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The Effect of Income Expectations on Social Policy Preferences[*]

Sebastian Barfort[†]

Abstract: This paper studies how individuals' income expectations affect their social policy preferences. I combine a repeated survey of subjective expectations and administrative data of earnings at the individual level. This enables me to validate individuals' expectations against objective data on actual outcomes. I find robust evidence that individuals' policy preferences are affected by their short run expectations. Individuals who expect to have high income in the future have systematically lower current demand for unemployment insurance and redistribution. The effect is particularly strong for impatient individuals. These results provide evidence that individuals' political attitudes are forward looking and reflect their economic interests in the future. I show that current income is only weakly related to current attitudes because individuals with income below the median expect upward mobility in the future, whereas individuals with income above the median expect downward mobility.

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[†]Department of Government, London School of Economics. s.barfort@lse.ac.uk.

Introduction

Many political scientists argue that economic self interest is a key determinant of political attitudes. The link between individuals' preferences for redistributive policies and their economic circumstances is often established using a static framework, in which individuals' attitudes are formed only once using all relevant information about the state of the economy, including their own income. These models guide a voluminous literature attempting to link individuals' economic circumstances to their political attitudes, but the empirical literature linking individuals' current income to their policy preferences find mixed results (e.g. Alesina et al. 2011; Fong 2001).

I argue that individuals' redistribution preferences are dynamic and depend on their expectations of future economic outcomes. Individuals who form preferences over redistribution and tax rates today have to consider how these policies affect them in the future. I argue that this important distinction between forward and backward looking preferences help explain previous inconsistent findings of the material self interest literature: Forward looking individuals do not primarily base their preferences on past income because this has already been taxed and therefore represents a sunk cost that cannot be recovered. Instead, their redistribution preferences depend on their expected future income.

I present empirical evidence in support of this hypothesis using subjective expectations of income elicited from probabilistic survey questions and validated against objective information from the Danish administrative registers. The Danish setting allows me to create a comprehensive dataset that combines a repeated large-scale telephone survey of political attitudes and expectations with Danish administrative register data containing detailed information on, e.g., income, labor market status, occupation, etc. The panel structure allows me to exploit a within-subject research design that tracks the same individuals over time. This enables me to at the same time relax the assumption that individuals hold rational expectations and overcome concerns that subjective expectations are affected by unobserved individual characteristics such as ability or motivation, or endogenous to party identification. The data are collected during turbulent economic times. This implies that I am able to study the relative effects of expected and current income in a setting where voters are highly focused on their material circumstances and welfare policy is at the forefront of public debate.

This paper's main result is that when accounting for the forward-looking aspect of preferences, individuals' political attitudes consistently reflect their material self interest. Individuals who expect to have high income in the future have system-

atically lower current demand for unemployment insurance and redistribution. Importantly, expectations of future income are much more predictive for individual attitudes than current income, even when the latter is measured precisely from administrative data. I show that current income is only weakly related to political attitudes because many respondents with current income below the median expect to move up in the income distribution in the future, whereas many respondents with income above the median expect future downward mobility. The detailed data allow me to validate participants' subjective expectations against objective third-party reported information on actual outcomes. I find that individuals forecast their short term income with remarkable precision, and that these forecasts are not affected by their party attachments. The main results hold using large batteries of controls created from administrative and survey data, and they are consistent both between individuals, i.e. those who expect higher income in the future have lower current demand for redistribution and unemployment benefits than others, and within, i.e. the same individuals decrease (increase) their demand for social policies when their income expectations increase (decrease). To my knowledge, this is the first article to show robust evidence that short run subjective income expectations affect political attitudes using a within-subject research strategy.

These results are important because they show individuals' political attitudes to be forward looking, i.e. determined by their short run income expectations in ways that are consistent with theoretical models of material self interest. This paper is most closely related to a small empirical literature in economics and political science focused on the role of expectations in shaping attitudes. Stegmueller (2013b) and Rueda, Stegmueller, and Idema (2014) analyze the effect of life time income expectations on preferences for redistribution in the UK and a cross section of Western European countries, finding that life time income expectations are important determinants of preferences for redistribution. The notion that individuals' projected life time income affects their attitudes to welfare policy draws on a large literature in economics on life cycle models of consumption (Friedman 1957). In such models, individuals who prefer a stable path of consumption will generally find it optimal to maximize consumption over the life cycle. While not denying the importance of life cycle considerations, this paper is focused on expectations over a short time horizon. I argue, and show theoretically, that short run expectations are important determinants of redistribution preferences when policies are flexible or when individuals are sufficiently impatient. The empirical analysis accommodates this prediction, finding evidence that impatient individuals are particularly affected by their short run income expectations.

Two other articles study the effects of short run expectations on political atti-

tudes. Alesina and La Ferrara (2005) analyze the effect of short run expectations of upward and downward mobility on preferences for redistribution using cross sectional survey data from the U.S. Their approach assumes that individuals form expectations that are objectively correct, i.e. rational. This assumption implicitly asserts that the expectation formation process is homogenous, i.e. all individuals have to process their information in the same way, have access to all relevant information on which they condition their expectations, and so on, which is difficult to validate empirically (Dominitz and Manski 1997; Manski 1993, 2004). In part due to these issues, Rainer and Siedler (2008) use subjective expectations of future career events and upward occupational mobility to predict individual preferences for redistribution in a cross section of male participants in the German Socio-Economic Panel. To my knowledge, this is the only other study using subjective expectations, and while it could be, as the authors argue, that individuals' expectations shape their attitudes on welfare policy, it is also plausible that unobservable characteristics, for example ability or motivation, explain their social policy preferences and their expectations of occupational ability. Furthermore, the authors are unable to validate individuals' expectations against actual outcomes, raising concerns that expectations are endogenous to individuals' party attachments.

The article's findings also contribute to a large empirical literature on the role of material self interest in shaping welfare preferences at the individual level. Using panel data from the US, Margalit (2013) finds that individual economic circumstances, particularly loss of employment, have a strong effect on individual redistribution preferences. Several recent papers rely on lottery windfalls to show that individuals' political attitudes are determined partly by their economic self interest (Peterson 2015; Powdthavee and Oswald 2014). A large literature finds evidence of material self interest using cross sectional data (e.g. Ansell 2014; Bean and Papadakis 1998; Cusack, Iversen, and Rehm 2006; Iversen and Soskice 2001; Rehm 2009; Rueda and Stegmueller 2015), while others find only limited support that current income determines political attitudes at the individual level (e.g. Alesina et al. 2011; Fong 2001).

How Expectations Shape Redistribution Preferences

The idea that individuals' material self interest determine their political attitudes is a fundamental assumption in numerous models of voting behavior and attitude formation, with the Meltzer and Richard (1981) paradigm of redistribution as a prominent example. Here voters care about their level of consumption, and their

relative position in the income distribution determines their preferences over redistribution. The model is static with complete information and voters' preferences do not depend on their expectations of the future. Recent frameworks extend this basic intuition to a dynamic setting to argue that individuals' political attitudes are forward-looking and reflect their expected future economic circumstances (e.g. Acemoglu, Egorov, and Sonin 2016; Agranov and Palfrey 2016; Alesina and Angeletos 2005; Piketty 1995). The core question is the following: How do individuals who are currently poor (rich), but expect to move up (down) in the income distribution in the future trade off their short and long run interests?

