Borrowing Welfare:

Credit Access and Support for Redistribution

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Abstract

Do voters see bank credit as an acceptable substitute for publicly-provided welfare? Recent scholarship has studied the political determinants of credit booms, yet we know much less about the "demand side", i.e. what voters want. We speculate that voters see bank credit as a private form of insurance against economic risk and therefore prefer a smaller welfare state when credit access is facilitated, but we argue that the tradeoff depends on (1) the type of credit, (2) the specific welfare policy, and (3) the socioeconomic situation of voters. We test these claims in two steps: relying on observational data from the European Social Survey between 2002–10 we analyze if individuals with better credit access demand lower levels of redistribution. Furthermore, we conduct a conjoint analysis in the United Kingdom that cleanly identifies a causal credit-access effect on preferences for redistribution; we find that voters support lower income taxation and less generous social security policies when credit is cheaply available, but do not find any evidence of a tradeoff between bank credit and support for unemployment benefits. We moreover demonstrate that the findings vary considerably across different income and risk groups.

Introduction

> Banks and credit unions should be making credit available [...]. Now, true, the people might have to pay a little bit of interest. But the idea that it's paycheck or zero is not a really valid idea. There's no reason why some institution wouldn't be willing to lend.
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> — Wilbur Ross, US Commerce Secretary, 2019.

Over the past decades, the idea that bank credit might serve as a private form of insurance against adverse economic risks has gained traction among policymakers and scholars in many advanced democracies. Households in advanced economies take out loans at high rates while welfare policies become less generous: in the United Kingdom, household debt rose by almost 50% between 2000 and 2008 and is rising again after a post-crisis dip (Mbaye, Moreno-Badia and Chae, 2018). Secretary Ross's tone-deaf advise to unpaid US government employees to resort to bank credit in order to survive a cash-flow interruption produced by the government shutdown in early 2019 illustrates a general development toward the individualization of economic risks through extensive use of credit markets even as fiscally-redistributive policies are slashed. Along these lines, scholars have argued that the expansion of credit markets that predated the Great Recession did not only fuel an economic bubble, but also allowed individuals to smooth consumption and to "keep up with the Joneses" despite growing disparity between those with top incomes and those in the low and middle classes (Rajan, 2010). And while empirical research on the political and economic drivers of credit supply has accumulated knowledge about the incentives that policymakers face to increase credit flows to society (Ansell and Ahlquist, 2017; Herrera, Ordoñez and Trebesch, 2014), the empirical evidence on the *demand-side drivers* of credit expansions is sparse. Hence, we know little about how citizens react to more affordable access to credit, and most of the existing research implicitly assumes that myopic voters simply accept credit as a substitute for traditional welfare policies.

We develop a theory about the conditions under which voters might trade off welfare policies for better access to credit starting from the observation that the welfare state serves a redistributive function that shifts income flows across individuals as well as an insurance function that allows individuals to protect against economic risk and uncertainty; hence, individuals support the welfare state out of different motives: low-income individuals in jobs with high labor market risks are more likely to benefit from permanent redistributive welfare measures while high-income, low-risk individuals support the welfare state in order to have a publicly-funded insurance net that they

might use sparingly to smooth consumption. Yet, credit is only an incomplete substitute for the welfare state in the sense that loans need to be repaid and thus cannot replace permanent redistributive measures. We therefore submit that high-income, low-risk individuals – the net contributors of welfare regimes – are more likely to see access to bank credit as a cheaper, more advantageous substitute for the welfare state; net beneficiaries of welfare transfers, i.e. those with low incomes and high labor market risks, would be less likely to welcome credit as a substitute for the welfare state.

