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From Globalization to Isolation: Exposure to the 2008 Financial Crisis and Three Dimensions of Liberal Attitudes in a Swedish Twin Design

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Abstract

This study investigates the link between non-liberal attitudes and adverse exposure to market disturbances during the 2008 global financial crisis, drawing from the premise that anti-liberal sentiments among Western voters stem from economic distress. We delve into three facets of liberal ideology in a Swedish sample: economic liberalism, liberal multiculturalism and liberal internationalism. Using variation in crisis exposure within identical twin pairs, comprehensive longitudinal economic data and detailed survey responses, we find no significant shift in economic or multicultural liberal attitudes with different crisis exposures. However, exposure to increased unemployment risk significantly lowered support for liberal internationalism, increasing scepticism towards global governance and multilateral cooperation.

Keywords: globalization; deglobalization; economic shocks; twin design

Political scholars have traditionally paid a lot of attention to material conditions, arguing that they have had substantial influence on political development throughout human history (Lipset 1959; Schumpeter 1975). This is not surprising since ideas rarely materialize out of thin air; they are often influenced by reality (Blyth 2002). A popular narrative today is, for instance, that illiberal forces grow from economic grievances: increased volatility in the business cycle coupled with competition from low-wage nations and increased automatization put Western workers in a tough spot (Algan et al. 2017; Autor et al. 2020; Kurer and Van Staalduijn 2022). However, this story has been told before because liberal regimes have risen and fallen in the past due to changing market conditions.

Previous globalization grew due to technological breakthroughs and liberal market institutions but sharply reversed following the return of illiberal ideals in Europe after the Great Depression (e.g. de Bromhead et al. 2013). A pressing problem was the lack of popular support for liberal policies – democratic governments

were unable to sustain liberal polices without the support of their constituents. In terms of drivers, Karl Polanyi (1957) argued that the breakdown of the liberal order was a direct consequence of liberalism itself: the dominant ideological ideas generated powerful forces, contributing to the rise of fascism and communism through their promises of taming the market. In this article, we seek to reinvestigate parts of this famous argument. We ask more precisely: which types of liberal attitudes are affected by market disturbances?

Regarding the mechanisms between market performance and liberal values, one group of scholars focus on long-run structural trends of increased globalization and technological change (e.g. Autor et al. 2020; Dippel et al. 2017; Kurer and Van Staaldin 2022). Another group focus on structural breaks in these trends: economic disruption brought on by a sudden collapse in trade and commerce, a line of inquiry that aligns more with the arguments of Polanyi (1957). Many of these scholars have extensively focused on the liberal backlash triggered by different types of crises, such as the Great Depression (Algan et al. 2017; de Bromhead et al. 2013; Funke et al. 2016). Even though these two types of events are opposites – one focusing on the growth of supply chains and the other on their breakdown – these scholars tend to find that both scenarios fuel support for the radical right. What we want to explore here is which types of values shifted among the most exposed workers after the 2008 breakdown.

While the financial crisis was an adverse event for a lot of people, the empirical problem is that exposure to the effects of the crisis was not random across the supply of labour. Instead, there is a process of selection for both occupations and industries based on cognitive skills, human capital and past socialization, all of which are known drivers of political attitudes. Simply put, we need to find a credible counterfactual to workers who experienced the impact of the financial crisis and the recession that followed. To accomplish this, we use unique and fine-grained register data on income, occupation and employment spanning several years, as well as detailed survey data on political attitudes for a large sample of Swedish identical twins, who share a large number of important characteristics. The design allows us to make quasi-causal arguments thanks to the combination of: (1) a discordant identical twin design, which removes all spurious covariation stemming from genetic confounding and past socialization and, thus, contingent labour-market skills and (2) the (conditionally) exogenous shift in demand for manufacturing goods, by measuring the within-pair differences in changes in occupational unemployment and income.

We investigate three types of attitudes, all of which relate to liberal ideology. The first set of attitudes relate to *economic liberalism* and the *laissez-faire* doctrine. This dimension covers the extent to which the respondents believe that governments should not intervene in free markets and redistribute economic resources.¹ The second set of liberal attitudes covers the principle of *liberal multiculturalism*; that is, attitudes regarding immigration and tolerance of other cultures. The final set of attitudes covers *liberal internationalism*, which refers to issues of global governance and includes multilateral agreements and European integration.

We obtain a somewhat surprising result. Specifically, we observe no significant differences between twins with low and high levels of crisis exposure with regard to the liberal attitudes often cited in the previous literature; that is, free-market

economics versus regulation and redistribution on the one hand, and liberal multiculturalism on the other hand. However, exposure to negative economic fallout appears to have dampened liberal internationalism and generated hostility towards global governance and multilateral cooperation. As such, this study offers a contribution not only to the literature on comparative politics but to international relations as well. We demonstrate here that transient economic factors can have a possible causal role in shaping important foreign policy attitudes. Thus, we agree with Thomas Flaherty and Ronald Rogowski (2021) that unfettered global capitalism poses a challenge to the liberal world order.

The market and liberal attitudes

In this study, we will focus on attitudes towards market liberalism, international cooperation and multiculturalism. The emphasis on market liberal attitudes is crucial due to the *laissez-faire* doctrine embedded in liberal ideology. However, it is important to distinguish between neoliberalism and social liberalism, as they diverge significantly in this regard. Neoliberals typically concentrate on negative freedoms related to property rights and the right to be free from coercion, such as taxation, whereas social liberals focus on positive rights aimed at providing equal economic opportunities for all (Schmidtz and Brennan 2010). A focus on negative freedoms typically leads to the notion of minimizing the state's role in the economy.

