Dimensions of Economic Voting[*]

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Abstract

Economic voting theory suggests that voters reward incumbents for strong economic performance and punish them for weak outcomes. However, this view often ignores the multidimensional nature of economic factors and their varied effects on different voter groups. This study explores how citizens evaluate four economic dimensions: growth, unemployment, the stock market, and inflation. We introduce a theoretical framework with four levels of economic reasoning: macroeconomic, egotropic, sociotropic, and distributive. Our analysis examines how these factors shape voting behavior and policy preferences.

We first use descriptive data from OECD countries to understand the economy's perceived dimensionality from the voter's perspective. Next, we analyze survey data from national election studies to assess how growth, unemployment, and inflation influence economic evaluations and voting behavior. Finally, we present findings from survey experiments conducted in Germany, Sweden, and the United States.

Our results reveal two main insights: (1) voters can discern interactions between economic dimensions and their effects on personal finances, the national economy, and distributional outcomes; (2) responses to these economic factors differ significantly across voter groups. These findings highlight the complexity of economic voting.

Introduction

Economic voting has garnered substantial attention in political science research (Erikson, MacKuen and Stimson 2002; Fiorina 1981; Kinder and Kiewiet 1981; Duch and Stevenson 2006; Lewis-Beck and Paldam 2000). Despite this focus, the field remains theoretically underdeveloped, with standard empirical analyses relying on imperfect data (cf. Healy, Persson and Snowberg 2017). A central problem, which we address in this paper, is the field's concentration on an oversimplified conception of 'the economy' (cf. Ansolabehere, Meredith and Snowberg 2014). Conventional wisdom holds that voters reward incumbent parties when the economy is good and punish them when it is bad (Lewis-Beck and Nadeau 2011). However, the economy comprises multiple dimensions, such as economic growth, inflation, unemployment, and stock market development, and it is far from obvious that different socio-economic groups perceive the economy uniformly or benefit equally from changes across these dimensions (Hibbs 1977).

Our study aims to disaggregate various aspects of the macro-economy and examine how they relate to retrospective evaluations and voting behavior. We develop a theoretical framework encompassing four types of economic reasoning. First, we study whether citizens can make judgments about 'what goes with what' (macroeconomic reasoning). Second, we examine how different macroeconomic dimensions affect citizens' evaluations of personal finances (egotropic reasoning) and the general national economy (sociotropic reasoning). Third, we investigate how the macroeconomic dimensions impact citizens beliefs about whether different socio-economic groups in society hurt or benefit from the development (distributive reasoning). Furthermore, we explore how these considerations influence vote choice and preferences for economic policies. Lastly, we study heterogeneous effects, examining whether different groups of citizens react differently to various dimensions of the macro-economy. Through this analysis, we seek to contribute to the discussion on citizens reasoning about the economy, and how this reasoning affects vote choice and considerations about economic policies.

Empirically, we first use descriptive data from OECD countries to assess the dimensionality of the economy from the voter perspective. Subsequently, we analyze survey data from comparative national election studies to test how growth, unemployment, and inflation affect economic evalu-

ations and voting decisions. After exhausting the observational historical data, we conclude that existing observational data lacks the necessary variation to identify the effects of different economic dimensions. This leads to the main part of the paper, in which we report results from a series of survey experiments where we manipulate changes in growth, unemployment, inflation, and the stock market, and measure citizens' reactions. Using these data, we attempt to paint a more comprehensive picture of the impact of macroeconomic dimensions and understand their heterogeneous effects on different groups of citizens.

Our findings reveal two key insights. First, voters can indeed assess interactions between economic dimensions and their impacts on personal finances, the national economy, and distributive outcomes. Second, we observe heterogeneous reactions to these economic dimensions across different citizen groups. These results underscore the complexity of economic voting and suggest important implications for our understanding of democratic accountability and economic policy-making.

Economic Voting

Common wisdom in the literature on economic voting suggests that negative government performance reduces the chances of re-election for incumbents, while positive performance is rewarded (Campbell et al. 1960; Hibbs 1977). Early studies established that incumbents are less likely to win elections if the economy is not performing well, often measured by macro-level indicators such as unemployment, inflation, and economic growth rates (Campbell et al. 1960; Kramer 1971; Hibbs 1977; Hibbs, Rivers and Vasilatos 1982). Overall, research suggested that voting behavior is most affected by unemployment and growth (Powell and Whitten 1993; Fidrmuc 2000), with Chappell and Gonçalves Veiga (2000) being one of the few studies citing inflation as the most important factor driving economic voting. This research not only established that economic performance affects voting but also showed that this holds across various political systems and countries.

While early research acknowledged the multi-dimensional nature of the economy and their potential heterogeneous effects on different voter groups, more recent research is less concerned with investigating these differences, and instead focuses more strongly on voters' ability to react to economic signals more generally.

To this extent, much of the recent literature suggests that voters are not very sophisticated and 'punish' politicians for bad events in general. Economic development is one area where voters tend to retrospectively punish the government for poor performance. Influential scholars argue that voters appear to be myopic, responding primarily to the election-year economy. Hence, they perform a relatively primitive form of retrospective voting, diffusely reacting to past events (Achen and Bartels 2016).

However, a vast body of research suggests that rather than voters' limited sophistication, institutional factors might hinder effective economic voting, as voters need to identify whom to blame or reward for economic performance through clarity of responsibility (Powell and Whitten 1993; Hellwig and Samuels 2008; Dassonneville and Lewis-Beck 2017; Royed, Leyden and Borrelli 2000). Clarity of responsibility stems from both, the current composition of government (i.e., strength of the government and single-party vs. coalition government) and the institutional setup, with a stronger effect attributed to the composition of government (Debus, Stegmaier and Tosun 2014; Royed, Leyden and Borrelli 2000). Majority and single-party governments allow for clearer blame assignment (Nadeau, Niemi and Yoshinaka 2002), while party systems with multiple parties increase the number of viable alternatives that voters can choose from (Anderson 2000; Royed, Leyden and Borrelli 2000). Adding to this line of inquiry, experimental evidence by Healy and Lenz (2014) suggests that voters might not be very unsophisticated. The apparent myopia may not be a deficiency of voters but rather of the information environment. Voters actually use the economic vote in a meaningful way if they have the necessary information available, such as information on cumulative growth during a term. Moreover, Healy, Persson and Snowberg (2017) show that when using real disposable income data, voters do not appear to be myopic but rather give equal weight to economic developments throughout the entire government term.

Myopia is, of course, only one aspect of the economic vote. Another line of investigation in the economic voting literature has been preoccupied with the distinction between sociotropic (caring about the state of the national economy) and egotropic (personal economic) considerations. Survey-based research largely argues that voters are sociotropic in their voting considerations, evaluating the state of the national economy rather than their personal economic situation, and doing so retrospectively rather than prospectively (Fiorina 1981; Kiewiet and Lewis-Beck 2011; Kinder and

Kiewiet 1981; Singer and Carlin 2013).

Much of the research on sociotropic and egotropic voting relies on survey questions that ask respondents to evaluate 'the state of the national economy' or 'their personal economy.' These questions generally do not refer to specific aspects of the economy, but rather to the economy as a whole, disregarding the fact that different aspects of the economy affect individuals differently based on various factors. Examples of such questions include: "Would you say that over the past year the nation's economy has gotten better, stayed the same, or gotten worse?" and "We are interested in how people are getting along financially these days. Would you say that you are better off, worse off, or just about the same financially as you were a year ago?" as included in the ANES survey.

Recent research has started to pull the strong reliance on survey data into question, as it does not adequately capture sociotropic and pocketbook voting. Instead, it shows that sociotropic considerations matter when taking into account the economic situation of respondents (Healy, Persson and Snowberg 2017). Moreover, more informed voters are assumed to hold more accurate views of the economy and to rely more strongly on economic performance as a basis for their voting decisions (Duch, Palmer and Anderson 2000; de Vries and Giger 2014; Gomez and Wilson 2006).

The research field does not entirely neglect the idea that different dimensions of the economy might have heterogeneous effects. Although the notion that different groups in society have distinct macroeconomic preferences was established by Hibbs (1979), until recently, few studies explicitly investigated the effect of class belonging on economic voting. Hibbs (1979) found that blue-collar workers are more sensitive to increases in unemployment, as they are more exposed to the risk of becoming unemployed themselves. White-collar workers react more strongly to changes in inflation, as increases in inflation would devalue their savings and investments (cf. also Hibbs, Rivers and Vasilatos 1982; Hibbs and Vasilatos 1982).

More recently, Lewis-Beck and Nadeau (2011) and Lewis-Beck and Martini (2020) find that the objective macroeconomic situation, specifically growth rates and the consumer price index, affect the evaluation of the economy. Fossati (2014) argues that individual-level risk exposure to unemployment moderates the effect between macroeconomic performance and incumbent voting. This aligns with the finding by Singer (2011) that unemployed individuals are more likely to perceive the economy as a salient issue for their voting decision. Moreover, Bojar and Vlandas (2021)

show that social groups are affected differently by various dimensions of economic performance. Specifically, they demonstrate that unskilled workers are more affected by levels of unemployment than others, that pensioners react more strongly to inflation, and that the stock market affects higher-income citizens but does not affect low-income citizens. They concluded that "governments might not be effectively penalized for poor economic performance in some dimensions, even in a well-functioning democracy, if this does not primarily affect powerful social groups" (p. 542).

While these studies constitute a major contribution to our knowledge, there are limits to what we can learn about the sophistication of economic voting for at least two reasons. First, observational studies face important measurement problems. Even if survey response data and macroeconomic indicators are available and comparable, these data lack information on what information about the economy voters were actually exposed to. If citizens are predominantly exposed to a single aspect of the economy, such as the growth rate, we might conclude that voters lack economic sophistication when it is actually the information environment that induces homogeneity in their response.

Moreover, the different dimensions of the macro-economy are entwined in a complicated causal structure, which heightens the risk of model misspecification and ecological fallacies (Kramer 1983). Suppose, for example, that high growth decreases unemployment and that both variables affect the economic vote. Including both growth and unemployment would then violate the backdoor criterion, biasing the estimated effect of growth on the economic vote. Furthermore, even if we had a structural model of the different aspects of the macroeconomy, the proper econometric modeling of this would be hindered by the infrequent measurement of the macroeconomy and voters' evaluations of it. In addition, by including all four indicators of the macro-economy in the same linear model, we must assume that these variables are causally independent of each other for the effects of these indicators to be identified, which they are obviously not in historical data.

