Down Again? Electoral Turnout and the Global Financial Crisis in OECD Democracies

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The global financial crisis (GFC) generated a shockwave that surged across the global economy. Within nation states, the swell rapidly rolled from the economy into politics, rapidly turning an economic crisis into a crisis of representative democracy. This paper analyses the consequences of these events for electoral turnout in the context of a claim that constraint on governments has generated a gap between mass preferences and elite decisions. This gap is said to be intensified by the global financial crisis, the consequence being decline in electoral participation, particularly in those countries most affected, and even more particularly among those individuals suffering the most harm: we test this hypothesis. We also test an alternative claim that perceptions of constraint as a result of the GFC most affect those with higher education. The paper takes 35 member countries of the Organisation of Economic Development and Cooperation (OECD) as its country cases, across the years between the early 1990s and 2015. Macro-data pooled over time and places establishes the broad patterns. Finally, we provide an analysis of micro-level data from 24 countries covering 94 elections during the period, collected under the auspices of the Comparative Study of Electoral Systems (CSES). It find thats the most potent effect of the GFC works at the country-level through the accumulation of government debt, which appears to depress turnout among the young, the less educated, and those on lower incomes.

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The global financial crisis (GFC) generated a shockwave that surged across the global economy. Within nation states, the swell rapidly rolled from the economy into politics, rapidly turning an economic crisis into a crisis of representative democracy. Political elites and governments caught the first impact, finding themselves obliged to take decisive actions, many of which involved policy instruments that had fallen out of fashion since the advance of neo-liberalism in the 1980s. But as the crisis deepened, in those countries worst affected, citizens began to experience painful consequences that their governments sought to justify on grounds of necessity, either to satisfy markets, prevent the collapse of banks, or in some cases because they were being imposed from outside in order to secure financial bailouts. In many cases, the worst of the damage could be contained by existing systems of social protection or by deficit spending or fiscal stimulus, but in other cases governments failed to maintain those defenses, succumbing to the politics of austerity. This paper analyses the consequences of these events for electoral turnout.

The level of electoral turnout has long been considered as an indicator of the 'health of democracy'. Across countries continuously democratic since 1970, electoral turnout has been in steady decline (Vowles 2018). As pioneers in the field of electoral research observed long ago, those who do not vote do not count: when they know what sorts of people vote or do not, politicians and political parties will pay most attention to the former (Key 1949, 527; Burnham 1987, 99). In most countries, electoral turnout tends to be lower than average among those who are young, on lower incomes and with relatively low levels of education (Verba, Scholzman, and Brady 1995; Leighley and Nagler 2013; Smets and Ham 2013). In those cases, representative democracies run the risk of failing to be inclusive of those who may require the most attention of governments to help them meet their needs, and who are likely to be the most vulnerable in the face of an economic shock like the GFC.

One explanation for steadily declining electoral turnout stands out from the rest: an apparently ever-yawning gap between the preferences of the mass electorate and those of political elites. Politicians have been turning away from their voters: and as a result, perhaps voters have been turning away from politicians. Critics of globalisation have identified the GFC as evidence for their arguments that the capitalist economy has been becoming even more responsive to the interests of economic elites and less and less responsive to those of ordinary people. Social and economic inequality has increased and is increasing. Financiers and banks had been taking excessive risks and, when chickens came home to roost, without their consent ordinary taxpayers were left with the bills. Critics of contemporary representative democracies go on to make the case that political parties had become increasingly remote from those that they sought to represent, leading to the 'hollowing' out of western democracy (Mair 2013, or to even stronger claims reinforcing assertions that we now live in an era of 'post-democracy' (Crouch 2004).

In conjunction with these claims, a depressing diagnosis has been becoming increasingly credible: support for democracy itself is falling, both in elite and mass political values and, most tellingly, in political behaviour itself. The reasons for abandoning voting so can be found in many sources: politicians asserting there to be 'no alternative' to painful economic reforms; and claims that because of globalisation the range of policy options has been shrinking toward only those acceptable to financial markets. Such arguments have come from both right and left: the right in approval, and the left seeking to shift the argument into opposition to capitalism itself. The common thread is the idea of 'constraint': because of

events, markets, or other external forces, governments are increasingly unable to protect the interests of all their citizens.

Assumptions based on these lines of argument can establish a simple hypothesis**: the global financial crisis has intensified the decline in electoral participation, particularly in those countries most affected, and even more particularly among those individuals suffering the most harm.** If there has been a trend towards lower turnout over time, we should therefore expect to see a disruption and intensification of that trend in elections during and after 2007 and 2008 as citizens perceive that their governments have become even less responsive to their needs than in the immediate past.

This paper first outlines in more depth and detail the theoretical foundations that inform this broad hypothesis, and discusses the literature that has sought to engage with it in the aftermath of the GFC. Next, it establishes the parameters of its own analysis, taking 35 member countries of the Organisation of Economic Development and Cooperation (OECD) as its cases, across the years between the early 1990s and 2015. After some descriptive analysis, it drills down into the explanatory variables most suitable for the task and formulates supplementary hypotheses to be tested. Macro-data pooled over time and places establishes the broad patterns. Finally, we provide an analysis of micro-level data from 24 countries covering 94 elections during the period, collected under the auspices of the Comparative Study of Electoral Systems (CSES).

Theory and Literature Review
Our starting point is the theory of electoral competitiveness (Franklin 2004). In this construction of the concept, competitiveness is not just defined in terms of the closeness of the race: it is also a question of how much the outcome of an election matters to those considering their vote, a focus directly relevant to the matters under scrutiny here. All this fits comfortably into the standard rational choice theory of turnout: the benefits that a person might expect if their party or candidate were to be the winner, offset by the costs but, most of all, weighted by the potential voter's perception of how much their vote might matter according to the expected closeness or distance in votes between parties or candidates in the election outcome. If the race is close, the result is uncertain, and a person will be more likely to vote, even if they realise that the odds of their single vote making a difference are low. When potential voters consider the benefits, they weigh up the policy promises of the contending parties: if those are significantly different, and those difference are salient to the potential voter in question, he or she will again be more likely to vote.

The theory extends beyond standard rational choice theory by sidestepping the concept of civic duty, the so-called 'D' term that is claimed to rescue rational choice from the paradox that, according to its logic, turnout would be much lower than observed (Grofman 1993). Instead, it is argued that people acquire a habit of voting, particularly if they start young. This habit can be promoted by social networks that both motivate participation and reduce information costs. But the most important insight is that people socialised into voting when elections are close and party policy differences are wide will continue to vote at higher levels, whereas others socialised into voting where elections are foregone conclusions and party policy differences are narrow will tend to vote less frequently throughout their lives. Therefore age cohorts based in different generational experiences with different habits of voting explain a great deal of change in macro-level turnout over time.

The key point to be drawn out for our purpose here is the salience of government responsiveness: if they are to vote with confidence, people should feel that their vote could make a difference. Contemporary critics of representative democracy make a compelling argument that over the past half-century, governments in advanced post-industrial democracies have become less responsive to their citizens than in the past. Political parties have become professionalised and in many countries, although not all, their memberships have shrunk. Legislators are increasingly drawn from higher status occupational groups, and are failing to represent those whose jobs and circumstances have lower status and who own fewer assets than the norm.

Moreover, since the 1970s there has been an ideological shift to the right. Governments have deregulated their economies, privatised previously publicly-owned assets, made central banks relatively autonomous in their oversight of monetary policy, and in many cases reconstructed social policy so as to generate incentives to pursue employment, with the objective of reducing the extent of long-term receipt of income maintenance for those otherwise finding it difficult to support themselves. Governments are perceived to be doing less, and taking less responsibility for the well-being of their citizens.

Underlying these developments has been the liberalisation of trade and capital flows across borders, the much-touted process of economic globalisation. As a result, governments are said to be increasingly constrained in their abilities to represent their citizens' preferences. Financial globalisation sowed the seeds of the global financial crisis. Admittedly, the effects of the GFC on governments presented something of a paradox: on the one hand, policy tools hitherto thought abandoned were brought out of retirement, most notably, the bailouts and in many cases the nationalisation of banks. On the other hand, the logic of 'there is no alternative' loomed large, as without their consent taxpayers were required to foot the bill for the mistakes made by economic elites.

The constraining effects of globalization therefore form the backdrop to the events of the global financial crisis. If the progress of globalisation has created constraint on governments, the experience of crisis should have reduced state autonomy even more. As Franklin put it in 2004 (179-180), globalization 'would operate very much like declining executive responsiveness, reducing the power of governments to make policies independently of international obligations and the reality of the international marketplace'. He suspected that a large part of the unexplained variance in his models of turnout could be explained by globalization-derived constraint. The literature on globalization and turnout therefore speaks to the hypothesis to be tested here: according to this logic, the GFC can be expected to have generated more extreme but otherwise similar effects to that of more incremental globalisation, in the form of a severe shock and its aftermath.

The first published investigation of the relationship between government constraint and turnout was by Steiner (2010), who used trade dependence, measures of capital market integration and a measure of overall integration across parliamentary elections in 23 OECD countries between 1965 and 2006. This found the expected evidence of decline and a link with globalisation. Steiner and Martin (2012) followed up with a 24-country study between 1950 and 2005. They found that globalization appears to affect turnout through the narrowing of party policy differences as measured by the Comparative Manifestos Project. In both articles, however, country-level fixed effects were not used, making the weight of evidence very much dependent on cross-sectional comparison rather than change over time. The data employed was entirely collected at the macro-level.

