

Unequal Representation of Economic Interests: The Role of Knowledge and Information about Fiscal Policy*

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Abstract

Studies investigating the political representation of income classes find that policy makers respond predominantly to the preferences of the rich, but are grappling with identifying the causes. I propose that an important driver of differential responsiveness is disparities across income classes in knowledge and information about fiscal policy. The specific mechanism is more people in lower income classes update their fiscal policy preferences according to a common-sense “household budget” logic, and hold less counter-cyclical preferences, compared to higher income classes that have sophisticated, Keynesian preferences. The argument implies that governments that counter cyclically adjust spending to the business cycle coincidentally respond more strongly to the preferences of the affluent. I test the proposition on a new dataset that includes 18 spending domains between 1985-2017 in highly egalitarian Denmark and find support for the theoretical proposition. The results have important theoretical and democratic implications as they suggest that an important driver of unequal representation is not systemic, but rather disparities across income classes in knowledge and information about fiscal policy.

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Introduction

The recent rise in inequality has increased attention to the political representation of income classes. Most studies focus on the U.S. and find that policy makers respond predominantly to the preferences of the affluent (e.g. Bartels, 2008; Gilens, 2012; Gilens and Page, 2014).¹ Comparative studies find a similar pattern of unequal representation across advanced democracies, but also indicate that the political and economic context matter (Bartels, 2017; Peters and Ensink, 2015; Rosset et al., 2013; Bernauer et al., 2015). Yet even under favorable conditions, political representation is (strongly) biased in favor of the rich (see also Elsässer et al., 2018; Schakel and Hakhverdian, 2018). The similar findings across widely different economic and political contexts are democratically concerning, but also raise questions about the drivers.

In this paper, I consider whether unequal representation is driven by factors other than systemic and institutional biases of contemporary democracies, focusing specifically on differences across income classes in knowledge and information about fiscal policy. I focus on fiscal policy, because limited preference divergence on most other policy domains puts a natural limit to political inequality (see Soroka and Wlezien, 2008). I argue that unequal representation is driven by a combination of a (i) standard macroeconomic response of governments and (ii) heterogenous responses of income classes to the state of the economy (see also Elkjær and Iversen, 2018): Governments rely on a new Keynesian logic and adjust spending counter cyclically to the business cycle, whereas citizens react heterogeneously to the business cycle because they have different levels of information about the macroeconomic functioning of fiscal policy (see Kölln, 2018). People on higher incomes have greater incentives to acquire information about fiscal policy and typically have the education required to process the information at low marginal cost. A higher share of the affluent therefore express sophisticated, Keynesian preferences, which are in tune with counter-cyclical government spending. And more people on lower incomes rely on a common-sense “household budget” understanding of the economy, which implies pro-cyclical spending preferences. The implication is that governments that pursue standard new Keynesian macroeconomic policies *coincidentally* respond more strongly to the preferences of the affluent.

Political representation can, of course, also be biased by systemic and institutional features of democracies, which makes it difficult to isolate the hypothesized effect of information about fiscal policy. I seek to minimize potential equality distorting effects of the political system by studying the Danish case which has highly favorable conditions to political equality, including low levels of economic inequality, high levels

¹The degree of unequal representation in the U.S. is a highly discussed topic. See Ura and Ellis (2008); Soroka and Wlezien (2008, 2010); Enns (2015); Bashir (2015); Branham et al. (2016)

of redistribution, a highly proportional electoral system, a non-market coordinated economy, strong labor unions, and state-funded political parties. Moreover, I examine how changes in government spending reflect preferences for change, which is a situation where policy makers have good possibilities of responding equally to the preferences of all income classes because conflict is relatively restricted (Soroka and Wlezien, 2008; Gilens, 2009). These case characteristics strongly suggest that substantive political representation should be quite equal.

I test the argument on a new dataset developed for this project which combines survey and spending data spanning 18 spending domains in the period 1985-2017 and find that even in egalitarian Denmark, policy makers respond more strongly to the preferences of the affluent than to those of lower income classes. However, the differential responsiveness seems to be a result of heterogeneous responses of income classes to the state of the economy and not of substantive misrepresentation of the interests of lower income groups. A higher share of the affluent are ingrained in social- and work-related networks where politics is discussed, they have higher levels of knowledge and information about fiscal policy, and they express more counter-cyclical spending preferences compared to lower income classes. This implies that governments that act in accordance with new Keynesian macroeconomic principles *coincidentally* respond more strongly to the preferences of the affluent. More broadly, the results suggest that an important driver of unequal representation is *not* systemic but rather a consequence of disparities in knowledge and information about fiscal policy and how it affects preference formation.

I proceed as follows. First, I discuss expectations about unequal representation and present the argument. Then, I introduce the case and data, followed by the empirical results. I conclude with a discussion of alternative explanations and the broader implications of the findings.

The Political Representation of Economic Interests

In the ideal democracy, policy makers respond equally to the preferences of citizens (Dahl, 1971). But completely equal representation is only possible if citizens hold similar preferences. As long as people disagree, policy makers cannot respond equally to the preferences of citizens and political decisions should be based on majority rule (Dahl, 2006, chap. 2). Majority rule implies that the median voter is pivotal, since she must be included in any majority decision (Downs, 1957).

Bartels (2008) and Gilens (2012) study the equality of political representation in the U.S and find that median voter representation is depressed by an outsized influence of the affluent. Gilens and Page (2014) extend that work and test the median voter

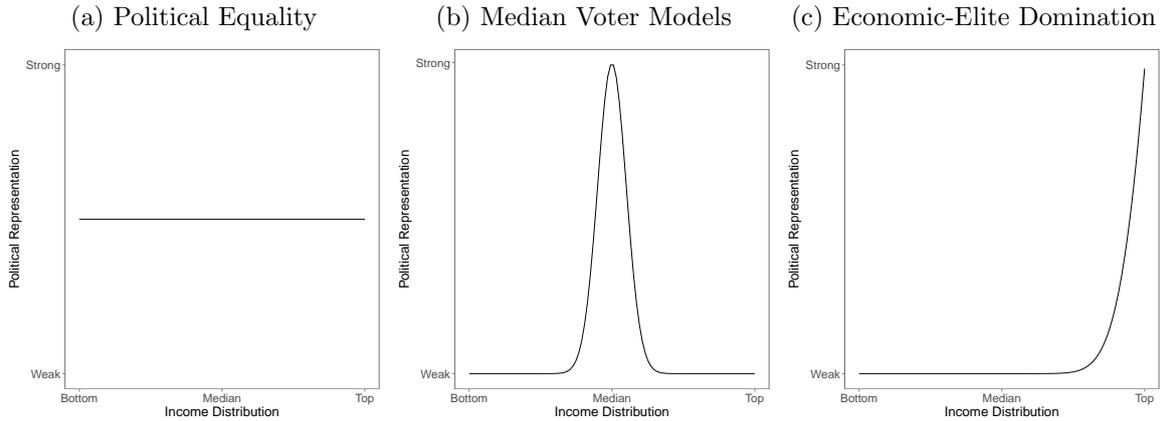
model against those of economic-elite domination and interest-group pluralism. They find that only the economic elite and organized interests exert independent influence on policy decisions and that people with a median income have no say over policy change. Comparative studies also suggest that representation is enhanced by income (Bartels, 2017; Bernauer et al., 2015; Rosset et al., 2013; Peters and Ensink, 2015). And case studies of European democracies indicate that unequal representation is not a unique feature of U.S. politics. Schakel and Hakhverdian (2018) find that members of the Dutch parliament have more congruent preferences with the rich than with the low and middle classes, and the findings by Elsässer et al. (2018) indicate that differential responsiveness is more pronounced in Germany than in the U.S. These findings suggest that representation is *monotonically increasing* in income and that the economic elite is dominating politics in advanced democracies.

To be clear, we are operating with three Weberian ideal type models of political representation, the predictions of which are illustrated in figure 1. The underlying assumptions of the models are that income structures preferences and that representation can be measured unidimensionally, which probably is not completely unreasonable to assume on fiscal policy. Figure 1a depicts a uniform distribution of completely equal representation, figure 1b is a normal distribution representing median voter models of politics, and figure 1c graphs a highly left-skewed distribution representing economic-elite domination models. The models are depicted in their most general and extreme form, with the empirical reality being some weighed combination of the three with weights corresponding to the explanatory power of each theory.

For example, that people with low and high income often have similar preferences means that no matter how biased responsiveness is, considerable weight will always be given to figure 1a (Gilens, 2012; Gilens and Page, 2014; Enns, 2015; Branham et al., 2016; Soroka and Wlezien, 2008, 2010). One might also observe some permutation of the median voter model (fig. 1b): By adding positive or negative skewness one can arrive at predictions consistent with bargaining models of representation (e.g. Iversen and Soskice, 2006) and the power resources framework (e.g. Stephens, 1979; Huber and Stephens, 2001).²

² In Iversen and Soskice (2006), adding positive skewness would represent a coalition between L and M and negative skewness a coalition between M and H . In the power resources framework, positive skewness would represent contexts with strong center-left parties and labor unions and negative skewness the opposite.