Several papers argue that individuals' expectations of life time income determine their redistribution preferences (Rueda, Stegmueller, and Idema 2014; Stegmueller 2013b). Importantly, Benabou and Ok (2001) analyze a rational expectations model where individuals with income below average do not support redistribution because of the hope that they will move up in the income distribution in the future and therefore be hurt by such policies. This intuition resembles that of the canonical permanent income hypothesis, in which individuals' current consumption depend on their expectations of future life time income (Friedman 1957).

While in no way denying the importance of long run considerations in forming political attitudes, I argue for two reasons why short run expectations are important determinants of current attitudes.[1] First, a sizable literature in economics finds that individuals' consumption behavior depend on short time horizons when they are sufficiently impatient or liquidity constrained (see e.g. Angeletos et al. 2001; Carroll 1994, 2001; Deaton 1991; Zeldes 1989).[2] Second, the degree to which intuitions from the life time consumption literature carry over to models of redistribution is crucially determined by the assumptions one is willing to make about how sticky redistribution policies are over time. In a standard consumption model, individuals are forced to trade off current and future consumption: Individuals with high current consumption have to consume less in the future. This trade off is not necessarily present in models of redistribution. When policies are completely persistent, i.e. when current levels of redistribution perfectly determine future levels, then the individual has to consider her life time income when deciding on an

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[1]In the online appendix, I formalize the verbal insights presented below in a dynamic version of a Meltzer and Richard model.

[2]Friedman (1957, 23) himself actually suggested that short-run considerations are important determinants of consumption behavior: "It would be tempting to interpret the permanent component [of income] as corresponding to the average lifetime value [...] It would, however, be a serious mistake to accept such an interpretation".

optimal tax rate, and models of life time consumption will accurately describe the formation of redistribution preferences. However, when policies are flexible and can be changed over time, then individuals can base their optimal redistribution preferences on their short run interests without having to trade off welfare in the long run. This implies that individuals who have initial income below the mean, but expect to move up in the income distribution in the future, will find it optimal to demand high levels of redistribution in the short term, and then decrease this demand as income converges to its expected long run trajectory. This effect is unique to models of redistribution preferences, and generates a larger scope for short run considerations compared to standard models of life time consumption. In a recent paper, Agranov and Palfrey (2016) find experimental evidence that individuals' demand for redistribution is unaffected by expected mobility when tax policy is voted on in every period. When tax persistence is introduced, however, individuals' redistribution preferences increasingly reflect their expected mobility.

As argued above, materially self interested individuals will let their expectations over their future economic circumstances determine their redistribution preferences. Applying the realistic assumption that policies can be changed over time generates a key role for short run expectations. Furthermore, the life cycle consumption literature in economics suggests that impatient individuals are particularly affected by their short run expectations. The rest of this paper tests whether short run income expectations affect attitudes to redistribution and unemployment benefits, and investigates whether the effect is largest among individuals who are impatient or liquidity constrained.

Context and Data

I study the effect of short run income expectations on social policy preferences by combining data from the Danish Panel Study of Income and Asset Expectations, a rolling panel survey of approximately 6,000 Danes beginning in 2010 with uniquely detailed data from Statistics Denmark's administrative registers. These combined data allow me validate participants' expectations against objective data on actual outcomes. Furthermore, recent research shows register-based income measures to be more strongly associated with political attitudes than survey income (Hariri and Lassen 2016), and I therefore use precise control variables created from administrative data in the regression analysis whenever possible. All interviews were carried out in January, implying that I can measure participants' expectations for the year ahead and match these with data on actual outcomes.

The data are collected during a time of macroeconomic turmoil in which fiscal and labor market policy were at the forefront of the public debate. The financial crisis hit Denmark in late 2008, with unemployment levels rising from its lowest point around 3 percent to around 8 percent in 2011.[3] Going into the crisis, the Danish public sector had a considerable primary surplus and one of the lowest levels of debt of the OECD countries, but the budget deficit increased dramatically - from a surplus of 4.8 percent of GDP in 2008 to a deficit of about the same size in late 2010 - leaving Denmark with hard fiscal choices regarding welfare and pension reform. The centre-right government reduced the duration of unemployment benefits by 50 percent to two years as part of an overall strategy to rely primarily on austerity measures to improve public finances. The coalition was defeated in a general election in 2011. In a Gallup poll conducted at the beginning of the campaign, 79 percent indicated that the economy was the most important issue with unemployment a close second at 62 percent (Stubager 2012). Economic and welfare policy has been contentious throughout the centre-left's tenure since 2011, as seen for example by its decision to repeal the centre-right's labor market reforms and instead reduce unemployment benefits in the final two years to 60 percent of their initial level. Despite these reforms, Denmark maintains one of the largest public sectors in the OECD, and have remained in the top 3 on most indicators of government size such as social expenditure over GDP since the outbreak of the crisis in 2008.[4]

Participants in the first survey were randomly selected among individuals in the Danish Central Person Register (CPR) with any positive amount of labor income in the period 1998-2004.[5] The survey is carried out by a professional survey firm, also responsible for the official Danish labor force surveys. Each survey lasts on average 10-12 minutes and covers on average 40 questions relating to economics and politics.[6] The survey data is subsequently joined at the individual level with

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[3]See unemployment data from Eurostat here.

[4]See social expenditure data from OECD here.

[5]On June 1, 2009, this amounts to 2,603,565 individuals, corresponding to approximately 70 percent of the Danish adult population ($\geq$ 25 years). Kreiner, Lassen, and Leth-Petersen (2012) provide additional details of the first round sample. The sampling strategy implies that the inference I make in this paper is to the Danish adult population with at least some connection to the labor market.

[6]The response rate was 55 percent. Attrition to the second round was 31 percent, and new respondents were again sampled randomly from the CPR. Attrition to the third round was 31 percent. In the online appendix, I examine issues of selective dropout. Applying a reweighting procedure to correct my regression estimates for initial non-response as well as attrition shows no evidence that systematic non-response affects my results.

administrative register data from Statistics Denmark through the CPR-number. The data include information on labor market status, current and historical unemployment, occupation, education, demographics, and detailed income data from tax returns. These data are without exception reported from the relevant third-parties; for example, information on earnings is reported by employers; information on transfer income is reported by government agencies, and so on. This means that the income and employment data found in the administrative registers are extremely accurate.

I use survey data to measure political attitudes and behavioral dispositions, as well as subjective income expectations. As part of the survey, respondents were asked two questions concerning their attitudes to social policy: One concerning unemployment benefits, the other concerning redistribution more broadly. These attitudinal questions are the study's main measures of social policy preferences. The questions capture two distinct aspects of the welfare state, namely to redistribute income from the rich to poor and to insure against individual risks (Iversen and Soskice 2001). I expect income expectations to affect demand for both aspects of welfare policy similarly, because higher expected income increases the costs of redistribution across individuals and provides a form of private insurance against idiosyncratic shocks (e.g. Ansell 2014).

The previous section argued that individuals rely primarily on their short run expectations when they are impatient or liquidity constrained. These concepts are closely related, and given the short time span I am unable to empirically distinguish the two.[7] In the main analysis, I use an impatience measure based on a survey question that asks participants how much they would be willing to pay to have the winnings of a lottery of 25,000 DKK paid out today rather than in a year.