Advocates of the *laissez-faire* doctrine argue that any form of economic intervention is potentially harmful, as it can lead to resource misallocation, market distortions and ultimately a decrease in overall societal welfare (e.g. Hayek 1976). Democratic *laissez-faire* is characterized by lax regulation and minimal intervention, where citizens pay taxes only to support a basic safety net for the less fortunate (see Kerr 2023). As such, while democracy is a central part of liberal ideology, the rule of law and independent courts ensure that basic economic principles are protected against government intervention. Against this background, some scholars have asked whether capitalism is compatible with the democratic system (Merkel 2014; Milner 2021).

The central problem for economic liberalism is that when voters experience negative fallout, they expect more rather than less from nation states. The traditional political economy literature asserts that individuals experiencing economic distress demand more economic intervention. For instance, income shortfalls have been found to produce increased support for redistribution and non-market liberal parties (Gidron and Mijs 2019; Owens and Pedulla 2013). Those who face labour-market risks will also seek to increase social spending because they anticipate income shortfalls in the future (e.g. Marx and Picot 2020; Vlandas 2019). The continued advocacy for welfare state expansion in Western economies has, for instance, been linked to workers seeking protection from the turbulence caused by globalization (but see Bergh 2021, for a critical discussion).

The core idea of embedded liberalism describes the economic and political system that combines free-market capitalism with national welfare policies (Ruggie 1982). The argument goes that workers are more likely to accept the risk associated with economic globalization if they are compensated through welfare spending by the state (Wolfe and Mendelsohn 2004). Some scholars have argued that the

backlash facing liberal parties can be attributed to their inability to deliver on this compromise (Fetzer 2019; Swank and Betz 2003). Hence we expect:

Hypothesis 1: *Labour-market disturbances brought on by the Great Recession led to an aversion to laissez-faire principles.*

Moreover, the neoliberal school of thought emphasizes the construction of robust institutions at both national and global levels, as this is believed to foster economic activity. More precisely, the neoliberal school of international relations suggests that states prioritize absolute gains over relative gains. This implies that states derive more benefit from collaborating to address collective issues than from engaging in zero-sum games, rivalry and competition (e.g. Keohane 1989, 2021). Concepts such as multilateralism, which refers to cooperation among three or more states, are particularly relevant in this context. This is because neoliberals diverge from the traditional state-centric framework of the realist school, advocating for a mixed-actor model in international affairs that includes non-governmental organizations (NGOs), multinational corporations and international institutions.

Key international institutions or organizations that align with the market liberal agenda include the World Trade Organization and the International Monetary Fund (IMF), as they promote tight fiscal policy, free trade and the privatization of many public assets (Babb 2013). Empirical research on the factors driving multilateral cooperation is limited, yet there are indications that these drivers are significant in the context of the backlash against liberalism. Recent research suggests, for instance, that economic insecurity brought on by free trade contributed to support for Brexit, general Euroscepticism and nationalistic sentiments (Dijkstra et al. 2020; Drinkwater 2021; Steiner and Harms 2020). Economic experiences also affect attitudes towards a common foreign and security policy within the EU (Kentmen 2010).

However, the mechanism is not entirely clear. It was early noted that it remains hard for citizens actually to make cost–benefit calculations of issues such as open markets and globalization (Baker 2005). Nevertheless, many large international organizations, such as the EU or the IMF, act as symbols for the globalization process. More precisely, Nils Steiner and Philipp Harms (2020) argue that globalization acts as a powerful symbol reflecting significant changes in economic, social and political domains, which people tend to view in either a positive or negative light. Consequently, individuals who have had negative experiences with globalization, such as an adverse economic shock, may develop adverse attitudes towards aspects linked to globalization, like multilateral cooperation (Steiner and Harms 2020). Therefore, it is likely that those feeling insecure may harbour negative feelings towards large international institutions, more due to their symbolic meaning. Thus we expect:

Hypothesis 2: *Labour-market disturbances brought on by the Great Recession led to an aversion to international organizations.*

Finally, a crucial element in modern liberal states is the concept of multiculturalism, which brings to the forefront issues related to cultural diversity among various

groups and individuals. This discourse has its roots in John Rawls's theory of justice, as well as debates on pluralism within liberal democracies (see Abbey 2012). Subsequent influential debates have revolved around the idea of group-differentiated rights, emphasizing the need to pay greater attention to cultural communities in light of liberalism's commitment to equality. Achieving true equality, as argued, involves recognizing and accommodating the distinct needs of different cultural groups and individuals (Kymlicka 1995).

For example, certain groups might receive exemptions from specific laws due to religious practices, or receive support for language provisions in education. The key here is that individuals should not be penalized for their beliefs, due to the liberal principle of respecting human capacity and self-determination (Kymlicka 1991). The topic of multiculturalism is contentious, particularly in the context of increased globalization and the resultant rise in migration. Central to this concept is the opposition to assimilation – the idea that migrants should not be compelled to blend completely into the host culture but rather should receive support to maintain their own cultural identities.

The liberal backlash and economic upheavals have brought many issues to the fore, but none has garnered as much attention as attitudes towards migrants and migration. Empirical research commonly finds that economic downturns, such as the financial crisis, are associated with hostile sentiments towards migrants and migration through the mechanism of heightened economic insecurity (Billiet et al. 2014; Laaker 2023; Polavieja 2016; Vogt Isaksen 2019). This phenomenon, while frequently discussed in the past decade, was identified in data from much earlier periods (Lapinski et al. 1997; Wilkes et al. 2008). Additionally, there has been a focus on the rising support for political parties with strong anti-migration stances.