Figure 1. Theories of Political Representation



The distribution of weight across the three models of representation should be systematically affected by political institutions. If we accept the claim that economic and political resources are interrelated³, we would expect inclusionary political institutions such as proportional representation (PR) and a non-market coordination of the economy to produce more equal representation, with most weight given to figures 1a and 1b.

PR incentivizes the middle class to ally with the poor which, through higher levels of redistribution (Iversen and Soskice, 2006), leads to smaller disparities in political resources. A similar logic implies a more equal distribution of educational spending under PR which lowers market income inequality (Iversen and Soskice, 2009). PR systems tend to have coordinated market economies and give substantial influence over wage setting and fiscal policy to organized interests, which further decreases disparities in economic and political resources (Wallerstein, 1999; Hall and Soskice, 2001; Estevez-Abe et al., 2001; Iversen and Soskice, 2009).

More directly, inclusionary institutions promote equal representation by encouraging bargaining and compromise between political actors. PR fosters multiparty systems that rarely experience one-party majority governments (e.g. Lijphart, 2012; Powell Jr., 2000). It is therefore necessary for parties to bargain in order to form governments and adopt new policy (Laver and Schofield, 1990). Majority coalition governments can govern without including the opposition, but under PR governments regularly control only a minority of the parliamentary seats (Laver and Schofield, 1990; Strom, 1990). In these cases, bargaining happens not only between the government

³Among the more important political resources, economic resources are believed to be related to participation in politics (Schlozman et al., 2012; Leighley and Nagler, 2014), political information and knowledge (Iversen and Soskice, 2015), descriptive representation (Carnes, 2013), interest organization (Hacker and Pierson, 2010; Schlozman et al., 2012), and money spent on political activities (Bonica et al., 2013).

parties but also between the government and the opposition, and opposition parties can have substantial influence on policy (Strom, 1990). Moreover, the involvement of organized interests in policy making institutionalizes bargaining and ensures that all major economic interests have equal opportunities to voice their interests. In sum, because political resources are more equally distributed and major economic interests are involved in political bargaining and compromise (through parties and organized interests), democracies with more inclusionary political institutions should produce more equal political representation.

However, economic resources are unequally distributed in all advanced democracies, and the economic-elite domination model may receive some weight, even in otherwise egalitarian contexts. In the U.S. the most prominent explanation is the role of money in politics (Bartels, 2008; Gilens, 2012; Page and Gilens, 2017). But the role of money in politics is different in other advanced democracies, where political parties rely more on membership fees and financial support from the state than on private contributions. Comparative studies have instead focused on economic and institutional factors. Rosset et al. (2013) find that overrepresentation of the affluent is stronger in more unequal contexts and Bernauer et al. (2015) that underrepresentation of low-income groups is less pronounced in countries with more proportional electoral systems. These findings suggest a conditioning effect of the political and economic context but they do not explain why the rich are most influential even under the most favorable conditions. Schakel and Hakhverdian (2018) speculate that a descriptive underrepresentation of the low educated and the poor in the Dutch parliament is driving their results in the Netherlands. Elsässer et al. (2018) also speculate about the impact of descriptive representation, as well as those of disparities in political participation and interest-group mobilization as potential drivers in Germany.

These factors are likely to matter for political representation (see e.g. Schlozman et al., 2012), but it would be surprising if the forces are so strong, compared to equality promoting forces related to electoral incentives and the importance of bargaining and compromise in policy making, that they produce the pattern observed by most empirical studies. This is because the empirically observed pattern of unequal representation indicates that representation is monotonically increasing in income, and the implication of the proposed mechanisms is thus that just small biases in descriptive representation, political participation, or interest-group mobilization leaves the electoral arena largely irrelevant with zero weight to median voter models of politics. If the biasing forces really matter, would we not expect some weighed combination of the median voter (fig. 1b) and economic-elite domination models (fig. 1c) instead? For instance, the representational curve should flatten towards the top of the income distribution if descriptive underrepresentation of the uneducated and the poor

cause unequal representation in otherwise fairly equal European countries. Members of parliament are better educated than average citizens and just by being members of parliament their income is above the median, but they do not come from the absolute top of the income distribution. So why are they more responsive to the preferences of the super rich than to those of the upper middle class? It is hard to see how systemic features of relatively egalitarian political systems can produce the pattern that representation is monotonically increasing in income, as implied by most empirical studies and the economic-elite domination model (fig. 1c). They should at most add some negative skewness to the median voter model's normal curve.

In sum, the similar pattern of unequal representation (with essentially zero weight to median voter models) across widely different political and economic contexts as well as the inconsistencies between the observed pattern of unequal representation and the proposed mechanisms suggests that (at least some of) the documented unequal representation is driven by something other than systemic biases of actual democracies. Below, I present and test an explanation of unequal representation that is consistent with the empirically observed pattern of unequal representation: I suggest that differential responsiveness is driven by differences across income classes in knowledge and information about fiscal policy.

Budget Logics and Information about Fiscal Policy

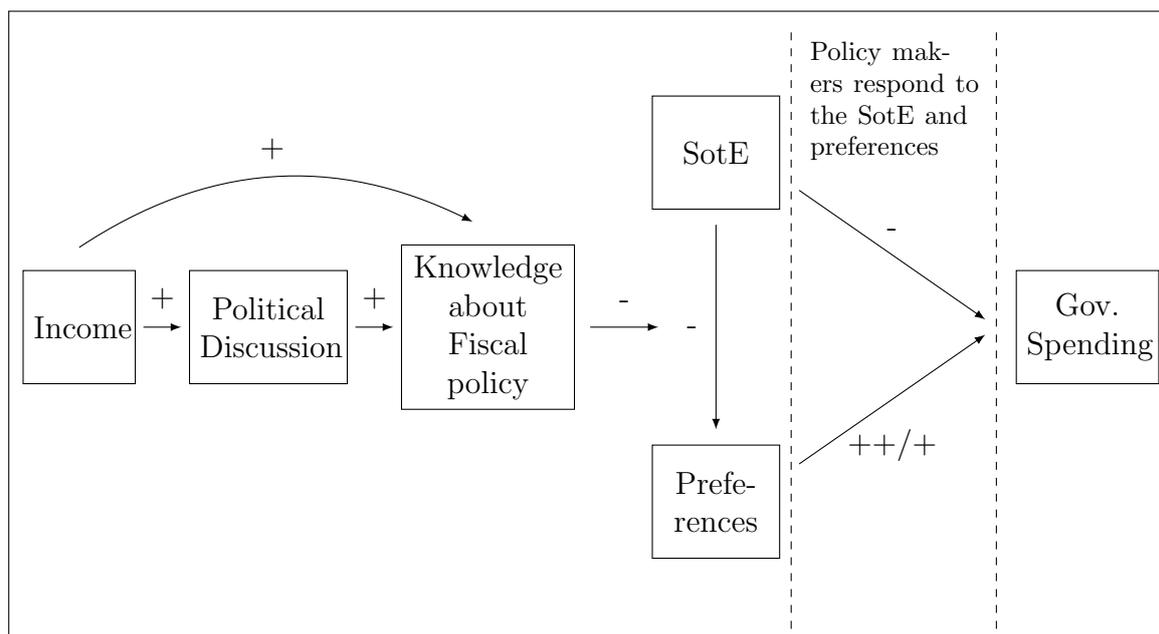
Figure 2 illustrates the theoretical proposition. Following a new Keynesian macroeconomic logic, government spending fluctuates counter cyclically to the business cycle. When the business cycle is at a trough spending is high, implying a budget deficit (due to high unemployment and low revenues), and when the economy is booming spending is low, implying a budget surplus (because of low unemployment and high revenues). These fluctuations are partly institutionalized as automatic stabilizers, e.g. unemployment benefits, but also affected by active government action.

All income classes are assumed to respond in a similar way to the business cycle, as implied by the well-known fact that subgroup preferences are highly correlated (see Page and Shapiro, 1992; Soroka and Wlezien, 2008), but the intensity of the response is expected to differ (cf. Kölln, 2018).⁴ I argue that this is because of differences across income classes in knowledge and information about the macroeconomic functioning of fiscal policy.

People with limited information about how the economy works seek answers in familiar and easily understandable objects, such as the personal household budget,

⁴ In figure 2, I assume that preferences adjust counter cyclically to the state of the economy but no matter how preferences are structured, the rich are coincidentally overrepresented as long as they hold relatively more counter-cyclical preferences compared to the lower income classes.