The exact question wording and the associated response categories of all survey items, as well as summary statistics on all variables used in the analysis, can be found in the online appendix. In the next section, I describe how subjective expectations of one-year-ahead income are elicited using probabilistic survey questions.

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[7] For example, Kreiner, Lassen, and Leth-Petersen (2012), analyzing a subset of the data used in this article, suggest that liquidity constraints are self-imposed by impatient individuals. In my data more than seventy percent of individuals classified as impatient are also liquidity constrained.

Measuring Subjective Income Expectations

One of the key advantages of eliciting expectations from surveys instead of estimating these from choice data is that it allows me to relax the assumption that individuals hold rational expectations. Rather than assuming that individuals are able to form expectations that are objectively correct, I only assume that the expectations elicited below accurately describe subjects' perceptions of their one-year-ahead income (Manski 2004; Rainer and Siedler 2008).

There are two broad approaches for eliciting expectations in surveys: A qualitative, in which respondents are asked to report the strength of their belief that an event will occur using a Likert scale (e.g "very likely", "fairly likely", etc.), and a probabilistic in which respondents are asked to report a set of probabilities that an event will occur (Hurd 2009; Manski 2004). There are several potential concerns related to the qualitative approach: The coarseness of the Likert response options could limit the information contained in answers to these questions, and different respondents might interpret the scales differently. In contrast, the probabilistic approach has several attractive properties and is often recommended for eliciting expectations in both developed and developing countries (see Delavande, Giné, and McKenzie 2011; Hurd 2009; Manski 2004 for recent reviews). The probabilistic approach is consistent with the theoretical approach to decision making under uncertainty where individuals are thought to assign coherent probabilities to future events, and it allows us to transparently calculate moments of the distributions of interest.

In principle, there are many ways to elicit probabilistic expectations over continuous variables such as income. Here, I ask respondents to report the minimum and maximum amount they expect to earn during the year. Afterwards, they are asked to report the probability that their yearly income will be less than the midpoint between these two numbers. These responses provide bounds on the support of each individual's probability distribution function $[y_{\min}^e, y_{\max}^e]$, and on the probability mass below the midpoint $p = P(Y < y_{\mid}^e)$, where $y_{\mid}^e = (y_{\min}^e + y_{\max}^e)/2$, but they but do not identify these distributions. To be able to calculate moments such as the mean I need to impose additional structure on the cumulative distribution function. In this paper, I assume that the cumulative distribution function is piece-wise uniform (e.g. Attanasio and Augsburg 2016; Attanasio and Kaufmann 2009).[8]

[8]In the online appendix, I show in detail that the main results presented in this paper hold when I replace the piece-wise uniform distribution with various other distributions that give more

The piece-wise uniform distribution is a mixture distribution consisting of two uniform distributions. The first is uniform on $[y^e_{\min}, y^e_{\mid})$, the second on $[y^e_{\mid}, y^e_{\max}]$. The probability that we sample from the first distribution, that is, that income falls between the minimum and the midpoint, is a Bernoulli random variable with parameter p: $X \sim \mathcal{B}(p)$. We can write the two distributions as

$$A : Y|X = 1 \sim \mathcal{U}(y^e_{\min}, y^e_{\mid})$$
$$B : Y|X = 0 \sim \mathcal{U}(y^e_{\mid}, y^e_{\max})$$

The expected value of the mixture distribution, Y, can then be calculated as

$$E[Y] = E[Y|X = 1]P[X = 1] + E[Y|X = 0]P[X = 0]$$
$$= \mu_A p + \mu_B(1 - p).$$

Expected one year ahead income can therefore be calculated as

$$y^e = \left[\frac{y^e_{\min} + y^e_{\mid}}{2}\right] p + \left[\frac{y^e_{\mid} + y^e_{\max}}{2}\right] (1 - p) \tag{1}$$

Despite the advantages of creating expectational variables from probabilistic survey questions, several concerns need to be addressed. In the following, I use the rich dataset to evaluate three potential sources of bias, namely whether respondents exert sufficient mental effort, whether expectations are endogenous to party loyalties, and whether the correlation between expectations and outcomes is driven by unobserved individual characteristics such as ability or motivation.

If individuals lack the ability to consistently express their expectations as probabilities then expectation measures created from probabilistic data could be biased (e.g. Bertrand and Mullainathan 2001; Zimmer 1984). Zafar (2011) devotes considerable attention to these concerns, finding that respondents generally hold well-formed and unbiased expectations. I use the administrative data to validate individuals' income expectations against information on actual outcomes. Figure 1 presents a binned scatterplot[9] of expected income plotted against actual earned income obtained from administrative data.[10] If individuals were able to perfectly

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weight to the middle of the support and less to the extremes.

[9] As part of their comprehensive security precautions, Statistics Denmark do not allow plotting of individual level data. This paper therefore only presents binned scatterplots.

[10] I use information about all major sources of income such as wage and capital income, etc.

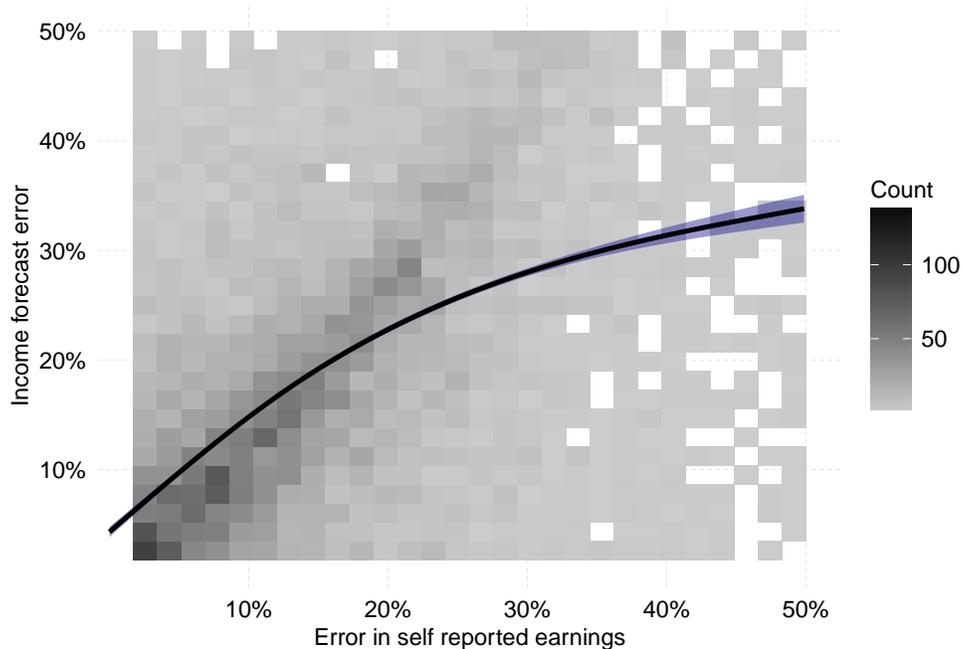Figure 1: Income Expectations and Actual Income
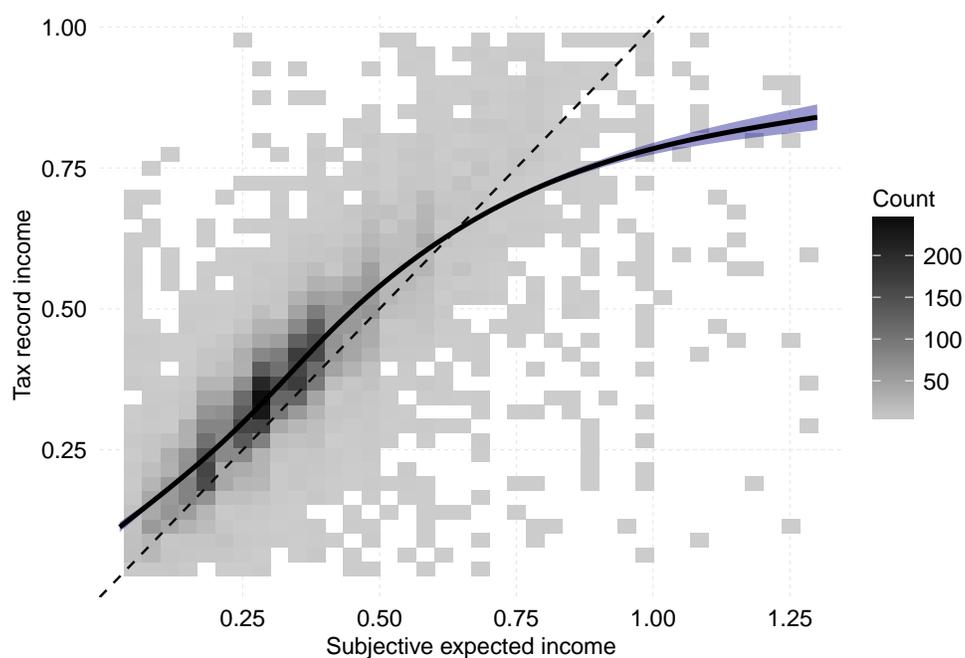
The figure shows a binned scatterplot along with a local smoother of subjective expected income against actual income measured from administrative data. Both variables are measured in mio DKK.

