.3. Geography of Production

Three additional formal results are relevant for our understanding of how geographic concentration shapes preferences:

- (a) The demand for redistribution,  $t^*$ , increases with the scope of realized risks,  $1 - \alpha$ . If the FOC is totally differentiated with respect to  $t^*$  and  $\alpha/(1 - \alpha)$ , the result is:

$$\frac{dt^*}{d\frac{\alpha}{1-\alpha}} = -\frac{t^*w_u}{\left(\frac{\alpha}{1-\alpha}w_u + \frac{w_{ir}^{-1/\delta_r}}{w_u}w_{ir}\right)}$$

- (b) The demand for redistribution increases with risk aversion. To see this, note that in the solution to the optimization problem,  $\frac{\partial t^*}{\partial \delta} > 0$ .
- (c) As a result of risk aversion, it is also the case that  $t^* > 0$  when  $w_{ir} > w_u$  (as long as it is not too much greater), whereas with  $\delta = 0$  any income above  $w_u$  will prefer  $t^* = 0$ . To see this note that if  $w_{ir} = w_u$  then in the FOC  $\left(\frac{w_{ir}}{w_u}\right)^{-1/\delta_r} = 1$ , if  $\delta_r > 1$ , and the FOC then implies with  $w_{ir} = w_u$  that  $t^* = 1 - \alpha$ , which is strictly positive for  $\alpha < 1$ . Hence, a small increase in  $w_{ir}$  above  $w_u$  implies a small decrease in  $t^*$ , and a small enough increase in  $w_{ir}$  implies that  $t^*$  must remain positive. The key analytical result is that the demand for redistribution increases with risk aversion, which suggest that for sufficiently high levels of specialization wealthier citizens may be willing to invest in insurance despite the short-term costs in tax terms. Accordingly, the resulting tax rate supported by the median voter in a specialized region will be higher as compared to the one driven exclusively by income motives, as depicted in figure 1 for region A.

## B. Data details

The European Social Survey is a large scale multi-country survey administered bi-annually in European countries starting in 2002.<sup>1</sup> Its target population are all individuals aged 15 or over, residing in private households (regardless of nationality, language, citizenship or legal status). Interviews are conducted face-to-face. Eurobarometer 74 and 76 are large-scale population surveys administered in European countries. The target population are all individuals aged 15 and over, who are resident in any of the member states.<sup>2</sup>

Table B.1 below list countries and years included in our analysis using ESS data.

Table B.2 provides descriptive statistics for covariates in our analysis.

<sup>1</sup>For more information see [www.europeansocialsurvey.org/](http://www.europeansocialsurvey.org/).

<sup>2</sup>For more information see <http://www.gesis.org/en/eurobarometer-data-service/home/>.

*Table B.1*  
*Countries and years included in ESS sample*

Austria	2002–2006
Belgium	2002–2012
Denmark	2002–2012
Finland	2002–2012
France	2004–2012
Germany	2002–2012
Ireland	2004–2006, 2010–2012
Italy	2002, 2012
Netherlands	2002–2012
Norway	2002–2012
Portugal	2002–2008,2012
Spain	2002–2012
Sweden	2002–2012
United Kingdom	2002–2012

*Table B.2*  
*Descriptives statistics of covariates in ESS and EB samples. Means, standard deviations, and deciles for continuous inputs; percentages for binary inputs.*

	Mean	SD	Deciles		Mean	SD	Deciles	
			1st	9th			1st	9th
<i>(A) Eurobarometer surveys</i>								
	wave 74.2				wave 76.1			
Age	51.5	17.0	29	74	53.5	17.0	30	76
Years of education	18.8	5.9	14	25	19.6	5.4	15	26
Income [subjective]	5.6	1.6	4	8	5.7	1.6	4	8
Female		51.8%				52.1%		
Unemployed		8.9%				5.8%		
Retired		30.7%				35.2%		
<i>(B) European Social Survey</i>								
	waves 1-7							
Age	49.0	17.4	26	73				
Years of education	12.7	4.6	8	18				
Income [10000 USD]	3.2	2.4	1	6				
Female		51.8%						
Unemployed		5.5%						
Retired or disabled		26.1%						
Not in labor force		14.8%						

Note: Sample sizes are: ESS: 110,925, EB 74.2: 13,400, EB 76.1: 8,049.