Figure 2. A Model of Income, Knowledge, and Differential Responsiveness



Note: SotE = State of the Economy. Gov. Spending = Government Spending. SotE can be thought of as a continuous variable, where higher values mean better economic performance. Preferences can be seen as measuring support for more/less spending with higher values meaning higher levels of support for more government spending.

when updating their preferences to the state of the economy. A household has to limit spending during bad times whereas it can better afford to spend money in good times. Applying that logic, people with little information of fiscal policy rationalize that the government should limit spending during recessions and increase spending during booms. The Keynesian macroeconomic logic is, of course, completely different to a household budget logic. People with high levels of information know that and adjust their preferences counter cyclically to the business cycle. The implication is that governments that pursue optimal macroeconomic policies and counter cyclically adjust spending coincidentally respond most strongly to the preferences of the group that has the highest share of people with a Keynesian understanding of the economy.

I assume that there is a mix of informed and uninformed people in all income classes with an increasing share of informed people in higher income classes. This is because the incentives to acquire knowledge and information about fiscal policy are closely associated with income, both for social- and work-related reasons and for investment purposes.

Iversen and Soskice (2015) argue that people acquire knowledge and information about politics either as a byproduct of social incentives or through incidental exposure,

and distinguish between an active and passive form. The active form requires independent acquisition of information in order to participate and contribute to political discussions in informal social networks, whereas the passive form is acquired through exposure. Lower cognitive barriers to information for highly educated and affluent people yield a higher optimal level. And because social networks tend to be homogenous along socio-economic lines (McPherson et al., 2001) and people seek acceptance by their peers (Baumeister and Leary, 1995), the incentives to acquire active information rises with socio-economic characteristics such as education and income (Iversen and Soskice, 2015, 1791).

And work-related networks also matter. Many high paying jobs require in-depth knowledge about politics and the economy, and some jobs even require making difficult decisions based on current political and economic affairs. Discussion of politics and the economy in work-related networks therefore increases with income, and with it the incentives to acquire active information. Passive information also increases, through exposure to political and economic discussions at the workplace.

It is clear that education and income explain much of the same variation in knowledge and information about fiscal policy. However, the incentives to acquire this specific kind of information are (much) more strongly related to income than to education. Because with higher income comes greater investment opportunities and more investment decisions. Investment decisions are not only related to attempts to maximize current income, but also to buying a house, choosing the right mortgage, to pension investments, and to maximizing inheritance for one's children. Given that people want to make good, informed decisions about their investments, the optimal level of information increases with income. And the effect may be self-reinforcing, since better investment decisions increase the probability that one ends up high in the income distribution.

For education the association is weaker because many people at the top of the education distribution are located firmly in the (upper) middle class. For instance, it takes a master's degree to be located at the top of the education distribution, and many people with a master's degree pursue teaching positions or serve as civil servants. That is not to say that these jobs are not well paid, but they do not place you in the top of the income distribution and the incentives to acquire information about fiscal policy for investment purposes are thus weaker.

Knowledge and information can, of course, also bias responsiveness through other channels than budget logics. Limited information about fiscal policy may lead to more unrealistic expectations to governments and less consciousness of spending limitations. And following a thermostatic logic, people with high information should be more attentive to differences across spending domains, which implies a stronger thermostatic

adjustment of preferences to spending on individual domains (Soroka and Wlezien, 2010). High information also increases the probability of giving an accurate assessment of one's preferences, which implies less measurement error and downward bias in estimates of political representation (see Stimson, 2011).

Empirically, it is very difficult to account for these differences across income classes, partly because knowledge and information work through several channels, which renders the use of macroeconomic controls insufficient, and partly because of data limitations. For instance, using some general form of political information as a proxy for information about fiscal policy will not suffice.⁵ This is because political information is often measured by correct answers to questions about one's local congressperson or the number of members of parliament. That kind general political information is probably correlated with information about fiscal policy, but it far from captures it fully. To fully account for the differences, one needs a specific measure of information about fiscal policy and separate the informed from the uninformed in each income class. Unfortunately, questions relating to information about fiscal policy are rarely part of surveys and in practice it is not a feasible strategy. I therefore take a more indirect approach and examine if the way income classes update their preferences to the state of the economy is consistent with the theoretical expectations, i.e. that the affluent have more counter-cyclical preferences and stronger thermostatic responses to spending on individual domains.

In sum, this theory is able to explain why the empirically observed pattern of unequal representation is largely identical across widely different political and economic contexts. Moreover, it gives a plausible explanation as to why representation seems to be a monotonically increasing function of income with no explanatory power of median voter models of politics, even in relatively egalitarian political systems. The reason is that income is closely associated with information about the macroeconomic functioning of fiscal policy, and that the preferences of people with high information are more in tune with standard macroeconomic policies. This suggests that estimates of unequal representation may be severely biased by the inability of empirical studies to separate the effect of information from that of systemic biases of actual democracies. It might very well be the case that government policies reflect the interests of the middle class (largely the prediction of median voter models) but that cyclical changes in these policies better reflect the preferences of the affluent (the prediction of economic-elite domination models), because of better information about the macroeconomic functioning of fiscal policy among the rich (see Elkjær and Iversen, 2018).

⁵ Proxying information about fiscal policy with education is also insufficient because the incentives to acquire information about fiscal policy are closely related to investment decisions and thus (much) more strongly related to income than to education.

The Case

I test the argument in Denmark because Denmark has some of the most favorable conditions to political equality, which minimizes the systemic forces that potentially bias responsiveness. The Danish political system is thus among the most inclusionary in the world. The electoral system is highly proportional and the multi-party system almost always produces minority coalition governments. Organized interests are powerful political actors and deeply involved in the coordination of the Danish economy. They still take part in political decision-making processes, although the use of corporatist institutions has declined since the early 1980s (Öberg et al., 2011; Rommetvedt et al., 2013). In a system like the Danish, policy making requires a great deal of bargaining and one cannot govern without making concessions and compromise (see Strom, 1990).

Denmark is also egalitarian with respect to other characteristics associated with political equality. Perhaps most importantly, Denmark is one of the most equal societies in the world and has one of the highest levels of redistribution (OECD, 2011). The high levels of economic equality limits inequalities in political resources, such as political participation. Accordingly, the turnout rate in national elections averages 86 percent since 1945. The big suspect in the U.S., money in politics, plays a comparatively small role in Danish politics. Political parties and individual politicians are allowed to receive private political donations, and especially in election years they do. However, parties' main income comes from state funding and membership fees (Justitsministeriet, 2015). Thus, neither parties nor politicians have to pander to the rich and raise big sums of money to get elected. Elected members of parliament are, on average, better educated than the average voter and receive an income above the median, but they do not come from the economic elite (Kjær and Pedersen, 2004). If their (upper) middle-class background creates a bias in representation in Denmark, it could add some negative skewness to a relatively heavy-tailed bell-shaped distribution of political power.

The Case of Government Spending

Changes in government spending is a hard test for unequal representation because conflict is relatively restricted, and governments have good possibilities of responding equally to the preferences of all income classes (Soroka and Wlezien, 2008; Gilens, 2009). Moreover, in Denmark bargaining and compromise are integral parts of crafting the yearly budget, which the parliament must approve. Before the government presents its budget proposal to the parliament, the government parties bargain with each other to find a common position. Then, the government bargains with the opposition in

order to secure a legislative majority. The budget is a huge piece of legislation and is negotiated in parts. The government does not bargain with the same parties on all parts of the budget and different constellations of parties usually support different elements of the budget. That way of negotiating the budget strongly suggests that policy influence is shared among political actors, and that the interests of large parts of the Danish society are reflected in the budget.

Data

I have developed a new dataset that consists of all Danish surveys which contain information about government spending preferences and income, combined with actual government spending. It covers 18 spending domains in the period 1985-2017. The broad range of domains makes the sample somewhat representative of different types of government expenditures. But it is not a random sample and one concern is that some spending domains enter and leave the surveys in certain years, which is likely to reflect changes in salience. That potential bias works against unequal responsiveness, since defection from median preferences is more costly for politicians on more salient domains.

Government Spending Preferences

Fourteen surveys from twelve different years are available for estimating income specific government spending preferences.⁶ I utilize a version of an often used question item that ask respondents about preferences for more or less government spending (e.g. Soroka and Wlezien, 2010):

*“I will read some public responsibilities and for each responsibility I would like you to indicate whether you think that the public sector is spending too much, about the right amount, or too little money. Is the public sector spending too much, about the right amount, or too little on... [Defense]”.*⁷

Net spending preferences are calculated by subtracting the percentage of people saying that the government spends too much on a spending domain from the percentage saying it spends too little (see Wlezien, 1995; Soroka and Wlezien, 2010). The net preference measure has a theoretical range of [-100:100] and higher absolute values indicate stronger support for less or more government spending. Income specific net

⁶ Appendix A contains a description of the surveys.

⁷ The question wording regarding unemployment benefits, social assistance, and housing benefits in 1985 relates to spending to the individual. The rest relates to aggregate level spending. The observation on housing benefits from 1985 is not included in the regressions. Spending preferences on elderly care is the average preference of spending on pensions and home help.

preferences are predicted using an approach similar to Gilens (2012). On the basis of self-reported household income and when necessary personal income, respondents receive a score equal to the midpoint of their income category based on the income distribution from the survey. This measure of the respondents' placement in the income distribution and its squared term are used to predict net preferences by income percentiles in 143 OLS regressions, one for each spending domain-year observation.