forecast their income all observations would lie on the 45° line. The figure shows a strong correlation between expected and actual income. The local smoother shows that individuals earning approximately 700,000 DKK or below marginally underestimate their actual income. The opposite might be true for individuals who earn more, but this is driven by relatively few observations.

Figure 1 indicates that individuals' subjective income expectations are strong predictors of their actual earnings, but they tell us little about the characteristics of individuals who fail to precisely forecast their income. One particular concern is that certain individuals fail to exert the sufficient mental effort that allows me to reliably measure their income expectations. Unfortunately, the data available do not contain direct information on mental effort. However, the survey asks respondents to report their gross income the year before. From the administrative data, I measure each individual's true earnings for this year and create the absolute percentage difference between these two variables. Figure 2 plots this difference

Figure 2: Misreporting Earned Income Correlates with Income Forecast Errors

The figure shows a binned scatterplot along with a local smoother of the percentage difference between errors in self reported income (the difference between respondents' stated earnings the year before and actual income as measured by the administrative data) against income forecast errors (the difference between respondents' one year ahead income expectations and actual income measured from administrative data).

against the absolute percentage forecast error in one year ahead income. The figure reveals a clear positive relationship: Respondents who are to some degree unaware of their past earnings generally make larger mistakes when forecasting their one year ahead income. This suggests that some respondents either fail to exert the required mental effort when answering the survey or are unaware of their personal finances. In the robustness section of this article, I show that my results are not driven by this group of individuals.

An important concern related to using subjective expectations in the context of redistribution preferences is that subjective data could be endogenous to individuals' political attitudes. In particular, the "perceptual screen" hypothesis (Campbell et al. 1960) holds that individuals' perceptions about their economic conditions are distorted by their partisan loyalties and whether or not their preferred party holds office (e.g. Ansolabehere, Meredith, and Snowberg 2013; Bartels 2002; Ger-

ber and Huber 2009). If party loyalties shape individuals' income expectations, then we should observe individuals' forecast errors to correlate with their party attachments. For example, if individuals who support the current government report more optimistic expectations, then this group should on average make larger forecast errors. I test this by grouping respondents based on whether they report to have voted for the centre-right coalition in the Danish 2007 election. I then regress this indicator variable on the absolute percentage error in forecasted income. Because Denmark has a parliamentary system, I consider both the case where individuals reported to support the government coalition and the case where they reported to vote for the parties who served in government.[11]

Table 1: Testing for Partisan Bias in Income Expectations

	Model 1	Model 2	Model 3	Model 4
Support government coalition	−0.0002	0.004		
	(0.005)	(0.005)		
Support government parties			−0.006	0.001
			(0.005)	(0.005)
Education (short)		−0.013*		−0.013*
		(0.007)		(0.007)
Education (medium)		−0.013*		−0.014*
		(0.007)		(0.007)
Education (long)		−0.033***		−0.034***
		(0.008)		(0.008)
Demographic Controls	No	Yes	No	Yes
Year FE	No	Yes	No	Yes
Observations	6,281	5,635	6,281	5,635

The table shows OLS regressions of individuals' government support as measured by their stated voting behavior in the 2007 Danish general election and a varying set of control variables on the absolute percentage deviation of expected to actual income according to the official Danish tax authorities. Demographic controls are measured from administrative data and include age, age^2, female (dummy), foreign background (dummy), homeowner (dummy), children (dummy), single (dummy), dummies for being self employed, outside the labor force or employed in the public sector. All models include a constant term (not reported). Robust standard errors are provided in parenthesis. *p<0.1; **p<0.05; ***p<0.01.

Results, presented in Table 1, do not support the perceptual screen hypothesis: I find no evidence that individuals' forecast errors are affected by whether or not they voted for the centre-right government. The coefficients on both indicators for government support are insignificant in all specifications and the point estimates

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[11]The government from 2007-11 consisted of the Conservatives and the Liberal Party and was supported by the Danish People's Party and the Liberal Alliance.

are close to zero. Furthermore, the sign of the effect changes with inclusion of a set of demographic controls. Interestingly, I find consistent evidence that forecast errors correlate with educational attainment: Individuals with higher levels of education systematically make smaller forecast errors.

Despite the fact that individuals' subjective income expectations are not endogenous to their support for the incumbent government, one might still worry whether subjective expectations are comparable across individuals. While individuals are arguably more likely to agree on the interpretation of probabilities than verbal categories on a Likert scale, one could be concerned that two individuals with equally pessimistic assessments of their economic prospects might report different probabilities (Tversky and Kahneman 1974, 1981), or that unobserved individual factors such as ability or motivation determine the precision of individual expectations. If such unobserved factors also influence respondents' political attitudes then regressions that rely on variation across individuals suffer from omitted variable bias.

I use the longitudinal nature of my dataset to investigate this concern. In Table 2, I regress actual income earned in a given year on subjective income expectations measured at the beginning of that year. The first four columns exploit variation across individuals, finding that income expectations robustly predict actual income even when controlling for lagged income, mean income over the last 10 years, a large battery of administrative controls, time and industry fixed effects, and so on. To further eliminate concerns of omitted variable bias, columns five and six include individual fixed effects. These eliminate all unobserved time invariant individual characteristics such as ability or anchoring effects. Even with the inclusion of individual fixed effects, subjective income expectations are found to be strong and significant predictors of actual income earned over the year. This provides evidence that subjective income expectations provide valuable private information beyond what can be modeled using only information on past outcomes, and that these expectations are not driven by unobserved individual characteristics.