There is a well-established correlation between aggregate economic losses and radical voting (e.g. Algan et al. 2017). Marcel Lubbers and Peer Scheepers (2001) observed, for example, that support for the radical right in Germany is more pronounced among the unemployed; similarly, Robert Jackman and Karin Volpert (1996) contend that the far right gains strength during periods of high unemployment in Europe. Manuel Funke et al. (2016), analysing a dataset spanning 20 developed countries since 1870, found that far-right movements gain momentum during economic hardship. A prevalent theory is that economically distressed voters oppose immigration fearing increased labour-market competition, leading them to support right-wing populists as a means to mitigate external pressures (Dehdari 2021; Stockemer 2017). Against this backdrop, we anticipate:

Hypothesis 3: *Labour-market disturbances brought on by the Great Recession led to an aversion to multiculturalism.*

However, while adverse economic shocks correlate with political behaviour, it remains unclear whether they help foment illiberal attitudes. The traditional social science literature asserts, for instance, that ideological values are created by socialization in younger years, whereafter they become slow-moving or 'sticky' (e.g. Krosnick and Alwin 1989; Sears and Funk 1999). The seminal argument holds that ideological values tend to be more stable than specific policy attitudes;

however, recent research has cast doubt on this argument because migration policy attitudes have also been found to be stable over time (Kustov et al. 2021).

It has also been acknowledged that few voters switch parties between elections in the American context, suggesting that economic change can explain some but not most of the surge for anti-liberal parties and candidates (see especially Margalit 2019). In fact, Larry Bartels (2023) has provided empirical evidence to suggest that liberal backsliding tends to emanate from political elites rather than from changes in popular attitudes; the general populace in Europe are more supportive of European integration, migration and so on compared to previous decades. Against this backdrop, we believe that the relationship between various dimensions of liberal attitudes and adverse market forces needs to be revisited.

Empirical design and data

The aim of this study is to estimate the effects of negative market shocks on three different dimensions of liberal attitudes. The empirical challenge is that exposure to market forces is not randomly assigned; rather, there is a strong process of selection behind occupational choices. Thus, a correlation between exposure to market forces and liberal attitudes may arise if the factors shaping political values also influence the choice of occupation. Much research has illustrated the importance of family conditions in that attitudes, partisan identities as well as the probability of voting are transmitted from parents to children in younger years (e.g. Jennings et al. 2009; Lahtinen et al. 2019; Macfarlane 2022; Quintelier 2015). The problem for us is that childhood conditions and parental background are also important factors behind occupational selection (Koçak et al. 2022; Tsukahara 2007). Thus, the aim of our empirical approach is to identify a credible counterfactual for workers who are exposed to harsh market forces – that is, to find workers who share the same traits, fundamental values and similar baseline expectations about social mobility but who are less exposed to the force of interest.

To achieve this, we combine two methodological approaches: leveraging variation within identical twin pairs induced by the financial crisis of 2008 and the subsequent recession. The impact of the financial crisis exemplified a negative economic event that was especially palpable in a small open economy such as Sweden. We argue that Sweden provides a good case study because the crisis was exogenous to Swedish industries; the fall in demand stemmed from conditions in other countries. Due to the collapse of trade, GDP fell by more than 5% and unemployment skyrocketed to over 8% (see Lindgren and Vernby 2016, for previous application). More importantly, the economic slump was exogenous to the workers in the affected industries. In fact, the Great Recession became a catalyst for occupational decline across industries that had provided many workers with well-paid jobs for decades (Boix 2015). However, these were events that lay beyond the workers' control. Hence, our design utilizes different levels of exposure to this negative market shift by differentiating a given set of independent variables between 2007 and 2009 (i.e. whether they changed during the crisis years), and then investigating differences in this exposure between identical twins.

The discordant MZ (monozygotic or identical) twin design exploits a type of natural pseudo-experiment: identical twins share not only their DNA but also their home environment and childhood upbringing. In many cases, their social

networks are characterized by considerable overlap. Thus, comparing within identical twin pairs rather than between unrelated individuals allows us to get much closer to a causal estimate (Vitaro et al. 2009) since it purges confounding effects from cohort effects thought to be vitally important for societal value change (see Inglehart 2008), co-socialization from parents (Healy and Malhotra 2013; Maxwell and Schulte 2018; Sinclair et al. 2005) and all genetic factors. The last is relevant, considering the increased understanding that genetics play an important role in influencing political behaviour (Alford et al. 2005; Klemmensen et al. 2012), thus inviting the spectre of genetic confounding.

It is helpful to compare this approach to that of using individual fixed effects in panel data since both can serve as tools for purging bias stemming from a large number of unobservable confounders. The individual fixed-effects model relies on variation within individuals over time, whereas the discordant twin model relies on cross-sectional variation between identical twins. The fixed-effects estimator factors out important invariant characteristics such as past socialization and parental background because these variables do not vary over time. The discordant twin design holds these variables constant because they are shared by the individuals within the twin pair. Thus, the discordant twin and individual fixed-effects models rely on different assumptions and leverage different types of variation.

For instance, the twin model is vulnerable to omitted variables related to differences between the twins. In the case with individual fixed effects, however, the critical assumption is that all time-varying confounders are observed and controlled for. Recent methodological research has questioned the possibility of actually controlling for variant and time-variant factors at the same time using the two-way fixed-effects model (see Imai and Kim 2021, on this issue). Thus, the discordant twin design comes with an advantage because it allows additional controls without violating any of the model's assumptions. Furthermore, to the extent that time-invariant factors like genetics or parental socialization put people on different trajectories, rather than pushing people towards different fixed levels, this also violates the assumptions of individual fixed-effects models but is effectively controlled for with the discordant twin design.