We build on the insights from previous literature and further test the assumptions regarding the dimensionality of the economy using existing observational data and experimental methods. Experiments have the added benefit of illuminating how voters reason and can be used to study the different steps in the cognitive process dealing with the information. But before turning to the empirics, we will develop the framework of four levels of voting sophistication.

Four Levels of Economic Vote Sophistication

The conventional wisdom in the literature is that economic performance is a strong predictor of incumbent voting. To some extent, voters have sociotropic considerations about the economy that appear to be affected by the macro-economy. In turn, these considerations affect vote choice. Most of the literature has relied on this rather simplistic view of how the macro-economy drives voters' evaluations. As a matter of fact, which dimensions of the macroeconomy that is driving perceptions of 'good economic performance' in the views of the voters remains a black box. So, while we know that economic performance is a strong predictor of incumbent voting, we know less about the underlying mechanisms. Is economic voting merely blind accountability, or can voters connect different aspects of the macro-economy to their own well-being and the well-being of other groups in society?

We present a framework that distinguishes between four levels of sophistication for the economic vote. The framework presents four steps of economic reasoning: from being able to understand 'what goes with what' in the economy, to making inferences about how it affects one's own economy, and further to being able to reason about how economic indicators affect the national economy and different socio-economic groups.

Macroeconomic Reasoning

We call the first level *macroeconomic reasoning*. Voters at this level can infer "what goes with what" in the macroeconomy. They understand how different economic dimensions are interrelated and how each dimension impacts the overall economy. For instance, they recognize that low unemployment often accompanies strong economic growth, positive stock market performance, and low inflation.

With this understanding, voters may cast an "economic vote" that ranges from unsophisticated, mindless retrospective voting (Achen and Bartels 2016), to more nuanced evaluations. In the unsophisticated form, voters blame politicians for negative economic events without distinguishing which aspects of the macro-economy affect their welfare. While this heuristic can incentivize incumbents to improve overall economic conditions, it may not ensure that voters select candidates who prioritize the economic dimensions most relevant to them (Mansbridge 2009).

Egotropic Reasoning

Existing research suggests that voters can engage in more sophisticated economic reasoning. Bojar and Vlandas (2021) show that voters weigh personally relevant macroeconomic indicators more heavily. We term this second level *egotropic reasoning*, a form of reasoning under which voters assess how different economic aspects affect them directly and prioritize those that impact their personal welfare (Hibbs 1977). This self-aware economic voting incentivizes incumbents to target specific macroeconomic improvements beneficial to individual voters.

Although some literature suggests sociotropic considerations outweigh egotropic ones, recent research indicates this may be a statistical artifact due to imperfect data. Ignoring personal economic considerations seems counterintuitive, as voters naturally care about their circumstances and find personal economic information easier to obtain. As Fiorina (1981, p. 5) notes, "In order to ascertain whether the incumbents have performed poorly or well, citizens need only calculate the changes in their own welfare." However, voters focusing solely on egotropic reasoning may lack broader economic insights.

Sociotropic Reasoning

The third level is *sociotropic reasoning*. These voters, like self-aware egotropic voters, consider their personal economic situation but also systematically evaluate the national economy. They reason about how macroeconomic conditions affect both themselves and the broader society. Extensive literature highlights the importance voters place on the national economy (Kiewiet and Lewis-Beck 2011; Kinder and Kiewiet 1979; Lewis-Beck and Stegmaier 2000). Explanations include voters' concern for the common good and the national economy serving as a clear signal influencing voting behavior (Lewin 1991; Ansolabehere, Meredith and Snowberg 2014; Elinder, Jordahl and Poutvaara 2015; Peltzman 1990).

Distributive Reasoning

The fourth level is *distributive reasoning*. Voters at this level engage in all previous forms of reasoning and also consider how different economic aspects affect various socio-economic groups. This

sophisticated reasoning is crucial for voters incorporating inequality concerns into their economic vote. Such voters can incentivize incumbents to adopt policies benefiting their group, even at the expense of others. Our categorization expands beyond the traditional sociotropic and egotropic distinction. Sophisticated voters intertwine personal and societal considerations, evaluating how economic developments affect their position and others. Whether voters can engage in this level of reasoning remains an open question in the literature.
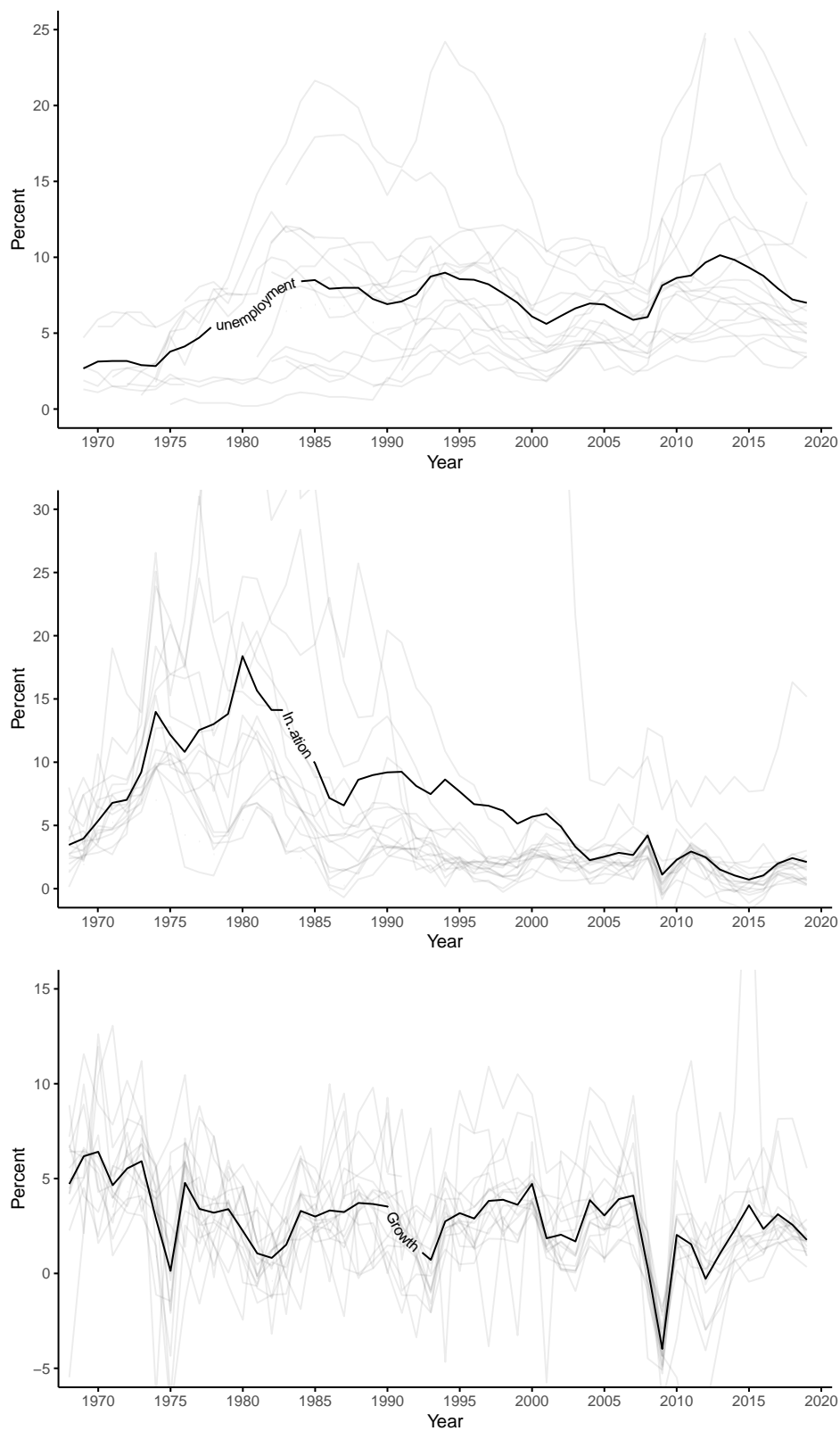
Empirical Background: One Economy?

In a methodological critique of the economic voting literature, Kramer (1983) pointed out that, in any cross-section of the economy, variation in economic perceptions will be dominated by error and idiosyncrasies. This is because, at any fixed time-point, there is, in a sense, only *one* economy, and any variation in individual perceptions of this economy must therefore originate from the individual voter. We believe, however, that in any cross-section of the economy, there may still be meaningful cross-sectional variation in economic perceptions, either because voters are not perfectly informed about the economy or because voters give different weight to different aspects of the economy. Further, this variation need not be idiosyncratic in any way, but may, for instance, largely be determined by the macro-economic exposure of the individual.

To substantiate our argument that the macro-economy is not a single dimension, we examine the trajectories and associations of inflation, growth, and unemployment in 20 OECD countries between 1970 and 2020.[1] We approach this analysis from the perspective of the voter rather than the macroeconomist. That is, our purpose is not to provide a "true" or structural model of the macro-economy, but instead to use the simplest models possible to approximate the inferences a sophisticated voter could make about the economy under imperfect information.

Figure 1 shows, in black, the average development of unemployment, growth, and inflation over the last decades (there is a lack of country-comparable measures of the stock market for the same time period, so we plot only these three dimensions here). It is evident that they do not develop

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[1]The countries included are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States.

Figure 1: Development of inflation, growth and unemployment in OECD countries

in tandem. Inflation experienced high levels during the 1970s, whereas levels have been fairly low until 2020. Growth has fluctuated between zero and five percent, with significant drops in the 1970s and during the financial crisis of 2008. Meanwhile, unemployment has been on the rise since the 1970s (albeit with some declines in the late 1990s and 2010s). The shaded gray lines indicate the trajectories of individual countries and show considerable variation between countries. For inflation and unemployment, some countries are extreme outliers with very high or low levels. For economic growth, the development of countries is more similar, but still with large variation.

The figure suggests that while growth and inflation moved largely together until the early 2000s, the relationship between growth and inflation became more muddled after the turn of the century. Unemployment, however, continues to move together with growth and inflation. The suspicion that the dimensions of the macro-economy are not necessarily developing together is confirmed when taking a closer look at their relationship in Figure 2. The figure shows coefficients from a series of simple regression models, where we regress the change in unemployment and inflation, respectively, on the lagged change in GDP growth. To mimic the voter's inference problem, we perform one regression per country and outcome variable, without using any pooling to reduce noise and increase efficiency. Shading shows the level of explained variation. The figure shows that, in general, increased GDP growth is associated with decreased unemployment and increased inflation. This is nothing new, of course, but it still shows that voters with heterogeneous preferences over unemployment and inflation may end up prospectively evaluating an economy very differently based on the change in the growth rate. However, the figure also shows that the association between these variables is far from one-to-one. This simple model explains about 20% of the variation in the change in unemployment and inflation. In many countries, such as for unemployment in Norway and inflation in the Netherlands, the associations are very weak, and the change in GDP offers little insight into how these variables will develop over time. Thus, it is clear that dimensions of the economy do not necessarily move in tandem, and that the macro-economy may develop in a way which enables voters, who differ in their macro-economic exposure, to substantially differ in their macro-economic evaluations for good reason.