Having validated my expectational measure against objective data, I proceed by considering individual level expected mobility. I do this by calculating from administrative data each respondent's current rank in the income distribution and the expected rank in a year given her income expectations. Results are plotted in Figure 3. Remarkably, the figure shows the expected mobility transition function to be approximately concave: Individuals below the median expect on average to be upwardly mobile, whereas the opposite is true for individuals with current

Table 2: Predicting Actual Income from Income Expectations

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Expected income	0.756***	0.599***	0.164***	0.159***	0.126***	0.122***
	(0.014)	(0.018)	(0.026)	(0.026)	(0.020)	(0.021)
Demographic Controls	No	Yes	Yes	Yes	No	No
Economic Controls	No	No	Yes	Yes	No	Yes
Industry FE	No	No	No	Yes	No	No
Year FE	No	No	No	Yes	No	Yes
Model	OLS	OLS	OLS	OLS	FE	FE
Observations	11,012	9,554	9,554	9,551	7,217	7,217

The table shows regressions of individuals' expected income on realized income for that year according to the official Danish tax registers. All controls are created from administrative data. Demographic controls include age, age^2, female (dummy), foreign background (dummy), homeowner (dummy), children (dummy), single (dummy), dummies for being self employed, outside the labor force or employed in the public sector, education (vocational), education (bachelor's degree), education (master's degree or PhD). Baseline is high school education or less. Income controls include current income, unemployment (dummy) and average income (2010-prices) and unemployment (1998-2009). All models include a constant term (not reported). The controls in the fixed effects regressions are current income and unemployment, and time and individual fixed effects. Robust standard errors clustered at the individual level are provided in parenthesis. *p<0.1; **p<0.05; ***p<0.01.

income above the median. The figure provides a key explanation why expected income is more important for welfare preferences than current income: A large fraction of individuals with low current income have low current demand for redistribution because they expect their income to increase over the year.[12]

Relating Income Expectations to Social Policy Preferences

This section estimates the effect of individuals' subjective income expectations on their welfare preferences. Because respondents' answers to the attitudinal questions are ordered-categorical, different estimation strategies are possible. Here, I treat the categorical responses as approximately continuous and assign numbers to each category. Following this strategy, I construct numerical variables that take the values from 1 to 3 when the dependent variable is attitudes to unemployment benefits, and 1 to 5 when it is attitudes to redistribution. I code both variables so higher values imply higher demand for unemployment benefits and redistribution.

[12]One explanation why the transition function is concave could be that the income process is to some degree mean reverting and that respondents are aware of this effect (Benabou and Ok 2001).

Figure 3: Expected income mobility
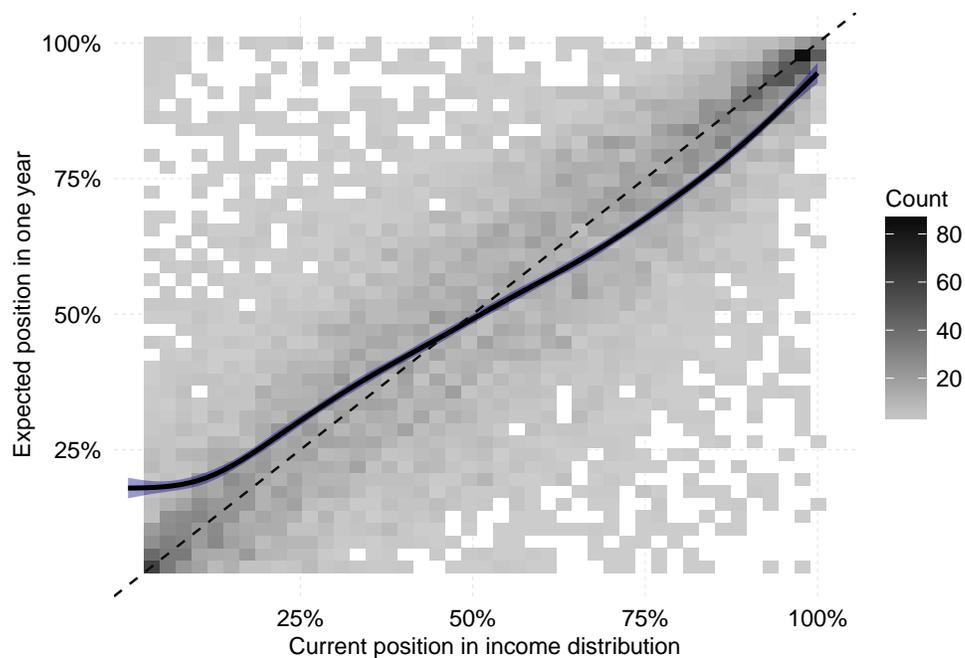
The figure shows a binned scatterplot along with a local smoother of respondents' current position in the income distribution plotted against their expected position according to their one year ahead income expectations.

The association between expectations and political attitudes is then estimated using ordinary least squares. This approach imposes few restrictions and is relatively transparent, and it often used in the literature (e.g. Alesina et al. 2011; Margalit 2013). As discussed above, one of the empirical challenges of using subjective expectations relates to the comparability of such measures across individuals. One key advantage of using OLS is that it provides a straightforward way of eliminating this concern through the inclusion of individual fixed effects.[13]

The baseline specification estimates the association between subjective income expectations and political attitudes across individuals using the following linear

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[13]In the online appendix, I show that the main results hold across individuals when using ordered logit. I also convert the variables into dichotomous measures and show that the main results hold when estimated by unconditional logit and Chamberlain's fixed effect conditional logit model (Chamberlain 1980).

model:

$$z_{it} = \phi y_{it}^e + \beta X_{it} + \varepsilon_{it} \qquad (2)$$

where z_{it} is individual i's attitudes to redistribution or unemployment benefits and y_{it}^e her subjective expectation of one year ahead income. Both variables are measured at the beginning year t. X_{it} is a vector of (very detailed) individual control variables created both from administrative register and survey data. Stock variables such as gender, educational attainment, and attitudinal characteristics are measured at the beginning of year t. Flow variables such as income and unemployment are measured in the year leading up to t (e.g. when analyzing the effect of expectations on attitudes in the beginning of 2011, I control for income obtained during 2010). The parameter of interest is ϕ, the effect of a one unit increase in expected income on political attitudes. I allow for arbitrary correlation in the error terms by clustering at the individual level.

Results from the baseline model are presented in Table 3. The table shows the cross sectional association between income expectations and preferences over redistribution and unemployment benefits in columns 1a-5a and 1b-5b, respectively. Column one presents the raw associations without control variables, showing a strong relationship between subjective income and both measures of social policy preferences.

Column two adds year fixed effects and a large set of standard demographic control variables such as age, gender, educational attainment, whether the individual is self employed, outside the labor force or employed in the public sector, if the individual has a foreign background, owns a house, and so on. Furthermore, I add information on current income and a proxy for life time income, calculated from a Mincer earnings regression estimated on the entire Danish adult working population over the last 10 years,[14] to control for individuals' expected life time earnings (Rueda, Stegmueller, and Idema 2014; Stegmueller 2013b).[15] Included are also controls for the employment status and history of the respondent. Recent research link individuals' social policy preferences to their occupational risk and housing wealth (e.g. Ansell 2014; Rehm 2009, 2016; Rehm, Hacker, and Schlesinger

[14]The online appendix contains a detailed description of how this Mincer earnings equation is estimated.

