

# What Drives Unequal Policy Responsiveness? Assessing the Role of Informational Asymmetries in Economic Policy-Making\*

Mads Andreas Elkjær

December 13, 2019

## Abstract

Recent scholarship on inequality and political representation argues that economic elites are dominating democratic policy-making, yet it struggles to explain the underlying mechanisms. This paper proposes that unequal responsiveness reflects asymmetries in information about fiscal policy across income classes, as opposed to being a structural bias inherent in capitalist democracy. I test the argument in a pathway case study of economic policy-making in Denmark, using a new dataset that combines preference and spending data spanning 18 spending domains between 1985-2017. I find that governments that pursue standard macroeconomic policies *coincidentally* respond more strongly to the preferences of the affluent, owing to a closer adjustment of preferences to the state of the economy among citizens in upper income groups. These findings have important democratic and theoretical implications, as they suggest that unequal responsiveness may not reflect substantive misrepresentation of majority interests, but rather differences in information levels across groups.

---

\*Previous versions of this paper have been presented at meetings of the Nordic Political Science Association (2017), Southern Political Science Association (2018), Midwest Political Science Association (2018), Danish Political Science Association (2018), and at graduate student workshops at Harvard University and the University of Southern Denmark. I would like to thank all attendants for helpful discussions. In addition, I would like to thank Larry Bartels, Robert Erikson, Henning Finseraas, Matt Grossmann, Jesper Hansen, Sophie Hill, Torben Iversen, Robert Klemmensen, Michael Baggesen Klitgaard, Erik Gahner Larsen, Peter Bjerre Mortensen, Stuart Soroka, the editorial team at CPS, and the three anonymous reviewers for excellent comments and suggestions.

## Introduction

Rising inequality has raised concerns that the power of moneyed interests is undermining democracy. In the U.S., the economic elite appears to dominate policy-making, arguably an effect of money in politics (Bartels, 2008; Gilens, 2012; Gilens & Page, 2014).<sup>1</sup> In other advanced democracies, where political parties are far less reliant on private donations, scholars find strikingly similar patterns of unequal representation, and point to disparities in political participation and descriptive representation as possible causes (Bartels, 2017; Elsässer, Hense, & Schäfer, 2018; Peters & Ensink, 2015; Schakel, in press). Participational and descriptive disparities can clearly create some degree of inequality in political representation, but considering the strong electoral incentives of policy makers to represent low and middle-class interests (Downs, 1957), it seems implausible that such disparities can lead to economic-elite domination of the democratic process. As it stands, the literature presents strikingly similar results across widely different political-economic contexts, yet it struggles to explain the underlying mechanisms.

Tracing the mechanisms is of crucial importance, because they determine the implications of the results. Elkjær and Iversen (in press) argue that differential responsiveness may simply reflect that high-income groups are better informed about fiscal policies, and therefore adjust their preferences more in line with standard macroeconomic policies. They find across a broad range of advanced democracies that while *changes* in redistributive policies reflect the short-term preferences of the rich, the *levels* of these policies reflect the long-run interests of the middle class. This result indicates that asymmetries in information may be causing the similarity in results, since existing studies examine short-term policy trends, but it is difficult to rule out any impact of structural biases.

In this paper, I test the informational asymmetry argument in a pathway case with the aim of discerning the causal mechanisms of differential responsiveness. Informational asymmetries exist in any democracy because information is closely tied to education and to incentives to be informed, which rise with income (Downs, 1957; Larcinese, 2005). This

---

<sup>1</sup>Unequal representation in the U.S. is highly discussed. See Bashir (2015); Branham, Soroka, and Wlezien (2017); Enns (2015); Enns and Wlezien (2011); Soroka and Wlezien (2008); Ura and Ellis (2008).

implies that the affluent express more counter-cyclical spending preferences (Kölln, 2018) and are more attentive to spending flows (Wlezien & Soroka, 2011), which opens the door to the possibility that differential responsiveness may be a consequence of governments adopting optimal fiscal policies, while citizens in different income groups update their preferences more or less in line with these policies. Unequal policy responsiveness, therefore, may partly be coincidental, rather than reflective of a substantive overrepresentation of the interests of the rich.

Structural features of capitalist democracy, of course, may also bias political representation, which makes it difficult to isolate the impact of information. To minimize equality-distorting effects of the political-economic context, I examine economic policy-making in Denmark, where conditions favor equal representation. Policy makers have good possibilities to provide equal responsiveness when adjusting spending, since conflict is relatively restricted (Gilens, 2009; Soroka & Wlezien, 2008). And the Danish case offers some of the most favorable conditions for political equality, including high levels of economic equality and redistribution, proportional representation, a coordinated market economy, and state-funded political parties. In Denmark, therefore, it is highly unlikely that economic policy-making is *dominated* by the economic elite. Any such finding would be a strong indication that something else than structural biases of capitalist democracy is driving the results.

I rely on a new dataset that combines preference and spending data spanning 18 spending domains from 1985 to 2017. In striking similarity to studies of other contexts, I find that also in Denmark policy responsiveness increases monotonically with income. I then show that this effect of income on responsiveness closely resembles those of income on political discussion, information, and preference formation. Specifically, the affluent are more involved in political discussions; they are better informed about political and economic issues; and they express more balanced, thermostatic, and counter-cyclical preferences compared to lower-income classes. Whereas the structural features of the Danish political system are wholly unable to explain the observed pattern of unequal responsiveness, the findings are fully consistent with the informational asymmetry argument.

I proceed as follows. First, I discuss expectations about political representation and present the argument. I then 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**

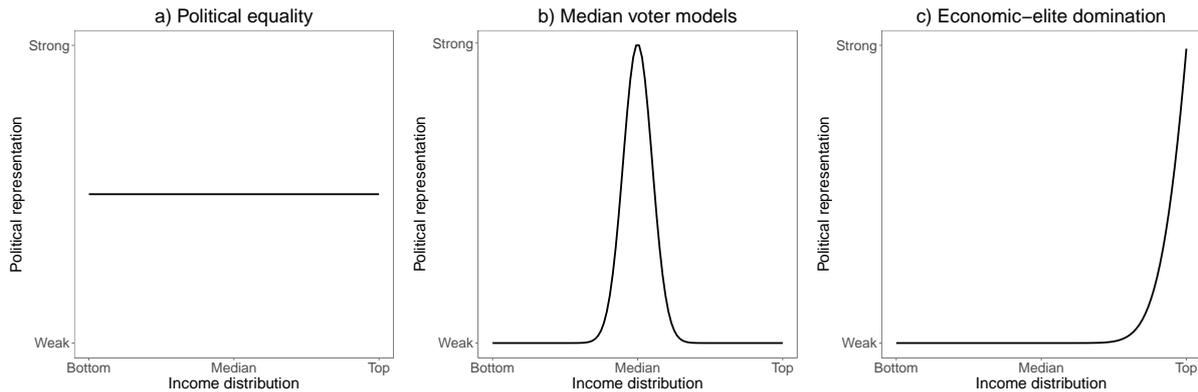
In the ideal democracy, policy makers respond equally to the preferences of citizens (Dahl, 1971). But unless all citizens hold similar preferences, political representation cannot be entirely equal, and policy decisions should instead be based on majority rule (Dahl, 2006). Majority rule implies that the median voter is pivotal, since she must be included in any majority decision (Downs, 1957). A fair amount of work shows that policy makers respond to majority demands (e.g. Brooks & Manza, 2006; Hobolt & Klemmensen, 2008; Rasmussen, Reher, & Toshkov, 2019; Soroka & Wlezien, 2010). But these studies examine responsiveness to average constituent preferences, and therefore say little about the equality of political representation.

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 (see also Gilens & Page, 2014). This pattern of unequal representation is also found by comparative studies of affluent democracies (Bartels, 2017; Peters & Ensink, 2015). Not even egalitarian political systems appear to ensure unbiased representation. For example, Elsässer et al. (2018) and Schakel (in press) find that the degree of unequal responsiveness in Germany and the Netherlands is just as pronounced as in the U.S. This work suggests that representation increases monotonically with income and that the economic elite dominates contemporary democratic politics.

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.<sup>2</sup> Figure 1a depicts a uniform distribution of political equality,

---

<sup>2</sup>These assumptions underlie most political economy models (e.g. Iversen & Soskice, 2006) and it seems reasonable to assume as regards economic policies, where income indeed structures preferences



**Figure 1.** Theoretical distributions of political representation.

figure 1b is a normal distribution representing median voter models of politics, and figure 1c graphs a highly left-skewed distribution of economic-elite domination. The models are displayed in their most general form, and the empirical reality can be considered as some weighted combination of the three with weights corresponding to the explanatory power of each theory.

For example, that people regardless of income often have similar, correlated preferences means that considerable weight will always be given to figure 1a (Enns, 2015; Soroka & Wlezien, 2008). One might also observe some permutation of the median voter model: by adding positive or negative skewness one can arrive at predictions consistent with bargaining models of representation (e.g. Iversen & Soskice, 2006) and the power resources framework (e.g. Huber & Stephens, 2001).

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 interrelated<sup>3</sup>, we may expect inclusionary institutions such as proportional representation (PR) and a coordinated market 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 income equality and redistribution (Iversen & Soskice, 2006, 2009), may limit disparities in political resources. Countries with PR tend to have coordinated market economies and

---

(Gilens, 2009).