There are also drawbacks to the discordant twin model. First, as mentioned above, confounders that are located in the 'unique environment' remain. This means all environmental differences between the twins are also related to both the exposure and the outcome. This is not limited to things occurring during the life cycle, but can also include minor differences during gestation, such as uterine placement (Matias et al. 2014).² More on how we have dealt with possible remaining confounding is outlined under 'Specification and control variables' below.

Second, since identical twins share a large number of factors, there is also going to be substantially less variation than in the between-family case to leverage in the analysis. This decreases statistical power. Whether this is a problem or not is an empirical question; we have decomposed the variation and compared between and within pairs below to make sure that there is enough.

Third, the effects of measurement error in the independent variables can change in unpredictable ways in a within-pair analysis (although this applies to all, including individual, fixed-effects models). More specifically, if the within-pair correlation in the measurement error of a variable is smaller than the within-pair correlation in

the ‘true’ value of the variable, attenuation bias is larger in within-pair models, meaning that results will be more biased towards zero than they would otherwise be (Ashenfelter and Krueger 1994).

Sample

We use a large sample of identical twins from the Swedish Twin Register.³ First, we rely on measures of political preferences from the extensive SALTY survey (Screening across the Lifespan Twin Young) conducted in late 2009 to early 2010 by the Swedish Twin Register – exactly at the peak of the impact of the Great Recession. This survey was fielded among twins between the ages of 50 and 66; thus, they were in their mid- to late career (as detailed below, excluding retirees)⁴ (Zagai et al. 2019). Besides the risk of unemployment during the Great Recession, there was also a wage cost related to switching industry or occupation as studies have established that human capital was both occupation- and industry-specific (Kambourov and Manovskii 2009; Sullivan 2010). Robert Gibbons et al. (2005) argued that workers were selected into sectors based on their comparative advantage and that moving from one sector to another decreased competitiveness. Thus, the individuals in our sample should have been more sensitive to occupational decline during the Great Recession because they had cultivated their skills in their professions over long periods of time. Simply put, switching occupation or industry at later ages comes at a greater cost.

To identify labour-market effects cleanly, we have excluded all individuals who were retired at the time. We considered a person retired if they: (a) received any old-age pensions (the AldPens variable in the Longitudinal Integrated Database for Labor Market Research – LISA – databases), and (b) did *not* receive working income (the ForvErs variable in the LISA databases), throughout the years 2007–2010. This ensures that we are not excluding people who are only part-time retired but are still on the labour market. Of the remaining sample, 54.1% were female. The median age of the remaining respondents was 59 at the time of the survey.

Liberal attitudes

The goal of our study was to ascertain whether exposure to an adverse market force (the global financial crisis) reduced liberal attitudes. Thus, we first focused on attitudes associated with liberal ideology; that is, attitudes related to market liberalism, multiculturalism and multilateral agreements and global governance. The SALTY survey contains an extensive battery of measures of political preferences. The respondents were asked to indicate the extent to which they agreed with a set of 34 policy proposals on a scale from 1 to 5 indicating ‘disagree completely’ to ‘agree completely’. We used these items to construct our three attitude scales: economic liberalism, liberal multiculturalism and liberal internationalism (Table 1).

The variable *economic liberalism* is based on the laissez-faire doctrine and captures the extent to which the respondents believed that the government should refrain from intervening in the market and the distribution of income. The scale was defined using items (direction indicated by sign) on reducing economic inequality (–), keeping property taxes (–), decreasing the public sector (+), decreasing social welfare (+), working for more free trade (+) and cutting taxes

Table 1. Descriptive Statistics, Dependent Variables

Variables	N	Mean	Min	Max	SD	Within SD
Economic liberalism	1,370	48.14	0	100	15.83	8.40
Liberal multiculturalism	1,446	40.44	0	100	22.07	11.20
Liberal internationalism	1,422	51.80	0	100	23.44	12.27

(+). Thus, the scale captures a broad range of attitudes regarding the extent to which governments should or should not intervene in the market and the extent of the redistribution of economic resources.

Our second variable, *liberal multiculturalism*, is intended to capture attitudes towards migrants and multiculturalism. The scale was defined using the following items: allowing more skilled migration (+), providing immigrants with more economic support to preserve their native culture (+), reducing the admission of refugees (−) and making citizenship conditional on passing a language test (−).

Our final dimension, *liberal internationalism*, captures how the respondents feel about multilateral cooperation between states. It was defined using the items: leaving the European Union (−), adopting the euro as currency (+) and joining the North Atlantic Treaty Organization (NATO) (+).

All scales were constructed in the following manner: first, each item was normalized to have mean 0 and standard deviation (SD) 1, and rescaled to the direction appropriate for each dimension. After this, all items in each scale were averaged.⁵ For ease of interpretation, we also rescaled the outcome variables to range from 0 to 100.

Independent variables

To distinguish between structural disadvantage in the labour market and the impact of a negative economic market shock we follow Thomas Kurer et al. (2019) in that we divide our main independent variables into two categories: on the one hand, variables that reflect static effects; on the other, variables that reflect changes induced by global market forces in 2008. Variables measured in levels capture the structural disadvantage and the social status of the individuals in the sample. These variables are most likely correlated with social policy preferences, but they are not of interest to us in this study. Instead, variables measured in changes are plausibly conditionally (within identical twin pairs plus controls listed below) exogenous measures of a negative market shock. Given the discordant twin model, the estimate should be interpreted as the effect of a change in circumstances induced by the 2008 financial crisis between two people who share the same status expectations and so on from all factors shared between them throughout the life cycle.