[15]It should be noted that this measure of expected life-time income describes individuals' expectations under the assumption that individuals hold rational expectations. I would have preferred to measure individuals life-time income expectations using the probabilistic approach described above, but the survey did not include such questions. The Mincer measure is the best approximation I was able to create given these constraints.

2012), and I therefore include controls for individuals' occupational unemployment rate and housing equity.[16] All aforementioned controls are constructed from administrative register data. Introducing this comprehensive battery of controls decreases the point estimates, but not the overall significance, of expected income. Interestingly, current income fails to predict political attitudes. This suggests that the link from individual income to political attitudes runs through short run expectations. The effects of income expectations are relatively large: the estimated coefficient suggests that the effect on preferences for redistribution of a one standard deviation increase in expected income is similar in size to approximately half of the estimated effect of gender.

Column three adds controls for individuals' broader ideological beliefs and risk aversion. There is a debate over the appropriateness of including measures of ideology when attempting to explain political attitudes. Rueda and Stegmueller (2015) argue that welfare preferences constitute a key dimension of individuals' ideology and therefore suggest excluding ideology measures as explanatory variables. Others argue that ideological positions can be considered an independent source of social policy preferences (Alesina et al. 2011; Margalit 2013). I show robustness of my results by including and a full set of fixed effects for respondents' self-reported vote intention, and I control for risk aversion because increases in income could lead to increases in demand for social spending if individuals are sufficiently risk averse (Moene and Wallerstein 2001). Including these controls has little overall effect on the estimate on expected income.

One might worry that individuals' income expectations are influenced by their perceptions of the overall trend of the economy. To alleviate such concerns, I use the fact that the 2011-12 surveys include probabilistic questions on individuals' expectations of their one year ahead equity value. I use eq. (1) to construct subjective expected housing value for each respondent. Because the housing market is intimately tied to broader trends in the economy, I include this variable in column four to capture individuals' expectations of such broader trends. Including this variable decreases the sample size because I loose responses from the 2010 survey. Controlling for expected equity value slightly decreases the point estimate on expected income, but short run income expectations remain a strong predictor of preferences for redistribution and unemployment benefits.

Column five introduces a lagged dependent variable to account for the fact that

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[16]The official public property assessment is carried out by the Danish Tax Authority and used for calculation of the property tax.

Table 3: Relating Income Expectations to Political Attitudes

| | A: Redistribution | | | | | | |
	Model 1a	Model 2a	Model 3a	Model 4a	Model 5a	Model 6a	Model 7a
Expected income	−0.535***	−0.401***	−0.334***	−0.238**	−0.173*	−0.397***	−0.192*
	(0.047)	(0.086)	(0.087)	(0.105)	(0.097)	(0.116)	(0.116)
Current income		−0.013	0.052	0.080	−0.107		0.115
		(0.106)	(0.109)	(0.131)	(0.112)		(0.127)
Observations	16,906	13,539	12,035	6,433	6,832	8,491	8,392

| | B: Unemployment Benefits | | | | | | |
	Model 1b	Model 2b	Model 3b	Model 4b	Model 5b	Model 6b	Model 7b
Expected income	−0.404***	−0.248***	−0.215***	−0.202***	−0.222***	−0.142**	−0.108*
	(0.024)	(0.045)	(0.046)	(0.060)	(0.059)	(0.062)	(0.062)
Current income		0.001	0.031	0.004	0.039		0.039
		(0.046)	(0.043)	(0.056)	(0.053)		(0.065)
Observations	16,558	13,263	11,819	6,329	6,726	6,831	6,760

Demographic Controls	No	Yes	Yes	Yes	Yes	No	No
Economic Controls	No	Yes	Yes	Yes	Yes	No	Yes
Year FE	No	Yes	Yes	Yes	Yes	No	Yes
Attitudinal Controls	No	No	Yes	Yes	Yes	No	No
Expectational Controls	No	No	No	Yes	No	No	No
Lagged Dep. Variable	No	No	No	No	Yes	No	No
Model	OLS	OLS	OLS	OLS	OLS	FE	FE

The table shows regressions of individuals' expected income and varying sets of controls on preferences for redistribution and unemployment benefits. Demographic controls are constructed from administrative data and include age, age², female (dummy), foreign background (dummy), homeowner (dummy), children (dummy), single (dummy), dummies for being self employed, outside the labor force or employed in the public sector, education (vocational), education (bachelor's degree), education (master's degree or PhD). Baseline is high school education or less. Economic controls, constructed from administrative data, include current income and unemployment (dummy), occupational unemployment rate, housing equity (2010-prices), average unemployment (1998-2009) and long run income estimated from a Mincer regression. Attitudinal controls include a full set of indicators for vote intention, and an indicator for risk aversion. Expectational controls include subjective expectations of one year ahead equity value. All models include a constant term (not reported). The controls in the fixed effects regressions are current income and unemployment and time and individual fixed effects. Robust standard errors clustered at the individual level are provided in parenthesis. *p<0.1; **p<0.05; ***p<0.01.

political attitudes are often persistent over time (e.g. Krosnick 1991; Margalit 2013; Stegmueller 2013a). Introducing this variable slightly decreases the point estimate of expected income on redistribution preferences, whereas the effect on demand for unemployment benefits is unchanged. In both models, income expectations remain a significant predictor of individuals' social policy preferences.

Thus far, I have presented empirical evidence of a cross sectional relationship between income expectations and preferences for redistribution and unemployment benefits. These relationships hold when removing the influence of a comprehensive set of very precise demographic, economic, attitudinal and behavioral controls. However, one might still worry that the associations reported above are driven by unobserved individual characteristics such as ability or motivation. I accommodate this concern by adding individual fixed effects to the linear model described in eq. (2). The augmented model can be written as:

$$z_{it} = \phi y_{it}^e + \beta X_{it} + \alpha_i + \varepsilon_{it} \tag{3}$$

where α_i is the time-invariant individual fixed effect for individual i. X_{it} includes time varying individual characteristics. Adding individual fixed effects removes the cross-sectional variation related to unobserved heterogeneity. The remaining variation that is used to identify ϕ now comes from variation within the same individuals over time. Standard errors are clustered at the individual level.

Results from the fixed effects regression are presented in columns six and seven of Table 3. Column six shows the raw within associations and column seven adds controls for current income and unemployment, and time fixed effects. The columns reveal the same relationships as reported in the cross sectional models: Expected income remains a strong predictor of both measures of welfare preferences. The point estimate on current income is never close to statistically significant. This confirms the main point of this paper, namely that individuals' political attitudes are forward looking and reflect their short term expectations rather than past outcomes.

This section shows strong evidence that subjective income expectations affect political attitudes. The point estimates on expected income are highly significant and always in the expected direction: Individuals who expect high one-year-ahead earnings have systematically lower current demand for redistribution and unemployment benefits. This is in line with the theoretical predictions where higher expected income reduced the gains from redistribution and provided a form a private insurance against job losses. I find strong evidence of these relationships

both between individuals and within the same subjects over time, suggesting that the estimates are not driven by unobserved individual characteristics such as ability or motivation. In the section that follows, I investigate how these results relate to individuals' position in the income distribution, their financial literacy and their levels of impatience.

*Robustness: Financial Literacy and Position in Income Distribution*

Do the effects of short run income expectations vary across individuals in systematic ways? In this section, I investigate the stability of the main results by analyzing whether the effect of income expectations depends on respondents' position in the income distribution and their knowledge of own past earnings.