<sup>3</sup>For instance, economic resources increase participation in politics and interest organization (Schlozman, Verba, & Brady, 2012), political information (Erikson, 2015; Iversen & Soskice, 2015), descriptive representation (Carnes, 2013), and political donations (Bonica, McCarty, Poole, & Rosenthal, 2013).

give substantial influence over wage setting and economic policy to organized interests, which may further restrict resource disparities (Hall & Soskice, 2001).

More directly, inclusionary institutions may promote representational equality by encouraging bargaining. PR fosters multiparty systems where coalition governments are the norm, and often governments control only a minority of the parliamentary seats. Consequently, parties can only govern through bargaining and compromise, which entails considerable power sharing (Lijphart, 2012; Powell Jr., 2000; Strom, 1990). Moreover, the coordination of policy with organized groups ensures that economic interests have quite equal opportunities to voice their policy priorities.

Yet, economic resources are unequally distributed in all democracies, and the economic-elite domination model may receive some weight, even in otherwise egalitarian contexts (Dahl, 2006). In the U.S., the most prominent explanation of economic-elite domination is the importance of money in politics (Bartels, 2008; Gilens, 2012). But money has a smaller impact on politics in other advanced democracies, where political parties rely more on membership fees and financial support from the state than they do on political donations (e.g. Koß, 2010). Comparative studies have instead focused on economic and institutional factors. Rosset, Giger, and Bernauer (2013) find that overrepresentation of the rich is weaker in more equal contexts, while Bernauer, Giger, and Rosset (2015) find that underrepresentation of the poor is less pronounced in more proportional electoral systems. These findings suggest a conditioning effect of the political-economic context, but they do not explain why the rich appear more influential even under the most favorable conditions. The most prominent explanation in these cases is that the poor are underrepresented in national parliaments, but disparities in political participation and interest-group mobilization also appear in discussions (Elsässer et al., 2018; Schakel, in press).

Surely those factors matter for political representation, yet it seems implausible that these forces would be so prominent compared to the equality promoting forces related to electoral incentives and the importance of bargaining in policy making, that they would produce the empirically observed pattern of monotonically increasing levels of political

representation in income. The implication of the proposed explanations would thus be that just small biases in descriptive representation, political participation, or interest-group mobilization are enough to make the electoral arena irrelevant with zero weight to median voter models of politics. Instead, if these biasing forces matter, it is more plausible that political representation would peak somewhere in between the median and the rich, depending on the weighted combination of the median voter and economic-elite domination models.

In fact, even in the extreme case where median voter models receive zero weight, the favored explanation of a descriptive underrepresentation of the poor is not consistent with monotonically increasing levels of political representation in income, especially not in countries with state-funded political parties. While it is true that members of parliament tend to be better educated than average citizens and that their income is above the median, they do not come from the absolute top echelons of the income distribution (Best, 2007). The social background of policy makers, therefore, cannot explain why the rich appear better represented than the upper middle class. In general, it is hard to see how structural features of relatively egalitarian political systems can produce monotonically increasing levels of political representation in income. Such features should only add some negative skewness to the median voter model's normal curve.

In summary, the similar pattern of unequal representation across widely different political-economic contexts as well as the inconsistencies between the observed pattern of unequal representation and the proposed mechanisms suggests that a factor other than structural biases may be driving the results. Below, I present and test an explanation that is consistent with the empirically observed pattern, arguing that differential responsiveness is a result of informational asymmetries across groups.

## **Why Information Matters**

To demonstrate the impact of information, I build upon the thermostatic model of responsiveness, which has proven remarkably robust across a wide range of settings (Soroka & Wlezien, 2010; Wlezien, 1995; Wlezien & Soroka, 2011, 2012).

As a baseline, let me first introduce the model under the assumption of perfect information, using a three-class setup with a low, middle, and high-income class;  $C = \{L, M, H\}$ . In this pure state, the relative preferences  $R$  of class  $C$  at time  $t$  are decided by the difference between each class's preferred level of policy  $P^*$  and the actual level of policy  $P$ . So when policy increases (decreases), relative support for policy adjusts downwards (upwards). Formally, this is written as:

$$R_{C,t} = P_{C,t}^* - P_t. \quad (1)$$

But not only do preferences respond to policy, policy also responds to preferences, meaning that the relative preferences of income classes at time  $t - 1$  (equally or unequally) influence subsequent changes in policies  $\Delta P$ . Of course, many other factors also affect policies, which we can capture with the vector  $\mathbf{X}$ . Formally, we can write this as:

$$\Delta P_t = \alpha + \beta_L R_{L,t-1} + \beta_M R_{M,t-1} + \beta_H R_{H,t-1} + \beta_{\mathbf{X}} \mathbf{X}_{t-1} + \varepsilon. \quad (2)$$

In equation (2),  $\alpha$  denotes the intercept and  $\varepsilon$  is a random disturbance term.  $\beta_{\mathbf{X}}$  captures the effects of all contextual factors that influence spending independently of preferences. And  $\beta_C$  captures the change in policy that is caused by the preferences of class  $C$ .<sup>4</sup>

Because of perfect information, citizens rationally update their preferences to contextual factors, and  $R_C$  and  $\mathbf{X}$  are contemporaneously, positively correlated. For example, extreme weather that damages infrastructure at time  $t$  would be reflected in a short-term increase in  $P_{C,t}^*$ , and thus  $R_{C,t}$ , and cause an increase in reparation costs on roads, bridges, or railways in  $t + 1$ .<sup>5</sup> Accordingly, we only get unbiased estimates of  $\beta_C$  if we account for  $\mathbf{X}$ . In this ideal state of perfect information, we can assess the relative influence of the income classes on changes in policies by comparing the  $\beta_C$ 's, while controlling for  $\mathbf{X}$ .

---

<sup>4</sup>If including government ideology, the coefficient on  $R$  would capture only the direct effect of preferences. Since most studies of differential responsiveness focus on the full effect, I do so as well.

<sup>5</sup>Following an exogenous shock,  $P^*$  reverts back to its initial long-run value in  $t + 1$  and  $R$  in  $t + 2$ . For instance, a positive shock in  $t$  increases  $P_t^*$ , and thus  $R_t$ , and causes an increase in  $P$  between  $t$  and  $t + 1$ . The higher  $P_{t+1}$  causes a decrease in  $R_{t+1}$ . And after the shock is absorbed in  $t + 1$ ,  $P^*$  reverts back to its pre-shock long-run value, causing  $R_{t+1}$  to drop below  $R_t$ . Between  $t + 1$  and  $t + 2$   $P$  drops, since the short-term shock is absorbed, causing  $R_{t+2}$  to increase back to the initial pre-shock value.

But of course, in reality, citizens may not be perfectly informed:  $R$  may not adjust to  $P$ , and  $P^*$  may not adjust to  $\mathbf{X}$ . On policy domains or in institutional settings where policies are difficult to discern, citizens may lack the information required to adjust their preferences to policies, and the effects of contextual factors on policies may generally not be well-understood (Kitschelt, 2000; Wlezien, 1995; Wlezien & Soroka, 2012). The first step is therefore to explicitly account for imperfect information by conditioning actual and preferred levels of policy by the information  $I$  available for class  $C$  at time  $t$ :

$$R'_{C,t} = P_{C,t}^* | I_{C,t} - P_t | I_{C,t}. \quad (3)$$

$P_t | I_{C,t}$  reflects that the level of policy is perceived rather than exogenously determined. And  $P_{C,t}^* | I_{C,t}$  reflects that the preferred level of policy depends on information about constraints on government actions and about contextual factors in  $\mathbf{X}$ , such as extreme weather, and their effects on policies.

Next, we need to update equation (2) to reflect that citizens have imperfect information. But we need to make one additional change: It is a strong assumption that we can capture all contextual factors that affect policies with the vector  $\mathbf{X}$ . In most cases, we can only capture some of the most obvious ones with  $\mathbf{X}'$ . Thus, in reality we estimate equation (4):

$$\Delta P_t = \hat{\alpha} + \hat{\beta}_L R'_{L,t-1} + \hat{\beta}_M R'_{M,t-1} + \hat{\beta}_H R'_{H,t-1} + \hat{\beta}_{\mathbf{X}} \mathbf{X}'_{t-1} + \epsilon. \quad (4)$$

If  $I = f(\overset{+}{income})$  then equation (4) contains three mutually reinforcing information effects that, ceteris paribus, cause higher income classes to have relatively larger coefficients. The first is a negative ‘measurement error bias’, which is due to uncertainty about actual and preferred levels of policy; a bias that would be decreasing in income (Achen, 1978; Stimson, 2011). The second is a negative ‘public responsiveness bias’, caused by uncertainty about changes in  $P$ , which attenuates adjustments in  $R'_C$  and leaves preferences less meaningful in the next period; a bias that would also be decreasing in income (Soroka & Wlezien, 2010; Wlezien & Soroka, 2011). And the third is a positive ‘context bias’ in

$\hat{\beta}_H$ , which would be present because  $\mathbf{X}'$  does not capture the entire effect of contextual factors, and part of the residual effect of  $\mathbf{X}$  would therefore be ascribed to  $R'_H$ .<sup>6</sup> For example, in the case of extreme weather that damages infrastructure at time  $t$ ,  $R'_{H,t}$  would respond more strongly than  $R'_{M,t}$  and  $R'_{L,t}$ , so if we do not account for the effect of extreme weather on subsequent increases in infrastructural spending, some of this effect would mistakenly go into  $\hat{\beta}_H$ .