While this does lend weight to our argument that not all economic indicators develop in tandem,

Figure 2: Association between GDP Growth and (A) Unemployment and (B) Inflation
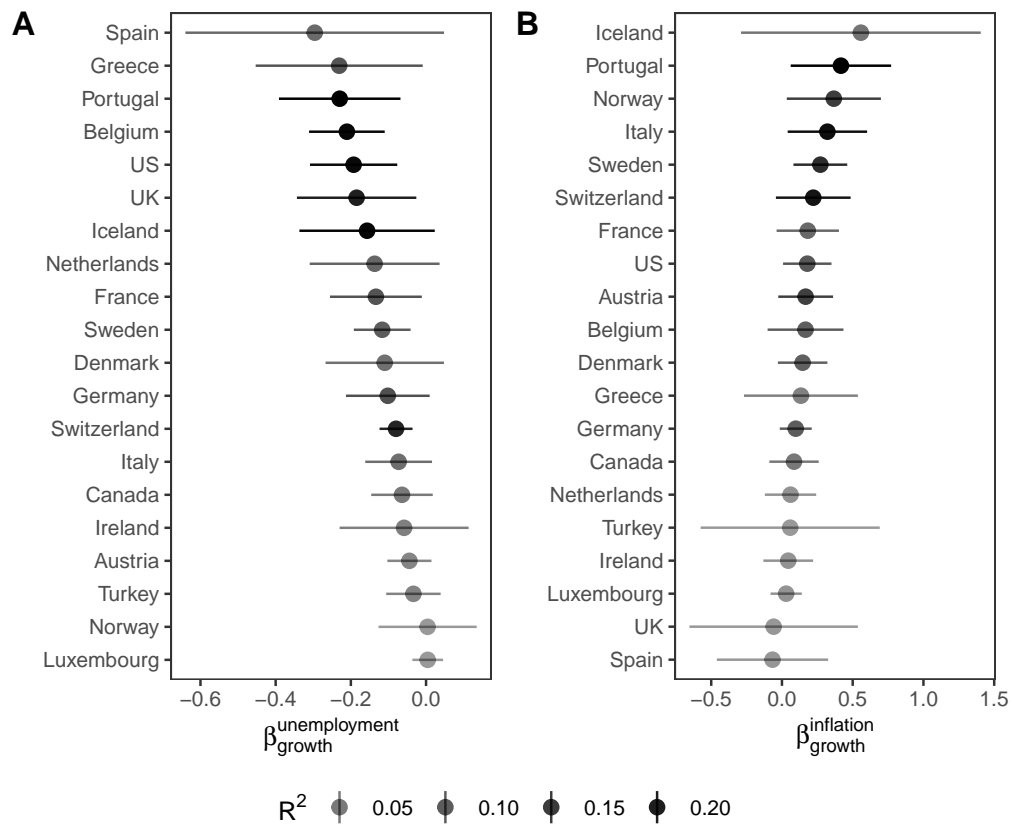
Notes: Coefficients from regressing first differences of unemployment and inflation on growth separately for each country and outcome variable. Bars indicate 95%-confidence intervals

and thus, individuals at least have the possibility to perceive the economy differently, it still remains an open question which aspect of the economy voters focus on in their evaluation and whether different income groups value the dimensions of the economy in different ways.

Observational Evidence of Heterogeneity in Economic Evaluations

Let us see how far observational data can take us when it comes to answering our questions regarding how the dimensions of the economy affect economic reasoning and economic voting. To get variation in the economic dimensions combined with electoral data, we turn to the Comparative Study of Electoral Systems (CSES). Using these data, we examine two dependent variables: economic evaluations of the national economy and voting for the incumbent. We evaluate the effect of individual-level income in addition to inflation rate, GDP growth, and unemployment rate (while we again lack comparable data for the stock market).

To better understand which dimensions of the economy matter for people's evaluations, we regressed sociotropic evaluations of the economy during the last 12 months on the three macro-economic indicators together with controls for income, age, and gender (using multilevel models at the country level, with fixed effects for election year). The results for the full sample are presented in the leftmost column in Table 1. Both personal economy and the macro-economic indicators—growth, inflation, and unemployment—contribute to sociotropic economic evaluations. Higher personal income and national growth contribute positively, while inflation and unemployment contribute negatively. The five rightmost columns report results from regressions estimated separately in the five income groups. The results show that the estimate for growth is about twice as large in the high-income group as in the low-income group, whereas unemployment matters more in low-income groups than in high-income groups. The coefficient for inflation is negative in all groups.

Tables 2 and 3 show the results of similar models regressed on individual-level voting for left- and right-wing governments separately. As expected, personal income is positively associated with voting for incumbent leftist governments and negatively associated with voting for rightist incumbent parties. GDP growth is positively associated with voting for both left- and right-wing governments

Table 1: The relationship between macro-economic evaluations and economic indicators.

	All Income Groups	Lowest Income Quintile	Second Income Quintile	Third Income Quintile	Fourth Income Quintile	Highest Income Quintile
Income	0.023***					
	(0.00)					
Inflation	-0.005***	-0.008***	-0.005***	-0.002	-0.006***	-0.009***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
GDP Growth	0.019***	0.015***	0.016***	0.014***	0.028***	0.029***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Unemployment	-0.001*	-0.003**	-0.001	-0.003**	-0.002	0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
N	76,515	14,888	16,234	16,477	14,830	14,086
Countries	30	30	30	30	30	30
Log restricted-likelihood	-26494.28	-5165.20	-5701.38	-5678.34	-5061.89	-5053.20

Notes: * denote statistical significance at the 10%. ** denote statistical significance at the 5%, *** denote statistical significance at the 1% level. Entries are from multilevel regression models with countries as levels and with fixed effects for year. The dependent variable is evaluations of the national economy during the last 12 months. The models include controls for age and gender.

in all income groups. The results for inflation and unemployment are less straightforward. Inflation is negatively associated with voting for both left and right governments. While the estimates for unemployment are small, it seems to be somewhat more negatively associated with voting for left-wing parties.

These results provide some evidence that several economic dimensions contribute to sociotropic evaluations and have heterogeneous effects on voting. However, existing observational data lack survey items that allow us to fully answer our questions about different kinds of economic reasoning, and what dimension of the economy voters consider when being asked about the state of the economy. Additionally, the analyses presented have low power, and the historic period under study offers only a limited set of combinations of the economic dimensions. Moreover, it is challenging to disentangle the economic dimensions from country-specific factors within this limited set of countries. Observations from historic reality do not bring us further, so we now turn to experimental designs to paint a fuller picture of the dimensions of the economy in relation to economic reasoning

Table 2: The relationship between incumbent voting (right-governments) and economic indicators.

	All Income Groups	Lowest Income Quintile	Second Income Quintile	Third Income Quintile	Fourth Income Quintile	Highest Income Quintile
Income	0.025***					
	(0.00)					
Inflation	-0.006***	-0.002	-0.007**	-0.010***	-0.010***	0.004
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
GDP Growth	0.015***	0.017***	0.013***	0.016***	0.014***	0.009***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Unemployment	0.001	0.002	0.002	-0.000	-0.001	-0.004
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
N	63,104	11,248	12,442	13,026	13,129	13,259
Countries	23	23	23	23	23	23
Log restricted-likelihood	-43439.65	-7579.17	-8524.67	-8949.29	-9175.49	-9342.00

Notes: $*$ denote statistical significance at the 10%. $**$ denote statistical significance at the 5%, $***$ denote statistical significance at the 1% level. Entries are from multilevel regression models with countries as levels and with fixed effects for year. The dependent variable is voting for incumbent government (right-governments). The models include controls for age and gender.

Table 3: The relationship between incumbent voting (left-governments) and economic indicators.

	All Income Groups	Lowest Income Quintile	Second Income Quintile	Third Income Quintile	Fourth Income Quintile	Highest Income Quintile
Income	-0.008***					
	(0.00)					
Inflation	0.003**	0.013***	0.002	0.004	0.003	-0.007**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
GDP Growth	0.036***	0.041***	0.032***	0.035***	0.035***	0.026***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Unemployment	-0.001	-0.004	-0.003	0.002	-0.005*	-0.003
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
N	59,361	11,081	12,925	13,048	11,741	10,566
Countries	25	25	25	25	25	25
Log restricted-likelihood	-39374.80	-7374.56	-8674.28	-8650.64	-7880.87	-7006.18

Notes: $*$ denote statistical significance at the 10%. $**$ denote statistical significance at the 5%, $***$ denote statistical significance at the 1% level. Entries are from multilevel regression models with countries as levels and with fixed effects for year. The dependent variable is incumbent voting (left-governments). The models include controls for age and gender.

and voting.

Experimental Design

We conducted a number of survey experiments, which we fielded in the USA, Germany, and Sweden via YouGov in 2023. This allows us to examine whether the heterogeneity of the economic vote generalizes to countries with different macroeconomic profiles. While it is not obvious whether voters in these three countries might react to macro economic information in different ways, the few observational analyses that are available suggest that citizens in these countries differ in their macroeconomic preferences. The few existing previous studies indicate that while US voters appear to be more concerned with growth and Swedish voters care more about unemployment, German voters are strongly averse to inflation (Hibbs and Vasilatos 1982; Scheve and Slaughter 2004). Hence, we are likely to cover some variation within the set of industrialized Western countries.

We designed two sets of experiments, in which we presented the respondents with information about the four main dimensions of the macroeconomy (GDP growth, unemployment, inflation, and the stock market). In the first experiment, we only presented respondents with one aspect of the economy, while we presented all aspects of the economy simultaneously in the second experiment. In other words, in the single indicator experiments, participants were exposed to hypothetical scenarios describing how one specific economic indicator changed over the last year. For the multiple indicator experiment, participants were presented with all four indicators simultaneously. We use the first, single-treatment experiment, specifically to study 'macroeconomic reasoning' (what goes with what), while the second experiment is leveraged to evaluate the remaining research questions.