### C. The micro logic of redistribution preferences

Here we provide a descriptive exploration of our theoretical models' key premise. The micro-logic of our argument implies that the income polarization of redistribution preferences is larger in countries that rely more on investment-oriented economic strategies.

In order to measure the polarization in redistribution preferences between rich and poor, we require a dataset of substantial size. We use the European Social Survey (ESS). It covers all of the countries in our analysis, and, in its pooled version, provides a large sample of over 100,000 individuals.<sup>3</sup> Another advantage of using ESS data is that it contains a measure of preferences for redistribution widely used in previous research (e.g., Rehm 2009). It elicits a respondent's support for the statement "the government should take measures to reduce differences in income levels" measured on a 5 point agree-disagree scale. We create an indicator variable equal to one if a respondent clearly supports redistribution (i.e., "agrees" or "strongly agrees" with the statement above).

The key right-hand-side variable of this section's analysis is income. To obtain a comparable, continuous measure of income, we follow the exiting literature (e.g., Rueda and Stegmueller 2016) and transform ESS income categories into midpoints.<sup>4</sup> Since the last income category is open ended, we impute its mid-point assuming that the upper tail of the income distribution follows a Pareto distribution. We then deflate incomes to 2005 prices and re-express all currencies in purchasing power parity adjusted international dollars.

The dependent variable for our descriptive analysis is constructed in three steps. First, we estimate for each country in our sample a probit model of support for redistribution accounting for individuals' gender, age, years of education, and labor market status (via indicator variables for unemployment and retirement).<sup>5</sup> Second, for each country, we calculate the probability of supporting redistribution among the poor and the rich, defined as individuals at the 20th and 80th percentile of the income distribution, respectively. The first difference in these two probabilities is our measure of income polarization over redistribution in each country.<sup>6</sup>

In Figure C.1 we plot this measure of polarization over redistribution between rich and poor against economic strategies in Western Europe. Larger negative values indicate more polarization between rich and poor. The position of countries in this plot reveals a strong relationship between economic strategies and polarization (their correlation is  $-0.74 \pm 0.19$ ). In countries that put low priority on investment over consumption policies, such as Italy or Spain, polarization over redistribution is low to almost nonexistent (as in Portugal). By contrast, in high-investment countries, such as the Netherlands, Finland, and Denmark, polarization is high, reaching up to a 10 percent point difference in redistribution support between rich and poor.

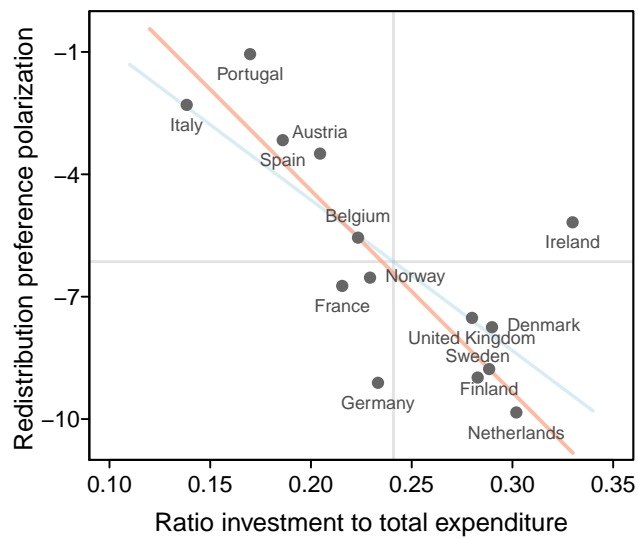
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<sup>3</sup>We use waves 1 to 6. After limiting the sample to the countries of our analysis we are left with 139,938 cases. After deleting cases with missing data, our final sample size is 109,538 individuals.