The context bias is likely to be aggravated when examining a wider range of issues, as this makes it increasingly hard to capture all relevant contextual factors. If studying a diverse set of issues that covers economic, social, and foreign policies, for instance, it would be difficult to account for  $\mathbf{X}$  as this would require accounting for factors like the state of the economy, changes in the structure of households (which may affect social policies), strategic national interests, and the foreign policy of other countries all at the same time and often over several decades. Consequently, many studies do not account for contextual factors at all (e.g. Elsässer et al., 2018; Gilens, 2012; Schakel, in press), which can result in considerable context bias in  $\hat{\beta}_H$ .

But even if we could perfectly account for  $\mathbf{X}$  that would not solve the issue because the measurement error bias and public responsiveness bias would persist. At the same time, information may condition the degree to which citizens take cues from policy-makers (Broockman & Butler, 2017; Zaller, 1992), which would only reinforce the impact of information and cannot be accounted for by contextual factors. Thus, as long as information is rising in income, and it conditions preferences, information will affect estimates of differential policy responsiveness. This is the case in any political system, and informational asymmetries may therefore be driving the similar findings of economic-elite domination across the widely different political-economic contexts.

There is little reason to think that this argument only applies to certain issue domains. But in the remainder of the paper, I derive and test implications that are specific to economic policy-making. Ultimately, whether the argument also applies to non-economic

---

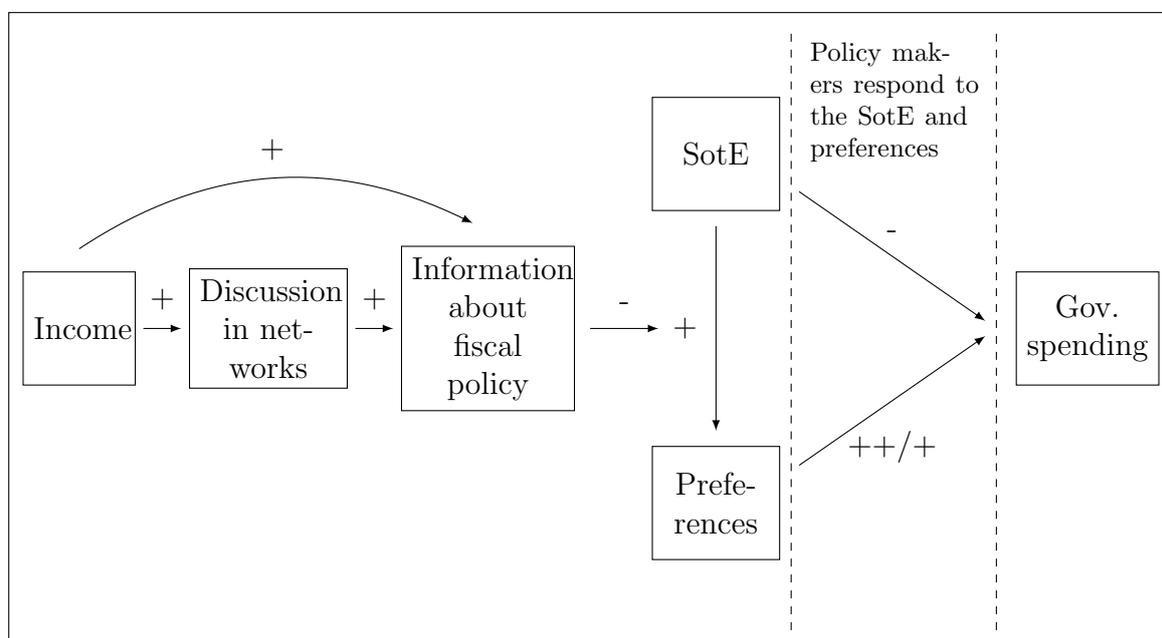
<sup>6</sup>The reason that only  $\hat{\beta}_H$  contains context bias is that income classes react quite similarly to contextual changes. Some of the residual effect of  $\mathbf{X}$  that  $\hat{\beta}_\mathbf{X}$  does not capture will therefore be ascribed to the group whose preferences correlate most strongly with  $\mathbf{X}$ . Hence, if modeling policy responsiveness in bivariate regressions, there would also be context bias in  $\hat{\beta}_L$  and  $\hat{\beta}_M$  but less than in  $\hat{\beta}_H$ .

issues is an empirical question open to future research.

## Government Spending and Information about Fiscal Policy

Figure 2 illustrates how even standard fiscal policies that serve the public interest can cause positive context bias and thereby drive findings of economic-elite domination (see fig. 1c). Following new Keynesian macroeconomic principles, government spending fluctuates counter-cyclically to the business cycle. Spending is low during economic upswings, when unemployment is low and revenues high, whereas spending is high during economic downturns, when unemployment is high and revenues low. These fluctuations are partly institutionalized as automatic stabilizers, e.g. unemployment compensation, but they are also driven by discretionary government policy (Darby & Melitz, 2008; Dolls, Fuest, & Peichl, 2012).

Since counter-cyclical fiscal policies balance economic droughts and ensure that a booming economy does not overheat, these policies serve the public interest. The poor



**Figure 2.** A sketch of the informational asymmetry argument in the realm of fiscal policy-making.

Gov. spending = government pending. SotE = state of the economy. SotE can be seen as a continuous variable, where higher values imply better economic performance. Preferences can be seen as measuring support for more/less spending with higher values meaning support for more spending.

and lower middle classes may have the most direct interest in counter-cyclical spending, as it also ensures that individual transfers and benefits do not depend on the unemployment rate. And because economic performance is crucial for voters (Lewis-Beck & Paldam, 2000), governments have strong electoral incentives to pursue these policies that promote a healthy economy.

The informational asymmetry argument is only viable if citizens respond heterogeneously to the business cycle. This condition may at first seem difficult to satisfy, since subgroup preferences are known to correlate highly (Page & Shapiro, 1992; Soroka & Wlezien, 2008), but responses do in fact differ in important ways. In general, spending preferences adjust pro-cyclically to the business cycle, which is implied by the thermostat model (Wlezien, 1995) and confirmed by Wlezien and Soroka (2012),<sup>7</sup> but higher levels of political sophistication are associated with relatively more counter-cyclical preferences (Kölln, 2018).

In line with Elkjær and Iversen (in press), I argue that responses to the business cycle are related to information about the macroeconomic functioning of fiscal policy. Low information about fiscal policy should be associated with pro-cyclical preferences because people with limited knowledge and information are inclined to seek answers in familiar and easily understandable objects, such as the personal household budget, when updating their preferences (Luskin, 1987). A household must limit their spending during bad times, whereas in good times it can better afford to spend money. Hence, people with low information may rationalize that governments should limit spending during recessions and increase spending during booms. The new Keynesian policies that governments adopt, of course, are radically different from the household budget logic. People with high information know this and therefore adjust their preferences in line with these stabilizing government policies. The implication is that governments, when adjusting spending, coincidentally respond more strongly to the preferences of those groups with higher shares

---

<sup>7</sup>The thermostat model predicts that support for spending is strong when spending is low. Combined with the fact that counter-cyclical fiscal policies entail that spending is low when the economy is booming, this implies that support for spending is strong during an economic upswing. This conjecture is confirmed by Wlezien and Soroka (2012), who find that spending preferences correlate negatively with unemployment across a broad set of affluent democracies.

of people with a new Keynesian understanding of the economy.

### **Income and Incentives to be Informed**

Because education as well as incentives to be informed are associated with income, the proportion of informed people in a given population should increase with income (Downs, 1957; Larcinese, 2005).

Lower cognitive barriers to information for highly educated and affluent people yield a higher optimal level of information (Iversen & Soskice, 2015). And because social networks tend to be homogenous along socio-economic lines (McPherson, Smith-Lovin, & Cook, 2001) and because people seek acceptance by their peers (Baumeister & Leary, 1995), the social incentives to actively acquire information in order to contribute to discussions in social networks increase with education and income (Iversen & Soskice, 2015). Passive information, which is received through exposure to discussions, also increases.

Information is also related to work-related incentives (Downs, 1957). 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. This is perhaps most pronounced in finance, where wages are very high. We would therefore expect political discussions in work-related networks to rise with income, which would further increase both active and passive information.

It is clear that income and education may explain much of the same variation in information, and thereby also in differential responsiveness. Indeed, differential responsiveness tends to be quite equally pronounced across income and educational groups, with income being a slightly stronger predictor. The latter has led some scholars to rule out information as the underlying mechanism, because attentiveness and information, arguably, are more strongly related to education than income (e.g. Gilens, 2012). But this may, in fact, not be the case. There is reason to believe that the incentives to acquire information about fiscal policy are more strongly related to income than to education. This is 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 other personal financial decisions such as purchasing a house, choosing the

right mortgage, to pension investments, and to maximizing inheritance for one's children. Because people want to make good decisions about their investments, and that it can be extremely costly to make financial mistakes, the optimal level of information rises with income (Larcinese, 2005). And the effect may be self-reinforcing, since better investment decisions increase the probability that one ends up high in the income distribution.

This entails that one cannot capture the relevant differences across income classes by controlling for education. In fact, in order to account for the information bias one would need highly precise measures of information about fiscal policy and separate out the informed from the uninformed in each income class. But, since questions tapping in to this kind of information are rarely part of surveys, it is in practice not a feasible strategy.

Instead, I assess the impact of information by testing the implications of the casual argument presented above, i.e. that responsiveness and information increase along with income, and that the affluent express relatively more counter-cyclical spending preferences and have stronger thermostatic responses to spending than do lower-income groups.