Do respondents in different parts of the income distribution react differently to changes in their short run income expectations? One might expect some individuals to be sufficiently rich that they still perceive themselves as net losers from redistribution, even when they expect to move down in the income distribution in the short run. For these individuals, the main effect from increased redistribution is higher taxes, and given their expected downward mobility they may feel less able to afford such tax increases than they did before, and they may therefore reduce their support for redistribution. To investigate this, I group respondents into quartiles based on their current income, and reestimate models 1-5 reported in Table 3. I present the coefficient on expected income in a coefficient plot in Figure 4. It should be noted that estimating these large models on smaller subsets of the data significantly decreases the power, and I therefore present point estimates with their associated 90 percent confidence intervals.

The figure shows the effect of income expectations on social policy preferences to be relatively stable across income quartiles and choice of control variables. The effect of expected income on demand for unemployment benefits is very similar across income groups. The effect of income expectations on demand for redistribution is slightly more variable, but the main point stands: individuals in different parts of the current income distribution react similarly to changes in their expected income. These results show that this paper's main results are not driven by individuals in any particular part of the income distribution.

One potential concern with the approach underlying this article is that results are driven by respondents who hold unrealistic or incoherent expectations. Table 1 showed income forecast errors to correlate negatively with education. This finding could indicate that the main results are driven by individuals who exert insufficient effort in the survey or hold low levels of financial literacy. Table 3 showed the

Figure 4: The Relationship between Expected Income and Social Policy Preferences by Income Quartile
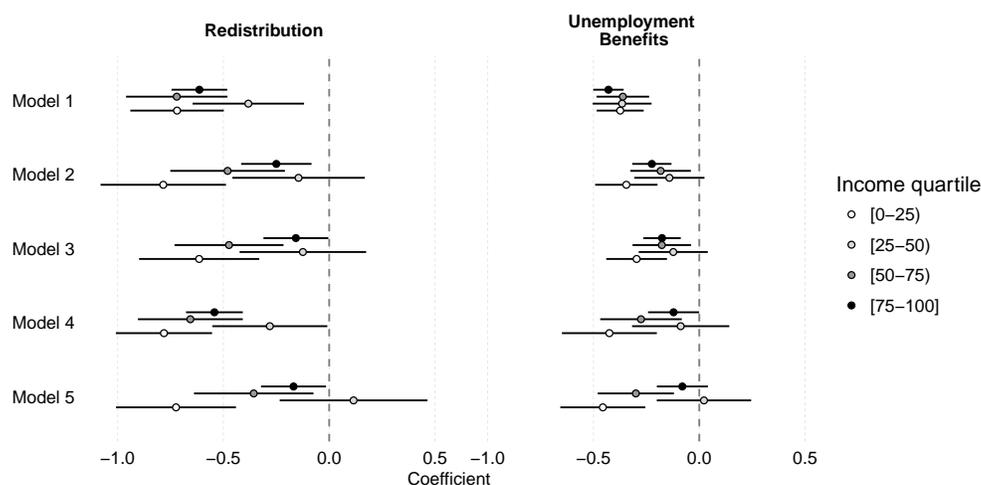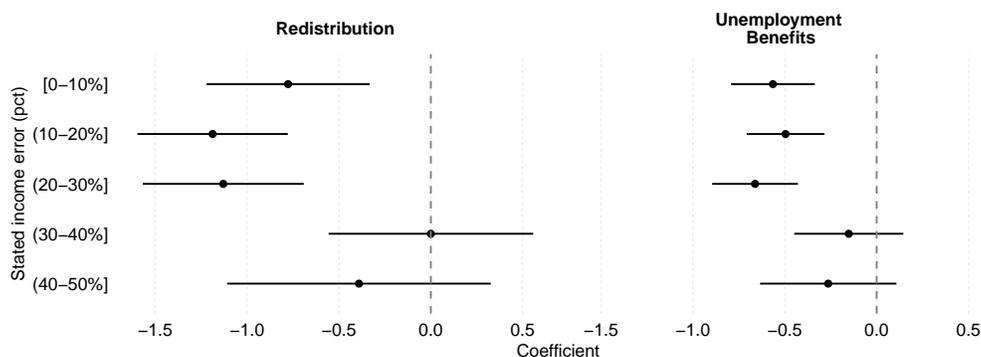

The figure shows the point estimates and 90 percent confidence intervals on expected income in models 1-5 of Table 3 estimated separately for respondents in each quartile of the current income distribution.

same relationships to hold within the same individuals over time, but did not show which individuals drove the effect. Below, I show that the main results are driven by individuals who hold coherent expectations and seem to exert sufficient effort. In Figure 2, I showed that individuals who failed to precisely report their current gross earnings tended to make larger errors when forecasting future income. My first measure of insufficient effort and low financial literacy therefore groups individuals according to their percentage error in self reported current earnings, and reestimates the effect of expected income on political attitudes, controlling for economic characteristics.[17] Results are presented in Figure 5. The figure shows that the main results are stable for individuals who make small or moderate mistakes (in the 0-30 percent range) when reporting current earnings, but become significantly smaller, and statistically insignificant, for respondents whose errors exceed 30 percent. These findings are consistent with previous research showing that individuals who exert low mental effort essentially report random noise when their expectations are measured probabilistically (Gouret and Hollard 2011). These

[17]I do not estimate the more demanding models in columns 3-5 as the group of individuals who make errors larger than 30 percent is relatively small.

Figure 5: Robustness of Main Results to Stated Income Errors

The figure shows the point estimates and 95 percent confidence interval on expected income from a regression with economic controls on preferences for redistribution and unemployment benefits estimated separately at different levels of stated income errors.

respondents introduce substantial measurement error in the expectations measure which attenuates their coefficients toward zero.

As a second measure of insufficient effort, I pay special attention to respondents who report the probability of earnings falling below the midpoint to be zero or fifty. Several studies find that respondents tend to bunch at certain round values (Hurd 2009; Manski 2004). Almost 62 percent of all respondents report the probability that earnings fall below the midpoint to be zero or fifty percent. If rounding can be taken as a proxy for insufficient effort, I would expect my results to vary systematically according to this classification. To test this, I reestimate the main results when interacting expected income with a dummy for whether the respondent provided p as zero or fifty.

Results, presented in Table 4, show some indication that the effect of expected income on redistribution preferences is smaller among individuals who exert low mental effort. The results are weaker, and generally insignificant for unemployment benefits. Taken together, these results are comforting, as they provide further evidence that the main results are not driven by respondents who exert low mental effort.