<sup>4</sup>Mid-point value assignments differ among survey waves. For 2004-2006 we use mid-points based on common value categories, while for 2008 and beyond, we use mid-points derived from country-specific income deciles. See Appendix B for details on income questions and our transformations.

<sup>5</sup>This amounts to what Gelman and Hill (2007) call a "completely unpooled" strategy, which is feasible here due to the large sample size available for each country.

<sup>6</sup>Note that the choice of percentile is of minor impact. We also obtain a qualitatively similar pattern by plotting income slopes from a linear probability model against economic strategies.



*Figure C.1*

*Polarization of redistribution preferences and its relationship to economic strategies.*

The y-axis plots first differences in predicted probabilities of redistribution support between poor and rich. More negative values indicate larger polarization in preferences by income. The x-axis plots investment-oriented economic strategies. The linear relationship between both is indicated by an OLS fit (light blue line) and an outlier-robust median regression (light red line). Gray lines show averages of both variables.

## D. Reduction of covariate space

We have a matrix of covariate,  $\mathbf{X}$ , of size  $n \times p$ , where  $n$  is the number of rows and  $p$  the number of columns, i.e., variables. For simplicity set each column of  $\mathbf{X}$  to have zero mean and unit variance. The singular value decomposition of  $\mathbf{X}$  is (e.g., Strang 2006: 331f):

$$\mathbf{X} = \mathbf{U}\mathbf{S}\mathbf{V}' \quad (5)$$

with  $\mathbf{S} = \text{diag}(s_i)$  a diagonal matrix of singular values. The columns of  $\mathbf{V}$  are principal axes, while the columns of  $\mathbf{V}\mathbf{S}/\sqrt{n-1}$  correspond to what are often called loadings in factor analysis. Our aim is to reduce the dimensionality of  $\mathbf{X}$  from  $p$  to  $k < p$ . Thus, we select the first  $k$  columns of  $\mathbf{U}$  and the  $k \times k$  upper-left part of  $\mathbf{S}$ . The product  $\mathbf{U}_k\mathbf{S}_k$  is the new  $n \times k$  matrix containing the first  $k$  principal components. Substituting them into (5) and choosing the corresponding  $\mathbf{V}_k$  yields

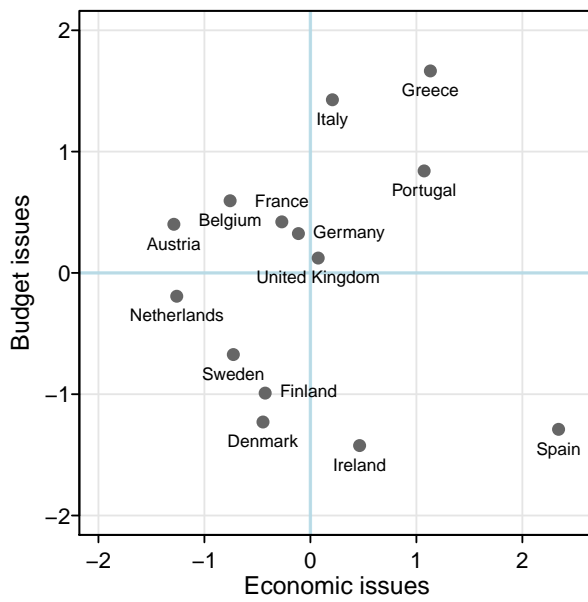
$$\mathbf{X}_k = \mathbf{U}_k\mathbf{S}_k\mathbf{V}_k' \quad (6)$$