Yet globalization is a process of change over time and, where time series analysis is possible, it should be used. This is the argument of Marshall and Fisher (2015). In contrast to Steiner, they use country fixed effects, thereby focussing on change within their country cases. Their sample contains 23 industrialized countries between 1970 and 2007. Seeking to replicate Steiner's findings in their own model, they find no effects for international trade but do find effects for foreign ownership in the form of foreign direct investment (FDI) flows and portfolio equity stock that also runs partly through reductions in government spending associated with the globalization variables. Marshall and Fisher subjected their analysis to an array of robustness checks. They found significant problems associated with the trending of both turnout and globalization variables, and therefore adjusted their analysis as best they could for spurious correlation. However, again their data is confined to the macro-level, and they fail to identify a clear micro-level linkage, although make various suggestions.

The evidence of survey data is therefore badly needed to confirm micro-level effects. Using the CSES, Vowles (2016) further investigated the effects of foreign direct investment, in the context both of globalisation and the GFC, but not on turnout directly but instead on two relevant forms of mass perception as estimated by CSES questions (for their exact text see the Appendix): the extent of government agency (who is in power makes a difference) and external political efficacy (voting makes a difference). He found no apparent perceptions of constraint from FDI but a substantive and significant relationship between government debt and perceptions of government agency.

Karp and Milazzo (2016) expanded the macro-analysis of turnout to 73 countries between 1970 and 2011, identifying the effects of globalization in tandem with the effects of the global financial crisis (GFC). At the macro-level they find the expected negative effects for globalization, and these are intensified when interacted with a dummy variable representing the post-GFC elections: the most globalized countries suffer turnout decline, while the least globalised experience a turnout increase. Drawn from the CSES, their micro-level analysis covers ten countries and 26 elections over the period 2002 to 2010. They identify negative turnout effects of the GFC most of all among the vulnerable: an index based on being single, a non-union member, and unemployed.

However Häusermann, Wüest, and Kurer (2017) have produced different findings. Using micro-level data from European Social Survey between 2006 and 2012, covering 28 European countries, they find that the GFC suppressed turnout most among the educated. More educated voters were found to be most responsive to three measurements of government constraint combined to form a scale estimating government constraint: the general government deficit, long-term interest rates that shape bond markets, and experiences of the imposition of conditionality agreements by international financial organizations providing shorter or longer term financial support for governments in need of bailouts.

Micro-level survey findings so far therefore throw up two contrasting hypotheses: Karp and Milazzo find that **effects are strongest among the most vulnerable**, presumably by way of direct experience that demotivates them from voting. Häusermann and her colleagues find that the effects run **through information and perceptions among those with the cognitive capacities to appreciate the growth of constraint**. Meanwhile foreign direct investment and levels of government debt have been found to have significant effects on turnout and perceptions of government agency.

Theoretically, Karp and Milazzo's findings speak to a literature that links globalization, the global financial crisis, and government constraint to concerns about rising inequality (Solt 2008). Imposition of policies to reduce government deficits and cut government expenditure affect the most vulnerable, further reducing their propensities to vote. This reduces the incentive for government to attend to the needs of the vulnerable, constructing a circular process that drives turnout downward, most of all among the poor. Yet empirical research does not entirely confirm this pattern (Stockemer and Scruggs, 2012), in some cases finding that turnout decline is more concentrated among the rich (Kasara and Suryanarayan 2015), more consistent with Häusermann and colleagues. Their findings are also more consistent with theories about information processing, cues, and heuristics, and above all, the incentives generated by electoral contexts: in particular, perceptions of constraint that are most likely to be taken on board by citizens with higher levels of education.

One should not be surprised by these contradictory micro-level findings. There are differences in timing and in case selection, not to mention in data sources. The European Social Survey collects high quality data but it is not calibrated with elections, and turnout is measured at the last election, which may have been some years earlier, yet is apparently analysed as if it were at the time of the interview: in Häusermann and colleagues the 'cases' appear to be waves of the survey, not particular elections. By contrast the CSES is a post-election survey, minimising but not eliminating recall error entirely, as data may still be collected some weeks after an election. But the case can be clearly sourced to a recent election. Meanwhile time has passed since the data so far discussed has been collected: Karp and Milazzo's data ends in 2010, that of Häusermann and colleagues in 2012. While the depth of the crisis experienced in 2008 and 2009 had passed, recovery was slow in many countries. Data now available can take us to 2016, and address a further question: were any effects identified during the crisis itself longer-lasting, or temporary?

Figure 1: Voting-Age Eligible Turnout in the OECD, 1990-2016, First-Order Elections
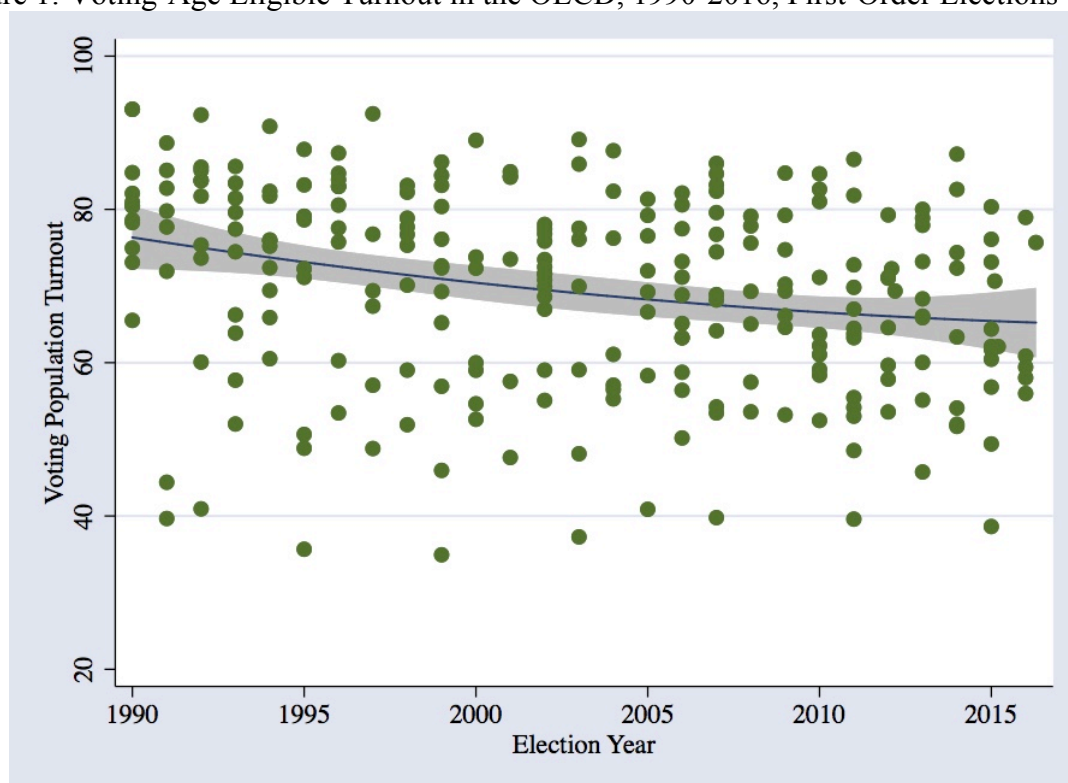
SOURCE: International IDEA, 2019

The Broad Parameters: Data and Description
Our macro dataset encompasses 35 OECD countries between 1990 and 2016, encompassing almost 250 elections. Table 1 displays their range and extent, dividing them into the three periods in question: pre-crisis, crisis, and post crisis or recovery. We have confined our scrutiny to 'first-order' elections that is, those that determine what party or coalition of parties control the executive functions of government. We therefore exclude mid-term elections in the United States or purely legislative elections in other Presidential systems. Our source of turnout data is the usual one: International IDEA, which provides data estimated both on registration and age-eligible bases.

Table 1 Countries, Elections, and First Order Status

Country	Elections Pre-Crisis	Elections in Crisis	Elections Post-Crisis	Years	First Order
Australia	7	0	3	1990-2016	Legislative
Austria	7	1	1	1990-2013	Legislative
Belgium	5	0	2	1991-2014	Legislative
Canada	5	1	2	1993-2015	Legislative
Chile	3	0	2	1993-2013	Presidential
Czechia	6	0	2	1990-2013	Legislative
Denmark	6	0	2	1990-2015	Legislative
Estonia	5	0	2	1992-2015	Legislative
Finland	6	0	2	1991-2015	Legislative
France	3	0	1	1995-2012	Presidential
Germany	5	1	1	1990-2013	Legislative
Greece	6	1	4	1990-2015	Legislative
Hungary	5	0	2	1990-2014	Legislative
Iceland	5	1	2	1991-2016	Legislative
Ireland	4	0	2	1992-2016	Legislative
Israel	5	1	2	1992-2015	Legislative
Italy	5	1	1	1992-2013	Legislative
Japan	6	1	2	1990-2014	Legislative
Korea	4	0	1	1992-2012	Presidential
Latvia	6	0	3	1990-2014	Legislative
Luxembourg	3	1	1	1994-2013	Legislative
Mexico	3	0	1	1994-2012	Legislative
Netherlands	5	0	2	1994-2012	Legislative
New Zealand	6	1	2	1990-2014	Legislative
Norway	4	1	1	1993-2013	Legislative
Portugal	5	1	2	1991-2015	Legislative
Slovakia	5	0	3	1992-2016	Legislative
Slovenia	4	1	2	1992-2014	Legislative
Spain	4	1	3	1993-2016	Legislative
Sweden	5	0	2	1991-2014	Legislative
Switzerland	5	0	2	1991-2015	Legislative
Turkey	5	0	2	1991-2014	Legislative*
UK	4	0	2	1992-2015	Legislative
US	4	1	2	1992-2016	Presidential
Totals	166	15	66	247	

*Turkey became a Presidential system in 2014.