## **The Danish Case**

The ideal setting to study the impact of information would be a pathway case of a capitalist democracy with some degree of inequality, so that incentives to be informed vary with income, but where all other factors that might bias political representation are absent. If one finds a similar pattern of differential responsiveness in such a case, and if it seems to be driven by differences in information, this would constitute strong evidence that information is the underlying mechanism, since all other biasing factors can be ruled out by design (see Gerring, 2007). Naturally, no actual democracy fits this description perfectly, but some are closer to it than others.

I test the informational asymmetry argument in Denmark because it has some of the most favorable conditions for political equality. The Danish political system is thus among the most inclusive in the world. The electoral system is highly proportional and the multi-party system almost always produces minority 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 (Rommetvedt, Thesen, Christiansen, & Norgaard, 2013). In a system like the Danish, policy making requires a great deal of bargaining, and one cannot govern without making concessions and compromise.

Denmark is also egalitarian with respect to other characteristics associated with political equality. Perhaps most importantly, Denmark is one of the most equal countries in the world and has one of the highest levels of redistribution (OECD, 2011). The high level of economic equality limits inequalities in political resources. For instance, the turnout rate in national elections averages 86 percent since 1945. The infusion of money into politics that one observes in the U.S. plays a comparatively small role in Danish politics. While parties are allowed to receive political donations, which they mainly do in elections years, their main income comes from state funding schemes and membership fees (Justitsministeriet, 2015). Thus, neither parties nor politicians have to raise large sums of money in order to run viable election campaigns. Members of parliament are, on average, better educated than the average voter and receive an income above the median, but they come from a “broad, composite middle class” (Kjær & Pedersen, 2004, p. 93). If their (upper) middle-class background creates a bias in representation, it could add some negative skewness to an otherwise heavy-tailed normal distribution of political power.

### **The Case of Government Spending**

Adjustments in spending is a hard test for unequal policy responsiveness because conflict is relatively restricted, leaving governments good possibilities to provide equal representation (Gilens, 2009; Soroka & Wlezien, 2008). Moreover, in Denmark bargaining and compromise are integral parts of crafting the annual budget, which must be approved by the parliament. Before the government presents its budget proposal to the parliament, the government parties bargain with each other to find a common position. The government then bargains with the opposition in order to secure a legislative majority. The budget, being a huge piece of legislation, 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. This form of negotiating the budget strongly suggests that policy influence is shared among political actors, and that the interests of large segments of the Danish society are reflected in the budget.

## Data

I have created a new dataset for this project that, to the best of my knowledge, consists of all Danish surveys that contain information about government spending preferences and income, combined with actual spending. The dataset covers 18 spending domains in the period 1985 to 2017, ranging from one to twelve observations per domain (the average is seven).<sup>8</sup> The broad range of domains makes the sample somewhat representative of different types of public expenditures. But it is not a random sample, and inclusion is likely to reflect the current salience of spending domains. This potential bias works against unequal responsiveness, since defection from median preferences is more costly for politicians on more salient domains.

### Government Spending Preferences

I rely on data from the Danish Election Study 1990-2015 ([www.valgprojektet.dk](http://www.valgprojektet.dk)), supplemented by six other national representative surveys, which all include a question item that asks: “Is the public sector spending too much, about the right amount, or too little on [...]?” (Web Appendix A includes a detailed description of the surveys).<sup>9</sup>

Using this question item, I calculate net support for spending by subtracting the percentage of respondents who say that the government spends too much on a spending domain from the percentage who say that it spends too little (similar to Soroka & Wlezien, 2010). This preference measure has a theoretical range of [-100:100], and higher absolute values indicate stronger support for either less or more spending. Values of zero reflect support for the status quo. Income-specific preferences are predicted using the approach

---

<sup>8</sup>Preference data are available for the years 1985, 1991, 1994, 1998, 2000, 2001, 2002, 2003, 2005, 2008, 2011, and 2015. Spending data are available from 1985 to 2017, but some of the earliest and latest years are missing. In Web Appendix A, I report the years for which data are available on each domain.

<sup>9</sup>About 74 percent of the survey data are from the Danish Election Study 1990-2015. The rest are from the six additional surveys.

proposed by 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 support by income percentiles in OLS regressions.

The preference data indicate that all income classes generally support spending increases over decreases. The affluent have the most balanced preferences, preferring 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, and thus that their true preferences are measured with less error. Yet one concern about the question wording is that no budget constraint is mentioned, which could have a differential impact on class preferences. To examine the potential bias, I compare preferences from the International Social Survey Program (ISSP) Role of Government IV to those from the Danish Election Study (DES) 2007. The two surveys ran simultaneously, and both include questions on the same underlying government spending preferences.<sup>10</sup> The surveys differ in that the DES does not mention a budget constraint, whereas the ISSP does.<sup>11</sup> The average difference between preferences in the two surveys is within two points for all income classes, which suggests that the less balanced preferences among lower-income classes are not driven by question wording effects.

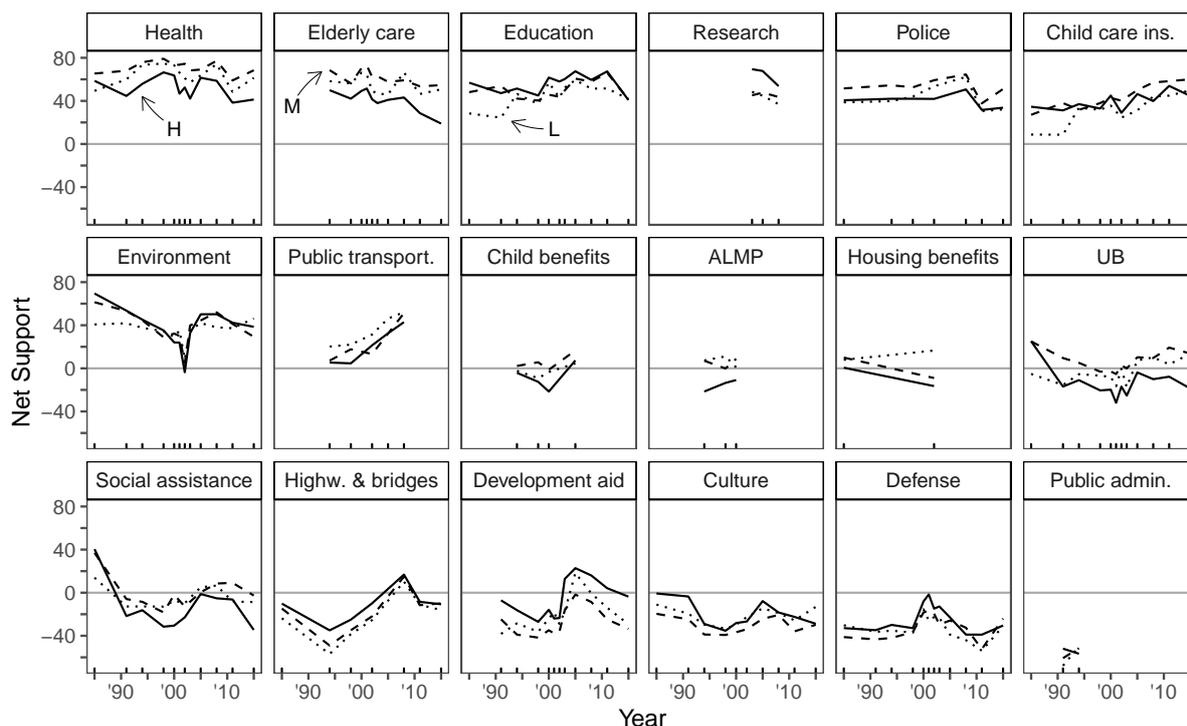
Figure 3 displays time series plots of net support for spending by income group.<sup>12</sup> The figure shows that there is considerable variation in preferences across the 18 spending domains, which demonstrates the broad range of domains included in the analysis. The figure also shows that income group preferences move highly parallel to one another over time. 'Parallelism' is a well-known feature of subgroup preferences that complicates the statistical analysis, because it entails high preference correlations (Page & Shapiro,

---

<sup>10</sup>The DES 2007 collected data between November 30, 2007 and May 15, 2008, whereas the ISSP Role of Government IV collected data between January 30 and May 5, 2008.

<sup>11</sup>The ISSP question wording is "... 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.". The surveys include comparable questions on police, environment, health, education, and defense. I have rescaled the ISSP answer categories from five to three in order to obtain comparable estimates.

<sup>12</sup>Descriptive statistics of preferences are reported in Web Appendix A.



**Figure 3.** Government spending preferences by income group, 1985-2015.

$N=143$ .  $H$  = 99th income percentile (solid line),  $M$  = 50th income percentile (dashed line),  $L$  = 1st income percentile (dotted line). ALMP= active labor market policies, UB = unemployment benefits. Preferences for spending on unemployment benefits, social assistance, and housing benefits (in 1985) relate to individual-level spending (the housing benefits 1985 observation is not included in the analysis of policy responsiveness). The rest relates to aggregate-level spending. On elderly care, preferences are the average preference for spending on pensions and home assistance. The rug plots show the years for which data are available.