which reconstructs the original data with  $k$  principal components. It is of size  $n \times p$  but now is only of rank  $k$ . It has the lowest possible reconstruction error (see the well-known Eckart-Young theorem; Eckart and Young 1936). We now replace the  $p$  variables in  $\mathbf{X}$  with the reduced set of  $k$  variables in  $\mathbf{U}_k\mathbf{S}_k$ . We choose  $k = 2$  based on both interpretability and a statistical criterion, namely the number of eigenvalues greater than 1 (Jolliffe 2002). The eigenvalues in our decomposition are: (3.84, 1.44, 0.32, 0.21, 0.15, 0.04), which clearly suggests to set  $k = 2$ . A two-dimensional solution captures 88% of the total variability in  $\mathbf{X}$ . Figure D.1 shows the position of countries on this two-dimensional vector, as well as the correlation of each column of  $\mathbf{X}$  with it.

Finally, we want our newly created variables to capture the part of country differences in economic and budgetary performance which is not caused by economic strategies  $z$  (which will be included in the model as well). More precisely, we require  $\mathbf{U}_k\mathbf{S}_k \perp z$ , which we achieve by residualizing them

$$\mathbf{U}_k\mathbf{S}_k - E(\mathbf{U}_k\mathbf{S}_k|z). \quad (7)$$





Correlation of covariates with		
	Axis 1	Axis 2
GDP	-0.73	-0.55
Unemployment	0.94	-0.12
Inequality	0.92	0.27
Poverty	0.90	0.33
Debt	0.06	0.92
Deficit	-0.23	-0.90

*Figure D.1*  
Country positions on two principal axes and their correlation with original covariates

## E. Accounting for Second Dimension Politics

In this section, we describe results that substantiate that it is unlikely that our results are driven purely by countries' existing levels of second-dimension politics. While we do not deny the relevance of the latter, we argue that our measure of economic strategies captures a fundamental feature of economic organization that shapes preferences independent of other dimensions of political conflict. Table E.1 shows estimates for our fiscal centralization model (based on specification M2 in Table 1) with different forms of fractionalization (Alesina et al. 2003) as additional controls. We use measures of ethno-linguistic and religious fractionalization, since they captures relatively stable, structural characteristics that are a source of political contestation and thus increase the societal relevance of second-dimension issues. We find that accounting for fractionalization leads to virtually unchanged estimates of the relationship between economic strategies and average preferences for fiscal centralization.

Table E.1

*Fractionalization as proxy for second-dimension politics. Models of preferences for centralization of European Union tax policy. Estimates for countries' economic strategies, with 90% credible intervals in brackets*

	Investment oriented economic strategies	$P(\theta < 0)$
Ethnic fractionalization	-0.419 [-0.677, -0.168]	0.007
Linguistic fractionalization	-0.463 [-0.708, -0.210]	0.003
Religious fractionalization	-0.443 [-0.706, -0.176]	0.006

*Note:* Bayesian hierarchical probit models. MCMC estimates based on 30,000 samples. Estimates are posterior means. Bayesian directional hypothesis tests  $P(\theta < 0)$  give posterior probability of coefficient being less than zero. Fractionalization measures are from Alesina et al. (2003).

## E. High-tech patents as a proxy measure for economic strategies

In this section we present more details of the alternative measure of countries' dominant economic strategies used in the main text. One observable implication of our argument is that countries that pursue more investment oriented strategies are likely to produce more high-tech innovations. We use this implication to create an alternative measure for economic strategies that prioritize investment over consumptive spending. Our measure is the the number of applications for high-tech patents to the European Patent Office and the US Patent and Trademark Office for each country normalized by the size of its labor force. Data are from the OECD patent database and we use all patents applied for between 2000 and 2007. We count as “high-tech” patents in biotechnology and nanotechnology, medicine, pharmaceuticals, as well as information and communication technology. As Figure F.1 shows, countries prioritizing investment-oriented are much more likely to produce greater number of high-tech innovations (adjusting for the size of the working population). The rank correlation between both measures is 0.74.