Figure 1 plots voting-age eligible turnout in first order elections across our dataset and, contrary to expectations, fails to find any obvious GFC effect. Electoral turnout continues a steady decline, with no apparent shock effect over the period 2008 and 2009. A similar

unreported plot of registration-based turnout shows the same trend. Of course, this data fails to register the experiences of the various countries, some worse affected by the crisis, others less affected. Figure 2 plots this data by country, further disrupting assumptions. The countries are ordered by the extent of the shock between 2009 and 2007, as estimated by change in real GDP per capita, from the top left of the Figure to the bottom right. The two worst affected countries, Estonia and Latvia, experienced turnout increases. By 2015, Latvia had made a strong recovery, consistent with its turnout performance, but Estonia had experienced no significant improvement in its economy since 2009. Two other badly affected countries, Iceland and Ireland, did have turnout declines, but so did relatively unaffected countries such as Austria and Chile. Some countries experienced the worst consequences after the 2008-2009 crisis: Greece, Spain, Portugal and Italy, and in these cases turnout decline is apparent, although Spain's has been relatively minor. There is some evidence here for a GFC and turnout linkage, but there are significant outliers and exceptions.

Macro-Variables, a Model, and Further Hypotheses
To begin further analysis, we establish a background or baseline model that lays out control variables, most notably, the effects of changes in electoral competitiveness and the structure of the party system that virtually all previous research has shown to significantly affect electoral turnout. They are operationalised as the closeness in vote share between the two largest parties, and the effective number of elective parties. A close vote share should promote turnout, giving people a sense that their vote could be pivotal. Closeness or distance in vote shares may fluctuate, or it may reflect a more fundamental feature of the party system. As long recognised in the literature, the effective number of elective parties is a more stable factor but has two countervailing effects. On the one hand, more parties provide more choice for voters, promoting turnout. On the other hand, with more effective parties there is a weaker relationship between vote choice and the government coalition that may be formed, potentially discouraging turnout (Jackman 1987). In our model, we will interact the two, on the assumption that the closeness or distance between the two major parties will be most effective in two party systems but will have weak to at best minor effects in larger party systems. As a final baseline variable, we include the year of election to control for trending effects: the first, for turnout itself, which we suspect is being driven downwards by generational replacement of voters we cannot otherwise estimate, and the second, for rising real GDP per capita over time, which would otherwise appear to be associated with turnout decline.

As a further control variable, we include stocks of foreign direct investment (FDI), both inward and outward, as a percentage of GDP. As noted earlier, FDI has been identified in recent research as the most potent apparent effect of globalisation on electoral turnout. The most globalised countries also tended to be more affected by the global financial crisis than those least globalised. We expect FDI to have a negative effect on turnout, as found by Marshall and Fisher (2015).

Moving closer toward our most central concern, we turn to the effects of the crisis and its aftermath: the level of economic development by country and election, estimated by real GDP per capita in purchasing power parities at 2010 constant prices, plus a categorical variable for pre-crisis (1990-2007), the crisis (years 2008 and 2009) and the recovery (2010-2016), thus establishing a period effect across the three time frames. This is interacted with GDP per capita, identifying the shifts that took place in the two later periods compared to those in the reference pre-crisis period (1990 to 2007).
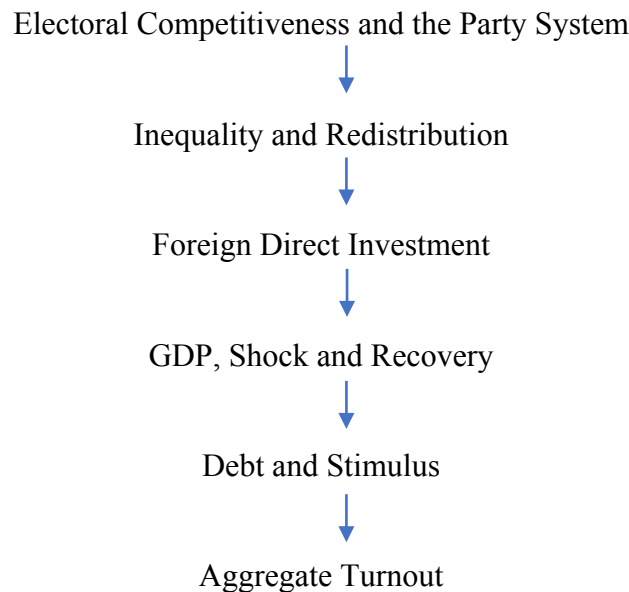
The effects of the GFC on ordinary citizens were mediated by two factors: first, the so-called automatic stabilisers made up of tax and welfare systems that redistribute income and provide citizens collective insurance for risks such as unemployment, illness, and accidents (Bermeo and Pontussen 2012). In a society with a highly effective tax, welfare and transfer system, the effects of an event like the global financial crisis may be addressed in large part by existing programmes that protect citizens against insecurity. But the effectiveness of these 'automatic stabilisers' depends on two things: first, the degree of market inequality and insecurity in the society in question, before taxes and transfers take effect: and the extent to which those tax and welfare systems reduce inequality and provide security for those succumbing to adverse circumstances. In our data, the market gini coefficient expresses the level of income inequality before taxes and transfers, and the redistribution effort figure represents the percentage change in the gini coefficient accounted for by those taxes and transfers. We will also interact these two indicators, on the assumption that, as market inequality moves up or down, the need for redistribution also changes. High or increasing market inequality means that greater redistributive effort is needed to maintain an existing level of disposable income inequality. Following the logic of arguments about the effects of inequality and turnout, we expect that **market inequality will be associated with lower turnout and redistributive efforts will have the opposite effect.**

The second form of mediation between citizens and the crisis was a discretionary fiscal stimulus: the extent to which governments were prepared to address the crisis by stimulating the economy by means of extra spending or tax cuts, usually by taking on government debt to fund the consequent deficit (Barnes and Wren 2012). The discretionary fiscal stimulus is captured by the cyclically adjusted or structural fiscal balance as a percentage of GDP, estimated as an austerity measure: that is, the absence of stimulus is positive, the extent of stimulus negative. We also include gross government debt as a percentage of GDP as another stimulus estimate. **We expect both austerity and government debt to negatively affect turnout,** austerity discouraging people from casting a vote because austerity tends to be justified on grounds of there being 'no alternative'. Debt has the effect of constraining governments by making them more vulnerable to fluctuations in international financial markets (and for this reason we choose gross rather than net debt as this best represents countries' levels of exposure to those markets). We also included annual general government deficit and long term interest rates in our dataset as alternative or supplementary estimates to be tested. Figure 3 displays our model, which indicate the most plausible causal relationships we hypothesise, although we also acknowledge likely feedback loops and interactions at and between various levels.

Our macro-level model is a pooled time series. We employ linear regression with election clusters as the panel is unbalanced, including elections separated at irregular intervals, with different numbers of elections in each country cluster. Annual economic data is drawn from mixtures of the year of the election and the one before, each year's calculations weighted by the date of the election, coded into three-month quarters. The first three models are run with fixed effects, so that our analysis focusses entirely on changes within countries rather than differences among them: the final model drops the fixed effects, enabling us to bring cross-country differences into the picture. As noted earlier, the elections we include are all 'first order', in which we expect the highest level of turnout: that is, legislative elections except where a President forms a government that cannot be overturned by the legislature, in which case we only include Presidential elections in that country. We ran models both for voting-age eligibility-based turnout (VAP, Table 1) and registration-based turnout (RBT, Appendix

Table 1). Findings are reported from the VAP model although, with only a few exceptions, both estimates of turnout show the same broad patterns.

Figure 3: Aggregate Turnout Model

Electoral Competitiveness and the Party System

↓

Inequality and Redistribution

↓

Foreign Direct Investment

↓

GDP, Shock and Recovery

↓

Debt and Stimulus

↓

Aggregate Turnout

Findings: Macro-level
In the first control-variable step of the VAP model in Table 1, we find that the effective number of parties has negative effects on turnout, but there is no effect for two-party vote closeness or distance. However, our expectation is confirmed in the final step after all other variables are included. That is, competitiveness matters in two-party competition, but not in multi-party systems. We take this as an underlying relationship only exposed by the addition of the further variables as controls. Other variables were tested in exploratory models: the time between elections, and a weighted policy polarization estimate based on party policy statements. Neither were significant or substantively strong: time between elections enhanced turnout slightly, but contrary to expectations policy polarization if anything negatively affected turnout but nowhere approaching significance. This an unexpected finding, as both according to theory and to previous empirical research the effects of party polarisation should enhance turnout.