In both the single- and multiple treatment experiments, participants completed four tasks in each experiment (i.e., responded to questions about the hypothetical economy four times with randomly assigned values on the indicator(s) each time). The numbers respondents were presented with were randomized, and the end points represent real historical change rates from the past 40 years of the countries under investigation.[2] The values of the indicators were integers randomly drawn from the following distributions and presented with the following phrasing[3]:

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[2] Note that neither GDP growth, unemployment, nor the stock market variables include a no-change condition, e.g., 0% growth

[3] Note that the phrasing of the multiple indicator treatment diverges slightly for easier readability, however, the

- Imagine that, during the last year, the unemployment rate [increased/decreased] by (-2, -1, ..., 4) percentage point(s)

- Imagine that, during the last year, the inflation rate was (0, 1, ..., 10)%

- Imagine that, during the last year, the GDP [grew/fell] by (-5, -4, ..., 7)%

- Imagine that, during the last year, the stock market [grew/fell] by (-42, ..., 65)%

We included two attention checks to screen out inattentive respondents and did not collect responses from participants who did not pass the screeners. In total, we collected about 3,000 attentive respondents from each country: the US, Sweden, and Germany. One-third of the participants were enrolled in the experiment that evaluates multiple indicators. The remaining participants were split evenly across four separate treatments, each focusing on a single economic indicator: inflation, unemployment, GDP, and stock market performance. Each of these four treatments included one-sixth of the total participants.

This can thus be seen as five experiments (four single-treatment and one multi-treatment) conducted in the three countries. Given that each experiment includes four steps (everyone responded to questions about the hypothetical economy four times), the study consists of 60 experimental rounds in total (five experiments with four rounds in three countries). We thus use variation both within and between respondents, which ensures sufficient statistical power.

In the single-indicator experiment, we asked participants to predict the levels of the three other dimensions they did not receive information about. We asked: "How do you think that the following aspects of the economy developed over the same time period?" and then asked participants to predict the development of the three dimensions they were not shown, on a five-point scale from "Definitely increased" to "Definitely decreased."

After both the single- and multiple-treatment experiments, we asked a number of questions to evaluate our theoretical framework. To evaluate egotropic reasoning, we used the standard question: "Given this economic development, would you say that your own economy got better, stayed about the same, or got worse during this time period?", with response alternatives ranging

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range of the variables is the same. The complete phrasing of the experiment can be found in the appendix

from "Much better" to "Much worse" on a five-point scale. To study sociotropic reasoning, we asked: "Would you say that the state of the economy in the country got better, stayed about the same, or got worse during this time period?", with the same response alternatives as for the previous question. To study distributive reasoning, we asked respondents the following question: "Based on the description above, would you say that the following groups would have been hurt or would have benefited from this economy?" and specified the groups "the working class," "the middle class," and "the rich," all evaluated on five-point scales from "Definitely hurt" to "Definitely benefited."

To study preferences for economic policies we asked: "Given this economic development, do you think that the government should do more to stimulate the economy or do less to cool down the economy?" with responses options on five point scales from "Stimulate the economy a lot" to "Cool down a lot". And finally to study voting we asked US respondents "Would you vote for a president responsible for this economic development?" with five point response options ranging from "Definitely vote for the president". In Sweden and Germany we instead asked "Would you vote for a party responsible for this economic development?"

A key aspect in both experiments is to examine how the respondent's macro-economic exposure conditions how they evaluate the economy and how this may affect their vote intentions. In our analysis, we focus on the respondent's income and labour market position as indicators for their individual socio-economic status. Income is operationalized by asking respondents to estimate their monthly income before taxes in the post-experiment survey. We use both the raw indication and a categorization of income based on the respondent's country income quintiles. As for labour market position we asked whether respondents were employed, and if so if they were worried of losing their job in the future. In the analyses we use the categorization "'unemployed", "'employed but worried about losing job" and "employed but not so worried".

Finally to study political knowledge we use a set of factual knowledge questions in each country inspired by the optimal set of questions recommended by Delli Carpini and Keeter (1996). In all three countries we ask respondents about their best estimates of the current unemployment rate, inflation rate, GDP growth rate and stock market development. In the US we ask which institution that determine if a law is constitutional, how much of a majority is required to override a presidential veto, which party has most members in the House of Representatives, how many

members there are of the supreme court and which party at the national level is most conservative. In Sweden, we ask what the threshold (in percentage) for parties to enter the parliament is, which party Mikael Damberg belongs to, when Sweden introduced women's suffrage, which political level is responsible for primary education, and who the current Minister of Finance is. In Germany, we ask at what percentage of second votes (Zweitstimmen) a party can definitely send representatives to the Bundestag, which of the two votes in Bundestag elections is decisive for the distribution of seats, by whom the Chancellor is elected, which party Katrin Göring-Eckardt belongs to, and which institution is tasked with determining whether laws are constitutional.

The full question wordings of the experiment is available in section A in the Appendix.[4]

Macroeconomic Reasoning: Can citizens make inferences about what goes with what in the macroeconomy?

Before we assess how citizens evaluate the economy and their egotropic and sociotropic consequences, we focus on voters' ability to make inferences about different macro-economic indicators. To mimic imperfect information, we present respondents with one aspect of the economy at a time. After each economic trajectory, we measure the respondent's belief about how the other economic indicators, not shown in the experiment, developed during the same period. To circumvent issues of numerical literacy, we ask about these beliefs using an ordinal five-point response scale, ranging from "decreased a lot" to "increased a lot."

Figure 4 shows unstandardized beta coefficients from regression models on the pooled data from the three countries, with standard errors clustered at the respondent level. Shades of red indicate negative relationships, while shades of blue indicate positive relationships. The intensity of the coloration signals the strength of the association. The results provide evidence that citizens do indeed make inferences about the interrelations between different economic indicators. We observe strong negative associations between unemployment and both stocks and GDP. Conversely, there are positive associations, especially between GDP and stocks. Notably, treatments providing information about GDP and unemployment generate the strongest associations with the other

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[4]The pre-registration for the experiment is available at `https://aspredicted.org/VS8_7G7`. The study was approved by the Swedish Ethical Review Authority, 2022-02050-01.

factors, while information about inflation and, in particular, stocks results in weaker associations when respondents predict the effects on other economic dimensions. It is clear that, on average, across the three countries, citizens can infer the relationships between different economic indicators.

Figure 3: Beliefs about what goes with what in the economy (pooled)

Note: Unstandardized beta coefficients from regression models using respondent fixed effects. Robust standard errors clustered on the respondent within parantheses.

However, while citizens clearly are not clueless about the macroeconomy, they also believe that good things go together. This is most evident in citizens' inferences about the other macro-economic indicators when inflation increases. Contrary to any Philips' curve reasoning, citizens infer that when inflation increases, both GDP growth and the stock market decreases, while unemployment increases. And, vice versa, when unemployment decreases, or GDP growth or the stock market increases, inflation is expected to decrease. The mental macroeconomy of citizens, thus, appears to be more mood or valence based, rather than grounded in orthodox macro-economic thinking. This is potentially a politically challenging result for incumbents, as voters expect high growth and

low unemployment to go together with low inflation. It also suggests that imperfect information about the macroeconomy might have an augmenting effect, as citizens infer that if one part of the macroeconomy is doing poorly so likely are the other parts.

In Section A of the online appendix, we provide tables with full results, including those divided by country. The associations point in the same directions across all three countries, with some minor variations. For instance, there is a stronger association between GDP and unemployment in Sweden and Germany, and generally weaker associations between the dimensions in the US data.

Egotropic and Sociotropic Reasoning: Can citizens make inferences about how different aspects of the economy would affect their own and the national economy?

After establishing that citizens are capable of drawing inferences about the rest of the economy from a single macroeconomic indicator, we now examine how capable they are of using information about the macroeconomy to evaluate the state of the national and personal economy. In other words, are citizens capable of egotropic and sociotropic reasoning?

To study this, we examine how voters evaluate the economy in an (almost) ideal information environment, leveraging the multiple-indicator experiment. We present respondents with all dimensions of the economy simultaneously and observe how they evaluate the state of their own and the national economy.

Figure 4 shows the effects of our four economic indicators on the evaluation of the personal economy (left panel) and national economy (right) panel. We present the results both from a regression analysis pooling all countries (the black point) and separately for each country (the grey points). Higher values means more favorable evaluations.[5]

The figure clearly demonstrates that citizens are capable of making sensible conclusions about how the dimensions would affect the personal and national economy. In all three countries, citizens' evaluations of both the personal and national economy are negatively affected by increasing unemployment and inflation while at the same time positively affected by an increasing GDP and an increasing stock market.

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[5]The full regression models can be found in section A in the Appendix.

Figure 4: Perceptions of Heterogeneous Effects on the Personal and National Economy
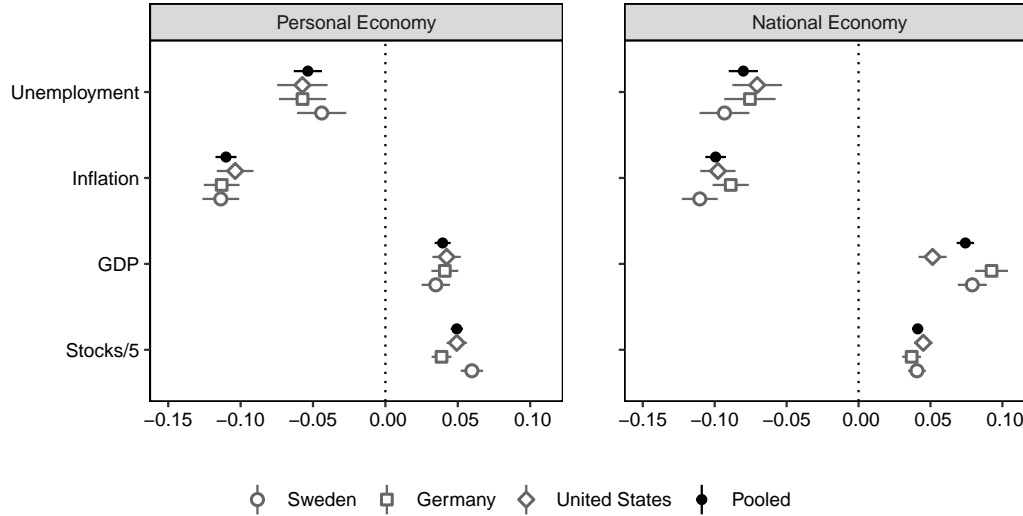
Note: Unstandardized beta coefficients from regression models using respondent fixed effects. The stock market indicator is divided by five to increase legibility. Robust standard errors clustered on the respondent within paran-theses.