1992).<sup>13</sup> Yet, it does not imply that people in different income groups hold similar preferences (Gilens, 2015). The degree of divergence depends on the size of the preference gap and on the character of support. The most interesting variation, in this respect, lies in the redistributive domains: active labor market policies, social assistance, housing, child, and unemployment 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 19 times that the middle and high-income groups disagree on the direction of changes in spending, 11 of the 15 times that the low and high-income groups disagree, and all seven times that the low and middle-income groups disagree. Preferences also track one another to a lesser extent on the redistributive

<sup>13</sup>The overall correlations of preferences are .92 ( $M-H$ ), .91 ( $L-H$ ) and .96 ( $L-M$ ). Within spending domains, they are .84 ( $M-H$ ), .68 ( $L-H$ ) and .74 ( $L-M$ ).

domains.<sup>14</sup> The Danish data thereby corroborate findings from the U.S. showing that preference divergence is strongest in redistributive domains (Soroka & Wlezien, 2008).

## Government Spending

To measure spending, I rely on data from Statistics Denmark and the Municipal Key Figures database, supplemented by estimates of individual-level spending on unemployment benefits and social assistance from the Comparative Welfare Entitlements Dataset (Scruggs, Jahn, & Kuitto, 2014) and the Social Assistance and Minimum Income Protection Dataset (SAMIP), since the questions on unemployment benefits and social assistance relate to individual-level spending. A detailed description of the spending sources and measures is included in Web Appendix A.

## Unequal Policy Responsiveness

Unequal policy responsiveness should be disaggregated into two concepts; policy alignment and policy influence. Policy alignment conceptualizes the extent to which policies correspond to subgroup preferences, whereas policy influence conceptualizes the degree of *independent* influence of subgroup preferences on policies (e.g. Rigby & Wright, 2013). I estimate the alignment between policies and preferences as:

$$\begin{aligned}
 \Delta S_{kt} &= \alpha + \beta_{p1} R_{p1,kt-2} + \varepsilon_{kt}, \\
 \Delta S_{kt} &= \alpha + \beta_{p2} R_{p2,kt-2} + \varepsilon_{kt}, \\
 &\dots, \\
 \Delta S_{kt} &= \alpha + \beta_{p100} R_{p100,kt-2} + \varepsilon_{kt},
 \end{aligned}
 \tag{5}$$

where  $\Delta S_{kt}$  denotes the real percentage change in spending from  $t - 2$  to  $t$  on spending domain  $k$ .  $\beta$  is the coefficient of the preferences  $R$  of respondents at the  $p = \{p1, p2, \dots, p100\}$  percentile in the income distribution.  $\alpha$  is the intercept and  $\varepsilon$  is the error term.

In line with previous studies that rely on time-series cross-section data to analyze

---

<sup>14</sup>On redistributive domains, the correlations are .82 ( $M-H$ ), .48 ( $L-H$ ) and .47 ( $L-M$ ).

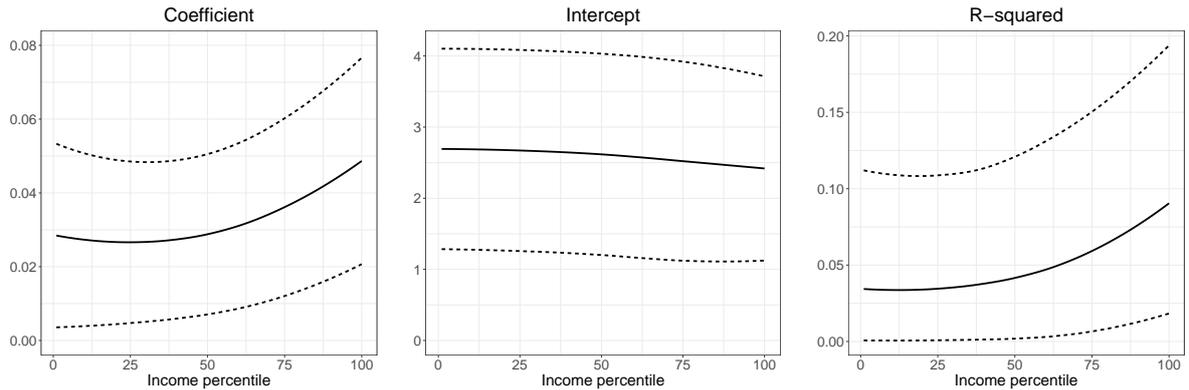
policy responsiveness (e.g. Bartels, 2017; Brooks & Manza, 2006), I estimate the models using OLS with standard errors clustered by spending domain. Serial correlation is not an issue, since the dependent variable is differenced, and lagged dependent variables are indistinguishable from zero when included in the models (see Web Appendix C).

Figure 4 illustrates the regression coefficients, intercepts, and r-squares from the 100 bivariate regressions estimated from equation (5).<sup>15</sup> The figure shows that the distribution of political representation in Denmark can be characterized as a weighted combination of political equality (an implication of similarity and collinearity of preferences) and economic-elite domination, while median voter models of politics receive zero weight. Specifically, the distribution of coefficients across the income distribution suggests that changes in spending correspond quite equally to the preferences of people at the bottom half of the income distribution, where after the effect of income on alignment is amplified. The distribution of intercepts suggests that baseline changes in spending are less biased for people in the upper third of the income distribution, and the distribution of r-squared values confirms those interpretations. Policy makers seem to be more responsive to the preferences of the affluent, and political representation appears to be monotonically increasing in income, mirroring the results of previous studies (e.g. Bartels, 2017; Elsässer et al., 2018; Gilens, 2012; Schakel, in press)

In Web Appendix C, I report results from spending domain fixed effects models. These models produce substantively similar results, but the effects are less precisely estimated, since most variation in both spending and preferences is across domains. In the fixed effects models, the coefficients and intercepts of the middle and upper income classes are largely identical to those from the pooled OLS models presented in figure 4, but the coefficient of the lower income class is negative, indicating that the alignment between changes in spending and preferences for change among the poor is driven solely by policy makers being more likely to increase spending on popular domains with high support for more spending (e.g. health) and to decrease spending on less popular domains where

---

<sup>15</sup>In all policy responsiveness models, I omit seven observations with large residuals. The results are substantively similar when including these observations, but the models are less efficient. In Web Appendix B, I show how the seven observations differ from the rest and report robustness tests.



**Figure 4.** Empirical distribution of political representation.

The figure displays the results of 100 bivariate regressions estimated from equation (5).  $N=123$  in each regression. The solid lines connect the point estimates from the 100 regressions and the dashed lines connect the upper and lower bounds of 95 pct. confidence intervals using standard errors clustered by spending domain. For R-squared, the confidence intervals are calculated using a non-parametric bootstrap based on 2000 independent draws with replacement and then graphed using a loess smoother.

voters support spending cuts (e.g. public administration). When accounting for cross-domain differences, changes in spending are wholly out of tune with the preferences of the poor.

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 spending. Policy influence is usually modeled as an extension of the policy alignment model by including low, middle, and high-income group preferences simultaneously in a multiple regression model (e.g. Rigby & Wright, 2013).<sup>16</sup> I estimate policy influence in a model that includes the preferences of respondents at the 1st( $L$ ), 50th( $M$ ), and 99th( $H$ ) income percentiles, such that

$$\Delta S_{kt} = \alpha + \beta_L R_{L,kt-2} + \beta_M R_{M,kt-2} + \beta_H R_{H,kt-2} + \varepsilon_{kt}, \quad (6)$$

where the coefficients  $\beta_L$ ,  $\beta_M$  and  $\beta_H$  estimate the partial effects of the preferences of low, middle, and high-income groups on changes in spending.<sup>17</sup>

Because preferences are highly correlated, the policy influence model suffers from high

<sup>16</sup>Of course, one would need a different research design in order to determine whether preferences causally influence policies. I follow the ‘standard’ estimation strategy to ensure comparability with existing research.

<sup>17</sup>The results are substantively similar if defining  $L$  and  $H$  closer to  $M$ , but multicollinearity increases.

levels of multicollinearity. This is a general issue in studies of differential responsiveness, which inflates the standard errors and can complicate the model estimation (Bashir, 2015; Bhatti & Erikson, 2011). We should therefore interpret the multiple regression results with caution and only in relation to the results from the bivariate policy alignment models.

Table 1 reports models of policy influence based on equation (6). Model (1) is a raw influence model, where only class preferences are included. The coefficients of the low and middle-income groups indicate that the lower and middle classes exert no independent influence on changes in spending, whereas the positive and significant coefficient of the affluent indicates that the affluent do. In model (2), I add a time trend to the model and the results are robust to this alternative specification. Strikingly, models (1) and (2) thus indicate that changes in spending within and across domains are only influenced by the rich. I test the robustness of this result to alternative model specifications in Web Appendix C. In all models, the rich exert independent influence on changes in spending while the lower and middle classes never do.<sup>18</sup>

In models (3) and (4), I include spending domain fixed effects. Once again, the fixed effects models produce less precise and stable estimates, but overall the results are substantively similar to those from the pooled OLS models. The estimates in both models (3) and (4) indicate that influence increases with income. The negative coefficients of the low-income group suggest that within domains changes in spending are completely detached from low-income group preferences, mirroring the results from the fixed effects alignment models. The coefficients of the middle class are positive, suggesting a degree of influence, but insignificant. And the coefficients of the affluent are roughly twice the size as those of the middle class. Yet, this does not imply that only the affluent exert policy influence. The pronounced multicollinearity entails that the standard errors of all groups are inflated. Indeed, the influence of the middle class and the rich is jointly significant in both models (3) and (4), indicating that policy influence on over-time changes in spending is shared among the middle class and the rich. Overall, the influence results are consistent

---

<sup>18</sup>Including predictors of fiscal policy in the models only slightly decreases the inequality in policy responsiveness, which – consistent with the theoretical expectations – suggests that information biases policy responsiveness estimates in more than one way.