The data indicate that income classes generally support spending increases over decreases. The affluent have the most balanced preferences and prefer increases to decreases with a ratio of 1.2. This ratio is 1.65 for the middle class and 1.47 for the poor. The more balanced preferences indicate that the affluent are more conscious of spending limitations. However, one concern about the question wording is that no budget constraint is mentioned, which could have a differential impact on income class preferences. To examine the potential bias, I compare preferences from the International Social Survey Program (ISSP) Role of Government IV Survey to those from the Danish Election Survey (DES) 2007. The two surveys ran simultaneously and both include questions on the same underlying government spending preferences.⁸ The surveys differ in that the DES does not mention a budget constraint whereas the ISSP does.⁹ The average difference between preferences in the two surveys are within 2 points for all income classes, which suggests that the greater support for spending increases among lower income classes is not driven by question wording effects.

Figure 3 displays time series plots of net preferences on the 18 spending domains between 1985-2015 by income group.¹⁰ The figure shows that there is a lot of variation in net preferences across the 18 spending domains, which demonstrates the broad range of domains included in the analysis. The figure also shows that income group preferences move highly parallel to one another over time. 'Parallelism' is a well-known feature of subgroup preferences (Page and Shapiro, 1992) and is pronounced even in times of economic crises (Gonthier, 2016). The parallel change in preferences over time complicate the statistical analysis because it entails high preference correlations.¹¹ But it does not imply that people in different income groups hold similar preferences (see Gilens, 2015, 1068). The degree of divergence depends on the size of the preference gap and on the character of support. The average preference gaps are

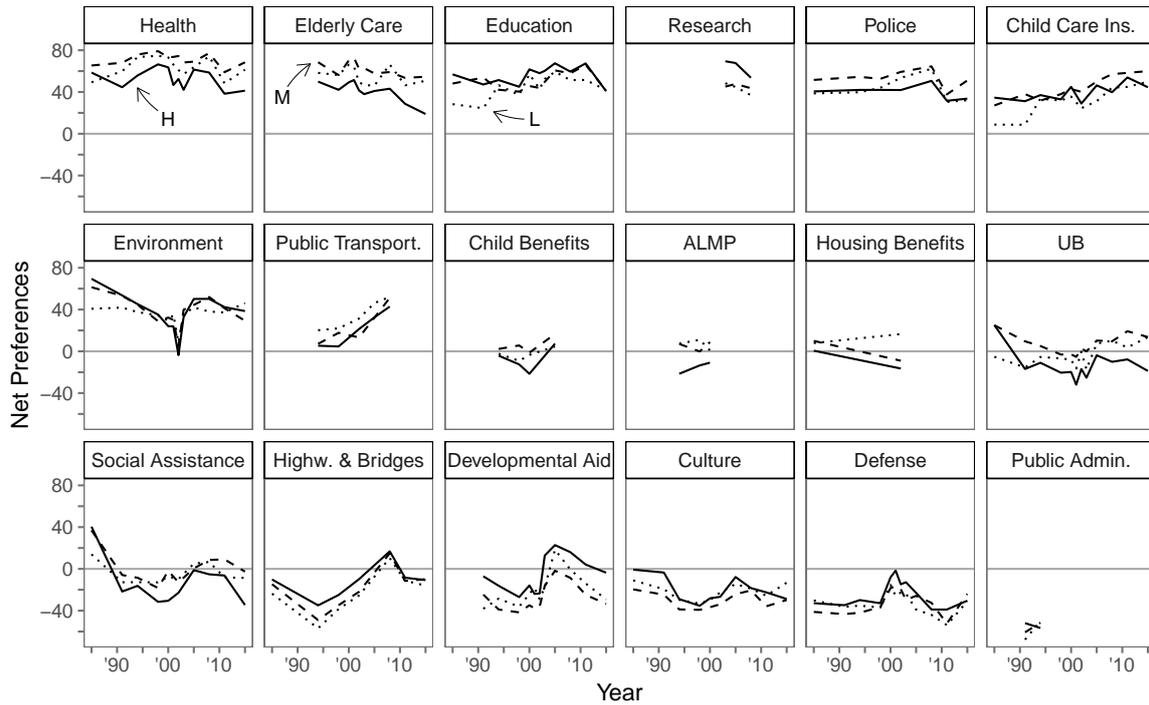
⁸ The DES 2007 collected data between November 30 2007 - May 15 2008, whereas the ISSP Role of Government IV collected data between January 30 - May 5 2008.

⁹ The ISSP question wording is "*Listed below are various areas of government spending. Please show whether you would like to see more or less government spending in each area. Remember that if you say 'much more', it might require a tax increase to pay for it.*". Both surveys include comparable questions on police, environment, health, education, and defense. I have rescaled the ISSP answer categories from five to three to get comparable estimates.

¹⁰ I compare preferences of people at the 1st, 50th, and the 99th income percentiles.

¹¹ Across all 143 observations of preferences, the correlations of income group preferences are .92 (medium-high), .91 (low-high) and .96 (low-medium).

Figure 3. Government Spending Preferences by Income Group, 1985-2015



Note: N=143. H = high income (solid line), M = medium income (dashed line), L= low income (dotted line). ALMP= active labor market policies, UB = unemployment benefits. On housing benefits, the question wording relates to spending to the individual in 1985 and to the aggregate level in 2002.

13 (High-Medium), 11.7 (High-Low), and 8.6 (Medium-Low).¹² The most interesting variation is on the redistributive domains: unemployment benefits, social assistance, active labor market policies, housing benefits, and child benefits, where the high-income group quite consistently supports less spending and the lower income groups more often prefer increased spending. The redistributive domains account for 14 of the 18 times that the medium- and high-income groups disagree on the direction of changes in government spending, 11 of the 15 times that the low- and high-income groups disagree, and all seven times that the low- and medium-income groups disagree. Preferences also track one another to a lesser extent on the redistributive domains.¹³ The Danish data thereby corroborate findings from the U.S. that indicate that there is most room for differential responsiveness on redistributive spending domains (Soroka and Wlezien, 2008). The data further suggest that to the extent that class conflict exists, it is most likely to be between the lower and middle classes on the one hand and the affluent on the other.

¹² Descriptive statistics of preferences by spending domain are reported in Appendix B.

¹³ Across all 31 available preference observations, the correlations are .82 (medium-high), .48 (low-high) and .47 (low-medium).

Government Spending

The spending data come from various sources, but a clear majority are official government statistics. A description of the spending sources and measures is included in Appendix A. I have constructed the dependent variable in two steps. First, I converted all relevant spending data from current prices to real prices using Statistics Denmark’s Net Price Index (2015=100). Then, because net preferences relate to support for more or less spending, the dependent variable is constructed to measure real percentage change in government spending.

Unequal Representation of Economic Interests

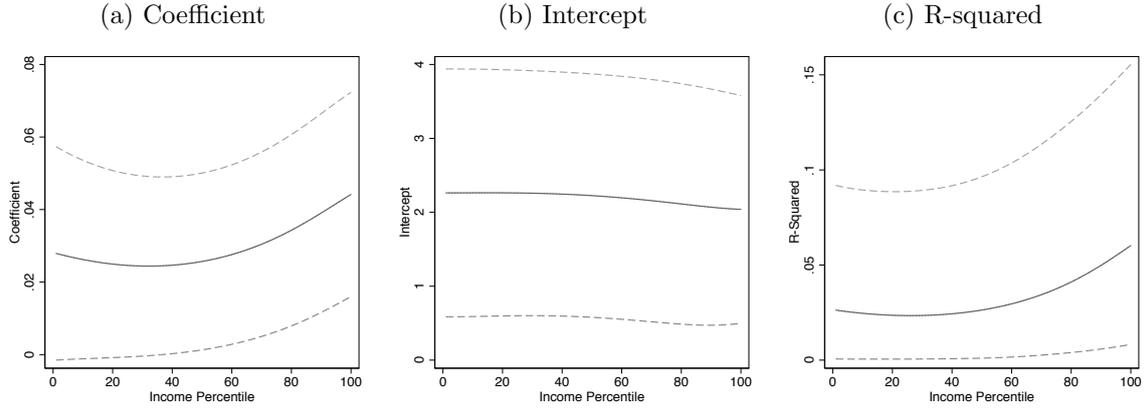
Responsiveness describes how well policy output reflects public preferences. A political system that responds perfectly to the preferences of citizens produces an intercept of zero and a regression coefficient of one (Achen, 1978). Differential responsiveness can be disaggregated into two distinct concepts, policy alignment and policy influence. Policy alignment conceptualizes the extent to which policy output is aligned to subgroup preferences whereas policy influence conceptualizes the degree of independent influence of subgroup preferences (Rigby and Wright, 2013). I estimate policy alignment as

$$\Delta S_{kt} = \alpha + \beta_I I_{kt-2} + \varepsilon_{kt}, \quad (1)$$

where ΔS_{kt} denotes the real percentage change in government spending from $t - 2$ to t on spending domain k . α is the intercept and β_I is the coefficient of income group preferences $I = \{1, 2, \dots, 100\}$ denoting the preferences of people at the I th percentile in the income distribution. ε is the error term.