For the personal economy, country differences are negligible: a one percentage point increase in unemployment is associated with a lower evaluation of about 0.05 on the five-point scale, while a one point increase in inflation results in a lower evaluation of about twice that size. Regarding GDP, we find strikingly similar positive effects across the three countries. For stocks, we see similar positive effects, albeit with some minor country differences. For the national economy, we observe a similar general pattern, albeit with weaker reactions to GDP in the US compared to especially Germany.

Two results findings are worth emphasizing. First, citizens do not make identical evaluations of the macroeconomy when it comes to the personal economy and when it comes to the national economy. Instead, they see the national economy and the personal economy as two separate entities. The effect of GDP, in particular, is especially strong on for evaluations of the national economy, and perhaps surprisingly weak for the evaluations of the personal economy. Meanwhile, the estimates for inflation and stocks are quite similar for both personal and national economic evaluations.

To further substantiate this, Table 4 shows standardized Shapley values for the economic in-dicators on our two economies. Shapley values shows the marginal improvement of including an

independent variable on the regression models' prediction accuracy. Standardized Shapley values normalize these statistics, allowing us to examine the relative contribution of a variable against the other variables in improving the predictive accuracy of the model. For GDP, for instance, we see that the standardized Shapley value only accounts for 10% of the predictive improvement for the personal economy, but 33% for the national economy.

Table 4: Standardized Shapley Values for Personal and National Economy

	Personal Economy	National Economy
Inflation	0.49	0.33
Unemployment	0.06	0.10
GDP	0.10	0.33
Stocks	0.35	0.24

Note: Shapley values for pooled regression models.

Second, inflation consistently has the strongest effect of all economic indicators for both the personal and the national economy. This is evident both from Figure 4 and Table 4. For instance, the marginal improvement in predictive accuracy of inflation on the personal economy is of the same magnitude as the other three indicators together. This, very likely, reflects the salience of inflation and the cost of living crisis in recent years.

In sum, these results show that citizens can distinguish between the effects of different economic dimensions and are able to engage in both egotropic and sociotropic reasoning. Interestingly, the two variables that have the strongest effects on the personal economy are inflation and stocks, two variables that are directly tied to the expenses and wealth of households, while the macroeconomic aggregates of GDP and unemployment appear much less important.

Distributive Reasoning: Can citizens make inferences about how different aspects of the economy affect different socioeconomic groups?

We have now established that citizens are able to make separate evaluations of the impact of the macroeconomy on the personal and the national economy. Are they also capable of reasoning

about how the macroeconomy has heterogeneous effects on different socio-economic groups? We examine this by determining how respondents evaluate the impact of the macroeconomy on 'the working class', 'the middle class', and 'the rich'. Specifically, respondents rated how these groups were affected by the indicators on a five-point scale ranging from "definitely hurt" to "definitely benefited."

Figure 5: Perceptions of Effects of the Economy on Classes
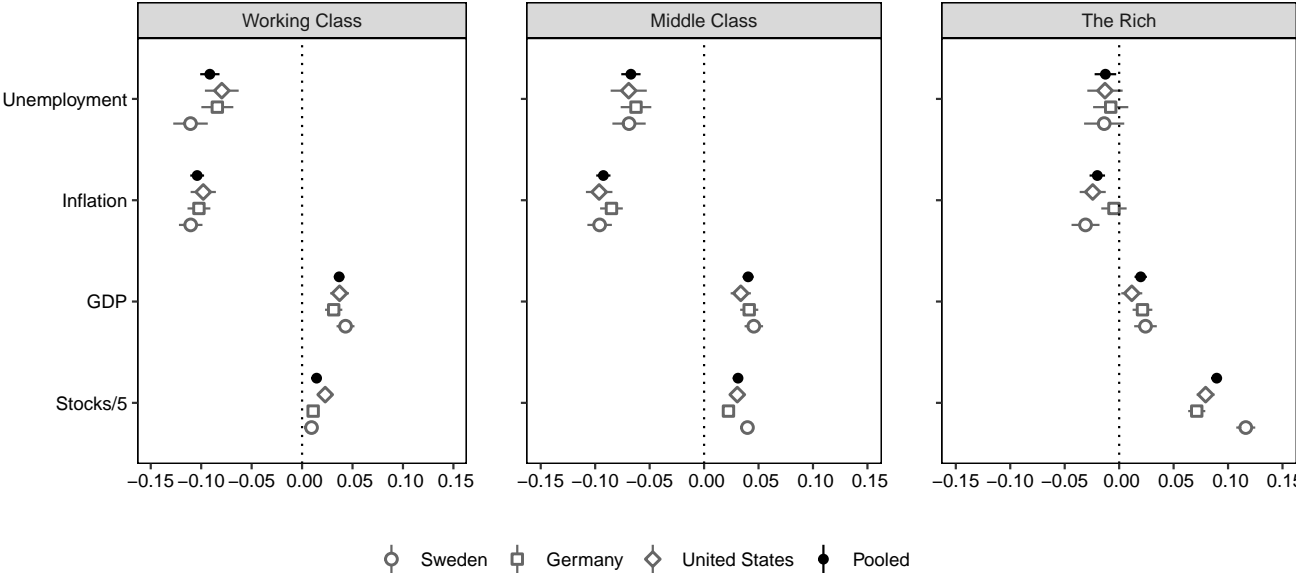
Note: Unstandardized beta coefficients from regression models using respondent fixed effects. Robust standard errors clustered on the respondent within parantheses.

Figure 5 demonstrates that citizens indeed are highly capable of distributive reasoning. The four dimensions of the macroeconomy are predicted to have different, and sensible, effects for different socioeconomic groups. GDP growth is an exception, as it is predicted to benefit all three groups with small positive estimates for all groups in all countries. Unemployment, on the other hand, is predicted to be worst for the working class, negative but less severe for the middle class, while the estimates are close to zero for the rich. A similar pattern is observed for inflation, which is also predicted to be worse for the working class and the middle class, while having a smaller effect on the rich. For the stock market, the relationship is reversed; the estimates for the working class are close to zero, marginally stronger for the middle class, whereas the rich are predicted to benefit

more from positive changes in the stock market. Again, we find small country-level differences, with a few exceptions, which is to be expected.

Table 5: Standardized Shapley Values for Distributional Effects on Groups

	Working Class	Middle Class	The Rich
Inflation	0.62	0.50	0.01
Unemployment	0.22	0.12	0.00
GDP	0.12	0.15	0.02
Stocks	0.04	0.22	0.97

Note: Shapley values from pooled data.

Once again, we present the standardized Shapley values in Table 5 to further substantiate this result. The relative differences in how much the four indicators increase the predictive accuracy of the model across the groups are striking. While the contribution of inflation to the predictive accuracy increases by 62% and 50% for the working class and the middle class, respectively, and virtually accounts for no prediction accuracy improvement on the rich. The reverse is the case for the effect of stocks. Clearly, the rich are preceived to be isolated from much of the macroeconomy, but heavily exposed to the financial market. The working class, on the other hand, are more or less unaffected by the financial market, and are primarily affected by inflation and unemployment. The middle class falls inbetween these two extremes, yet much more closely to the working class. It is perhaps surprising that the unemployment rate appears to be much less important than inflation also for the working and middle class, but this might reflect that the problems of unemployment are concentrated to a minority of the population, while inflation affects all individuals regardless if you risk become unemployed or not.

Do the dimensions of the economy affect voting and opinions on economic policies?

Our analyses show that citizens, far from being oblivious about the economy, indeed are capable of reasoning about what parts of the economy go together, how it affects the country, their personal economy and different socio-economic groups. But do they draw any political conclusions from this

reasoning? Specifically, does it affect voting intentions and opinions on economic policies? To study this, we ask respondents, after having been presented with the treatments, whether they would a) vote for an incumbent government responsible for this economic development, and b) whether they would, based on the information they received, favor more expansive or restrictive economic policies.

We begin by presenting the effects of the treatments on voting intentions. This is also measured on a five-point scale, where higher values mean greater vote intention. Figure 6 shows that the macroeconomic indicators indeed affect voting intention. Unemployment and inflation are negatively associated with vote intentions for the responsible incumbent government, while growth in GDP, and to a lesser extent, the stock market, are positively associated. The country differences are again generally small. But there is a stronger association between the stock market and vote intentions in the US.

Figure 6: Perceptions of Effects of the Economy on Incumbent Vote Intention
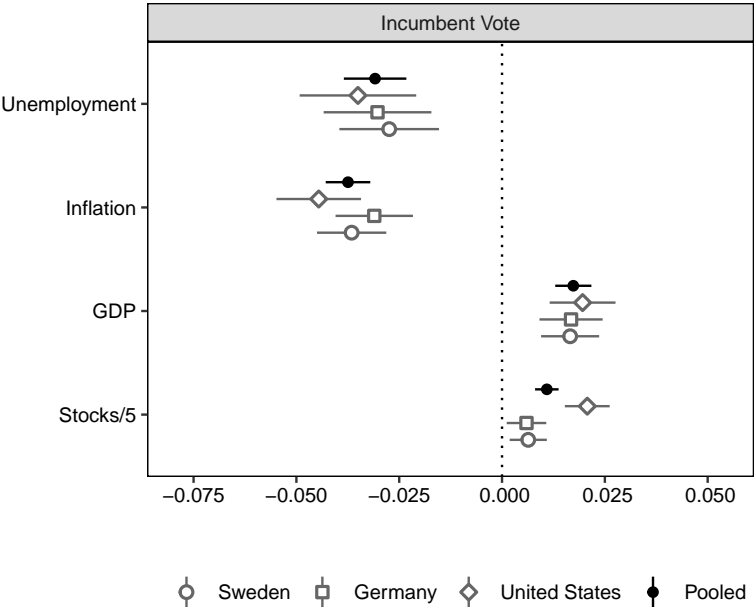
Note: Unstandardized beta coefficients from regression models using respondent fixed effects. Robust standard errors clustered on the respondent within parantheses.

Table 6 shows the corresponding standardized Shapley values for voting intention. Strikingly, the Shapley values for voting intention differ quite substantially from the Shapley values for evaluating

the personal economy. In particular, both unemployment and GDP appears to be much more important when considering how to vote, than when inferring the impact on the personal economy. Likewise, the development of the stock markets appears to be much less important. This shows that, not only do citizens distinguish between the impact of these indicators on the personal and national economy, they do not simply transfer their evaluations of these indicators on their personal economy or the nationwide economy to their voting intentions. One possible interpretation of these results is that indicators that the incumbent has less control over, such as the stock market, is less influential on people's voting behavior than its impact on their personal economy.