**Table 1.** Estimates of the Independent Influence of Income Group Preferences on Changes in Government Spending.

	(1)	(2)	(3)	(4)
	Two-year % $\Delta$ government spending			
Low income	-0.11 (0.06)	-0.08 (0.07)	-0.17* (0.05)	-0.13* (0.05)
Middle income	0.01 (0.06)	-0.01 (0.06)	0.05 (0.09)	0.05 (0.09)
High income	0.14* (0.03)	0.13* (0.04)	0.12+ (0.06)	0.10+ (0.05)
Trend		-0.41* (0.18)		-0.44* (0.20)
Trend <sup>2</sup>		0.01* (0.00)		0.01+ (0.01)
Spend. dom. FE			✓	✓
Constant	2.54* (0.50)	5.94* (1.61)	3.04* (0.74)	6.64* (1.93)
N	123	123	123	123
R-squared	0.15	0.17	0.07	0.09

\*  $p < 0.05$ , +  $p < 0.1$ . Standard errors clustered by spending domain are in parentheses.

with the alignment results in showing that political representation appears to increase monotonically with income.

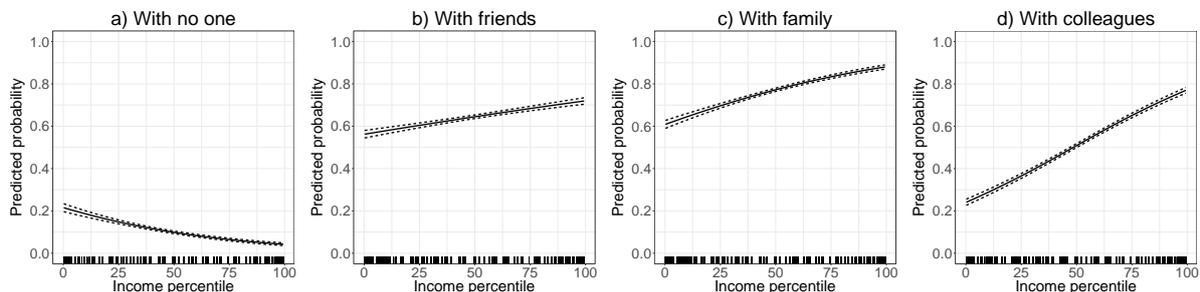
Considering the egalitarianism of the Danish political-economic context, it is surprising that the results are so consistent with economic-elite domination models and that median voter models appear to have no explanatory power. One should think that Denmark's high levels of economic equality and inclusionary institutions would render considerable power to the middle class, but that is not reflected in the results. Thus, if these results reflect disparities in substantive political representation, they are not only democratically disturbing but also theoretically perplexing. Yet as I argue above, and present evidence to the effect below, there is reason to believe that the results reflect informational asymmetries across income classes, as opposed to substantive misrepresentation of majority interests.

## Class, Information, and Heterogeneous Preference Formation

I examine the impact of information by testing the theoretical implications discussed above and illustrated in figure 2. I start with the effect of income on information.

Figure 5 demonstrates that a higher share of the affluent are part of social and work-related networks where politics is discussed. Figure 5a shows that the probability of never taking part in political discussions decreases from around .2 among the poor to .1 in the middle class to .05 among the rich. Income also predicts discussion of economic issues: The probability of discussing economic issues on at least a weekly basis increases from .39 to .53 when moving from low to high income, and the association remains even after controlling for education (results are reported in Web Appendix D). This difference may seem rather small, but even small differences across groups are important as they can have large consequences for results on unequal responsiveness (Elkjær & Iversen, in press).

Figures 5b and 5c confirm that people with lower incomes are less likely to discuss politics in their social networks. Around six out of ten of the poor discuss politics with their friends and family, whereas more than seven out of ten of the affluent discuss politics with their friends and almost nine out of ten with their family. Besides engaging in discussions with their friends and family, the affluent also acquire information as a result of their work-related networks. Figure 5d shows that around one in four of the



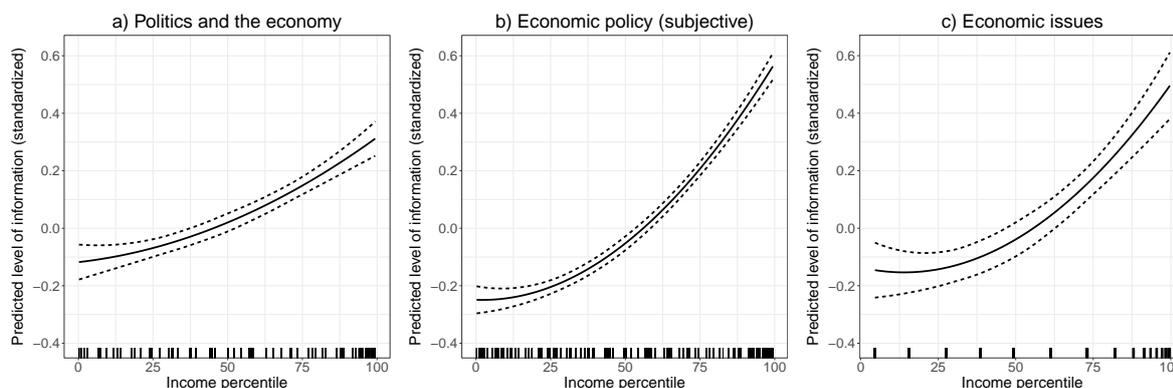
**Figure 5.** The effect of income on the probability of discussing politics.

The predicted probabilities are derived from logistic regressions with income predicting discussion. The models include year fixed effects. In fig. 5a the data are from the Danish Election Surveys 1998-2011,  $n=9,910$ . In fig. 5b and 5c the data are from the Danish Election Surveys 1990-2011,  $n(5b)=12,562$  and  $n(5c)=12,559$ . And in fig. 5d the data are from the 1985-survey and the Danish Election Surveys 1990-2011,  $n=13,305$ .

poor discuss politics with colleagues, whereas politics at work is discussed by about every other person with a median income and almost four out of five of the affluent. Naturally, this is related to the fact that many high paying jobs require intimate knowledge and information about political and economic affairs, and it is thus not very surprising that such topics are highly discussed among the affluent in work-related networks. Overall, figure 5 indicates that information is increasing in income.

In figure 6, I display the association between income and information about political and economic affairs. The level of information is estimated using different surveys in the three subfigures, since not all surveys include questions related to information. In figure 6a, information is captured by correct answers to sets of diverse questions, such as the partisanship of certain politicians, Denmark’s economic development in recent years, the size of spending domains, and so on. These questions capture a general kind of political-economic information, but they do not capture specific information about fiscal policy in its entirety. The figure shows that the affluent are around .3 standard deviations better informed compared to people with a median income and around .4 compared to the poor.

The measures in figures 6b and 6c come closer to capturing specific information about



**Figure 6.** The effect of income on information about economic and political issues.

The estimates are derived from OLS regressions with income and income-squared predicting information. The models predicting information about politics and the economy (fig. 6a) and subjective knowledge about economic policy (fig. 6b) include year fixed effects. In fig. 6a, information is captured by correct answers to questions about political and economic affairs, and the data are from the Danish Election Surveys 2005-2015,  $n=8,072$ . In fig. 6b, the variable measures self-evaluated knowledge about economic policy, and the data are from the Danish Election Surveys 1994-2015,  $n=13,352$ . In fig. 6c, economic information is measured by correct answers to questions about economic issues and the data are from Kalogeropoulos, Albæk, de Vreese, and Van Dalen (2015),  $n=2,270$ . In all cases, the information variable is standardized with mean = 0 and standard deviation = 1.

fiscal policy. Figure 6b displays the effect of income on self-evaluated knowledge of economic policy. The respondents are asked to evaluate the extent to which they understand what politicians are talking about when they discuss economic 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 6c is based on correct answers to four factual questions about current economic affairs. The figure shows that income has only a small effect on economic information at the bottom half of the income distribution, where after information increases rapidly with income. People at the top of the income distribution are about .5 and .6 standard deviations better informed compared to people with a median income and the poor, respectively.

In Web Appendix D, I examine the associations between income, political discussion, and information in a multivariate framework. I find that both income and political discussion have independent effects on political and economic information, also when controlling for education. These findings speak to the robustness of the effect of income on information, and it is entirely consistent with the theoretical argument.

### **Adjustments of Preferences to the State of the Economy**

Given that a higher share of the affluent have high levels of information, we would expect the affluent to have stronger thermostatic and relatively more counter-cyclical spending preferences than the lower and middle classes. And considering the distribution of information across the income groups (fig. 6), we can be even more specific and expect an amplifying effect of income closer to the top of the income distribution.