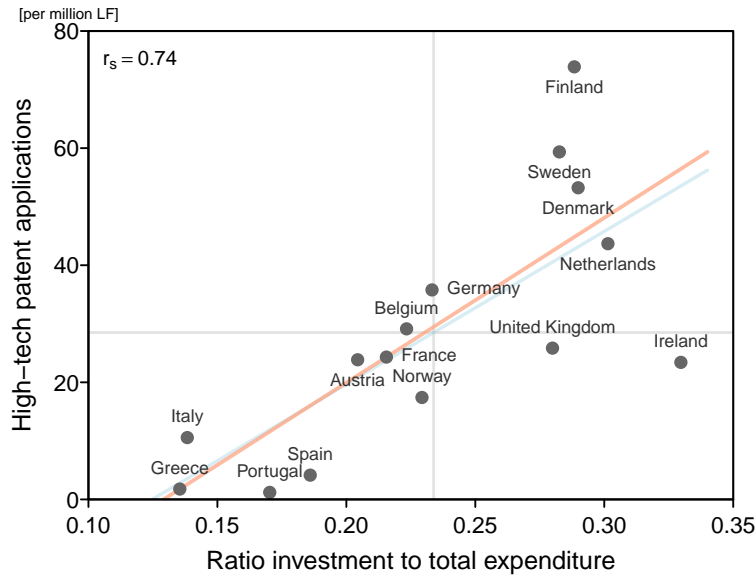


Figure F.1

*Relationship between economic strategies and innovation.*

Number of high-tech patent applications to European Patent Office and US Patent and Trademark Office [per million labor force]. OLS (light blue) and outlier-robust median regression (light red) lines superimposed. Gray lines show averages of variables.

We now investigate if our results also obtain when using this alternative measure of country strategies. Table F.1 shows estimates from a series of models for citizens' preferences for the centralization of European tax policy. We find our results to be remarkably similar to those in the main text: countries with a higher share of high-tech patents (indicating more investment-oriented economic strategies) are populated by citizens that prefer less centralization of EU fiscal tax policy.

Table F1

Using High-tech patents as proxy for countries' economic strategies. Bayesian hierarchical probit models of preferences for centralization of European Union tax policy. Estimates, with 90% credible intervals in brackets, and Bayesian directional hypothesis tests.

	M0	M1	M2	M3
PC1: economic	—	−0.002 [−0.362 0.324] $Pr(\theta > 0) : 0.506$	−0.005 [−0.198 0.185] $Pr(\theta > 0) : 0.518$	0.017 [−0.196 0.216] $Pr(\theta > 0) : 0.432$
PC2: financial	—	0.019 [−0.282 0.326] $Pr(\theta > 0) : 0.457$	0.017 [−0.152 0.195] $Pr(\theta > 0) : 0.435$	0.044 [−0.156 0.241] $Pr(\theta > 0) : 0.362$
High-tech patents	—	—	−0.368 [−0.490 −0.244] $Pr(\theta > 0) : 0.000$	−0.377 [−0.507 −0.242] $Pr(\theta > 0) : 0.001$
Individual controls	yes	yes	yes	yes
Country random effects	yes	yes	yes	yes, robust
Var( $\xi$ )	0.162	0.223	0.071	0.050

Note: MCMC estimates based on 30,000 samples. Estimates are posterior means. Bayesian directional hypothesis tests  $P(\theta > 0)$  if  $\text{sgn}(\theta) = -1$  and  $P(\theta < 0)$  if  $\text{sgn}(\theta) = 1$ .

a Scores from a SVD of covariate matrix including GDP per capita, unemployment rate, inequality, poverty, debt, deficit into two principal components. See appendix D for technical details.

b Robust random effects,  $\xi \sim t(\mu_\xi, \sigma_\xi^2, \nu)$  with  $\nu = 4$ .