Table 4: Robustness of Main Results to Rounding

	A: Redistribution			
	Model 1a	**Model 2a**	**Model 3a**	**Model 4a**
Expected income	-0.759^{***}	-0.649^{***}	-0.583^{***}	-0.316^{**}
	(0.099)	(0.116)	(0.115)	(0.129)
Report p at zero or fifty	-0.088^{*}	-0.090^{**}	-0.088^{*}	-0.038
	(0.046)	(0.046)	(0.045)	(0.054)
Expected income × Report p at zero or fifty	0.297^{***}	0.271^{**}	0.274^{**}	0.179
	(0.111)	(0.110)	(0.110)	(0.132)
Observations	13,540	13,539	12,035	6,832

	B: Unemployment Benefits			
	Model 1b	**Model 2b**	**Model 3b**	**Model 4b**
Expected income	-0.445^{***}	-0.313^{***}	-0.276^{***}	-0.246^{***}
	(0.053)	(0.061)	(0.060)	(0.078)
Report p at zero or fifty	-0.047^{*}	-0.041^{*}	-0.039^{*}	-0.036
	(0.024)	(0.024)	(0.024)	(0.031)
Expected income × Report p at zero or fifty	0.114^{*}	0.096	0.092	0.072
	(0.059)	(0.058)	(0.057)	(0.075)
Observations	13,264	13,263	11,819	6,726

Demographic Controls	Yes	Yes	Yes	Yes
Economic Controls	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Attitudinal Controls	No	No	Yes	Yes
Lagged Dep. Variable	No	No	No	Yes

The table shows regressions of individuals' subjective expected income, interacted with an indicator for whether they report the probability of earnings falling below the midpoint to be zero or fifty, and varying sets of controls on preferences for redistribution and unemployment benefits. Demographic controls are constructed from administrative data and include age, age^2, female (dummy), foreign background (dummy), homeowner (dummy), children (dummy), single (dummy), dummies for being self employed, outside the labor force or employed in the public sector, education (vocational), education (bachelor's degree), education (master's degree or PhD). Baseline is high school education or less. Economic controls, constructed from administrative data, include current income and unemployment (dummy), occupational unemployment rate, housing equity (2010-prices), average unemployment (1998-2009) and long run income estimated from a Mincer regression. Attitudinal controls include a full set of indicators for vote intention, and an indicator for risk aversion. Expectational controls include subjective expectations of one year ahead equity value. All models include a constant term (not reported). Robust standard errors clustered at the individual level are provided in parenthesis. *p<0.1; **p<0.05; ***p<0.01.

Do Impatient Individuals Rely More on Their Short Run Expectations?

Having demonstrated that a change in individuals' short run income expectations brings about a change in their demand for redistribution and unemployment benefits, I proceed by exploring the degree to which these effects depend on respondents' level of impatience. As argued in the theoretical section, impatient individuals are expected to rely more on their short run expectations compared to more patient individuals. This effect is often suggested in the economics literature on life time consumption as an explanation for why individuals deviate from their long term optimal consumption path (see Carroll 2001 and references herein). To test whether impatient individuals are affected more by their short run expectations, I define an impatient respondent as one who is willing to pay a positive amount for having the winnings of a lottery of 25,000 DKK paid out today instead of in a year. According to this measure, approximately 15 percent of the respondents can be defined as impatient.[18] I then reestimate eq. (2) where I allow the effect of expectations to vary by the impatience indicator.

Results, presented in Table 5 for expected income, support the hypothesis that impatient respondents' attitudes are particularly affected by their short run expectations. Both groups' redistribution preferences are dependent on their expected one year ahead income, but the effect is around thirty to fifty percent larger for impatient individuals. The effect is strongest for demand for unemployment benefits, where the difference between the two groups is always highly significant, whereas it is less strong for redistribution.

Conclusion

This paper studies how individuals' short run income expectations affect their social policy preferences. I argue theoretically that individuals motivated by material self interest should let their expectations of future income determine their current social policy preferences. From this perspective, current income has already been taxed and should therefore to a much lesser extent influence preferences over welfare policies. I argue that short run expectations are important determinants of

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[18]Because approximately 85 percent of the probability mass in the impatience measure is concentrated at zero, I am unable to use a continuous measure of impatience as this would be driven almost exclusively by the very few individuals who would be willing to pay a lot to have the lottery winnings paid out today.

Table 5: Relating Income Expectations to Political Attitudes: The Role of Impatience

| | A: Redistribution | | | |
	Model 1a	Model 2a	Model 3a	Model 4a
Expected income	-0.528^{***}	-0.427^{***}	-0.360^{***}	-0.148
	(0.077)	(0.095)	(0.094)	(0.099)
Impatient	0.128^{*}	0.122^{*}	0.123^{*}	0.210^{***}
	(0.068)	(0.068)	(0.066)	(0.069)
Expected income × Impatient	-0.319^{*}	-0.298^{*}	-0.278^{*}	-0.429^{**}
	(0.167)	(0.167)	(0.162)	(0.174)
Observations	13,483	13,482	11,984	6,798

| | B: Unemployment Benefits | | | |
	Model 1b	Model 2b	Model 3b	Model 4b
Expected income	-0.318^{***}	-0.197^{***}	-0.166^{***}	-0.145^{**}
	(0.041)	(0.050)	(0.049)	(0.062)
Impatient	0.148^{***}	0.138^{***}	0.136^{***}	0.153^{***}
	(0.036)	(0.035)	(0.034)	(0.042)
Expected income × Impatient	-0.357^{***}	-0.336^{***}	-0.316^{***}	-0.372^{***}
	(0.091)	(0.090)	(0.087)	(0.103)
Observations	13,209	13,208	11,769	6,693

Demographic Controls	Yes	Yes	Yes	Yes
Economic Controls	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Attitudinal Controls	No	No	Yes	Yes
Lagged Dep. Variable	No	No	No	Yes

The table shows regressions of individuals' subjective expected income, interacted with an impatience dummy, and varying sets of controls on preferences for redistribution and unemployment benefits. Demographic controls are constructed from administrative data and include age, age^2, female (dummy), foreign background (dummy), homeowner (dummy), children (dummy), single (dummy), dummies for being self employed, outside the labor force or employed in the public sector, education (vocational), education (bachelor's degree), education (master's degree or PhD). Baseline is high school education or less. Economic controls, constructed from administrative data, include current income and unemployment (dummy), occupational unemployment rate, housing equity (2010-prices), average unemployment (1998-2009) and long run income estimated from a Mincer regression. Attitudinal controls include a full set of indicators for vote intention, and an indicator for risk aversion. Expectational controls include subjective expectations of one year ahead equity value. All models include a constant term (not reported). Robust standard errors clustered at the individual level are provided in parenthesis. *p<0.1; **p<0.05; ***p<0.01.

current political attitudes under the reasonable assumption that redistribution and tax policies are flexible over time, or when individuals are sufficiently impatient.

I combine a recent repeated survey of subjective expectations with Danish administrative data, and document a robust and sizable effect of short run income expectations on current attitudes to social policy: Individuals who expect to have higher income in the future have lower current demand for redistribution and unemployment benefits than others. I use my detailed data to show that individuals form precise expectations of their future economic circumstances that are unaffected by their party loyalties. In line with the theoretical argument, I find that impatient individuals are particularly affected by their short run income expectations. The rich administrative data allows me to control for other plausible explanations of welfare preferences, and, importantly, the main results are robust to the inclusion of individual fixed effects. Furthermore, I show that my results are not driven by individuals in particular parts of the income distribution or by individuals who exert insufficient mental effort in the survey. While this paper does not exploit any clear exogenous variation, the results taken together suggest a strong causal effect of short run income expectations on political preferences.

These results highlight the important role of individual economic circumstances in shaping political attitudes. They show that material self interest has a strong influence on individuals' preferences once we account for the fact that individuals are forward looking and motivated by how current welfare policies will affect their economic well-being in the future. This paper suggests that short run expectations play a key role in shaping current attitudes. This raises the question how individuals update their expectations and preferences in response to unforeseen events. This seems a particularly interesting path for future research.

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