The unemployment rate is an obvious candidate for proxying the state of the economy. It is probably the most visible feature of the business cycle for most citizens, and indeed, both the rate and risk of unemployment are crucial for explaining preference formation (Blekesaune, 2007; Rehm, 2009). Moreover, unemployment is a regularly used instrument for the preferred level of spending –  $P^*$  in equations (1) and (3) (e.g. Wlezien & Soroka, 2012). I test whether income groups react differently to changes in the economy with the

following regressions:

$$\begin{aligned}
\Delta R_{L,kt} &= \alpha + v_L \Delta U_t + \psi_L \Delta S_{kt} + \varepsilon_{kt}, \\
\Delta R_{M,kt} &= \alpha + v_M \Delta U_t + \psi_M \Delta S_{kt} + \varepsilon_{kt}, \\
\Delta R_{H,kt} &= \alpha + v_H \Delta U_t + \psi_H \Delta S_{kt} + \varepsilon_{kt},
\end{aligned} \tag{7}$$

where changes  $\Delta$  in the preferences  $R$  of income class  $C = \{L, M, H\}$  are regressed on changes in unemployment  $U$  and government spending  $S$ . To reiterate, the theoretical expectation of unemployment is weaker negative or stronger positive effects among higher income groups, i.e.  $v_L < v_M \ll v_H$ . For spending, the expectation is stronger negative effects for those with higher income, i.e.  $\psi_H \ll \psi_M < \psi_L < 0$ . Corroborating evidence of these expectations would imply that estimates of policy responsiveness for higher income groups contain more positive context bias and less negative public responsiveness bias, and thus that better information among more affluent people is causing increasing levels of political representation in income (cf. equations (3) and (4)).

It turns out that the lower and middle classes respond pro-cyclically to the business cycle, whereas the affluent, on average, do not to respond to a changing economy. This is indicated by the results on unemployment in table 2. The results show that the poor

**Table 2.** How Preferences Adjust to the Business Cycle and Government Spending.

	(1)	(2)	(3)	(4)	(5)	(6)
	$\Delta R_L$	$\Delta R_M$	$\Delta R_H$	$\Delta R_L$	$\Delta R_M$	$\Delta R_H$
$\Delta$ Unemployment	-1.93*	-1.36*	-0.08	-1.92*	-1.61*	-0.37
	(0.59)	(0.54)	(0.64)	(0.61)	(0.56)	(0.64)
$\Delta$ Government spending				-1.93	-2.43	-3.95*
				(1.71)	(1.57)	(1.79)
Constant	0.64	-0.12	-0.78	0.66	0.25	-0.16
	(1.11)	(1.02)	(1.19)	(1.14)	(1.05)	(1.19)
N	111	111	111	107	107	107
R-squared	0.09	0.05	0.00	0.09	0.08	0.05

\*  $p < 0.05$ , +  $p < 0.1$ . Standard errors are in parentheses.  $R_L$ ,  $R_M$ ,  $R_H$  denote the preferences of low( $p1$ ), middle( $p50$ ), and high-income( $p99$ ) groups. Unemployment refers to the unemployment rate, as a percentage of the civilian labor force, and the data are from Armingeon et al. (2018). Government spending is mean centered and standardized (one SD) by spending domain.  $\Delta$  is a change operator that varies between 1-4 years. Observations that are more than four years apart are omitted from the models, but including these observations yields substantively similar results (see Web Appendix C).

have the strongest pro-cyclical response, implying an increasing share of citizens in lower-income classes with a household understanding of the economy. The coefficients of the affluent indicate that there is about an equal share of informed and uninformed people in high-income groups. It may seem surprising that not even the affluent express counter-cyclical preferences, but this result is consistent with those of previous studies (e.g. Kölln, 2018). Most importantly, it does not challenge the informational asymmetry argument, because the argument relates to *differences* in information across income groups, not to the absolute *levels*. At the same time, it is important to note that this result is not due to the rich holding more stable preferences, since that is not implied by the argument. As shown in figure 3, there is considerable variation in the preferences of the rich. In fact, the variance in high-income preferences is highest on 11 of the 18 spending domains.

The effect of government spending is negative for all groups as predicted by the thermostatic model, and consistent with the theoretical expectation the affluent express the strongest thermostatic response to spending. This means that the rich more closely adjust their preferences to short-term changes in spending. And it demonstrates that both the negative public responsiveness bias and the positive context bias are at work. The rich generally seem more attentive to current political and economic affairs, and they adjust their preferences more in line with standard macroeconomic government policies.

In Web Appendix C, I test the significance of the differences in income class responses by re-estimating the regressions in table 2 using changes in the preference gap between two income groups as the dependent variable. Those results confirm the above interpretation. While there are no significant differences in responses between the lower and middle classes, the thermostatic and counter-cyclical responses of the affluent are significantly stronger than those of the lower-income groups (but  $p < .1$  for the difference in thermostatic response between  $M$  and  $H$ ).

In sum, the affluent have preferences that are more in line with standard stabilizing fiscal policies (yielding more positive context bias), their thermostatic response is stronger (yielding less negative public responsiveness bias), and they have more realistic expectations about spending in the form of more balanced preferences compared to lower-

income classes (yielding less negative measurement error bias). And in striking similarity with the effects of income on responsiveness and information, the effects of income on responses to the business cycle and spending are amplifying at the top of the income distribution. Unequal policy responsiveness in Denmark thus appears to reflect disparities in information across income groups, as opposed to substantive overrepresentation of the interests of the rich.

## Conclusion

This paper has sought to disentangle the theoretical puzzle of severe unequal representation in advanced democracies by studying the pathway case of economic policy-making in Denmark. In striking similarity to previous studies in both the U.S. and Europe, the analysis shows that political representation increases monotonically with income. But whereas this pattern might be consistent with the role of money in politics in the U.S., it is wholly inconsistent with structural features of the Danish political system. Disparities in political participation are small in Denmark, and the results are identical when examining voter preferences (see Web Appendix C), indicating that differences in turnout is not the driver. The slight upper middle-class bias in descriptive representation in the Danish parliament does not comport with the observed pattern of economic-elite domination. And this pattern can hardly be explained by inequalities in interest organization either, given that both labor and business interests are highly organized (Hall & Soskice, 2001). Moreover, political donations play only a small role in Danish politics, since parties are financed by the state. But how then, is one to account for the observed inequality in responsiveness?

Following Elkjær and Iversen (in press), I have argued that the underlying mechanism of unequal responsiveness is disparities in information across income classes. Rising information levels in income implies that citizens in high-income groups have preferences that better reflect current economic and political circumstances. Accordingly, when governments pursue standard macroeconomic policies, such as stabilizing fiscal policies, these short-term policy changes more closely reflect the preferences of high-income groups. But

the bias is coincidental, driven by better information, rather than a substantive overrepresentation of the interests of the rich. The similar, amplifying effects of income on (i) responsiveness, (ii) information, and (iii) cyclical and thermostatic responses to spending are fully consistent with implications of this informational asymmetry argument.

How do the results generalize to other contexts? The great advantage of the Danish case is that although structural biases are not completely absent, they are small enough to be ruled out as possible drivers of patterns of unequal representation similar to those found in the U.S. and elsewhere in Europe. That a similar pattern of unequal representation, nonetheless, is found in Denmark and that this finding appears to be driven by informational asymmetries – which are present in any democracy – suggests that informational asymmetries, at least partially, may explain the strikingly similar findings of economic-elite domination across advanced democracies (cf. Gerring, 2007). Substantive political representation could be much more equal than indicated by the current literature (see Elkjær & Iversen, in press).

Yet, the results do not imply that political representation is completely equal. One limitation of this study, and generally of studies of this kind, is that it is hard to make precise statements about the equality of substantive political representation, given the impact information has on responsiveness. Middle-class preferences should generally be highly influential, since the middle class has a favorable bargaining position at the center. Whether policies also reflect the interests of other economic classes depends on political alliances. The tendency of more center-right governments in recent decades could be an indication that the middle class increasingly seeks to ally with the rich, which could leave the poor out of influence. Only by taking seriously the challenges that asymmetries in information pose, can we provide clear answers to such conjectures. A promising avenue for future research, therefore, is to find ways to separate the impact of information from that of structural biases of contemporary, capitalist democracies when assessing the equality of political representation.

## References

- Achen, C. H. (1978). Measuring Representation. *American Journal of Political Science*, 22, 475–510.
- Armingeon, K., Wenger, V., Wiedemeier, F., Isler, C., Knöpfel, L., Weisstanner, D., & Engler, S. (2018). *Comparative Political Data Set 1960-2016*. Bern: Institute of Political Science, University of Berne.
- Bartels, L. M. (2008). *Unequal Democracy: The Political Economy of the New Gilded Age*. New York and Princeton: Russell Sage Foundation and Princeton University Press.
- Bartels, L. M. (2017). *Political Inequality in Affluent Democracies: The Social Welfare Deficit*. Working Paper 5-2017, Research Concentration: Elections and Electoral Rules, Vanderbilt University. Retrieved from [https://www.vanderbilt.edu/csdi/includes/Working\\_Paper\\_5-2017.pdf](https://www.vanderbilt.edu/csdi/includes/Working_Paper_5-2017.pdf)
- Bashir, O. S. (2015). Testing Inferences about American Politics: A Review of the "Oligarchy" Result. *Research & Politics*, 2, 1–7.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529.
- Bernauer, J., Giger, N., & Rosset, J. (2015). Mind the gap: Do proportional electoral systems foster a more equal representation of women and men, poor and rich? *International Political Science Review*, 36, 79–98.
- Best, H. (2007). New Challenges, New Elites? Changes in the Recruitment and Career Patterns of European Representative Elites. *Comparative Sociology*, 85–113.
- Bhatti, Y., & Erikson, R. (2011). How Poorly Are the Poor Represented in the U.S. Senate? In P. K. Enns & C. Wlezien (Eds.), *Who gets represented?* (pp. 223–246). New York: Russell Sage Foundation.
- Blekesaune, M. (2007). Economic conditions and public attitudes to welfare policies. *European Sociological Review*, 23, 393–403.
- Bonica, A., McCarty, N., Poole, K. T., & Rosenthal, H. (2013). Why Hasn't Democracy