Our first set of independent variables intend to capture structural disadvantages on the labour market. One traditional operationalization of economic insecurity is the so-called ‘occupational unemployment rate’; that is, the unemployment rate among people in the same occupation (e.g. Vlandas 2019). Recent studies have argued that this variable offers a good way of capturing the relative demand for workers’ skills. In addition, it provides a good measure of the perceived risk of

unemployment, and thus of a person's sense of economic threat. We calculate occupational unemployment using SSYK codes (the Swedish version of the International Standard Classification of Occupations – ISCO – scheme) – which are available in Swedish register data in the LISA database, held and managed by Statistics Sweden – and define it as the percentage of unemployed people in the full population in year t per three-digit occupational SSYK category in year $t - 1$, merged onto the three-digit SSYK code of the respondent. Reliable occupation codes are available for all years since 2002. Therefore, to capture longer-term disadvantage, we use the average risk of unemployment during the pre-treatment period from 2002 through 2007.

To capture the impact of exposure to the effects of the Great Recession, we measure the change in occupational unemployment between 2007 and 2009. As seen in Figure 1, the crisis hit Sweden in 2008 following a downward trend, and the bulk of the effects were seen in 2009. By the end of 2010, unemployment risk had already dramatically declined again. By looking at the change in unemployment risk between 2007 and 2009, we are therefore capturing the crisis effect, without the recovery. We argue that the impact on the occupational unemployment rate induced by the collapse in trade is plausibly exogenous once we control for initial disadvantage (the static variables) and all unobserved shared factors between identical twins.

Our second set of independent variables attempts to capture relative status and realized income losses. The first variable is simply working income, which we also obtain from the LISA database. To avoid the attenuating effects of year-on-year variation in income, we use the average across years leading up to the crisis (i.e.

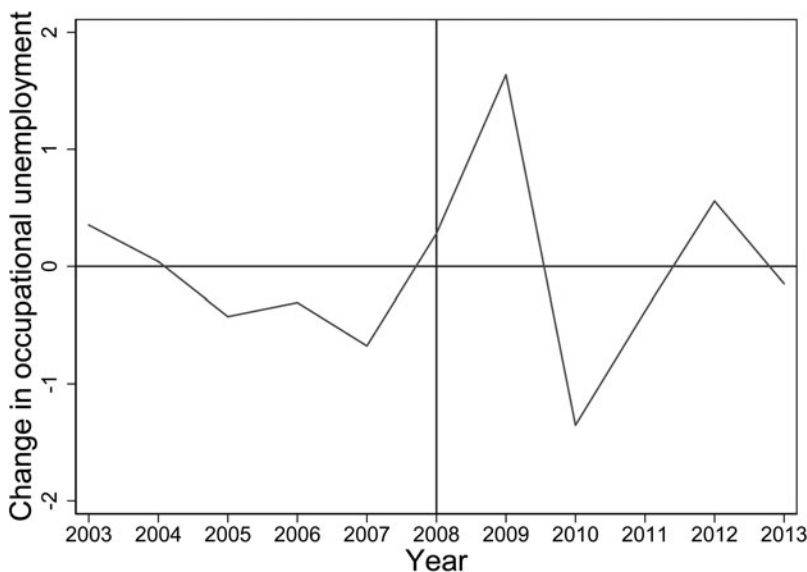


Figure 1. Change in Occupational Unemployment Variable, Year-on-Year.

Note: This figure illustrates a time series of changes in occupational unemployment from 2003 to 2013, showing a sharp increase around the time of the 2008 financial crisis.

2000–2007), in steps of 100,000 SEK (Swedish kronor). Income in levels is intended capture the respondent's social status. To estimate the impact of a realized income loss we again take the difference in income between 2007 and 2009. This second measure captures (conditional on income in levels) the impact of a change of position in the income distribution resulting from a market shock.

Specification and control variables

Our basic design is thus fairly simple. If the twin with a higher value on the independent variable (such as a larger decline in labour-market security during the financial crisis) also exhibits lower values than his/her co-twin on a dependent variable (i.e. less liberal attitudes), then this cannot be attributed either to any of the factors the twins share, or to any factors they do not share which are unrelated to which sectors were hit harder by the crisis. While the effects of the crisis cannot be considered exogenous per se (although the crisis did arise 'exogenously' in the sense of originating pseudo-randomly from outside the Swedish economy, it did not strike randomly across Swedish industrial sectors), we believe we apply a decent causal test when we examine these effects through the lens of differences in crisis exposure between identical twins while holding long-run economic variables constant. Formally speaking, we can account for the within-pair variation by adding fixed effects for twin-pair identifiers in an ordinary regression framework. This gives us the following model:

$$y_i = a + bx_i + \sum \gamma_j d_j + \sum c_k z_{ki} + e_i$$

where x_i is the independent variable of interest for individual i , γ_j is the fixed effect for twin pair j and z_{ki} is the value for control variable k . To avoid artificially deflating the standard errors when pair-nested data are used, standard errors are also clustered at the pair level. The only remaining sources of bias, then, are variables residing in the twins' unique environment that are *also* related to the way in which the crisis hit. To safeguard against this further, we have added several conventional controls to the model.