The first step in the VAP model includes both market inequality and redistribution effort, interacted together as explained above. In the country-fixed effects versions of our model, their effects are small and the effects of redistribution appear to have negative effects on turnout with all variables included. However, further investigation suggests this is strongly influenced by the relatively small number of countries where redistribution is low. The general trend in OECD democracies over the period from 1990 to 2016 has been for both market inequality and relative redistribution to increase with only a relatively small number of countries being outliers. The extreme cases of Greece, Ireland, and Iceland follow this general trend, indicating the role of automatic stabilisers in meeting their crises. The picture changes in Model 4 without fixed effects, while also drilling down into the distinction between pre- and post 1990 democracies. This cross-national comparison indicates that redistribution has positive effects on turnout in old democracies, with slightly greater effects where market inequality also tends to be relatively low. Further analysis not reported here shows that in the old democracies the strongest effects of redistribution are found during the

Table 2: Age-Eligible Turnout in the OECD, 1990-2016

|	1	2	3	4
Year	-0.353***	-0.293***	-0.263	0.438*
	(0.055)	(0.086)	(0.182)	(0.246)
Two Party Vote Distance (TPVD)	-0.041	-0.080	-0.395**	-0.292
	(0.142)	(0.146)	(0.174)	(0.375)
Effective Elective Parties (EEP)	-1.256***	-1.191***	-1.366***	0.211
	(0.315)	(0.332)	(0.469)	(0.694)
TPVD * EEP	0.002	0.010	0.074*	0.050
	(0.033)	(0.034)	(0.039)	(0.084)
Market Gini (MG)	0.329	0.171	-1.260	0.991
	(0.489)	(0.511)	(0.818)	(1.230)
Relative Redistribution (RR)	0.379	-0.185	-1.685*	2.842*
	(0.641)	(0.701)	(0.915)	(1.712)
MG * RR	-0.009	-0.001	0.030	-0.044
	(0.013)	(0.014)	(0.020)	(0.037)
Log FDI Stocks % GDP		-1.023	1.082	-1.454
		(1.032)	(1.313)	(1.535)
Years 2008 and 2009 (GFC)			-11.694**	-12.448
			(5.585)	(12.257)
Years 2010-2016 (Recovery)			0.952	-0.774
			(2.845)	(6.246)
Real GDP Per Capita PPP (GDP)			-0.091	-0.502***
			(0.194)	(0.138)
GDP * Recovery			0.056	0.331
			(0.063)	(0.280)
GDP * GFC			0.310**	-0.028
			(0.127)	(0.143)
Structural Balance % GDP (Austerity)			-0.542***	-1.210***
			(0.179)	(0.354)
Austerity * GFC			-0.084	0.370
			(0.354)	(0.806)
Austerity * Recovery			0.485*	0.810
			(0.278)	(0.576)
Log Gross Government Debt % GDP			-5.651***	-4.677***
			(1.338)	(1.558)
New Democracy				160.476**
				(61.830)
MG * New				-3.356**
				(1.337)
RR * New				-4.941***
				(1.824)
MG * RR * New				0.090**
				(0.039)
Country Fixed Effects	Yes	Yes	Yes	No
Constant	778.990***	676.427***	696.880*	-839.083*
	(112.404)	(172.659)	(356.335)	(489.459)
Observations	245	236	197	194
R-squared	0.881	0.881	0.917	0.435

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

post-2010 recovery phase, with countries with low levels of relative redistribution suffering most from lower turnout.

The second step of the model also adds the effect of FDI: note that the figure is logged to reduce the influence of a few cases with very high levels of FDI. The relationship turns out to be weak and entirely non-significant. In alternative models without the year trending control, FDI had strong effects, although these disappeared again in the final version of the alternative model without the year trend.

The final step adds the effects of economic change, interacted with the period variable. The interactions between GDP per capita and the period variable are significant. Pre-crisis and post-crisis, variation in GDP per capita has no association with turnout but, in the crisis period, despite overlapping confidence intervals in Figure 4, we still see the expected lower turnout where GDP per capita becomes lower.

Figure 4: Period Effects for Real GDP Per Capita and Turnout
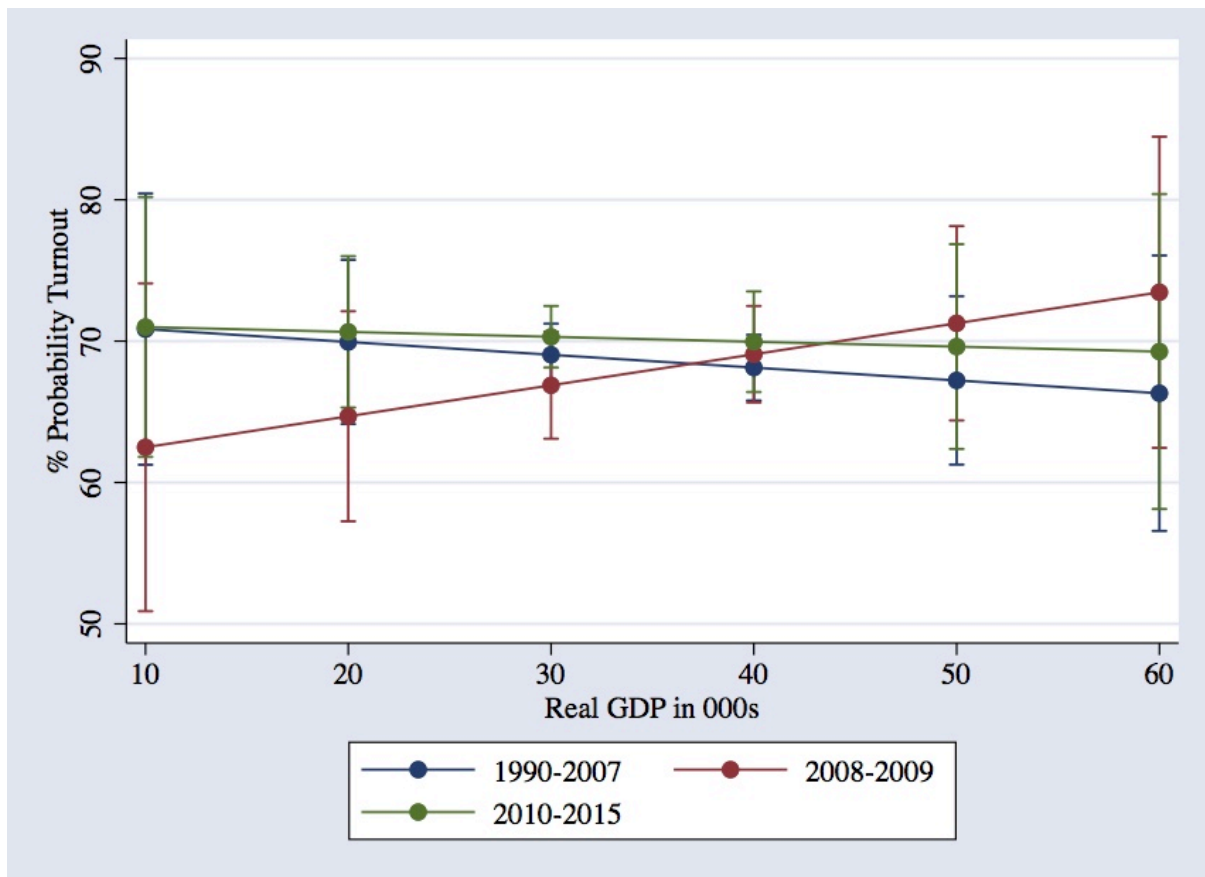
While real-world within-country change across the GDP per capita range does not encompass more than small sections of the regression slope when plotted, Ireland's and Estonia's real GDP per capita dropped by about $5000 US in constant prices between 2009 and 2007 (predicting about 1 per cent turnout decline) and Greece's by about $7500 between 2012 and 2007 (predicting about a 1.5 per cent turnout decline). The predicted probability of Ireland's turnout decline to 2012 was about another one per cent. In fact, Irish turnout went down by more than 5 points between 2011 and 2007 and Greece's by about the same between 2012 and 2007, suggesting that there were other factors also in play further driving decline.

However, Estonia's turnout increased by two per cent between 2011 and 2007, with a further increase in 2015. As will be seen later, there may be an explanation for this apparent puzzle.

This step in the model also adds austerity versus stimulus, and government debt, providing the most striking findings hitherto. Austerity has the expected effects, stimulus being associated with higher turnout and austerity with the reverse. Stimulus/austerity data by country pre-crisis, crisis, and recovery periods can be found in Appendix Table 2. However, interacting austerity/stimulus with the two period dummies shifts the ground somewhat. Figure 5 shows that the positive effects of stimulus on turnout are confined to the pre-crisis and crisis periods, but have no appreciable effect after the crisis. As the stimulus was at its highest during the crisis years, this is likely to be one reason why turnout did not fall lower at the time. In the case of Estonia, compared to before and after the crisis, there was a significant stimulus over the period 2008-2009, partly accounting for the failure for the collapse of the economy to adversely affect turnout.

Figure 5: Stimulus and Turnout   Figure 6: Government Debt and Turnout
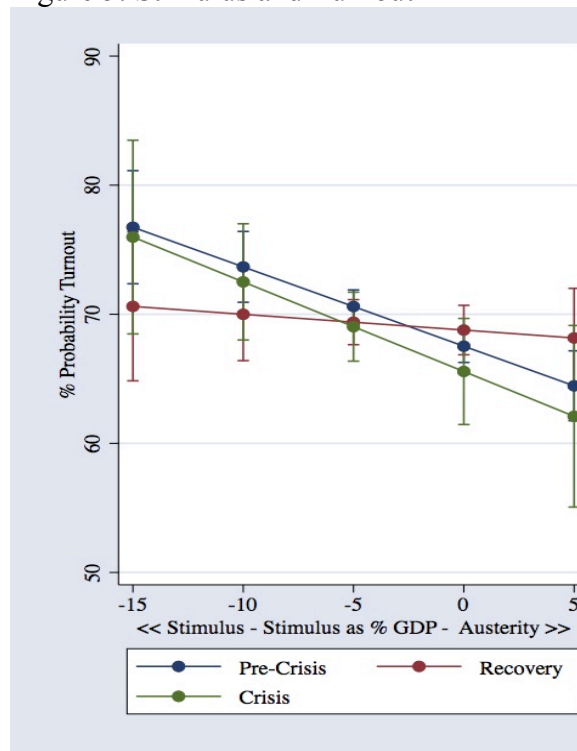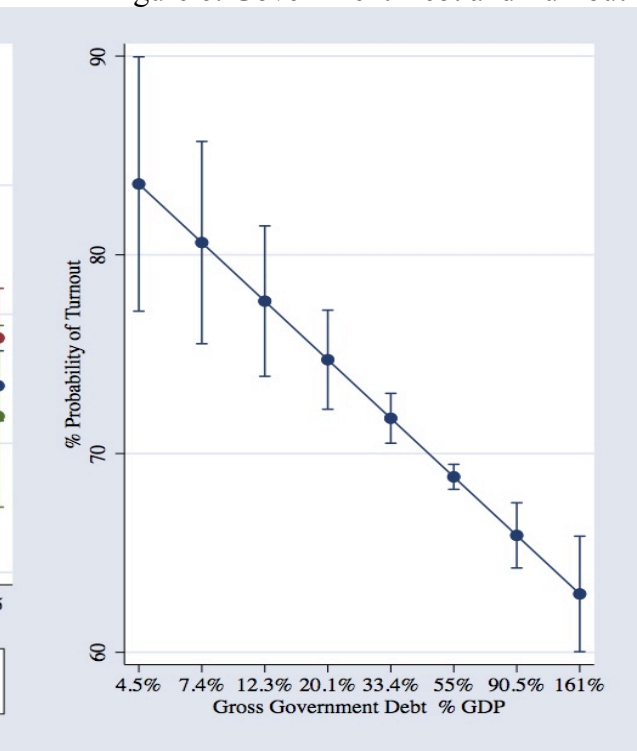
The effects of government debt are more dramatic, washing out any direct recovery effects on turnout. This makes sense given the significant increase in government debt in most countries during the recovery period. (Note that the Figure's x-axis is logarithmic but the labels indicate the unlogged equivalents). Interactions were attempted between debt and the GFC and recovery dummies, but the effects of government debt remain consistent across all the time periods. But as government debt levels have significantly increased in most countries since the GFC, debt has still had a more potent negative effect over the later period. General government deficit, long term interest rates, and per cent unemployed were tested in alternative versions of the model – none proved significant.