We test these implications using observational data from the European Social Survey in 23 countries over eight years (2002–10) as well as in a conjoint analysis in the United Kingdom that allows cleaner identification of the a causal credit-access effect on support for redistribution. Deploying Bayesian multilevel models, the observational study finds overall support for our hypotheses, showing that individuals that report a better ability to borrow demand lower levels of fiscal redistribution across a wide variety of European countries; this effect is pronounced for individuals with higher incomes, but not for individuals with low levels of job rountinization, our proxy for labor market risk. Though the use of observational data speaks to issues of external validity, this correlational analysis prevents us from making strong claims of identification of a causal effect and we cannot know for sure which sources of credit respondents have in mind as they consider whether they have access to credit; moreover, the broad character of the outcome variable does not allow us to disentangle whether respondents are motivated by redistributive or insurance concerns. We therefore turn to a conjoint analysis that provides causal evidence on the alleged link between better credit access and support for the welfare state. The experiment can help us disentangle how different forms of credit — namely, access to *credit card loans* and access to *mortgage loans* — affect the spending and taxation preferences of individuals in the United Kingdom. The experimental study confirms that individuals with better credit access demand lower levels of redistribution, yet this effect is concentrated among high-income, low-risk individuals who become more reluctant to pay higher income taxation. Their preferences over unemployment support and welfare transfers do not change in response to better access to bank credit, and low-income, high-risk voters do not see credit as a substitute to publicly-provided social policies. Hence, instead of helping overcome economic and social hurdles and inequality, credit markets contribute to polarization over social policies by furthering the gap between net contributors and beneficiaries of redistributive policies.

Theory

Despite repeatedly sounding the death knell for welfare systems in advanced democracies, welfare regimes have not really experienced fundamental shifts in the generosity of social policies (e.g. Pierson, 1996). In fact, public social expenditure and employment protections in OECD countries exhibit remarkable persistence over time within countries (OECD, 2014) What has changed considerably over the past decades is the labor market, and governments have taken different paths in their attempts to narrow the growing gap between traditional welfare policies and new types of risks faced by many citizens (Bonoli, 2007). Reforms have often occurred through "hidden" forms of retrenchment, such as shifts on eligibility and benefits rules that significantly alter welfare policies (Hacker, 2004) and a growing emphasis on social investment policies (Hemerijck, 2010).

An important obstacle to implementing welfare state retrenchment is public opinion. Far-reaching cuts in social policies are highly unpopular among voters (Bremer and Bürgisser, 2018). Powerful constituencies in favor of a generous welfare state have in many cases successfully thwarted the abolishment of existing social policy frameworks (Pierson, 1996), and recent experimental evidence demonstrates that voters demand compensatory measures for cutbacks in welfare policies (Häusermann, Kurer and Traber, 2018). An abundant literature shows that those individuals that stand to gain the most from welfare policies are the fiercest supporters of generous fiscal redistribution. Iversen and Soskice (2001) show that individuals with more specific skills face higher risks due to particularly high costs of re-employment (e.g. retraining) and therefore demand more redistributive policies, and Rehm (2009) demonstrates that occupational unemployment risks drive individuals' support for the welfare state. More recently, Walter (2017) and Thewissen and Rueda (2017) have shown that the risk of occupational off-shoring is positively associated with support for fiscal redistribution and that workers employed in jobs that face a high risk of automation value redistribution more.

Recent research has explored the ways through which governments might have been able to cut publicly-provided welfare despite widespread support for generous redistributive measures. In line with Häusermann, Kurer and Traber (2018), this literature focuses on compensation for voters and on alternatives to traditional redistribution policies. One such potential alternative to fiscal redistribution is better access to bank credit. The rise of credit markets can be seen as a market-based form of "compensation" for declining institutional welfare transfers. In the US, for example, the rapid expansion of consumer credit over the past few decades has been described as a politically-convenient mechanism to forgo the adoption of costly welfare measures,

as easy credit allows many individuals to smooth consumption, insure against adverse shocks, and purchase assets despite stagnating wages and without having to implement tax hikes (Rajan, 2010; McCarty, Poole and Rosenthal, 2013). Ansell and Ahlquist (2017) develop a more general theory about the political conditions under which governments promote the expansion of credit markets to fight economic inequality instead of resorting to classical redistributive measures: they confirm that growing economic inequality is associated with expanded credit only when parties of the right are in power, which suggests that mainly conservative governments promote credit as a substitute for welfare spending.