Figure 4 presents the results from the simple policy alignment models. The figure plots the estimated regression coefficients, intercepts, and r-squareds from equation (1). It shows that the distribution of political representation in Denmark looks like a weighed combination of completely equal representation (figure 1a) and economic-elite domination (figure 1c), while median voter models of politics (figure 1b) seem to have no explanatory power. Specifically, the distribution of coefficients across the income distribution suggests that people in the bottom half of the income distribution are quite equally represented, whereafter the strength of responsiveness increases with income. The distribution of intercepts suggests that baseline changes in government spending are less biased for people in the upper third of the income distribution, and taken together, the distribution of r-squared values reinforces that interpretation. The strength with which policy makers respond to preferences increases with income, especially in the upper third of the income distribution. These results are consistent

Figure 4. Empirical Distribution of Political Representation



Note: N=126. Four observations where government spending changed by 20 percent or more in the subsequent two-year period are omitted. Dashed lines are 95 pct. confidence intervals. For r-squared, the confidence intervals are calculated using a non-parametric bootstrap based on 1000 draws and they are graphed using a lowess smoother.

with the prediction of economic-elite domination models and most previous studies on unequal representation. They suggest that changes in government spending are aligned to preferences across the entire income distribution, but most strongly to those of the affluent. Even though the results mirror those of previous studies, it is still surprising that median voter models of politics receive essentially no weight in highly egalitarian Denmark. One should think that the high levels of economic equality and inclusionary political institutions would give considerable power to the middle class, but that is not reflected in the results.

While the policy alignment models provide important information about the alignment between policies and preferences, they convey little information about which income class(es) independently influence policy output. Policy influence is usually modeled as an extension of the policy alignment model which estimates the effect of low-, middle-, and high-income group preferences simultaneously. I estimate policy influence in a model that includes the preferences of people at the 1st(L), 50th(M), and 99th(H) income percentiles, such that

$$\Delta S_{kt} = \alpha + \beta_L L_{kt-2} + \beta_M M_{kt-2} + \beta_H H_{kt-2} + \varepsilon_{kt}, \quad (2)$$

where the coefficients β_L , β_M and β_H estimate the partial effects of L , M , and H on changes in government spending.¹⁴

Table 1 reports models of policy influence based on equation (2). Model (1) in-

¹⁴ The results are substantively similar if defining L and H closer to M , but multicollinearity increases.

dicates that the low and middle classes have no influence on changes in government spending, the coefficients are even in the wrong. By contrast, the positive and significant coefficient of the affluent indicates that the affluent have substantial policy influence. In model (2), I include a time trend and the results are robust to this alternative model specification. Models (3) and (4) are similar to models (1) and (2) but omit three potential, influential observations. If anything, this seems to increase the disparities in policy influence. In models (5)-(8), I include spending domain fixed effects to account for unobserved heterogeneity across spending domains. These models are less efficient but produce substantively similar results. Models (5) and (6) include four potential, influential observations and all effects are imprecisely estimated. Omitting these potential, influential observations yields more efficient estimates, as shown in models (7) and (8). Models (7) and (8) show that low-income group preferences are negatively and significantly correlated with changes in government spending, indicating a detachment between low-income group preferences and changes in government spending. The coefficient of the middle class is positive but only about half the size

Table 1. Estimates of Policy Influence

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	% Δ Government spending							
Low income	-0.04 (0.09)	-0.02 (0.08)	-0.11 (0.06)	-0.08 (0.07)	-0.09 (0.09)	-0.04 (0.09)	-0.21* (0.04)	-0.17* (0.04)
Medium income	-0.04 (0.07)	-0.05 (0.07)	0.01 (0.06)	-0.01 (0.06)	0.02 (0.09)	0.03 (0.09)	0.06 (0.09)	0.06 (0.09)
High income	0.12* (0.03)	0.12* (0.04)	0.14* (0.03)	0.13* (0.04)	0.08 (0.10)	0.04 (0.09)	0.13* (0.06)	0.10+ (0.05)
Trend		-0.28 (0.27)		-0.41* (0.18)		-0.37 (0.30)		-0.41+ (0.21)
Trend ²		0.01 (0.01)		0.01* (0.00)		0.01 (0.01)		0.01 (0.01)
Spend. dom. FE					✓	✓	✓	✓
Constant	2.18* (0.61)	4.44 (2.67)	2.54* (0.50)	5.94* (1.61)	2.46* (0.83)	5.67* (2.51)	3.19* (0.78)	6.63* (1.92)
N	126	126	123	123	126	126	122	122
R-squared	0.09	0.10	0.15	0.17	0.02	0.04	0.10	0.12
Adj. R-squared	0.07	0.06	0.13	0.13	0.00	0.00	0.07	0.08

Note: * $p < 0.05$, + $p < 0.1$. Clustered standard errors are in parentheses. All models exclude (four) observations where government spending changed by more than 20 percent over the two-year period. In addition, unemployment benefits 1985, environment 2002, and environment 2008 are influential observations and omitted in models (3), (4), (7), and (8). In models (7) and (8) unemployment benefits 2008 is also an influential observation and is therefore omitted.

of that of the affluent. The affluent is also the only group with a significant effect ($p < 0.05$ in model (7) and $p < 0.1$ in model (8)). These results corroborate the results from the simple policy alignment models as well as studies from other contexts in showing that political representation is monotonically increasing in income with median voter models of politics having essentially no explanatory power. These are stark results, especially considering the egalitarianism of the Danish society and political system. But as I argue above and present evidence to the effect below, the results reflect differences across income classes in information about fiscal policy as opposed to disparities in substantive political representation.

In Appendix B, I report a set of robustness tests to alternative model specifications. The results are substantively similar when (i) including observations where spending changed by 20 percent or more over the two-year period, (ii) using one-year changes in government spending instead of two-year changes, and (iii) controlling for macroeconomic variables and government partisanship. Restricting the sample to surveys with perfectly identical question wordings yields more unequal representation.

Heterogenous Responses to the State of the Economy

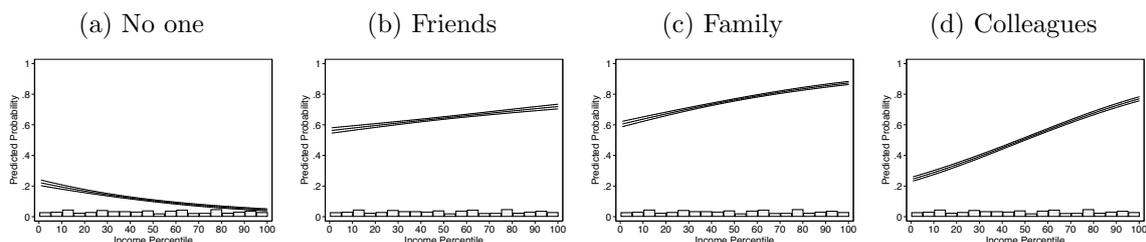
To examine the effect of differences across income classes in information about fiscal policy, one would ideally have a measure that makes it possible to separate the informed from the uninformed in each income class. In practice, however, that is not a feasible strategy because measures of information about fiscal policy are rarely available. I therefore take a more indirect approach and present evidence that indicates that income is closely associated with information about fiscal policy and that higher income classes have more counter-cyclical preferences.

The incentives to acquire information about fiscal policy are closely associated with income because more affluent people are more deeply ingrained in social- and work-related networks where politics and the economy are discussed, and because they have greater investment opportunities.

Figure 5 shows that a higher share of the affluent are part of social- and work-related networks where politics is discussed. Figure 5 (a) shows that around one in twenty of the affluent do not discuss politics with anyone, whereas one in ten of the middle class and one in five of the poor never take part in informal political discussions. People who never discuss politics have little incentives to acquire active political information, and they acquire little passive information because they are not exposed to political information in their social networks.