Table 6: Standardized Shapley Values for Voting and Stimulating the Economy

	Vote	Stimulate Economy
Inflation	0.46	0.01
Unemployment	0.16	0.12
GDP	0.24	0.58
Stocks	0.14	0.29

Note: Shapley values from pooled data.

In Figure 7, we shift our focus beyond the evaluation of the incumbent, to the question of what citizens would want the incumbent to do in power. Specifically, when do they want the incumbent to take action and stimulate the economy, and when should they instead try to cool down the economy. Here, the results, for the first time, for some indicators, are less homogenous across countries. We should, however, keep in mind that this is a more cognitively demanding task and there are no objective straightforward "correct answers". Respondents in all three countries agree that unemployment should lead to economic stimulus, while stock market growth is associated with preferences for less economic stimulus. They also agree, that GDP growth should, all else equal, warrant the incumbent to cool down the economy, although there is quite some variation on the size of this effect, with a larger estimate in Germany and the US, while Sweden is found in between. On these three indicators, citizens in Germany, the US and Sweden appear to share countercyclical economic preferences.

Figure 7: Perceptions of Effects of the Economy on Economic Stimulus
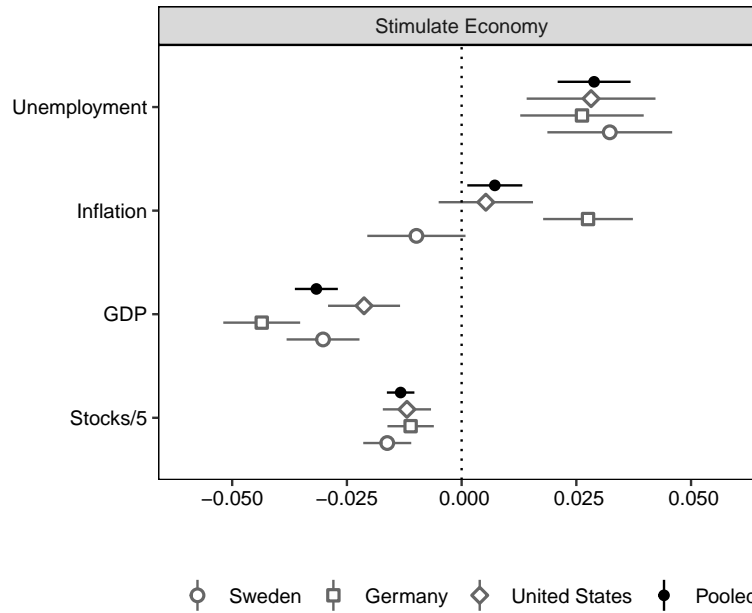
Note: Unstandardized beta coefficients from regression models using respondent fixed effects. Robust standard errors clustered on the respondent within parantheses.

When it comes to inflation, we find a more conflicting picture. In Germany, higher inflation is associated with demands for more stimulus, while in the US and Sweden, the estimates are not distinguishable from zero. This might reflect the difficulty of dealing with higher inflation from the incumbent's perspective. While higher inflation decreases the purchasing power of households, thereyby making it more difficult to make ends meet, helping citizens out by stimulating the economy might of course result in even higher inflation rates. To combat inflation, governments would instead try to cool down the economy, which of course might exacerbate the economic situation for households. The somewhat ambiguous results, thus, may reflect the strength of these conflicting considerations.

The findings in Figure 7 are also reflected in the corresponding Shapley values in Table 6. Specifically, we find that inflation adds almost no predictive power to the model, and that GDP is by far the most important economic indicator.

Heterogeneity analyses: Do different groups ascribe different weight to the dimensions?

While we have seen quite consistent results across countries, the average estimates reported might still hide a lot of underlying heterogeneity. Do all citizens react to the macroeconomy in the same way regardless of their socio-economic circumstances or political sophistication? The degree to which the response to the macroeconomy is conditioned by socio-economic hetereogeneity directly addresses Kramer's problem. First, even though there, at a given point in time, only is one economy, the weight that different groups place on different aspects of the economy might be an important explanation for the heterogeneiety we observe in perceptions of the national economy. Consider a scenario where the economy is experiencing jobless growth. Both the unemployed and high-income earners are equally informed about all aspects of the macro-economy. Despite having the same information, they may still differ in their evaluations of the state of the economy because they assign different weights to different economic dimensions, reflecting their personal circumstances and priorities. Second, some individuals, especially those who are intersted in politics, might be particularly apt at drawing on information on the macroeconomy to evaluate it, whether focusing on different groups, themselves or the country as such.

To analyze this, we perform a set of heterogeneity analyses, focusing on the personal vulnerability to becoming unemployed as well as political knowledge. In Table 7, we examine the results across groups with different levels of job security: respondents who are a) unemployed, b) employed but worried about unemployment, c) employed and not worried about unemployment or d) not participating in the labor market (the reference category). We present the results for all dependent variables analyzed so far, including evaluations of the national and personal economy, distributive effects for the working class, the middle class, and the rich, vote intentions, and opinions on economic stimulus. Overall, we find very few moderating effects of labor market position. For the vast majority of the estimates, there is no moderation in relation to labor market position. If anything, those who are unemployed appear to react less to information on unemployment compared to those who are not on the labor market. There is essentially no evidence that labor market position affects how much or what information about the macroeconomy that citizens care about.

Table 7: Heterogeneous Effects of Labor Market Status

	Personal Economy	National Economy	Working Class	Middle Class	Rich	Stimulus	Vote
Inflation	-0.12***	-0.11***	-0.11***	-0.10***	-0.03***	0.00	-0.04***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
Unemployment	-0.05***	-0.09***	-0.10***	-0.07***	-0.01	0.04***	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
GDP	0.04***	0.08***	0.04***	0.04***	0.02***	-0.04***	0.02***
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Stocks	0.05***	0.04***	0.01***	0.03***	0.10***	-0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inflation × Not worried	0.02*	0.01	0.01	0.01	0.01	0.00	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Inflation × Worried	-0.01	0.01	0.02	0.02	0.02	0.03*	0.01
	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)
Inflation × Unemployed	0.02	0.03*	0.02	0.03	0.03*	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Unempl. × Not so worried	-0.00	0.01	0.01	-0.00	-0.01	-0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Unempl. × Worried	-0.02	0.01	0.03	0.01	-0.01	-0.02	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Unempl. × Unemployed	0.02	0.06**	0.04*	0.03	0.04*	-0.01	0.00
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Inflation × Not worried	-0.01	-0.01*	0.00	-0.00	0.00	0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
Inflation × Worried	0.00	-0.01	-0.02	-0.00	0.01	0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Inflation × Unemployed	-0.01	-0.03**	-0.00	-0.01	-0.01	0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Stocks × Not worried	0.01*	-0.00	0.00	0.01	-0.01	-0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Stocks × Worried	-0.02*	-0.02*	-0.00	-0.01	-0.04***	0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Stocks × Unemployed	-0.01	-0.00	0.00	0.01	-0.03**	0.01*	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Observations	11252	11252	11252	11252	11252	11252	11248

Notes: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects.
*$p < 0.05$,** $p < 0.01$,*** $p < 0.001$.

The results are different for political knowledge, as shown in Table 8, are very different. Here, we find that political knowledge significantly affects the estimates. Respondents with high political

knowledge appear more capable of drawing inferences from the information on the economy that they are given. For evaluations of the personal and national economy, increased political knowledge amplifies the negative effects of inflation and unemployment while enhancing the positive effects of stock market performance and GDP growth. These results also indicate that political knowledge can moderate the perceived impact of economic indicators on voting behavior. Higher political knowledge tends to mitigate negative perceptions related to economic downturns (such as inflation and unemployment) and enhance positive perceptions of economic growth indicators (such as GDP and stock market performance).

Table 8: Heterogeneous Effects of Political Knowledge

	Personal Economy	National Economy	Working Class	Middle Class	Rich	Stimulus	Vote
Inflation	-0.14***	-0.14***	-0.14***	-0.13***	-0.03***	-0.00	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Unemployment	-0.07***	-0.12***	-0.13***	-0.09***	-0.02	0.04***	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
GDP	0.05***	0.12***	0.05***	0.06***	0.03***	-0.05***	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
Stocks	0.06***	0.05***	0.01***	0.04***	0.14***	-0.02***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inflation × Low	0.08***	0.08***	0.10***	0.09***	0.02*	0.01	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Inflation × Medium	0.03**	0.04***	0.04***	0.03***	0.01	0.02*	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Unemployment × Low	0.04**	0.09***	0.08***	0.06***	0.01	-0.02	-0.03*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Unemployment × Medium	0.02	0.04**	0.04***	0.02*	0.00	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
GDP × Low	-0.03***	-0.09***	-0.03***	-0.04***	-0.01	0.04***	0.03***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
GDP × Medium	-0.01	-0.05***	-0.02**	-0.02***	-0.00	0.03***	0.02**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Stocks × Low	-0.04***	-0.03***	-0.00	-0.03***	-0.10***	0.02***	0.01
	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Stocks × Medium	-0.01*	-0.01*	0.00	-0.01**	-0.05***	0.01*	-0.00
	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Observations	11248	11248	11248	11248	11248	11248	11248

Note: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects.
$^{*}p < 0.05,$ $^{**}p < 0.01,$ $^{***}p < 0.001$

Returning to Fiorina's argument that net changes in personal welfare might guide vote choice, these results offer a sobering insight about the role of the economy in politics. To the extent that economic voting is sociotropic and relies on information about how the economy at large is doing, our results suggests that citizens with lower levels of political knowledge and sophistication might be less apt at using the economic vote. Instead, the citizens who appear to be most skilled in making inferences and evluations based on information on the macroeconomy – citizens with high levels of political knowledge – might be the ones who are least in need of heuristics as these.

Discussion

By moving beyond analyses of historical observational data and employing survey experiments to study the impact of different dimensions of the macroeconomy, we demonstrate that the economic voting literature rests on an oversimplified concept of 'one economy.' When examining various economic dimensions, a more nuanced picture emerges, revealing that voters are capable of sophisticated reasoning at several levels: macroeconomic, egotropic, sociotropic, and distributive. In other words, voters can infer interconnections within the macroeconomy, assess how it affects themselves and the national economy, and evaluate impacts on different socio-economic groups. Moreover, these distinct economic dimensions independently influence how voters judge incumbent governments and what economic policies they support. Importantly, different groups of citizens do not react uniformly to these various economic dimensions, with the effects particularly amplified by political knowledge.