First, we control for dependence on social transfers. We define this as the ratio of yearly income from social welfare and unemployment benefits to total yearly income from work (as above defined as the LISA variable ForvErs) plus social welfare and unemployment benefits. As in the case of income, we use the average ratio during the ten years leading up to the survey. We believe this variable is important, because the Swedish government introduced policies aimed at reducing unemployment and cutting government expenditures during this period. We believe that this variable is relevant since exposure to austerity has previously been correlated with populist voting (Fetzer 2019).

Second, we include years of education, because many scholars believe education has a general liberalizing effect – generating attitudes of universalism, cosmopolitanism and cultural liberalism (Stubager 2008). Workers with fewer cognitive and educational resources place a greater value on the nation state (Shayo 2009), and they are more likely to support welfare chauvinism (Van der Waal et al. 2010). However, low-skilled workers that are exposed to international competition are far more likely to suffer from job loss or lower wages due to outsourcing; by

contrast, highly skilled workers such as engineers often benefit from this process (Findlay and Kierzkowski 1983). Education has also previously been found to have an effect on immigration attitudes using a discordant twin design in the same twin sample (Feng 2024). We base our measure for years of education on the register variable Sun2000Niva from the LISA database.

Third, we control for financial vulnerability, which we define as the ratio between debt and real wealth. A financial crisis tends to put pressure on debtors, which in turn leads to political conflicts (Gyöngösi and Verner 2022). One study, for instance, found that financial stress among homeowners was related to the rise of right-wing populism in Poland (Ahlquist et al. 2020). We have obtained the data for this variable from the Swedish wealth register. However, the wealth register was discontinued in 2007, when the wealth tax was abolished. We decided, therefore, to use the last year of its operation (2007). We define the final debt-ratio variable as the log of the ratio of debt to real wealth.⁶

Fourth is financial wealth. We believe wealth plays an important role in our empirical setup, given that low working income can be a sign of either high or low social status (i.e. living off capital gains, in the former case). Work income in itself, therefore, is not a sufficient control. Furthermore, a sizeable literature suggests that voters with patrimony display different attitudes and behaviours from those prevalent among the less affluent: that is, they demand more pro-market policies (Lewis-Beck et al. 2013). Thus, possession of financial wealth can easily translate into support for general economic integration.

Finally, we control for the long-run change in the size of the respondent's sector of the labour market. This is intended to capture demand for the respondent's skills and is measured as the relative change between 2002 and 2007 in the number of people who share the same three-digit SSK code as the respondent between 2002 and 2007, defined as the previously discussed three-digit SSK code. Table 2 contains descriptive statistics for our independent variables.

Discordant twin analyses rely on there being enough variation within twin pairs. In Tables 1 and 2, we have therefore disaggregated the standard deviation to the overall SD and the within-pair SD. As is evident from these columns, the within-

Table 2. Descriptive Statistics, Independent Variables

N	Mean	Min	Max	SD	Within SD	Note	
Unemployment risk	1,938	3.28	0.07	9.10	1.65	0.80	Mean 2002–2007
Δ UR 2007–2009	2,072	1.87	−4.41	20.35	3.23	1.72	
Income	2,260	2.74	0	20.56	1.55	0.74	Mean 2000–2007
Δ Inc 2007–2009	2,272	0.07	−20.78	6.80	0.96	0.67	
Transfer ratio	1,960	1.74	0	88.90	6.85	4.38	Mean 2000–2007
Education yrs	2,292	12.18	7.00	19.00	2.54	1.00	
Debt ratio (log)	2,282	1.87	0	14.09	3.86	2.48	Measured 2007
Financial wealth (log)	2,282	10.79	0	16.76	3.62	2.04	Mean 2000–2007
Δ Size of sector	2,098	1.066	0.41	8.24	0.40	0.26	Ratio 2007/2002

pair SD is generally at least half as big as the overall SD. This indicates that there is more than enough variation left within pairs to leverage in the analysis.

Results

The main results can be found in Table 3, and we begin with the results for economic liberalism. When looking at the main crisis exposure variables – change in income and change in unemployment risk – neither appears to have had an effect on economically liberal attitudes. That is, in short, crisis exposure did not seem to affect economic attitudes.

Instead, when looking at the controls, the long-run income level shows up as a significant predictor ($p < 0.05$). This is thus in line with a long tradition in political economy that explains preferences for redistribution with relative income. Those

Table 3. Results

Variables		Economic	Multicultural	International
Risk	Unemployment risk	0.13 (0.51)	-0.40 (0.67)	0.08 (0.73)
	Δ UR 2007–2009	0.03 (0.26)	0.27 (0.24)	-1.33*** (0.32)
Income	Income	1.84** (0.62)	0.10 (0.83)	0.57 (0.82)
	Δ Inc 2007–2009	-0.14 (0.70)	0.50 (1.01)	-0.27 (0.82)
Controls	Transfer ratio	0.10 (0.08)	-0.02 (0.13)	0.32* (0.13)
	Years of education	-0.02 (0.45)	1.32* (0.52)	0.59 (0.57)
	Debt ratio (log)	-0.17 (0.17)	0.19 (0.20)	0.06 (0.24)
	Financial wealth (log)	0.14 (0.19)	0.51 (0.27)	0.50 (0.36)
	Δ Size of sector	-1.02 (2.21)	6.11* (2.51)	-0.96 (3.22)
	Constant	41.75*** (6.80)	12.61 (8.64)	39.74*** (9.68)
	Obs	1,092	1,164	1,136
R^2	0.71	0.75	0.72	

Notes: All models restricted to identical twin pairs, with fixed effects per pair. Pair-clustered robust standard errors in parentheses. Crisis exposure variables in bold. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

with higher income should be expected to be less in favour of government regulation and redistribution, and indeed they are – even when examining differences within identical twin pairs. The size of this correlation, however, is rather modest – an increase in average income of one standard deviation increases economic liberalism by 2.5 points on this scale ranging from 0 to 100. It is also important to keep in mind that the study was not designed to recover a causal estimate for this variable.