People on lower incomes discuss politics to a lesser extent with their friends and family. Around six out of ten of the poor discuss politics with their friends and family,

Figure 5. How Income Affects How Much People Discuss Politics with



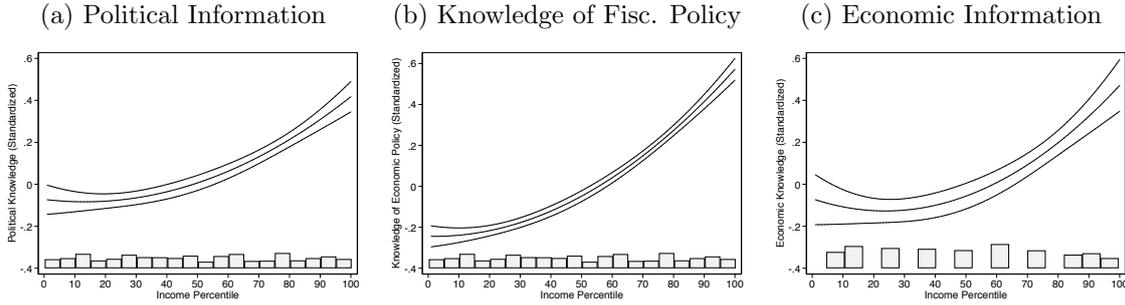
Note: a) $n=9,910$; b) $n=12,562$; c) $n=12,559$; d) $n=13,305$. In a) the data are from the Danish Election Surveys 1998-2011. In b) and c) the data are from the Danish Election Surveys 1991-2011. And in d) the data are from the 1985-survey and the Danish Election Surveys 1991-2011.

whereas seven out of ten of the affluent discuss politics with their friends and more than eight out of ten with their family. The affluent also acquire political and economic knowledge as a result of their work-related networks. Figure 5 (d) shows that around one in five of the poor discuss politics with colleagues, whereas about every other person with a median income and about four out five of the affluent discuss politics at work. Naturally, this is related to the fact that many high paying jobs require intimate knowledge and information about political and economic affairs. Having high political and economic information is often a prerequisite for securing a high paying job and it is thus little surprising that political and economic affairs are highly discussed topics among the affluent in work-related networks. Overall, figure 5 strongly suggests that the social- and work-related incentives to acquire knowledge and information about fiscal policy are increasing in income.

In figure 6, I display the association between income and information about political and economic affairs. Knowledge and information are estimated using different surveys, since not all surveys include questions about political and economic information. In figure 6 (a) information is measured based on correctly answered questions about political and economic affairs, such as which parties certain politicians are member of, how the economy has evolved in the past years, the number of Danish members of parliament, the number of EU member states etc.. These questions capture a general kind of political and economic information, and give some indication of how knowledge and information about political and economic affairs relate to income, but they do not capture specific information about fiscal policy in its entirety. The figure shows that knowledge and information increases with income. The affluent are around .4 standard deviations better informed compared to people with a median income and around .5 compared to the poor.

Figure 6 (b) displays how self-evaluated knowledge of fiscal policy varies according to income. The respondents are asked to evaluate the extent to which they understand

Figure 6. Knowledge and Information about Politics and Fiscal Policy



Note: In a) information is measured by correctly answered questions about political and economic affairs, and the data are from the Danish Election Surveys 2005-2011, $n=6,308$. In b) the variable measures self-evaluated knowledge about fiscal policy, and the data are from the Danish Election Surveys 1994-2011, $n=11,619$. In c) economic information is measured by correctly answered questions about the economy and the data are from a 2010 panel survey, $n=2,270$ (Kalogeropoulos et al., 2015). In all cases, the information variables are standardized with mean = 0 and standard deviation = 1.

what politicians are talking about when they discuss fiscal policy. On the self-evaluated measure, the affluent are around .6 standard deviations better informed compared to people with a median income and around .8 compared to the poor. The measure in figure 6 (c) is based on correct answers to four factual questions about the economy. The figure shows that income has no effect on economic information in the bottom of the income distribution, whereafter information increases rapidly with income. People at the top of the income distribution are about .5 standard deviations better informed compared to people in the bottom half of the income distribution. Overall, the results displayed in figure 6 suggest that a higher share of the affluent have high levels of knowledge and information about fiscal policy, and that the effect of income amplifies closer to the top of the income distribution. Note that this pattern of knowledge and information is quite similar to that of political representation (figure 4 and table 1).

Since a higher share of the affluent have high levels of knowledge and information about fiscal policy, we would expect the affluent to have more counter-cyclical preferences than the low and middle classes. And given the distribution of knowledge and information across income classes, we can be even more specific and expect an amplifying effect of income closer to the top of the income distribution.

In table 2, I regress income group preferences on deficits, unemployment, and government spending. Government spending is mean centered and standardized (one sd) by spending domain, so that spending on all domains is measured on the same scale. I further include lagged preferences to account temporal dependence. The theoretical expectations are that the effects of deficits and unemployment are stronger

Table 2. How Government Spending Preferences Adjust to the State of the Economy

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>L</i>	<i>M</i>	<i>H</i>	<i>L</i>	<i>M</i>	<i>H</i>
Deficit (% of GDP)	1.16 (0.73)	1.66* (0.51)	2.70* (0.60)	1.93* (0.84)	2.16* (0.57)	3.31* (0.62)
Unemployment	-0.34 (1.58)	-0.85 (1.18)	1.22 (1.28)	0.41 (1.36)	0.62 (1.16)	2.77+ (1.33)
Government spending	-1.92 (1.27)	-1.49 (1.10)	-1.64* (0.68)	-1.46 (1.17)	-1.44 (1.16)	-2.98* (1.01)
Lagged <i>L</i>	0.93* (0.02)			0.29* (0.04)		
Lagged <i>M</i>		0.94* (0.02)			0.39* (0.06)	
Lagged <i>H</i>			0.89* (0.03)			0.32* (0.07)
Spend. dom. FE				✓	✓	✓
Constant	3.75 (8.46)	5.27 (6.57)	-6.91 (7.08)	8.46 (7.50)	6.82 (6.55)	-6.77 (7.10)
N	121	121	121	121	121	121
R-squared	0.89	0.92	0.86	0.27	0.33	0.38
Adjusted R-squared	0.88	0.92	0.86	0.25	0.31	0.36

Note: * $p < 0.05$, + $p < 0.1$. Clustered standard errors are in parentheses. *L*, *M*, *H* denote low-, medium-, and high-income group preferences.

and more positive among the affluent (assuming an overweight of people with high information in all income classes). This is because counter-cyclical spending implies more spending during recessions, where unemployment and deficits are high, and less spending during booms, when unemployment and deficits are low. The implication of the thermostatic model is negative coefficients, so that support for spending is lower when actual spending is high and we would thus expect a stronger negative effect among the affluent (see Wlezien, 1995; Soroka and Wlezien, 2010).

Looking across models (1)-(3) the coefficients on deficit indicate that all income classes respond counter cyclically to the business cycle. When deficits are high, there is greater support for government spending. The sizes of the coefficients suggest that the counter-cyclical response of the affluent is greater than those of the low and middle classes. The response of the poor is even too small to reach statistical significance. When adding spending domain fixed effects, the effect increases for all income classes but the differences across the classes remain: the rich have the strongest counter-cyclical response to deficits. The effects of unemployment indicate a similar pattern.

In models (1)-(3), we observe similar differences across the groups but no effect is significant. Adding spending domain fixed effects in models (4)-(6) again increases the effect sizes and makes the effect of unemployment significant at the .1 level among the affluent. Also on unemployment do the affluent have a stronger counter-cyclical response to the state of the economy. The coefficients on government spending are of similar size across models (1)-(3) but only the effect of the affluent is precisely estimated. In the fixed effects models (4)-(6) the thermostatic response of the affluent is about twice as strong as those of the low and middle classes, and it is the only one that is significantly different from zero.

The results in table 2 are consistent with the theoretical expectations: The affluent have stronger counter-cyclical responses to the state of the economy and a stronger thermostatic response to actual spending compared to the lower income classes. Moreover, the effect of income is amplifying towards the top of the income distribution, just as we observed with political representation and information about fiscal policy. In Appendix B, I test whether the income-class responses are significantly different from one another by reestimating the regressions with the preference gap between two income groups as the dependent variable. Those results confirm the interpretation. There are no significant differences in responses between the low and middle classes. In all cases, the response of the affluent is significantly more counter cyclical than those of the low and middle classes. There are no significant differences in the thermostatic responses of the income classes in the pooled OLS models, but the difference between the affluent and the middle class is significant in the fixed effect model and almost significant at the .1 level between the affluent and the poor ($p = .12$).

In sum, the affluent have preferences that more in tune with counter-cyclical spending, their thermostatic response is stronger, and they have more realistic expectations to government spending in the form of more balanced preferences compared to the lower income classes. Moreover, the effect of income is amplifying in the top of the income distribution on both information, counter-cyclical and thermostatic responses, and political representation. That suggests that differential responsiveness in Denmark is driven by disparities in knowledge and information across income classes about fiscal policy, as opposed to being substantive misrepresentation of the interests of people at the lower end of the income distribution. Unequal representation thus seems to be coincidental rather than a deliberate action on the part of Danish policy makers.

Discussion and Conclusion

Recent studies find that even quite egalitarian democracies experience unequal representation, mirroring results from the U.S., but have a hard time explaining the

empirically observed pattern of political representation. I have argued that monotonically increasing levels of political representation in income is inconsistent with explanations based on systemic features of relatively egalitarian democracies. The reason is that these democracies have strong forces that promote equal representation and if the democratically undermining forces, such as unequal political participation or descriptive misrepresentation, really matter we would expect some weighed combination of median voter models of politics and economic-elite domination models, implying a peak in representation somewhere in between the middle class and the rich, as opposed to representation being strictly increasing in income.