Perhaps most striking is that no single factor, such as GDP or unemployment levels, solely drives people's perceptions of the economy and their subsequent reasoning. Instead, each of the four dimensions under study—unemployment, inflation, GDP, and the stock market—exerts independent effects on most of the dependent variables examined.

These findings have important implications for our understanding of voters and their ability to hold politicians accountable. While we know that the economy often drives election results to some degree, we have limited knowledge about which economic dimensions are most influential and to what extent. Our results suggest that manipulating voters with a booming economy immediately

before an election may not be as straightforward as some might assume. If voters perceived a single economy primarily driven by one factor, such as the stock market, such manipulation might be easier. However, voters consider multiple factors in a more sophisticated manner than previously acknowledged, making it challenging to optimize all economic dimensions just before an election. For incumbent politicians to receive full credit for a well-managed economy, they must ensure not only steady GDP growth but also robust stock market performance, combined with low inflation and low unemployment. It might not be as easy to manipulate voters as some might think since voters appear to be able to sophisticatedly reason about the macroeconomy and it's impacts.

The consistency of our findings across the three countries—the United States, Sweden, and Germany—strengthens the credibility of our results. In most analyses, respondents from these nations react to and draw conclusions about the economy in remarkably similar ways. This consistency holds not only for the main findings but also for distributive reasoning about how the economy affects different socio-economic groups. However, we acknowledge that the data were collected during a particular historical period, i.e., the post-pandemic era characterized by high inflation. We encourage further studies on this matter in different settings and under varied economic circumstances.

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Online Appendix—Not Intended for Publication

A   Additional analyses

Table A.1: Beliefs about What Goes With What in the Macroeconomy (Pooled)

	Inflation			Unemployment			GDP			Stocks		
Inflation				0.09*** (0.00)			-0.08*** (0.01)			-0.08*** (0.01)		
Unemployment	0.07*** (0.01)							-0.22*** (0.01)			-0.14*** (0.01)	
GDP		-0.07*** (0.01)			-0.17*** (0.01)							0.16*** (0.00)
Stocks			-0.01*** (0.00)			-0.02*** (0.00)			0.02*** (0.00)			
Observations	6296	6280	6432	6184	6280	6432	6184	6296	6432	6184	6296	6280

Notes: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects. $^*p < 0.05, ^{**}p < 0.01, ^{***}p < 0.001$.

Table A.2: Beliefs about What Goes With What in the Macroeconomy (United States)

	Inflation			Unemployment			GDP			Stocks		
Inflation				0.08*** (0.01)			-0.06*** (0.01)			-0.08*** (0.01)		
Unemployment	0.07*** (0.01)							-0.16*** (0.01)			-0.11*** (0.01)	
GDP		-0.06*** (0.01)			-0.12*** (0.01)							0.14*** (0.01)
Stocks			-0.01*** (0.00)			-0.02*** (0.00)			0.02*** (0.00)			
Observations	2140	2132	2140	2088	2132	2140	2088	2140	2140	2088	2140	2132

Notes: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects. $^*p < 0.05, ^{**}p < 0.01, ^{***}p < 0.001$.

Table A.3: Beliefs about What Goes With What in the Macroeconomy (Germany)

	Inflation			Unemployment			GDP			Stocks		
Inflation				0.09*** (0.01)			-0.07*** (0.01)			-0.07*** (0.01)		
Unemployment	0.09*** (0.01)							-0.24*** (0.01)			-0.13*** (0.01)	
GDP		-0.11*** (0.01)			-0.19*** (0.01)							0.17*** (0.01)
Stocks			-0.01*** (0.00)			-0.02*** (0.00)			0.02*** (0.00)			
Observations	2144	2112	2112	2088	2112	2112	2088	2144	2112	2088	2144	2112

Notes: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects. $^{*}p < 0.05,^{**} p < 0.01,^{***} p < 0.001$.

Table A.4: Beliefs about What Goes With What in the Macroeconomy (Sweden)

	Inflation			Unemployment			GDP			Stocks		
Inflation				0.11*** (0.01)			-0.09*** (0.01)			-0.09*** (0.01)		
Unemployment	0.04** (0.01)							-0.26*** (0.01)			-0.17*** (0.01)	
GDP		-0.05*** (0.01)			-0.19*** (0.01)							0.18*** (0.01)
Stocks			-0.01*** (0.00)			-0.02*** (0.00)			0.02*** (0.00)			
Observations	2012	2036	2180	2008	2036	2180	2008	2012	2180	2008	2012	2036

Notes: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects. $^{*}p < 0.05,^{**} p < 0.01,^{***} p < 0.001$.

Table A.5: Evaluations of the Economy

	Personal Economy		National Economy		Vote	
Inflation	0.11***	0.10***	0.10***	0.10***	0.04***	0.04***
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)
Unemployment	0.05***	0.06***	0.08***	0.07***	0.03***	0.04***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
GDP	-0.04***	-0.04***	-0.07***	-0.05***	-0.02***	-0.02***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Stocks	-0.01***	-0.01***	-0.01***	-0.01***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inflation × DE		0.01		-0.01		-0.01
		(0.01)		(0.01)		(0.01)
Inflation × SE		0.01		0.01		-0.01
		(0.01)		(0.01)		(0.01)
Unemployment × DE		-0.00		0.01		-0.00
		(0.01)		(0.01)		(0.01)
Unemployment × SE		-0.01		0.02		-0.01
		(0.01)		(0.01)		(0.01)
GDP × DE		0.00		-0.04***		0.00
		(0.01)		(0.01)		(0.01)
GDP × SE		0.01		-0.03***		0.00
		(0.01)		(0.01)		(0.01)
Stocks × DE		0.00*		0.00		0.00***
		(0.00)		(0.00)		(0.00)
Stocks × SE		-0.00*		0.00		0.00***
		(0.00)		(0.00)		(0.00)
Observations	11252	11252	11252	11252	11248	11248

Notes: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects. $^*p < 0.05,$$^{**}p < 0.01,$$^{***}p < 0.001.$

Table A.6: Perceptions of the Distributional Impact on Socioeconomic Groups

	Working Class		Middle Class		The Rich	
Inflation	-0.10***	-0.10***	-0.09***	-0.10***	-0.02***	-0.02***
	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)
Unemployment	-0.09***	-0.08***	-0.07***	-0.07***	-0.01*	-0.01
	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)
GDP	0.04***	0.04***	0.04***	0.03***	0.02***	0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Stocks	0.00***	0.00***	0.01***	0.01***	0.02***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inflation × DE		-0.00		0.01		0.02*
		(0.01)		(0.01)		(0.01)
Inflation × SE		-0.01		0.00		-0.01
		(0.01)		(0.01)		(0.01)
Unemployment × DE		-0.00		0.01		0.01
		(0.01)		(0.01)		(0.01)
Unemployment × SE		-0.03*		0.00		-0.00
		(0.01)		(0.01)		(0.01)
GDP × DE		-0.01		0.01		0.01
		(0.01)		(0.01)		(0.01)
GDP × SE		0.01		0.01		0.01
		(0.01)		(0.01)		(0.01)
Stocks × DE		-0.00**		-0.00*		-0.00
		(0.00)		(0.00)		(0.00)
Stocks × SE		-0.00**		0.00*		0.01***
		(0.00)		(0.00)		(0.00)
Observations	11252	11252	11252	11252	11252	11252

Notes: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects. $^*p < 0.05,^{**}p < 0.01,^{***}p < 0.001$.

Table A.7: Preferences for Economic Stimulus

	Stimulus	
Inflation	-0.01*	-0.01
	(0.00)	(0.01)
Unemployment	-0.03***	-0.03***
	(0.00)	(0.01)
GDP	0.03***	0.02***
	(0.00)	(0.00)
Stocks	0.00***	0.00***
	(0.00)	(0.00)
Inflation × DE		-0.02**
		(0.01)
Inflation × SE		0.02*
		(0.01)
Unemployment × DE		0.00
		(0.01)
Unemployment × SE		-0.00
		(0.01)
GDP × DE		0.02***
		(0.01)
GDP × SE		0.01
		(0.01)
Stocks × DE		-0.00
		(0.00)
Stocks × SE		0.00
		(0.00)
Observations	11252	11252

Note: OLS estimates with robust standard errors clustered on respondents and respondent fixed effects.
$^*p < 0.05,$ $^{**}p < 0.01,$ $^{***}p < 0.001$

Survey instruments

Introduction

The survey is part of a research project at the Department of Political Science at the University of Gothenburg and aims to create a better understanding of how people think about the economy. The survey will take just over 10 minutes to complete. We are interested in your thoughts on different aspects of the economy. We will present a few different hypothetical scenarios about the economic development and ask you to answer some questions about how different groups would fare under these scenarios and how different parts of the economy are connected. There are no wrong answers in this survey. We are simply interested in what conclusions you draw from the information we provide you. However, it is important for the quality of the survey that your answers are well thought through. We therefore ask you to carefully read through all information. We will check the survey responses to ensure that the people participating in the survey have read and understood the instructions. Among the upcoming questions are a couple of simple questions that check this. If you do not answer these questions correctly, it is not certain that we will be able to use your answers in the survey.

Do you agree to participate in this survey?

- Yes

- No

For our research, careful attention to survey questions is critical! We thank you for your care. .

- I understand

- I do not understand

People are very busy these days and many do not have time to follow what goes on in politics or the economy. We are testing whether people read questions. To show that you have read this much answer both "extremely interested" and "very interested."

- Extremely interested

- Very interested

- Moderately interested

- Slightly interested

- Not interested at all

Political Questions US

FOR US RESPONDENTS: Generally speaking, do you usually think of yourself as a Democrat, a Republican, an Independent, or something else?

- Democrat

- Republican

- Independent

- Something else

FOR US RESPONDENTS: Would you consider yourself a strong Democrat/Republican or a not very strong Democrat/Republican?

- Strong

- Not very strong

FOR US RESPONDENTS: Do you think of yourself as closer to the Republican or the Democratic Party?

- Closer to Republican Party

- Closer to Democratic Party

- Neither

FOR US RESPONDENTS: Where would you place yourself on the scale below ranging from 'extremely liberal' to 'extremely conservative'?