Implicit in arguments about credit as a functional equivalent of welfare is the assumption that most individuals accept this substitution willingly. Based on this assumption, previous research has explored the *supply side* of credit growth and mapped out the political drivers of credit expansion. Yet, the *demand side* of credit access has received scant attention and it remains unclear whether individuals prefer or even buy into the notion that better access to credit could be a substitute for risk-attenuation policies. We now discuss some of the promises and limits of thinking about credit access as a substitute for redistribution.

The demand side: Trade-off between access to credit and support for redistribution

In principle, a strong case can be made for complete financial inclusion as a functional equivalent of welfare protection. Beyond the crucial role that credit markets perform in mobilizing resources towards productive activities and enhancing the efficiency of the economy (Beck, Levine and Loayza, 2000), they also benefit consumers by opening up new economic opportunities. Credit markets could even play a role in reducing economic inequality (Demirguc-kunt and Levine, 2009) and, as Menaldo and Yoo (2015) note, financial development and financial inclusion are more likely to increase in what they term "popular democracies" — as opposed to elite-biased democracies that are not associated with better credit access for consumers.

Welfare states deliver two important services to voters: they provide publicly-provided insurance against risk and uncertainty to individuals who support the insurance scheme through their taxes and duties (*intertemporal personal redistribution*), and they redistribute wealth and income across individuals through permanent redistributive policies from the more affluent to low-income households (*interpersonal redistribution*). Not all citizens benefit to the same degree from the two functions of the welfare state: low-income households mainly benefit from income and wealth transfers, individuals in occupations with high labor market risks benefit from generous insurance

nets that cushion the economic consequences of job losses, and high-income households with secure jobs are the ones least likely to benefit from either form of welfare policy, but are those that carry the largest share of the tax burden than finances welfare regimes.

Consider, in contrast, some of the benefits for consumers that follow from well-functioning credit markets. One of them is the possibility of using credit to insure against adverse economic shocks. Credit constitutes a partial alternative to an institutionalized welfare system financed by taxes, and allows individuals to engage in consumption smoothing and to avoid hard budget constraints in the event of an economic shock without forcing them to permanently pay high taxes in order to finance redistribution. Access to credit can thus work as an insurance mechanism that *partially* substitutes for publicly-provided welfare and might reduce heavy fiscal participation. To be clear, the argument *is not* that bank credit is a perfect substitute of the welfare state. First, the cost of short-term borrowing from financial markets is fully borne by the individual, not by the taxpayer. A loan today shifts an individual's financial burden to the future and can only bridge temporary financial shortfalls, rather than replace permanent wealth and income gaps. In other words, credit only achieves *intertemporal redistribution*, not *interpersonal redistribution*. Second, credit exposes individuals to new forms of risk, such as maturity and liquidity risks that obtain from potential changes in exchange rates or banking crises (see, e.g. Ahlquist, Copelovitch and Walter, 2018). Third, credit flows to individuals with the ability to post some form of collateral, which potentially cuts a number of poorer households from access to credit when they most need it. It is therefore not readily obvious whether and under which circumstances voters accept bank credit as a substitute for publicly-provided fiscal redistribution.

We expect that individuals with better access to bank credit demand lower levels of publicly-provided welfare policies. Yet, given the limitations we just referenced, we conjecture that the willingness to substitute welfare spending with better credit access is not universal, but is mediated by an individual's relative economic situation and unemployment risk profile. First, an individual's relative income position crucially determines whether she pays for or benefits from fiscal redistribution and thus whether she supports welfare policies. Low-income individuals are net beneficiaries of welfare transfers and therefore should be more reluctant to accept credit as a substitute for welfare policies. Individuals with higher incomes finance the welfare state through taxes while usually depending on the welfare state at worst temporarily; they should be more willing to resort to alternative insurance mechanisms offered by financial markets which provide a tool to smooth consumption. We thus expect higher credit access to correlate with lower support

for redistribution mostly among high-income individuals.