Findings: Micro-Level
We now return to the competing claims of the two previous analyses of the association between the GFC and electoral turnout that can only be tested with micro-data: to the

inequality hypothesis, in which turnout is discouraged among the poor and the vulnerable, and to the alternative education hypothesis, in which turnout is discouraged among the more highly educated because they are most aware of the constraints imposed on governments by the crisis. Our source is the integrated module dataset (IMD) of Modules 1-4 of the CSES, augmented by further data otherwise missing from the IMD culled from the separate Module data files and merged into the IMD: most notably, that based on occupations and political knowledge. The CSES IMD provides us with data from 24 of our OECD countries and 95 elections, which are listed in Appendix Table 3. It should be noted, however, that missing data at both macro and micro-levels reduces the number of country/election cases listed in the Table for some versions of the Model.

Table 3: Period Effects on Vote or Not Vote, Random Effects Logit

VARIABLES	(1) 1996-2007	(2) 2008-2009	(3) 2010-2016
Year	-0.062*	-0.119	0.220**
	(0.035)	(0.623)	(0.110)
Two Party Vote Distance (TPVD)	-0.110	0.231	0.220***
	(0.087)	(0.176)	(0.081)
Effective Elective Parties (EEP)	-0.348**	-0.435*	0.259*
	(0.164)	(0.238)	(0.143)
TPVD * EEP	0.021	-0.008	-0.041**
	(0.018)	(0.034)	(0.018)
Real GDP Per Capita PPP (GDP)	0.021*	0.071***	0.036***
	(0.011)	(0.025)	(0.013)
Gross Government Debt % GDP	-0.408*	-1.634***	-0.286
	(0.244)	(0.490)	(0.435)
Structural Balance % GDP (Austerity)	0.072	-0.355*	-0.115*
	(0.048)	(0.192)	(0.065)
Age	0.074***	0.070***	0.043***
	(0.003)	(0.012)	(0.012)
Age-Squared	-0.000***	-0.000***	-0.000
	(0.000)	(0.000)	(0.000)
Female (Male)	-0.077***	0.037	-0.021
	(0.021)	(0.069)	(0.042)
Household Income	0.171***	0.187***	0.214***
	(0.009)	(0.052)	(0.019)
Education	0.279***	0.215***	0.319***
	(0.012)	(0.076)	(0.024)
Outsider (Insider)	-0.125***	-0.303**	-0.163**
	(0.028)	(0.130)	(0.073)
var(_cons[country/elections])	0.776***	0.499***	0.347***
	(0.149)	(0.170)	(0.097)
Constant	124.968*	240.521	-446.559**
	(70.812)	(1,252.021)	(221.361)
Observations	81,164	15,799	36,770
Number of groups	57	12	25

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3 kicks off the analysis with separate multi-level random effects models run on the three periods identified earlier, focussing on the most theoretically and empirically relevant macro variables, and some core micro-variables. The Level 2 variable is country/election. These models have the advantage of allowing a first cut inspection of changes in the variables of most interest between the three periods. They suffer from a key limitation, as they cover different mixtures of countries and therefore do not compare like with like. The differences may be suggestive, but they will be far from definitive.

The Table suggests that the effects of income on turnout did increase between pre-crisis, crisis, and recovery periods, those of low incomes becoming less likely to vote than those on high incomes. The effects of education dropped during the two crisis years but bounced back during the recovery, again supporting a claim that the gap between turnout among those with higher education and lower education narrowed at the time of the crisis. These findings provide preliminary support for both hypotheses, although adding the further possible discovery that any education effect during the crisis was temporary. Table 4 provides the results of a more robust examination.

The Table contains the significant macro-level variables and adds the available micro-variables. Model 1 contains the macro-level variables only and confirms that the most important findings from the macro-level follow through into the more restricted number of countries and elections available from the CSES IMD: most notably, that austerity has negative turnout effects only pre-crisis and during the crisis (as shown in Figure 5). The crisis, and its extent, also continues to show negative effects on turnout, as do the effects of gross government debt. In Model 2, the main individual-level variables are added, all with the expected effects: the young are less likely to vote, as are women, and those on low incomes and with low education and 'outsiders': those who are unemployed, in part-time work, or disabled. For Model 3, we tested various macro-micro level interactions with the period variables relevant to our hypotheses, most notably education and income, on which our hypotheses are centred. A non-significant education interaction remains in the model – while nonsignificant, the coefficients and slopes generated were as hypothesised, but the effect was very small and the previous education slope bounced back during the recovery period as suggested in the Table 4 Model based on period disaggregation. Income and outsider status had no significant or substantive effects in period interactions, apparently disconfirming the inequality or vulnerability hypothesis. However, an alternative version of the model testing Karp and Milazzo's vulnerability index did show the hypothesised effect, but it was nonsignificant and substantively very small.

The next step of the model adds in further individual-level sociological variables traditionally associated with turnout (see Appendix). Because of missing values across various country/election cases, the overall individual-level and group Ns decline. However they make very little difference to the findings hitherto, although do soak up some of the effects of education. An alternative model using relative skill specificity in place of class shows similar findings: the less skilled are less likely to vote. In the final step, the effects of education are halved by the addition of the attitudinal variables, partisanship, and political knowledge, which is exactly what one should expect: the effects of education on turnout should not be discounted on this basis, because they tend to flow though these variables.

Table 4: Electoral Turnout and the GFC: Micro-Macro Multi-Level Model

Vote or Not Vote, Multi-Level Models	(1)	(2)	(3)	(4)	(5)
Year	-0.006	-0.010	-0.010	-0.060	-0.013
	(0.027)	(0.032)	(0.033)	(0.041)	(0.031)
Two Party Vote Distance (TPVD)	-0.015***	-0.017***	-0.016***	-0.020***	-0.014*
	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)
Effective Elective Parties (EEP)	-0.156***	-0.160**	-0.165***	-0.164**	-0.151**
	(0.059)	(0.062)	(0.062)	(0.074)	(0.060)
Period: Years to 2007 (Reference)					
Years 2008 and 2009 (GFC)	-1.139**	-1.216**	-1.324**	-1.407**	-1.710
	(0.531)	(0.548)	(0.661)	(0.559)	(1.372)
Years 2010-2015 (Recovery)	0.383	0.333	0.444	1.050*	0.529
	(0.354)	(0.434)	(0.456)	(0.545)	(0.518)
Real GDP Capita (PPP)	-0.011	-0.023	-0.026	-0.014	-0.034**
	(0.028)	(0.035)	(0.037)	(0.041)	(0.017)
Crisis * Real GDP Capita	0.031*	0.039**	0.038*	0.043**	0.048
	(0.018)	(0.019)	(0.021)	(0.018)	(0.038)
Recovery * Real GDP Capita	0.003	-0.001	0.001	-0.002	-0.002
	(0.008)	(0.010)	(0.010)	(0.010)	(0.008)
Structural Balance % GDP (Austerity)	-0.070**	-0.066**	-0.058*	-0.040	-0.034
	(0.027)	(0.028)	(0.031)	(0.029)	(0.040)
Austerity * Crisis	-0.055	-0.029	-0.044	-0.054	-0.072
	(0.052)	(0.057)	(0.059)	(0.055)	(0.095)
Austerity * Recovery	0.094**	0.074	0.078	0.129**	0.009
	(0.039)	(0.049)	(0.050)	(0.057)	(0.058)
Government Debt % GDP (Logged)	-0.328*	-0.489***	-0.495**	-0.474**	-0.834***
	(0.170)	(0.180)	(0.212)	(0.208)	(0.230)
Age		0.065***	0.054***	0.067***	0.058***
		(0.006)	(0.006)	(0.005)	(0.012)
Age * Age		-0.000***	-0.000***	-0.000***	-0.000**
		(0.000)	(0.000)	(0.000)	(0.000)
Female (Male)		-0.048*	-0.060**	0.100***	-0.003
		(0.029)	(0.030)	(0.027)	(0.066)
Household Income (Quintiles)		0.186***	0.137***	0.122***	0.210***
		(0.013)	(0.012)	(0.012)	(0.021)
Education		0.274***	0.247***	0.167***	0.300***
		(0.028)	(0.018)	(0.018)	(0.027)
Outsider (Insider)		-0.156***	-0.144***	-0.138***	-0.129*
		(0.035)	(0.034)	(0.035)	(0.072)
GFC * Education		-0.060			
		(0.070)			
GFC * Recovery		0.047			
		(0.040)			
Union			0.209***		
			(0.036)		
Married			0.273***		
			(0.028)		
Class: Higher Service (Reference)					
Lower Service			-0.019		