I shed light on the theoretical puzzle, that severe unequal representation in egalitarian contexts is, by studying the political representation of income classes in one of the most egalitarian democracies in the world. The pattern of differential responsiveness found in Denmark suggests increasing levels of political representation in income and mirrors both comparative and U.S. studies. However, systemic features of the Danish political system are unable to explain this particular pattern of unequal representation. It is thus unlikely that the small differences in political participation across income classes or the light upper middle-class bias in descriptive representation in Denmark make the electoral arena largely irrelevant for political representation, as is implied by the finding that median voter models of politics have no explanatory power.

Instead, I argue that the driving force is disparities across income classes in knowledge and information about fiscal policy. Specifically, I suggest that because the affluent have high levels of information and a sophisticated, Keynesian understanding of the economy, their preferences are in tune with changes in government spending. Responsiveness is coincidentally biased in favor of affluent preferences, simply because more people on lower incomes have a common-sense “household budget” understanding of the economy that is out of tune with the new Keynesian macroeconomic policy that governments pursue. The similar, amplifying effects of income on (i) knowledge and information about fiscal policy, (ii) counter-cyclical and thermostatic responses, and (iii) political representation fit the implications of this argument neatly.

More broadly, the findings indicate that disparities in knowledge and information about fiscal policy is an important driver of differential responsiveness. A promising topic for future research is to separate the coincidental, unequal representation driven by differences in knowledge and information from that driven by systemic features of political systems. Substantive political representation of income-class interests may turn out to be much more equal than what the current literature indicates.

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Appendix A

Description of the Surveys

The following surveys are used in the analysis: ‘Samfundsudvikling og Sociale Mod-sætninger I Danmark’ from 1985 fielded by Jørgen Goul Andersen and Jens Hoff; all Danish Election Surveys in the period 1990-2015; a set of panel surveys about ‘The Danish People’s view of Society’ from 2000, 2001, and 2003; and two midway-election surveys from 2000 and 2003, which were kindly made available by Jørgen Goul Andersen.

The panel and midway-election surveys differ in some regards from the 1985 survey and the Danish Election Surveys. The question wording is slightly different in panel and midway-election surveys but it taps into the same government spending preferences. The panel and midway-election surveys also do not contain demographic weights. The panel surveys ask some respondents the same question up to three times in one year. For respondents who have responded to the same question more than once in one year, I use the average preference. The 2000 midway-survey have five answer categories, which I rescale to three. I report robustness tests of OLS regressions excluding observations from these surveys in appendix B. The results are robust.

Government spending preferences from the Danish Election Surveys are coded to belong to the year in which most of the survey data were collected, not the year of the election. The surveys consist on average of 1506 respondents, that provide information about income, with a range of [429:2528].

Measures of Government Spending

Operationalization of the net replacement rate for social assistance, measured as the net minimum income protection benefit replacement rate (MIP)

Data on MIP is collected from the Social Assistance and Minimum Income Protection Dataset (SAMIP) – The SAMIP is provided as part of the Social Policy Indicator Database (SPIN) at the Swedish Institute for Social Research, Stockholm University. Data on APWN is collected from the Unemployment replacement rates dataset among 34 welfare states 1971-2009: An update, extension and modification of Scruggs’ Welfare State Entitlements Data Set (Van Vliet and Caminada, 2012).

I use the same estimation procedure as Wang and Van Vliet (2016) with minor alterations. Wang and Van Vliet (2016) estimate the net minimum income replacement rate (NMIRR) as family benefits which is defined as

$$NMIRR = FamilyBenefits = MIP - HousingBenefits,$$

where $MIP = Social Assistance + Child Benefits + Housing Benefits + Other Benefits$. In Denmark, there are no 'other benefits'. They average NMIRR across three family types as follows

$$\overline{NMIRR} = \frac{1}{3} \times \left(\frac{FB_{single}}{APWN_{single}} + \frac{FB_{loneparent,twochildren}}{APWN_{oneearnercouple,twochildren}} + \frac{FB_{family,twochildren}}{APWN_{oneearnercouple,twochildren}} \right)$$

where APWN is the average production worker net wage from Van Vliet and Caminada (2012).

Three caveats about their way of measuring net minimum income replacement rates in Denmark makes me differ from their calculations. First, their measure does not include housing benefits, which underestimates the minimum income replacement rate, and more importantly it makes the time-series inconsistent. In 1994, the social assistance scheme was reformed. The reform increased gross social assistance but simultaneously made it taxable. The reform also reduced housing benefits considerably. Not including housing benefits yields an increase of 14.5 percent in \overline{NMIRR} between 1993-1994. Including housing benefits yields a decrease of 1.6 percent between the same two years. Thus, not including housing benefits from the measure yields a strong increase in \overline{NMIRR} that the people on social assistance did not experience. Second, the MIP measure relates more closely to the survey question I use than that of \overline{NMIRR} . Respondents can hardly be expected to differentiate between the level of social assistance and that of other kinds of benefits when assessing whether spending on social assistance at the individual level is too high or low. It is more likely that respondents consider the net amount of money that a person or family on social assistance receives. Third, Wang and Van Vliet (2016) use APWN for 'one earner couple, two children' as the denominator for family benefits of 'lone parent, two children'. The composition of these family types clearly differ which results in a biased measure. Instead, I estimate spending on social assistance as the net minimum income protection replacement rate (NMIP) which is calculated as follows

$$\overline{NMIP} = \frac{1}{2} \times \left(\frac{MIP_{single}}{APWN_{single}} + \frac{MIP_{family,twochildren}}{APWN_{oneearnerfamily,twochildren}} \right).$$

Overview of Government Spending Measures

Table 3. Measures of Government Spending on the 18 Spending Domains

Spending domain	Source	Table	Measure	Description
Unemployment Benefits	Comparative Welfare Entitlements Dataset 2. Version 2014-03 (Scruggs et al., 2014)		Net Unemployment Replacement Rate (NURR). Calculated by averaging unemployment insurance replacement rate of ‘single person, no children’ and ‘one earner family, two children’	
Social Assistance	Combination of the Social Assistance and Minimum Income Protection Dataset (SAMIP) and the Unemployment Replacement Rates Dataset Among 34 Welfare States, 1971-2009. An Update, Extension and Modification of the Scruggs’ Welfare State Entitlements Data Set (Van Vliet and Caminada, 2012)			See description in appendix
Active Labor Market Policy	Statistics Denmark	OFF23X/ OFF29	10.4 Unemployment	Benefits in cash or in kind regarding unemployment
Housing Benefits	Statistics Denmark	OFF23X/ OFF29	10.5 Housing	Help to housing costs
Child Benefits	Statistics Denmark	OFF23X/ OFF29	10.3 Family and Children	Benefits in cash or in kind (except health benefits) to families with children

Continued on next page

Table 3 – continued from previous page

Spending domain	Source	Table	Measure	Description
Elderly Care	Statistics Denmark	OFF23X/ OFF29	10.2 Old age	Benefits in cash or in kind (except health benefits) in connection to old age
Health	Statistics Denmark	OFF23X/ OFF29	7. Health	
Education	Statistics Denmark	OFF23X/ OFF29	9. Education	
Environment	Statistics Denmark	OFF23X/ OFF29	5. Environmental Protection	
Culture	Statistics Denmark	OFF23X/ OFF29	8.1. Leisure- and sport activities 8.2 Cultural activities 8.4 Leisure, Culture, Religion etc.	
Research	Statistics Denmark	FOUBUD	Total public budget for research	
Child Care Institutions	Ministry of Social Affairs and the Interior	Municipal key figures (Nøgletal)	Average net municipal cost on child caring pr. 0-13-year-old child	
Defense	Statistics Denmark	OFF23X/ OFF29	2. Defense	
Police	Statistics Denmark	OFF23X/ OFF29	3.1 Police	
Developmental Aid	Statistics Denmark	OFF23X/ OFF29	1.2 Economic Aid to Foreign Countries	

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Table 3 – continued from previous page

Spending domain	Source	Table	Measure	Description
Administration	Statistics Denmark	OFF23X/ OFF29	1.1 Executive and legislative organs, tax- and financial agencies, the foreign service, 1.3 General services, 1.5 General Public Services etc., 1.6 Transactions regarding public debt and transfers of a general kind	
Highways and Bridges	Statistics Denmark	VEJ2	Total expenditures on roads	Investment in the Great Belt- and the Oresund connection includes the railroad connection
Public Transportation	Statistics Denmark	BANE42	Total expenditures on Banedanmark's train tracks and other tracks	

Appendix B

Table 4. Average Income Group Net Preferences

	Low	Medium	High	ΔML	ΔHL	ΔHM
Unemployment Benefits	-4.9	6.4	-13.3	11.4	13.9	19.7
Social Assistance	-4.2	0.8	-11.0	8.0	12.9	12.6
Active Labor Market Policies	6.5	5.2	-15.9	6.5	22.4	21.1
Housing Benefits	12.2	0.5	-8.1	13.8	20.3	8.6
Child Benefits	-2.6	5.8	-8.2	8.4	6.8	14.0
Elderly Care	55.6	62.6	42.1	8.7	13.5	20.5
Health	63.7	71.2	52.9	7.5	12.5	18.3
Education	45.1	50.8	57.6	9.4	12.5	8.2
Environment	34.6	39.3	38.4	7.4	9.7	5.0
Culture	-22.8	-30.4	-18.7	7.7	5.3	11.7
Research	43.4	45.5	64.1	4.3	20.8	18.7
Child Care Institutions	29.2	42.6	38.6	13.8	10.5	7.3
Defense	-33.0	-32.5	-24.2	6.6	9.3	9.6
Police	44.8	53.3	41.0	8.6	5.1	12.4
Developmental Aid	-18.8	-26.6	-5.1	10.7	14.7	21.5
Public Administration	-58.9	-56.1	-54.3	4.3	11.4	7.1
Highways & Bridges	-24.2	-19.5	-11.8	4.8	12.5	7.8
Public Transport	34.4	24.3	21.4	10.1	13.0	6.5
Total	13.7	17.1	14.1	8.7	11.8	13.0

Note: $N=131$. The means reported here are based on all available preference observations. ΔML is the average absolute difference in preferences between M and L by spending domain. Similarly for the other groups.