Moving to liberal multiculturalism, we see the same lack of results for the main measures of the crisis exposure: the coefficients are substantively small and not statistically significant for either change in unemployment risk or income. Among the controls, neither do we see correlations with within-pair differences in long-run income or unemployment risk, suggesting that economic factors overall – apart from the transient crisis exposure – may not be strongly related to these attitudes. What we do see instead is that years of education is significant ($p < 0.05$). This is in accord with a long line of research finding education to be a strong predictor of tolerance and pro-immigration attitudes. The effect is once again modest, however, with an increase of one standard deviation in years of education being associated with an increase of roughly 3.5 points on the multicultural scale. We would like to emphasize that this is when holding a number of potential economic outcomes of education constant, meaning that it is not mediated by, for example, lower salaries or less secure labour-market conditions.

Finally, we look at liberal internationalism. Unlike with the previous outcomes, we *do* see a robust crisis effect: an increase in occupational unemployment did in fact lead to attitudes less favourable towards global governance and multilateral cooperation ($p < 0.001$). The magnitude is such that a standard deviation increase in the change in unemployment risk led to a four-point decrease on the liberal internationalism scale. This thus represents the strongest finding both substantively and statistically.

Robustness checks

To further dig into this result, we also present a set of robustness checks in [Table 4](#). First, we disaggregate the liberal internationalism scale into its three components: join NATO, instate the euro as currency and leave the EU (inverted). Both the NATO ($p < 0.01$) and euro ($p < 0.001$) questions show independent significant effects. The EU question is not significant, meaning that the results for liberal internationalism are primarily driven by a decrease in the willingness to join new international cooperations.

To underscore that the result is in fact driven by issues of international multilateral cooperation and not by, for example, an increase in opposition to economic integration specifically, we also test the item on working to increase free trade separately (labelled FT) in [Table 4](#). If the effect on the liberal internationalism scale instead captured sentiment related to limiting exposure to international market volatility, we should see a similar effect on attitudes about free trade. However, instead we see that free-trade attitudes are not affected by any of the crisis measures, strengthening the interpretation that this is about multilateral cooperation rather than a conflation with economic issues.

Finally, we also run a placebo test for the main result on the full liberal internationalism scale in the last column of [Table 4](#): instead of the change in

Table 4. Robustness

Variables		(1)	(2)	(3)	(4)	(5)
		NATO	Euro	EU	Free trade	International
Risk	Unemployment risk	0.63	0.08	-0.43	0.01	-0.16
		(0.86)	(0.80)	(0.79)	(0.89)	(0.76)
	Δ UR 2007–2009	-1.12**	-1.41***	-0.58	-0.71	
		(0.35)	(0.41)	(0.36)	(0.42)	
	Δ UR 2002–2007					-0.39
						(0.67)
Income	Income	1.42	-1.01	0.53	0.67	0.35
		(1.08)	(0.83)	(0.92)	(1.08)	(0.83)
	Δ Inc 2007–2009	-0.60	0.43	-0.44	0.95	-0.28
		(1.09)	(1.01)	(1.02)	(1.22)	(0.84)
Controls	Transfer ratio	0.24	0.28*	0.22	-0.02	0.29*
		(0.16)	(0.13)	(0.16)	(0.12)	(0.14)
	Years of education	0.45	1.05	0.06	-0.11	0.93
		(0.69)	(0.62)	(0.62)	(0.67)	(0.57)
	Debt ratio (log)	-0.20	0.26	-0.03	0.10	0.08
		(0.26)	(0.26)	(0.25)	(0.27)	(0.24)
	Financial wealth (log)	-0.16	0.38	0.83*	0.16	0.48
		(0.39)	(0.36)	(0.37)	(0.40)	(0.36)
	Δ Size of sector	-4.26	-4.53	5.63	-6.58	1.83
		(3.90)	(3.76)	(4.71)	(3.92)	(3.63)
	Constant	-28.88*	-33.17**	110.87***	-21.01	31.57***
		(11.61)	(10.41)	(10.82)	(11.47)	(9.43)
Obs		1,146	1,194	1,184	1,146	1,136
R ²		0.62	0.71	0.69	0.64	0.71

Notes: All models restricted to identical twin pairs, with fixed effects per pair. Pair-clustered robust standard errors in parentheses. Crisis exposure variables in bold. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

unemployment during the crisis years, we test the effect of the period preceding the crisis. This shows no results. That is, working in a sector that had experienced an increase in unemployment right before the crisis did not affect liberal internationalist attitudes – this effect is limited to unemployment spikes caused by the crisis. This underscores that the effects we are seeing are not effects of general changes in labour-market conditions, but are specific to the Great Recession.

The Appendix in the Supplementary Material also contains more elaborate regression tables for each of the outcomes, where controls are sequentially added. An additional result that should be noted with regard to liberal internationalism

is that the effect of the change in unemployment risk is significant in the bivariate within-pair model, while adding controls strengthens the result both in magnitude and significance. This is further reassuring, since a result being weakened by controls may indicate that there is remaining confounding that could be captured with higher-quality (i.e. less noisy) controls, and therefore that the results may still be biased away from zero. This does not appear to be the case here, which indicates that the design itself was efficient in absorbing the relevant confounders.