- Slowed Rising Inequality? *Journal of Economic Perspectives*, 27, 103–124.
- Branham, J. A., Soroka, S. N., & Wlezien, C. (2017). When do the Rich Win? *Political Science Quarterly*, 132, 43–62.
- Broockman, D. E., & Butler, D. M. (2017). The Causal Effects of Elite Position-Taking on Voter Attitudes: Field Experiments with Elite Communication. *American Journal of Political Science*, 61(1), 208–221.
- Brooks, C., & Manza, J. (2006). Why do welfare states persist? *Journal of Politics*, 68(4), 816–827.
- Carnes, N. (2013). *White-Collar Government: The Hidden Role of Class in Economic Policy Making*. Chicago: The University of Chicago Press.
- Dahl, R. A. (1971). *Polyarchy: Participation and Opposition*. New Haven, CT: Yale University Press.
- Dahl, R. A. (2006). *On Political Equality*. New Haven & London: Yale University Press.
- Darby, J., & Melitz, J. (2008). Social spending and automatic stabilizers in the OECD. *Economic Policy*, 715–756.
- Dolls, M., Fuest, C., & Peichl, A. (2012). Automatic stabilizers and economic crisis: US vs. Europe. *Journal of Public Economics*, 96, 279–294.
- Downs, A. (1957). *An Economic Theory of Democracy*. New York: Harper.
- Elkjær, M. A., & Iversen, T. (in press). The Political Representation of Economic Interests: Subversion of Democracy or Middle-Class Supremacy? *World Politics*.
- Elsässer, L., Hense, S., & Schäfer, A. (2018). *Government of the people, by the elite, for the rich: Unequal responsiveness in an unlikely case*. MPIfG Discussion Paper 18/5. Retrieved from [http://www.mpifg.de/pu/mpifg\\_dp/2018/dp18-5.pdf](http://www.mpifg.de/pu/mpifg_dp/2018/dp18-5.pdf)
- Enns, P. K. (2015). Relative Policy Support and Coincidental Representation. *Perspectives on Politics*, 13, 1053–1064.
- Enns, P. K., & Wlezien, C. (2011). *Who Gets Represented?* New York: Russell Sage Foundation.
- Erikson, R. S. (2015). Income Inequality and Policy Responsiveness. *Annual Review of Political Science*, 18, 11–29.

- Gerring, J. (2007). Is There a (Viable) Crucial-Case Method? *Comparative Political Studies*, 40, 231–253.
- Gilens, M. (2009). Preference gaps and inequality in representation. *PS: Political Science & Politics*, 42, 335–341.
- Gilens, M. (2012). *Affluence and Influence: Economic Inequality and Political Power in America*. New York and Princeton: Russell Sage Foundation and Princeton University Press.
- Gilens, M. (2015). The Insufficiency of Democracy by Coincidence: A Response to Peter K. Enns. *Perspectives on Politics*, 13, 1065–1071.
- Gilens, M., & Page, B. I. (2014). Testing Theories of American Politics: Elites, Interest Groups, and Average Citizens. *Perspectives on Politics*, 12, 564–581.
- Hall, P. A., & Soskice, D. (2001). *Varieties of Capitalism. The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.
- Hobolt, S. B., & Klemmensen, R. (2008). Government Responsiveness and Political Competition in Comparative Perspective. *Comparative Political Studies*, 41, 309–337.
- Huber, E., & Stephens, J. (2001). *Development and Crisis of the Welfare State: Parties and Politics in Global Markets*. Chicago: University of Chicago Press.
- Iversen, T., & Soskice, D. (2006). Electoral Institutions and the Politics of Coalitions: Why Some Democracies Redistribute More Than Others. *American Political Science Review*, 100, 165–181.
- Iversen, T., & Soskice, D. (2009). Distribution and Redistribution: The Shadow of the Nineteenth Century. *World Politics*, 61, 438–486.
- Iversen, T., & Soskice, D. (2015). Information, Inequality, and Mass Polarization: Ideology in Advanced Democracies. *Comparative Political Studies*, 48, 1781–1813.
- Justitsministeriet. (2015). *Betænkning om åbenhed om økonomisk støtte til politiske partier – Betænkning nr. 1550*. Retrieved from <http://www.justitsministeriet.dk/sites/default/files/media/Pressemeddelelser/pdf/2015/Betaenkning%20Partistoetteudvalg.pdf>

- Kalogeropoulos, A., Albæk, E., de Vreese, C. H., & Van Dalen, A. (2015). The predictors of economic sophistication: Media, interpersonal communication and negative economic experiences. *European Journal of Communication*, *30*, 385–403.
- Kitschelt, H. (2000). Linkages Between Citizens and Politicians in Democratic Polities. *Comparative Political Studies*, *33*, 845–879.
- Kjær, U., & Pedersen, M. N. (2004). *De danske folketingsmedlemmer - en parlamentarisk elite og dens rekruttering, cirkulation og transformation 1849-2001*. Aarhus: Aarhus Universitetsforlag.
- Kölln, A. K. (2018). Political sophistication affects how citizens' social policy preferences respond to the economy. *West European Politics*, *41*, 196–217.
- Koß, M. (2010). *The Politics of Party Funding: State Funding to Political Parties and Party Competition in Western Europe*. Oxford: Oxford University Press.
- Larcinese, V. (2005). Electoral competition and redistribution with rationally informed voters. *Contributions to Economic Analysis and Policy*, *4*, 1–26.
- Lewis-Beck, M. S., & Paldam, M. (2000). Economic Voting: An Introduction. *Electoral Studies*, *19*, 113–21.
- Lijphart, A. (2012). *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries* (2. ed.). New Haven & London: Yale University Press.
- Luskin, R. C. (1987). Measuring Political Sophistication. *American Journal of Political Science*, *31*, 856–899.
- McPherson, M., Smith-Lovin, L., & Cook, J. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, *27*, 415–444.
- OECD. (2011). *Divided we stand: Why inequality keeps rising*. OECD Publishing.
- Page, B. I., & Shapiro, R. Y. (1992). *The Rational Public: Fifty Years of Trends in Americans' Policy Preferences*. Chicago: Chicago University Press.
- Peters, Y., & Ensink, S. J. (2015). Differential Responsiveness in Europe: The Effects of Preference Difference and Electoral Participation. *West European Politics*, *38*, 577–600.
- Powell Jr., G. B. (2000). *Elections as Instruments of Democracy: Majoritarian and*

- Proportional Visions*. New Haven & London: Yale University Press.
- Rasmussen, A., Reher, S., & Toshkov, D. (2019). The opinion-policy nexus in Europe and the role of political institutions. *European Journal of Political Research*, 58(2), 412–434.
- Rehm, P. (2009). Risks and Redistribution. An Individual-Level Analysis. *Comparative Political Studies*, 42, 855–879.
- Rigby, E., & Wright, G. C. (2013). Political Parties and Representation of the Poor in the American States. *American Journal of Political Science*, 57, 552–565.
- Rommetvedt, H., Thesen, G., Christiansen, P. M., & Norgaard, A. S. (2013). Coping With Corporatism in Decline and the Revival of Parliament: Interest Group Lobbyism in Denmark and Norway, 1980-2005. *Comparative Political Studies*, 46, 457–485.
- Rosset, J., Giger, N., & Bernauer, J. (2013). More Money, Fewer Problems? Cross-Level Effects of Economic Deprivation on Political Representation. *West European Politics*, 36, 817–835.
- Schakel, W. (in press). Unequal policy responsiveness in the Netherlands. *Socio-Economic Review*, 1–21.
- Schlozman, K. L., Verba, S., & Brady, H. E. (2012). *The Unheavenly Chorus: Unequal Political Voice and the Broken Promise of American Democracy*. Princeton: Princeton University Press.
- Scruggs, L., Jahn, D., & Kuitto, K. (2014). *Comparative Welfare Entitlements Dataset 2. Version 2014-03*. University of Connecticut & University of Greifswald.
- Soroka, S. N., & Wlezien, C. (2008). On the Limits to Inequality in Representation. *PS: Political Science & Politics*, 41, 319–327.
- Soroka, S. N., & Wlezien, C. (2010). *Degrees of Democracy. Politics, Public Opinion, and Policy*. New York: Cambridge University Press.
- Stimson, J. A. (2011). The Issues of Representation. In P. K. Enns & C. Wlezien (Eds.), *Who gets represented?* (pp. 347–360). New York: Russell Sage Foundation.
- Strom, K. (1990). *Minority Government and Majority Rule*. Cambridge: Cambridge

University Press.

Ura, J. D., & Ellis, C. R. (2008). Income, Preferences, and the Dynamics of Policy Responsiveness. *PS: Political Science & Politics*, 41.

Wlezien, C. (1995). The Public as Thermostat: Dynamics of Preferences for Spending. *American Journal of Political Science*, 39, 981–1000.

Wlezien, C., & Soroka, S. N. (2011). Inequality in Policy Responsiveness? In P. K. Enns & C. Wlezien (Eds.), *Who gets represented?* (pp. 285–310). New York: Russell Sage Foundation.

Wlezien, C., & Soroka, S. N. (2012). Political Institutions and the Opinion–Policy Link. *West European Politics*, 35, 1407–1432.

Zaller, J. (1992). *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge University Press.