Table 5. Estimates of Policy Influence, Including Outliers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	% Δ Government spending							
Low income	-0.10 (0.10)	-0.10 (0.10)	-0.18* (0.08)	-0.16+ (0.09)	-0.10 (0.10)	-0.06 (0.09)	-0.23* (0.05)	-0.19* (0.04)
Medium income	-0.02 (0.08)	-0.02 (0.07)	0.03 (0.07)	0.03 (0.07)	0.09 (0.07)	0.10 (0.07)	0.13 (0.08)	0.13 (0.08)
High income	0.16* (0.04)	0.16* (0.05)	0.18* (0.04)	0.17* (0.05)	0.09 (0.10)	0.05 (0.10)	0.15* (0.06)	0.12+ (0.07)
Trend		-0.08 (0.40)		-0.22 (0.28)		-0.24 (0.40)		-0.25 (0.27)
Trend ²		0.00 (0.01)		0.01 (0.01)		0.00 (0.01)		0.00 (0.01)
Spend. dom. FE					✓	✓	✓	✓
Constant	2.58* (0.84)	3.19 (3.69)	2.94* (0.80)	4.75+ (2.35)	1.78+ (0.98)	4.20 (3.17)	2.51* (0.72)	4.92+ (2.35)
N	130	130	127	127	130	130	126	126
R-squared	0.08	0.08	0.13	0.13	0.03	0.04	0.08	0.09
Adj. R-squared	0.06	0.04	0.11	0.09	0.01	0.00	0.06	0.05

Note: * $p < 0.05$, + $p < 0.1$. Clustered standard errors are in parentheses. Unemployment benefits 1985, environment 2002, and environment 2008 are omitted in models (3), (4), (7), and (8). Models (7) and (8) also omit unemployment benefits 2008. These observations have high residuals.

Table 6. Estimates of Policy Influence, Excluding Observations from the Panel and Midway-Election Surveys

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	% Δ Government spending							
Low income	-0.04 (0.10)	-0.02 (0.09)	-0.11 (0.07)	-0.09 (0.07)	-0.06 (0.11)	0.00 (0.12)	-0.20* (0.05)	-0.15* (0.06)
Medium income	-0.08 (0.08)	-0.09 (0.07)	-0.03 (0.06)	-0.04 (0.07)	-0.05 (0.11)	-0.05 (0.12)	0.02 (0.11)	0.01 (0.11)
High income	0.16* (0.04)	0.15* (0.05)	0.18* (0.04)	0.17* (0.05)	0.15 (0.14)	0.10 (0.13)	0.19* (0.07)	0.16* (0.07)
Trend		-0.21 (0.31)		-0.30+ (0.16)		-0.43 (0.35)		-0.43* (0.18)
Trend ²		0.01 (0.01)		0.01 (0.00)		0.01 (0.01)		0.01+ (0.00)
Spend. dom. FE					✓	✓	✓	✓
Constant	2.53* (0.67)	4.19 (2.70)	2.98* (0.50)	5.40* (1.38)	2.58* (0.95)	6.27* (2.85)	3.23* (0.91)	6.88* (2.04)
N	100	100	97	97	100	100	96	96
R-squared	0.09	0.09	0.16	0.17	0.03	0.05	0.10	0.13
Adj. R-squared	0.06	0.05	0.13	0.12	0.00	0.00	0.07	0.08

Note: * $p < 0.05$, + $p < 0.1$. Clustered standard errors are in parentheses. The models exclude observations from the panel and mid-way surveys (see Appendix A) as well as (four) observations where government spending changed by more than 20 percent over the two-year period. In addition, unemployment benefits 1985, environment 2002, and environment 2008 are omitted in models (3), (4), (7), and (8). Models (7) and (8) also omit unemployment benefits 2008. These observations have high residuals.

Table 7. Estimates of Policy Influence, One-Year Changes

	(1)	(2)	(3)	(4)
	One-year % Δ Government spending			
Low income	-0.02 (0.04)	-0.02 (0.05)	-0.04 (0.04)	-0.04 (0.05)
Medium income	0.01 (0.04)	0.01 (0.04)	-0.02 (0.07)	0.01 (0.05)
High income	0.04* (0.02)	0.04+ (0.02)	0.04 (0.05)	0.02 (0.04)
Deficit (% GDP)		0.45 (0.28)		0.42+ (0.24)
Unemployment		1.01 (0.63)		0.88 (0.65)
Government partisanship (5-year MA)		-1.09 (0.85)		-0.87 (0.89)
Spend. dom. FE			✓	✓
Constant	0.72+ (0.39)	-4.79 (3.55)	1.60* (0.53)	-3.44 (3.92)
N	126	126	126	126
R-squared	0.05	0.09	0.02	0.04
Adj. R-squared	0.03	0.04	-0.01	-0.01

Note: The models exclude (four) observations where government spending changed by more than 10 percent over the one-year period. Clustered standard errors are in parentheses. * $p < 0.05$, + $p < 0.1$.

Table 8. Estimates of Policy Influence, Including Controls

	(1)	(2)	(3)	(4)
	Two-year % Δ Government spending			
Low income	-0.01 (0.09)	-0.08 (0.06)	-0.05 (0.09)	-0.18* (0.04)
Medium income	-0.05 (0.07)	-0.00 (0.06)	0.03 (0.12)	0.06 (0.11)
High income	0.11* (0.04)	0.13* (0.03)	0.04 (0.09)	0.11 (0.06)
Deficit (% of GDP)	0.07 (0.59)	-0.33 (0.59)	0.22 (0.56)	0.01 (0.53)
Unemployment	0.54 (1.34)	-0.48 (1.20)	0.85 (1.51)	0.26 (1.15)
Government Partisanship (5-year MA)	0.86 (1.40)	1.67 (1.21)	0.34 (1.89)	0.58 (1.37)
Spend. dom. FE			✓	✓
Constant	-0.89 (7.47)	5.04 (6.51)	-2.45 (9.58)	1.69 (6.87)
N	126	123	126	122
R-squared	0.11	0.18	0.05	0.11
Adj. R-squared	0.07	0.13	0.00	0.06

Note: The models exclude (four) observations where government spending changed by more than 20 percent over the two-year period. Clustered standard errors are in parentheses. * $p < 0.05$, + $p < 0.1$.

Table 9. How Government Spending Preferences Adjust to the State of the Economy, Using Gaps as Dependent Variable

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>M-L</i>	<i>H-L</i>	<i>H-M</i>	<i>M-L</i>	<i>H-L</i>	<i>H-M</i>
Deficit (% of GDP)	0.47 (0.43)	1.52* (0.60)	0.99* (0.46)	0.28 (0.40)	1.38* (0.41)	1.09* (0.30)
Unemployment	0.43 (0.83)	2.23* (0.98)	1.98* (0.84)	0.94 (0.67)	2.77* (0.54)	1.77* (0.68)
Government spending	-0.03 (0.61)	-0.14 (0.88)	-0.22 (0.80)	-0.12 (0.82)	-2.17 (1.33)	-2.43* (0.95)
Lagged <i>M-L</i>	0.48* (0.08)			0.05 (0.08)		
Lagged <i>H-L</i>		0.61* (0.05)			0.06 (0.10)	
Lagged <i>H-M</i>			0.81* (0.07)			-0.15* (0.06)
Spend. dom. FE				✓	✓	✓
Constant	-1.75 (3.94)	-14.49* (5.74)	-12.76* (4.66)	-3.12 (3.66)	-16.77* (3.03)	-13.76* (3.79)
N	121	121	121	121	121	121
R-squared	0.24	0.47	0.65	0.03	0.20	0.16
Adjusted R-squared	0.22	0.45	0.63	-0.01	0.17	0.13

Note: * $p < 0.05$, + $p < 0.1$. Clustered standard errors are in parentheses. *L*, *M*, *H* denote low-, medium-, and high-income groups.