Discussion

The purpose of this article was to shed light on whether different dimensions of liberal attitudes are influenced by exposure to the adverse labour-market effects of the 2008 financial crisis. We investigated how this affected three types of liberal values: attitudes towards economic liberalism, liberal multiculturalism and liberal internationalism. We found no evidence to support that exposure to increased unemployment risk or loss of income during the crisis influenced attitudes along the theoretically most salient dimensions – that is, neither towards economic issues of redistribution and state intervention – nor values on immigration and multiculturalism.

However, we did find a significant relationship between crisis exposure and negative attitudes towards liberal internationalism. That is, the impact of the crisis appears limited to attitudes directly related to how Sweden acted with other nations in the international system. The two most important drivers behind this effect were negative attitudes about joining the European Monetary Union and NATO. As such, adverse exposure to these market forces generated negativity towards further integration with the EU and the nations of the NATO defence alliance. We also reasoned that this effect was not simply driven by economic rationalizations. While implementing the euro in Sweden is indeed plausibly related to industrial performance and trade protectionism, joining NATO is not primarily related to economic factors but to non-economic mechanisms. Indeed, we did not see an effect on a question about working for more free trade in the world.

The mechanisms for this decline in liberal internationalism have not been uncovered in this study, but previous studies may offer some guidance. Prior studies have established a close correlation between attitudes towards various facets of globalization, including trade, migration and economic integration (Hillen and Steiner 2020; Vries 2018). Steiner and Harms (2020) posit that globalization might serve as a potent symbol encapsulating broad shifts in economic, social and political realms, which individuals generally perceive either positively or negatively. Consequently, those with adverse experiences of globalization, such as a trade shock, may develop negative perceptions of issues associated with globalization, such as immigration. Steiner and Harms (2020) further argue that economic consequences of trade shocks can produce nationalist sentiments in relation to the transfer of political power from the national to the super-national level. It is plausible that citizens feeling insecure might harbour negative sentiments towards entities like NATO and the euro, owing more to their symbolic significance than to any economic rationale.

While we argue that our study design can overcome a number of problems relating to unmeasured confounders, it is not perfect, and tying back to the limitations

mentioned in the design section above is therefore of interest. First, any remaining variables in the twins' unique environment that is systematically related to their likelihood of being hit harder by the crisis effects may still confound the results. We think we have gone to great lengths to safeguard against this, but as with any non-experimental design it always remains a possibility. Second, as mentioned, statistical power is reduced in any type of family-based model since there is necessarily less variation within than across families. This means that true effect sizes had to be larger to be detectable in our case than in a conventional cross-sectional design, given the same sample sizes. In the worst-case scenario (and in particular with small samples), a lack of results may be entirely attributable to this decrease in precision. However, notwithstanding that our sample sizes cannot be considered small, we have shown that there is a fair amount of variation to leverage. Moreover, post-facto this risk does not appear overly serious since both static economic variables (e.g. income in the case of attitudes towards economic liberalism) and actual crisis effects (e.g. the change in unemployment risk in the case of liberal internationalism) were indeed detectable.

A pivotal aspect warranting attention is the extent to which our findings are applicable to other temporal contexts and nations. It is important to highlight that during the era under examination, discourse surrounding NATO in Sweden was predominantly oriented towards international obligations rather than national security concerns. At present, with the Nordic countries facing increased aggression from Russia, it is conceivable that economic insecurity may lead to divergent outcomes. Historically, since the era of the Napoleonic wars, Sweden has consistently adopted a policy of neutrality, conscientiously avoiding military alliances while safeguarding its sovereignty amidst global conflicts. This approach enabled Sweden to maintain its independence through both World Wars, adhering to a policy of non-alignment. Additionally, Sweden's commitment to monetary sovereignty is exemplified by the Riksbank, the world's oldest central bank. Therefore, it is plausible that economic perturbations might elicit distinct reactions in different scenarios, such as issues related to migration or climate mitigation.

To conclude: we think our results do lend some credence to the view that unregulated global capitalism can have harmful consequences for other aspects of the modern liberal order. Indeed, if we are to avoid falling into a new era of crumbling international institutions, it may require that we reconsider aspects of global economic governance – or at least how negative fallout from economic crises can be dampened and more equitably distributed.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/gov.2024.22>.

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Ethics statement. IRB approval was given by the Uppsala ethics review board (Dnr 2017/083).

Notes

1 A conceptual clarification might be necessary: in American discourse, the political spectrum is usually defined as spanning liberal–conservative. In most advanced democracies, however, the political spectrum is significantly wider, spanning e.g. socialists, social democrats, greens, centrists, liberals and conservatives,

where liberals and conservatives are both perceived to be on the right side of the spectrum. What we here refer to as economic liberalism may thus on the American political map erroneously be interpreted as economically left-wing attitudes, but are in fact economically right-wing attitudes, i.e. free-market non-interventionism (counter to high taxes and a redistributive welfare state).

2 It is worth pointing out, however, that possible differences in gestational environment between identical twins is naturally going to be vastly smaller than that between any two random individuals since the twins will share almost all environmental parameters throughout the gestational period, such as maternal exposures etc.

3 IRB approval was given by the Uppsala Ethics Review Board (2017/083).

4 The response rate to the SALT survey was about 47%.

5 This type of procedure has been argued to substantially reduce measurement error, see e.g. Ansolabehere et al. (2008).

6 Specifically, it was defined as $r_i = \ln\left(\frac{\text{debt}}{\text{real wealth} + 1} + 1\right)$ to avoid undefined values.

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