- Extremely liberal

- Liberal

- Somewhat liberal

- Neither liberal nor conservative

- Somewhat conservative

- Conservative

- Extremely conservative

Political Questions SWE

FOR SWE RESPONDENTS: Do you usually consider yourself a supporter of any party?

- Left Party
- Social Democrats
- Green Party
- Centre Party
- Liberals
- Christian Democrats
- Moderate Party
- Sweden Democrats
- No
- Other party
- Don't know

FOR SWE RESPONDENTS: Do you feel like a strong supporter of your party?

- Strong supporter
- Not a strong supporter

FOR SWE RESPONDENTS: Is there any party that you feel closer to than the others?

- Left Party
- Social Democrats
- Green Party
- Centre Party
- Liberals
- Christian Democrats
- Moderate Party
- Sweden Democrats
- No
- Other party
- Don't know

Political Questions DE

FOR DE RESPONDENTS: Do you usually consider yourself a supporter of any party?

1. Die Linke

2. Bündnis 90/Die Grünen

3. SPD

4. CDU/CSU

5. FDP

6. AfD

7. No

8. Other party

9. I don't know

FOR DE RESPONDENTS: Do you feel like a strong supporter of your party?

- Strong supporter

- Not a strong supporter

FOR DE RESPONDENTS: Is there any party that you feel closer to than the others?

- Die Linke

- Bündnis 90/Die Grünen

- SPD

- CDU/CSU

- FDP

- AfD

- No

- I don't know

Questions on Labor Market Position

Are you currently out of work or have you been out of work during the last six months?

- Currently employed, not out of work in the last six months

- Currently employed, out of work in the last six months

- Currently out of work

- Not applicable (not active on the labor market)

How worried are you about losing your job in the near future?

- Extremely worried

- Very worried

- Moderately worried

- A little worried

- Not at all worried

How much do you agree with the following statement: "My job is secure"?

- Strongly agree

- Agree

- Somewhat agree

- Neither agree nor disagree

- Somewhat disagree

- Disagree

- Strongly disagree

If you were to lose your job in the near future, how difficult would it be for you and your family/household to get by?

- Very difficult

- Somewhat difficult

- Not very difficult

- Not difficult at all

Demographic Questions

FOR US RESPONDENTS: Which one of these best describes you?

- Asian or Pacific Islander

- Black or African American

- Hispanic or Latino/a

- Native American or Alaskan Native

- White or Caucasian

- Biracial or multiracial

- Other Ethnicity

FOR SWE RESPONDENTS: Indicate which of the following options best describes you:

- I was born in Sweden and both of my parents have Swedish citizenship

- I was born in Sweden and one of my parents has Swedish citizenship

- I was born in Sweden and neither of my parents have Swedish citizenship

- I was not born in Sweden and neither of my parents have Swedish citizenship

DE SWE RESPONDENTS: Indicate which of the following options best describes you:

- I was born in Germany and both of my parents have German citizenship.

- I was born in Germany and one of my parents has German citizenship.

- I was born in Germany and neither of my parents has German citizenship.

- I was not born in Germany and neither of my parents has German citizenship.

Introduction to the treatments

We will now present you with some different hypothetical scenarios about how the economy has developed during the last year. After each scenario, we will ask you a couple of questions about what you make of this economic development, and how you think that a few different groups would be affected by it.

In the scenarios, we will ask you questions about four aspects of the economy: unemployment, GDP, inflation, and the stock market. To make sure that we are on the same page, please read the description of these aspects.

The unemployment rate is a measure of the percentage of the total labor force that is unemployed but actively seeking employment and willing to work. A higher unemployment rate means that more people are unemployed and looking for jobs.

The inflation rate is the rate at which the level of prices for goods and services in general is rising. A higher inflation rate means that goods and services are becoming more expensive, and that purchasing power is decreasing.

GDP (Gross Domestic Product) growth is a measure of the increase in the value of all goods and services produced in a country from one year to another. Higher GDP growth means that more goods and services are being produced.

Stock market growth refers to the increase in the value of the stock market, as measured by a stock market index. Higher stock market growth means that the general value of stocks is increasing.

Please read the following statements carefully and determine for each of them whether the statement is true or false based on the information you just read.

If the inflation rate is 4%, this means that the general level of prices in the economy increased during last year

- True

- False

If the stock market grew by 2%, this means that the value of stocks decreased

- True

- False

If the unemployment rate increased by 5 percentage points, this means that less people are looking for a job now.

- True

- False

If the unemployment rate increased by 5 percentage points, this means that less people are looking for a job now.

- True

- False

Hypothetical Scenarios: Single Treatment

Respondents get one of the four possible treatments:

- Imagine that, during the last year, the inflation rate was X%, meaning that prices on average increased. Given that the inflation rate was X, how do you think that the following aspects of the economy developed over the same time period?

- Imagine that, during the last year, the unemployment rate increased / decreased by X percentage points. Given that the unemployment rate increased / decreased by X percentage points, how do you think that the following aspects of the economy developed over the same time period?

- Imagine that, during the last year, GDP grew by / fell by X. Given that the GDP grew by / fell by X, how do you think that the following aspects of the economy developed over the same time period?

- Imagine that, during the last year, the stock market fell by / grew by X %. Given that the stock market fell by / grew by X %, how do you think that the following aspects of the economy developed over the same time-period

We ask about the three dimensions that were not given information about:

- GDP

- Unemployment

- Stock market

- Inflation rate

    - Definitely increased
    - Somewhat increased
    - Stayed about the same
    - Somewhat decreased
    - Definitely decreased

Hypothetical Scenarios: Multiple Treatment

Respondents get the following information:

Imagine that, during the last year:

- the inflation rate was X%, meaning that prices on average increased / decreased.

- the unemployment rate increased / decreased by X percentage points.

- GDP grew by / fell by X.

- the stock market fell by / grew by X %.

Questions after both single and multiple treatments

Given this economic development, would you say that your own economy got better, stayed about the same, or got worse during this time period?

- Much better

- Somewhat better

- Stayed about the same

- Somewhat worse

- Much worse

Would you say that the state of the economy in the country got better, stayed about the same, or got worse during this time period?

- Much better

- Somewhat better

- Stayed about the same

- Somewhat worse

- Much worse

Based on the description above, would you say that the following groups would have been hurt or would have benefited from this economy?

- The working class:

    - Definitely hurt
    - Somewhat hurt
    - Neither hurt nor benefited
    - Somewhat benefited
    - Definitely benefited

- The middle class:

    - Definitely hurt
    - Somewhat hurt
    - Neither hurt nor benefited
    - Somewhat benefited
    - Definitely benefited

- The rich:

    - Definitely hurt
    - Somewhat hurt

- Neither hurt nor benefited
  - Somewhat benefited
  - Definitely benefited

Given this economic development, do you think that the government should do more to stimulate the economy or do less to cool down the economy?

- Stimulate the economy a lot

- Stimulate the economy a little

- Neither stimulate nor cool down the economy

- Cool down the economy a little

- Cool down the economy a lot

FOR US RESPONDENTS: Would you vote for a president responsible for this economic development?

- Definitely vote for the president

- Probably vote for the president

- Not sure whether to vote or not vote for the president

- Probably not vote for the president

- Definitely not vote for the president

FOR SWE RESPONDENTS: Would you vote for a party responsible for this economic development?

- Definitely vote for the party

- Probably vote for the party

- Not sure whether to vote or not vote for the party

- Probably not vote for the party

- Definitely not vote for the party

Knowledge Questions: US

Please give your best estimate on each of the following:

- How high is the unemployment rate currently?

- What is the current inflation rate?

- What was the GDP growth rate during the last year?

- How much did the stock market (Dow Jones Industrial Average) grow or fall last year?

Whose responsibility is it to determine if a law is constitutional or not: is it the President, the Congress, or the Supreme Court?

- President

- Congress

- Supreme Court

- Don't know

How much of a majority is required for the U.S. Senate and House to override a presidential veto?

- They cannot override

- 1/3

- 1/2

- 2/3

- 3/4

- Don't know

Do you happen to know which party had the most members in the House of Representatives in Washington DC prior to the 2022 elections?

- Democrats

- Republicans

- They were tied

- Don't know

Would you say that one of the major parties is more conservative than the other at the national level? If so which party is more conservative?

- Democrats

- Republicans

- Neither

- Don't know

How many members of the U.S. Supreme Court are there?

Knowledge Questions: SWE

Please give your best estimate on each of the following:

- How high is the unemployment rate currently?

- What is the current inflation rate?

- What was the GDP growth rate during the last year?

- How much did the OMX Stockholm 30 grow/fall last year?

What is the threshold (in percentage) for parties to enter the parliament?

Which party does Mikael Damberg belong to?

- Left Party

- Social Democrats

- Green Party

- Centre Party

- Liberals

- Christian Democrats

- Moderate Party

- Sweden Democrats

- Don't know

When did Sweden introduce women's suffrage?

- 1905

- 1921

- 1932

- 1947

- Don't know

Which political level is responsible for primary education?

- State

- County Administrative Board

- Regions

- County Councils

- Municipalities

- Don't know

Who is the current Minister of Finance?

- Mikael Damberg

- Elisabeth Svantesson

- Jimmie Åkesson

- Jessika Roswall

- Anders Ygeman

- Don't know

Knowledge Questions: DE

Please give your best estimate on each of the following:

- How high is the unemployment rate currently?

- What is the current inflation rate?

- What was the GDP growth rate during the last year?

- By how much did the stock market index (DAX) rise or fall last year?

At what percentage of second votes (Zweitstimmen) can a party definitely send representatives to the Bundestag?

Regarding Bundestag elections, which of the two votes is decisive for the distribution of seats in the Bundestag?

- The first vote (Erststimme)

- The second vote (Zweitstimme)

- Both are equally important

- I don't know

By whom is the Chancellor of the Federal Republic of Germany elected?

- The Bundesrat

- The Federal Convention (Bundesversammlung)

- The Bundestag

- The people

- I don't know

Which party does Katrin Göring-Eckardt belong to?

- CDU

- CSU

- SPD

- FDP

- The Greens (GRÜNE)

- The Left (DIE LINKE)

- AfD

- I don't know

Whose task is it to determine whether laws are constitutional?

- Bundestag

- Bundesrat

- Federal President (Bundespräsident)

- Federal Constitutional Court (Bundesverfassungsgericht)

- Federal Court of Justice (Bundesgerichtshof)

Conclusion

Thank you very much for participating in this survey. If you had any issues filling out the survey or if something was hard to understand please let us know by filling out the text box below.