## G. Eurozone countries

In this subsection, we repeat our two models from the main text while excluding European countries that are not part of the Eurozone. There are good reasons to include these countries in the analysis: some scholars argue that they are *de facto* members of the common currency area (Plümper and Troeger 2008); they make and are affected by centralization and transfer decisions in the council. However, we expect that our results are not driven by the preferences of non-Eurozone citizens. We thus expect to find similar parameter estimates, albeit with larger uncertainty intervals, since excluding countries decreases our (already limited) country-level sample size even more.

Table G.1

*Estimates excluding non-Eurozone countries. Panel (A) shows preferences for more fiscal centralization, panel (B) shows preferences for increased inter-regional transfers.*

	Estimate	<i>p</i>
<i>A: Fiscal centralization</i>		
Investment-orient economic strategies	−0.312 [−0.575, −0.057]	0.026
<i>B: Inter-regional transfers</i>		
Exposure	0.184 [0.085, 0.282]	0.005

*Note:* Bayesian hierarchical probit models. MCMC estimates based on 30,000 samples. Estimates are posterior means. Bayesian *p*-value of directional hypothesis tests in final column.

Table G.1 shows estimates obtained by excluding non-Eurozone countries. Panel (A) shows estimates from citizens' preferences for fiscal centralization regressed on investment-oriented economic strategies (based on specification M2 of Table 1). Even in this more limited sample we find our core results confirmed. The estimate is reduced by about 30 percent, but still of substantive magnitude and statistically distinguishable from zero. Panel (B) shows estimates for citizens' support for inter-regional transfers regressed on our measure of financial risk exposure (based on specification M1 of Table 2). Here we find our estimate to be increased: citizens in countries more exposed to financial risk are more likely to support inter-regional transfers. The credible interval of the estimate does not include zero—although we caution (again) that this result is based on a rather limited number of countries (for which we have IBS data). Nonetheless, the relative robustness of these estimates increases our confidence that our findings do not materially depend on the preferences of citizens in countries that opted not to join the Euro.

## H. Prior choices and sensitivity checks

The variance of individual-level residuals is unit-normal  $\epsilon_{ij} \sim N(0, 1)$  and fixed to identify the scale of the probit model. For all other parameters in our hierarchical models we specify “non-informative” priors. We use regression-type priors for coefficients:  $\forall k : \beta_k \sim N(m_0, v_0)$  for individual-level covariates and  $\forall k : \gamma_k \sim N(m_1, v_1)$  for macro-level covariates. The variance of random effects is distributed  $\sigma_\alpha^2 \sim G^{-1}(a_1, b_1)$ . Table H.1 column (P1) below shows the parametrization of hyperparameter values. We also conduct prior sensitivity checks studying if or how much our results depend on prior choices. Two sets of hyperparameter values are given in columns (P2) and (P3): in the former we lower the a priori variance of coefficients (putting more weight on zero), in the latter we use a different parametrization of the random effects variance. The final column shows the maximum difference between coefficients in our original model and the sensitivity analyses. We find that our results are not substantively affected by prior choices.

Table H.1  
Priors and robustness checks

Parameter	Hyperparameter values			Max $\Delta^a$
	P1	P2	p3	
$\beta_k \sim N(m_0, v_0), k = 1, \dots, K_x$	$m_0 = 0, v_0 = 100$	$m_0 = 0, v_0 = 10$	$m_0 = 0, v_0 = 100$	0.001
$\gamma_k \sim N(m_0, v_0), k = 1, \dots, K_z$	$m_0 = 0, v_0 = 100$	$m_0 = 0, v_0 = 10$	$m_0 = 0, v_0 = 100$	0.011
$\sigma_\alpha^2 \sim G^{-1}(a_1, b_1)$	$a_1 = 1, b_0 = 0.005$	$a_1 = 1, b_0 = 0.005$	$a_0, b_0 = 0.001$	<0.000

Note: P1 are hyperparameter values used in main text.

<sup>a</sup> Maximum of pairwise differences of all coefficients between P1 and P2 and P3.

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