	(1)	(2)	(3)	(4)	(5)
			(0.042)		
Skilled Workers			-0.290***		
			(0.041)		
Unskilled Workers			-0.419***		
			(0.053)		
No Occupation			-0.161***		
			(0.054)		
Political Knowledge				0.315***	
				(0.019)	
Democratic Dissatisfaction				-0.095***	
				(0.012)	
Big/Any				0.382*	
				(0.203)	
Votes Make Difference				0.267***	
				(0.018)	
Who in Power Difference				0.108***	
				(0.012)	
Partisanship: Not Close (Reference)					
Currently Close				0.635***	
				(0.044)	
Generally Close				1.081***	
				(0.056)	
Market Gini					-0.034
					(0.029)
Relative Redistribution					0.029
					(0.019)
var(_cons[Country])					0.302***
					(0.103)
var(_cons[Election])	0.138***	0.151***	0.159***	0.137***	0.251**
	(0.042)	(0.046)	(0.049)	(0.037)	(0.106)
Constant	18.833	24.710	24.167	122.582	30.088
	(53.563)	(64.505)	(63.629)	(80.193)	(61.827)
Fixed Country Effects	Yes	Yes	Yes	Yes	No
Observations	164,816	133,733	119,845	107,431	105,576
Number of groups	95	94	88	81	19

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

NOTE: Models 1-4: election groups (robust clusters), country fixed effects. Model 5, three-level random effects model on elections within 19 old democracies.

In Model 5 we drop the country fixed effects and run a three-level random effects model on old democracies only, to test if cross-country comparison again brings out the effects on inequality and redistribution found in old democracies only. The effects are in the expected directions but are relatively small and nonsignificant.

The strongest findings remaining are those associated with the effects of austerity (confined to the pre-crisis and crisis periods) and those of debt (found throughout). To conclude we therefore drill down more deeply into our data to test further extrapolations of our theoretical expectations: that that these two phenomena strongly associated with turnout could affect social groups differently, affecting the extent and changing the balance of turnout in ways not

captured by our periodisation approach. We therefore hypothesise that age, political knowledge, income, education, and outsider status will condition turnout responses to austerity and government debt. We include age because of the well-known effects of the global financial crisis on youth unemployment and youth opportunities more generally, and the cushioning effect of assets and more generous social policy support for the elderly in many countries. Age effects on turnout also may have lasting effects on subsequent turnout behaviour of age-defined cohorts. Table 5 provides a clear summary of the findings and Table 6 the details. Figures 8-12 display the probability estimates with confidence intervals for the relationships for which the hypothesis is confirmed.

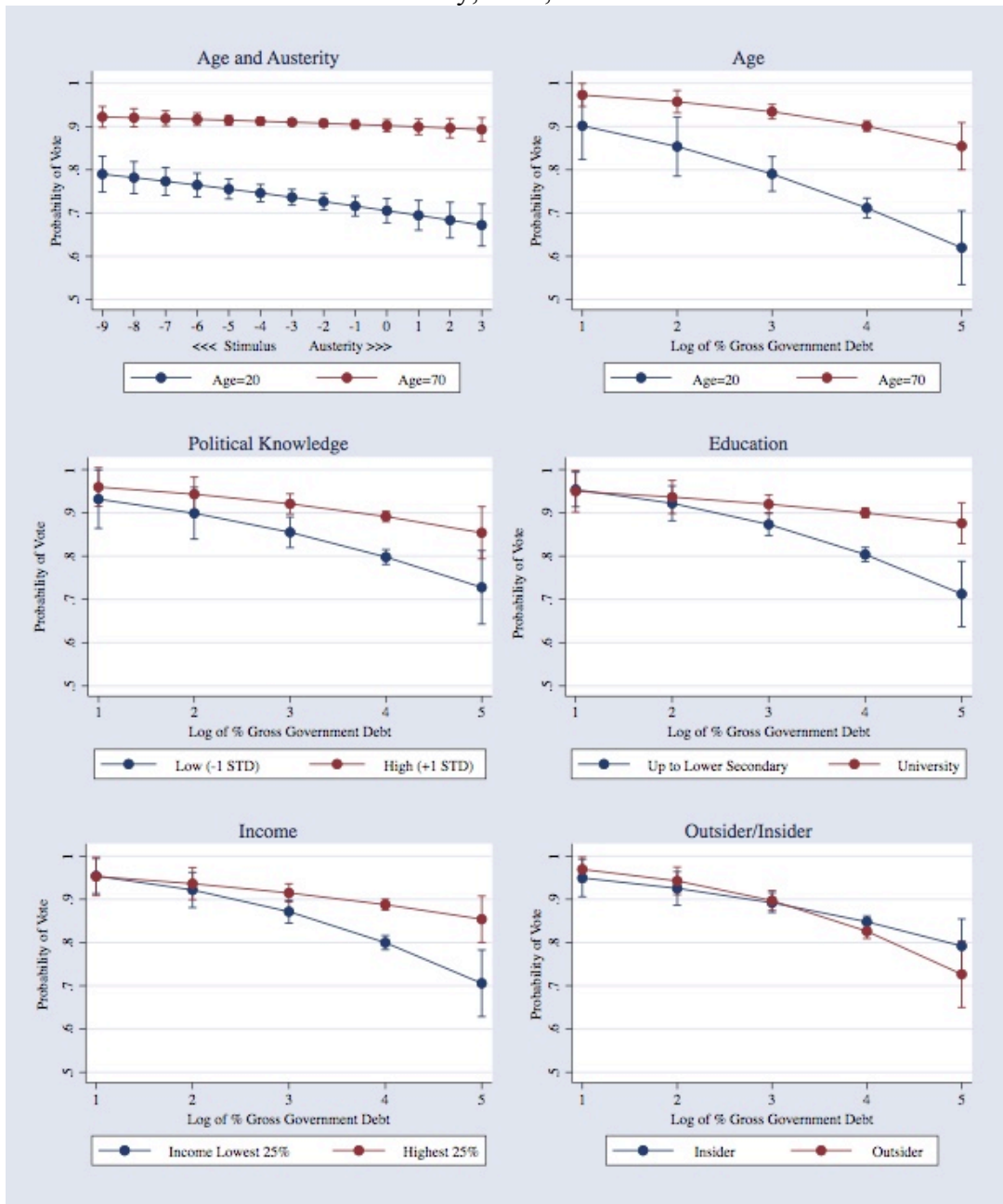Figure 8-12 Interactive Effects on Austerity, Debt, and Turnout

Table 5 Summary of Interactive Effects

Those Most Affected By

	Austerity	Debt
Age	young	young
Political Knowledge	No interaction	less knowledge
Education	No interaction	less educated
Income	No interaction	on low incomes
Outsider	No	Yes

Figure 8 indicates that the young are less likely to vote than the old, and both young and old are less likely to vote as policy shifts toward austerity. But the effects of austerity of the young are slightly stronger than among the old. Otherwise, as Table 5 reports, responses to austerity run in parallel across political knowledge groupings, income bands, outsider/insider status, and education levels: there are no interactive effects. Figures 9 to 12 confirm interactive effects on responses to government debt for all the identified groups. Youth turnout is more affected by debt than turnout among the old, turnout among those with low knowledge is more affected than those with higher knowledge, and the same applies for those on lower versus high incomes and those with low compared to high education levels. The effect on outsiders is apparent but less pronounced.

Implications and Conclusions
This paper set out to test a simple hypothesis: that by intensifying the alleged gap between masses and elites, the GFC has intensified a decline in electoral participation, particularly in those countries most affected. The evidence for this claim is weak at best. Despite the severe consequences of the GFC in many countries, there was no strong 'shock' turnout effect. In several countries with more extreme experiences, turnout did not decline either during or after the GFC, although in some it did. In multivariate analysis, we found that during the two years of crisis, after holding government policy constant in terms of debt and stimulus, variation in GDP per capita was associated with turnout, more or less as expected, but outside of the crisis period it had no effects. In real-world terms of within-country differences, the predicted effect of variation in real GDP per capita on turnout during the crisis was rarely more than one per cent.

Our within-country analysis finds little turnout effect for automatic stabilisers but the picture changes with cross-country comparison, although clear findings are confined to the old democracies where redistribution appeared to enhance turnout particularly during the recovery period. By contrast the effects of stimulus were strongly apparent within countries: the apparent consequences of government responses to the GFC. Governments decided to take on debt to a lesser or greater degree, and whether to respond with austerity or fiscal stimulus. A shift toward austerity was associated with lower turnout, but only during the pre-crisis and crisis periods. Change in the logged ratio of gross government debt to GDP had the strongest apparent effects on turnout, and these were consistent across the three time periods covered by our data. Of course, these variables are negatively correlated, within our dataset of first order country/election cases (at r=0.41). In terms of the long-term fiscal balance, stimulus is usually funded by increasing government debt or by tax cuts. Debt can increase without effective stimulus, however, as in the case of the GFC, where governments bailed out or nationalised banks and finance companies to protect them from failure. Without incurring debt, tax cuts must be matched by expenditure cuts and consequent reductions in government

services. The economy in general may benefit, but the cost may be borne by those for whom the services are cut. Post-crisis, debt increased and there were expenditure cuts in many countries, and whatever evidence of stimulus that remained no longer had positive effects on turnout.

Our initial hypothesis also proposed that turnout effects of the GFC would be felt most strongly among those individuals suffering the most harm, and we also noted conflicting findings that identified the most significant decline among the most educated. Drilling down to the individual level, we tested these two claims: one rooted in an inequality paradigm, the other focussing on the ability to cognitively process information about constraint. Despite initial indications, there were no changes in the direct effects of income or outsider status on turnout, except on the extreme margins. The same applied to education, with a very weak and nonsignificant association in the expected direction.

We then tested the conditional effects of age, income, education and outsider status on apparent responses to austerity/stimulus and debt. During the crisis (and before it) austerity somewhat depressed turnout among the young. Debt had more consistent effects conditioned by all four micro-level factors. It is worth pointing out that the effects of political knowledge do not bear out expectations that constraint should perceived most strongly among the educated or, in this case, the more informed. The less informed are more affected by debt constraint perceptions in their turnout behaviour, as are those on low incomes, lower education, and to a lesser extent, those who are outsiders. Yet if anything a government policy to incur debt to address the crisis and assist a recovery should be more expected to benefit people in these groups, at least on the assumption that debt enables fiscal stimulus rather than austerity, or otherwise funds the continuation of redistributive social policies. Why should debt have such apparent effects? It may be because where government debt is increasing it becomes highly salient in political discourse, largely framed in negative terms. While there are strong economic arguments to allow debt to increase in this context, if only temporarily, less knowledgeable voters who also tend to be younger, on lower incomes, and with lower education are likely to have been less exposed to more sophisticated economic analysis.

Our finding that young people are somewhat more affected by austerity and the accumulation of government debt has further implications. If turnout is learned behaviour, and acquiring the propensity to vote or not when young has lasting effects, we may not yet be able to estimate the full consequences of the GFC for electoral turnout in the future, particularly in countries where redistributive effort is low and where debt continues to limit the policy options of governments.

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Appendix

Appendix Table 1: Registration-Base Turnout in the OECD, 1990-2016

VARIABLES	Registered Turnout			
	1	2	3	4
Two Party Vote Distance (TPVD)	-0.136	-0.130	-0.075	-0.327
	(0.178)	(0.169)	(0.169)	(0.206)
Effective Elective Parties (EEP)	-1.095***	-1.275***	-1.162***	-1.248**
	(0.395)	(0.387)	(0.384)	(0.558)
TPVD * EEP	0.030	0.022	0.005	0.058
	(0.041)	(0.039)	(0.038)	(0.046)
Market Gini (MG)	0.178	0.580	-0.027	0.727
	(0.613)	(0.589)	(0.591)	(0.984)
Relative Redistribution (RR)	1.770**	0.834	0.183	0.559
	(0.777)	(0.801)	(0.797)	(1.109)
MG * RR	-0.032**	-0.017	-0.002	-0.017
	(0.016)	(0.016)	(0.016)	(0.023)
Log FDI Stocks % GDP		-3.381***	-1.594	0.355
		(0.753)	(1.127)	(1.468)
Years 2008 and 2009 (GFC)			-10.601*	-12.098**
			(5.879)	(5.801)
Years 2010-2016 (Recovery)			-9.644***	-2.567
			(2.708)	(2.932)
Real GDP Per Capita PPP (GDP)			-0.193	-0.360**
			(0.132)	(0.181)
GDP * Recovery			0.216***	0.076
			(0.072)	(0.074)
GDP * GFC			0.248*	0.308**
			(0.148)	(0.146)
Structural Balance % GDP (Austerity)				-0.380**
				(0.157)
Gross Government Debt % GDP				-0.073**
				(0.028)
Constant	81.160***	84.604***	111.319***	86.165*
	(29.252)	(28.294)	(28.543)	(44.479)
Observations	245	236	236	197
R-squared	0.809	0.841	0.855	0.884

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 2: Fiscal Stimulus and Austerity in the OECD, 1990 to 2016, Mean Annual Figures

	Rank 1990-1007	1990-2007	Rank 2008-2009	2008-2009	Rank 2010-2016	2010-2016
Australia	9	-0.34	14	-2.94	24	-3.17
Austria	23	-3.03	16	-3.33	13	-1.57
Belgium	20	-2.88	12	-2.78	23	-3.14
Canada	17	-2.14	9	-1.33	15	-1.69
Chile	7	0.56	13	-2.93	9	-0.80
Czech Republic	25	-4.17	25	-5.06	12	-1.21
Denmark	10	-0.62	6	0.17	8	-0.72
Estonia	6	0.57	10	-1.44	2	0.82
Finland	4	0.77	5	0.67	10	-1.03
France	24	-3.34	26	-5.08	28	-4.04
Germany	19	-2.69	8	-1.02	6	-0.16
Greece	35	-8.78	35	-13.94	5	0.27
Hungary	34	-7.23	24	-4.59	16	-1.82
Iceland	8	-0.14	30	-7.17	21	-2.52
Ireland	5	0.64	33	-8.79	31	-4.64
Israel	26	-4.24	22	-4.06	25	-3.42
Italy	31	-5.62	21	-3.99	17	-1.86
Japan	30	-5.53	27	-5.32	35	-6.29
Korea, Republic of	2	1.90	3	0.89	1	1.19
Latvia	14	-1.44	19	-3.85	14	-1.64
Luxembourg	1	2.65	1	1.68	3	0.80
Mexico	11	-0.87	11	-2.07	30	-4.21
Netherlands	16	-1.87	15	-3.20	18	-2.04
New Zealand	3	1.82	7	-0.11	11	-1.15
Norway	28	-4.71	18	-3.70	34	-5.44
Poland	27	-4.70	28	-5.33	27	-3.82
Portugal	29	-4.90	31	-7.46	26	-3.51
Slovakia	32	-6.03	23	-4.50	22	-3.13
Slovenia	12	-1.02	20	-3.94	19	-2.29
Spain	15	-1.50	34	-8.93	29	-4.11
Sweden	21	-2.92	2	1.05	7	-0.16
Switzerland	13	-1.21	4	0.85	4	0.35
Turkey	33	-6.13	17	-3.57	20	-2.34
United Kingdom	18	-2.63	32	-7.92	32	-4.93
United States	22	-2.96	29	-6.37	33	-5.40
Average		-2.4		-3.7		-2.3

High Stimulus   Austerity

Source: World Bank

Appendix Table 3: Integrated Data Module CSES Countries and Elections

AUSTRALIA	1996	2004	2007	2013			
CANADA	1997	2004	2008	2011	2015		
CHILE	1999	2005	2009				
CZECH REPUBLIC	1996	2002	2006	2010	2013		
DENMARK	1998	2001	2007				
FINLAND	2003	2007	2011	2015			
FRANCE	2002	2007	2012				
GERMANY	1998	2002	2005	2009	2013		
GREAT BRITAIN	1997	2005	2015				
ICELAND	1999	2003	2007	2009	2013		
IRELAND	2002	2007	2011				
ISRAEL	1996	2003	2006	2013			
MEXICO	1997	2000	2003	2006	2009	2012	2015
NETHERLANDS	1998	2002	2006	2010			
NEW ZEALAND	1996	2002	2005	2008	2011	2014	
NORWAY	1997	2001	2005	2009	2013		
POLAND	1997	2001	2005	2007	2011		
PORTUGAL	2002	2005	2009	2015			
SLOVENIA	1996	2004	2008	2011			
SOUTH KOREA	2000	2004	2008	2012			
SPAIN	1996	2000	2004	2008			
SWEDEN	1998	2002	2006	2014			
SWITZERLAND	1999	2003	2007	2011			
USA	1996	2004	2008	2012			

Appendix: Variables and Definitions

Macro-Level

Turnout: Voting Age Eligible and Registration Based Turnout are from International IDEA.
https://www.idea.int/data-tools/data/voter-turnout

Electoral Competitiveness: updated and corrected from the Global Elections Database
Brancatti, nd) http://www.globalelectionsdatabase.com/. Distance between first and second
placed parties/candidates in votes cast.

Polarization. See Russell Dalton (2008), and 'Party System Polarization Index
for CSES Modules 1-4 Countries'.
http://www.cses.org/datacenter/usercommunity3/usercommunity3.htm
Dalton's formula is applied to Manifesto Project Data. See https://manifesto-
project.wzb.eu/datasets. This is an index weighted by parties' votes.

Effective Elective Parties (as defined by Laasko and Taagepera, 1979). From Michael
Gallagher, 'Election Indices' (with a few additional calculations from official data)
https://www.tcd.ie/Political_Science/people/michael_gallagher/ElSystems/Docts/ElectionIndi
ces.pdf

Inequality and Redistribution. From the Standardised World Income Inequality database
(SWIID): see Solt 2019.
https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/LM4OWF

Foreign Direct Investment. United Nations Conference on Trade and Development.
https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx.

Real GDP Per Capita PPP. From 'Level of GDP per capita and productivity', OECD Stat. In
USD, constant prices, 2010 PPPs.
https://stats.oecd.org/Index.aspx

Gross Government Debt as % GDP. Gross Debt Position % of GDP. From the World Bank,
https://tcdata360.worldbank.org/indicators/govt.debt.net?country=BRA&indicator=2785&viz
=line_chart&years=1980,2023, accessed February 26 2019.

Cyclically Adjusted Balance as % GDP (Austerity Versus Stimulus). From the IMF
https://www.imf.org/external/datamapper/GGCB_G01_PGDP_PT@FM/ADVEC/FM_EMG/
FM_LIDC

General Government Deficit (OECD).
https://www.oecd-ilibrary.org/governance/general-government-
deficit/indicator/english_77079edb-en?isPartOf=/content/indicatorgroup/cc9669ed-en

Long Term Interest Rates (Ten-Year Bonds) (OECD)
https://data.oecd.org/interest/long-term-interest-rates.htm

Micro-Level

CSES Integrated Module Dataset (ww.cses.org)
Vote/not vote, age, gender, household income (in quintiles), education (four category scale), marital status, partisanship (Three category scale), satisfaction with democracy, who is in power ('…where ONE means that it doesn't make any (a) difference who is in power and FIVE means that it makes a big difference who is in power), where would you place yourself?')', voting makes a difference ('….where ONE means that voting won't make any (a) difference to what happens and FIVE means that voting can make a big difference), where would you place yourself?'). The countries/elections using the two forms of the latter questions are reported in Vowles 2008.

Additional CSES data from Modules 1-4
Employment status, union household, occupation, respondents and partners (class), political knowledge (standardised by country/election, a four point scale based on answers to three questions coded 0 or 1, and added). ISCO88 (Modules 1-3) and ISCO08 (Module 4) codes are linked to Daniel Oesch's (2006) class categories as described at http://people.unil.ch/danieloesch/scripts/. The 'business owner' category is not available as neither ISCO codes or other CSES background variables provide this information.

Figure 2: Turnout in 35 OECD Democracies, 1990-2016
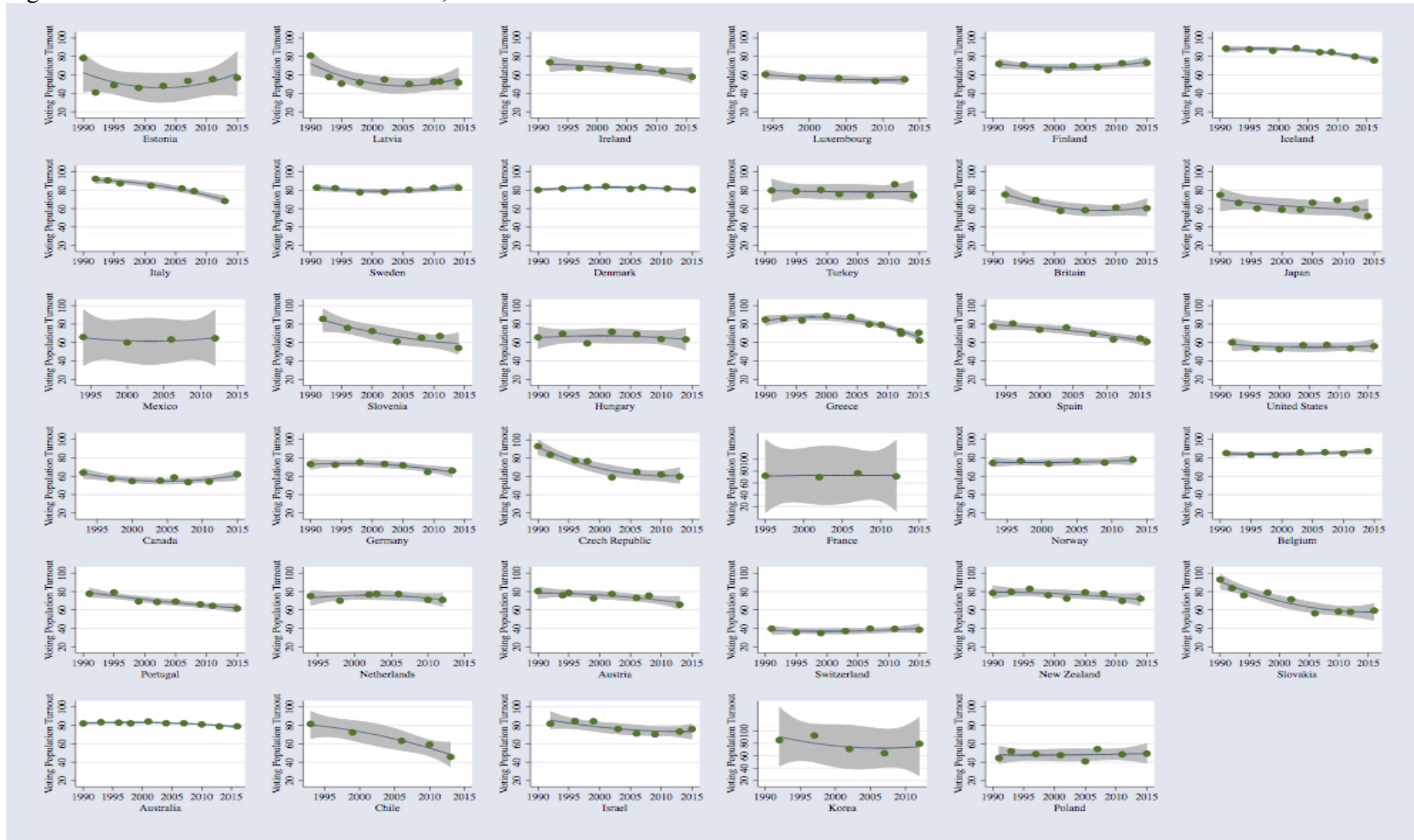
Table 6 Austerity and Debt Interactions By Age, Political Knowledge, Education, and Income

VARIABLES	(1) Austerity/ Age	(2) Austerity/ Knowledge	(3) Debt/ Knowledge	(4) Debt/ Age	(5) Debt/ Income	(6) Debt/ Education	(7) Debt/ Outsider
Year	-0.011	-0.019	-0.019	-0.010	-0.010	-0.010	-0.010
	(0.032)	(0.035)	(0.035)	(0.032)	(0.033)	(0.032)	(0.032)
Two Party Vote Distance	-0.017***	-0.016***	-0.016***	-0.017***	-0.017***	-0.016***	-0.017***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Effective Elective Parties	-0.159***	-0.176***	-0.176***	-0.159***	-0.159***	-0.158***	-0.159***
	(0.061)	(0.066)	(0.066)	(0.061)	(0.061)	(0.061)	(0.061)
Years 2008 and 2009 (GFC)	-1.318**	-1.303**	-1.302**	-1.319**	-1.308**	-1.335**	-1.327**
	(0.567)	(0.573)	(0.574)	(0.569)	(0.569)	(0.575)	(0.569)
Years 2010-2015 (Recovery)	0.378	0.411	0.410	0.386	0.392	0.395	0.371
	(0.439)	(0.446)	(0.446)	(0.441)	(0.441)	(0.444)	(0.442)
Real GDP Capita (PPP)	-0.023	-0.016	-0.016	-0.023	-0.024	-0.023	-0.025
	(0.035)	(0.040)	(0.040)	(0.035)	(0.035)	(0.035)	(0.035)
Crisis * Real GDP Capita	0.038**	0.038**	0.038**	0.038**	0.038**	0.038**	0.038**
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Recovery * Real GDP Capita	0.001	0.002	0.002	0.001	0.001	0.000	0.001
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Structural Balance % GDP	-0.089***	-0.064*	-0.065**	-0.067**	-0.067**	-0.065**	-0.066**
	(0.029)	(0.034)	(0.033)	(0.029)	(0.029)	(0.028)	(0.029)
Austerity * Crisis	-0.035	-0.047	-0.047	-0.033	-0.033	-0.033	-0.033
	(0.057)	(0.063)	(0.063)	(0.057)	(0.057)	(0.057)	(0.056)
Austerity * Recovery	0.073	0.079	0.079	0.075	0.075	0.074	0.073
	(0.049)	(0.050)	(0.050)	(0.049)	(0.049)	(0.049)	(0.049)
Gross Government Debt % GDP	-0.496***	-0.440**	-0.425**	-0.511***	-0.679***	-0.707***	-0.449**
	(0.179)	(0.213)	(0.215)	(0.190)	(0.188)	(0.185)	(0.180)
Age	0.066***	0.057***	0.057***	0.064***	0.065***	0.065***	0.065***
	(0.006)	(0.006)	(0.006)	(0.011)	(0.006)	(0.006)	(0.007)
Age * Age	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female (Male)	-0.048*	0.080***	0.080***	-0.048*	-0.047	-0.049*	-0.048*
	(0.029)	(0.027)	(0.027)	(0.029)	(0.029)	(0.029)	(0.029)

Household Income	0.186***	0.154***	0.154***	0.185***	-0.075	0.185***	0.185***
	(0.013)	(0.013)	(0.012)	(0.013)	(0.104)	(0.013)	(0.013)
Education	0.280***	0.217***	0.217***	0.280***	0.280***	-0.139	0.280***
	(0.020)	(0.019)	(0.019)	(0.020)	(0.020)	(0.134)	(0.020)
Outsider (Insider)	-0.157***	-0.135***	-0.135***	-0.157***	-0.154***	-0.156***	0.796***
	(0.035)	(0.036)	(0.036)	(0.035)	(0.035)	(0.035)	(0.239)
Knowledge		0.417***	0.258*				
		(0.028)	(0.154)				
Austerity * Age	0.001						
	(0.000)						
Austerity* Knowledge		0.001					
		(0.006)					
Debt * Knowledge			0.041				
			(0.040)				
Debt * Age				0.000			
				(0.002)			
Debt * Income					0.068**		
					(0.027)		
Debt * Education						0.109***	
						(0.034)	
Debt * Outsider							-0.246***
							(0.061)
var(_cons[IMD1003])	0.150***	0.161***	0.161***	0.151***	0.151***	0.151***	0.151***
	(0.046)	(0.048)	(0.048)	(0.046)	(0.047)	(0.047)	(0.046)
Constant	25.671	41.603	41.677	24.619	24.746	24.312	23.309
	(63.364)	(68.094)	(67.972)	(63.474)	(63.696)	(63.660)	(63.674)
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	133,733	125,329	125,329	133,733	133,733	133,733	133,733
Number of groups	94	87	87	94	94	94	94

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1