Second, an individual's unemployment risk profile also affects the probability that individuals fall back on welfare transfers. Individuals in occupations associated with unemployment risks are more likely to benefit from unemployment insurance schemes, whereas individuals in low-risk jobs are likely to depend on the welfare state only temporarily. In general, individuals who suffer larger labor market risks will be more likely to support redistribution as a form of insurance. Hence, we expect the trade-off between fiscal redistribution and credit access to be more costly for individuals that face higher labor market risks.

In short, the way in which individuals use the welfare state is driven by their levels of *economic disadvantage* and *economic insecurity* (Rehm, Hacker and Schlesinger, 2012). High-income and low-risk individuals are likely to depend on the welfare state only as a means to smooth shocks over their life-cycles, whereas low-income and high-risk citizens additionally rely on a welfare state that redistributes across individuals (Barr, 2001). Bank credit, however, only offers *temporary* insurance against adverse economic shocks and is therefore only an attractive alternative to the welfare state for individuals that do not permanently depend on fiscal redistribution. In that way, income and risk mediate the relationship between credit access and demands for redistribution.

Correlational study

We do not find in previous literature much attention to the *demand side* of credit access as a substitute for welfare. One exception is Hariri, Jensen and Lassen (2018) who, close to our own views, argue that "liquidity constraints" — what we call lack of access to credit — force individuals to depend on the insurance functions of the welfare state *regardless* of their asset holdings and incomes. Based on micro-data from Denmark, they show that even wealthy individuals with low ratios of liquid assets to disposable income tend to support unemployment insurance. They also find that individuals facing liquidity constraints are more supportive of redistribution, based on a cross-section of 22 European Social Survey (ESS) countries.[1] We expand on Hariri, Jensen and Lassen's results by analyzing data on 93 ESS surveys in 23 European countries observed through

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[1]Tertytchnaya et al. (2018) argue that the ability to self-insure — which they construe as the ability to accumulate precautionary savings, hold risk-hedging assets, and count on help from friends — drives individuals' assessments of government performance.

five biennial waves from 2002 to 2010.[2] Because our purview spans years before and after the great recession, we can exploit both within- and cross-country variation to explore whether this trade-off remains consistent across countries and years. Considering such a wide set of countries and years helps us place the experimental results of this study appropriately, minimizing overreach in assessing external validity. Based on these observational data, we confirm that, in most country-years, those that self-report access to credit are less supportive of redistribution. We also find an interaction effect between access to credit and income, such that high-income respondents with access to credit are much less likely to support redistribution. In contrast, we fail to find a strong interaction effect between access to credit and a measure of unemployment risk.

Data

We inspect the extent to which respondents agree with the statement: "The government should take measures to reduce differences in income levels." Though it is arguably difficult to find a single survey question that captures the nuanced attitudes that respondents hold toward welfare regimes, this indicator is commonly employed in the literature to measure respondents' support for the redistributive and insurance functions provided by social safety nets. *Support for redistribution* is a five-point ordered categorical variable that runs from "disagree strongly" to "agree strongly." We reverse the coding so that higher values correspond to support for redistribution. Support of redistribution in the ESS surveys is consistently high. More than 70% of respondents either agree or strongly agree with the statement that the government should take measures to reduce income differences, and only around 15% express explicit opposition to the statement.

We explore whether an individual's *credit access* affects her attitudes toward redistribution. For this purpose, we use a question that asks respondents to report on their ability to borrow money: "If for some reason you were in serious financial difficulties and had to borrow money to make ends meet, how difficult or easy would that be?" Answers are captured in a five-point scale from "very difficult" to "very easy". This indicator captures an individual's perception about her general ability to borrow money in a pinch, which is close to our goal of understanding whether

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[2]We include Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Slovakia, Spain, Sweden, and Switzerland. We could not explore data following 2010 because they exclude a crucial *access to credit* indicator. Inconsistency in coding income forces us to drop surveys in Estonia (2004, 2006), France (2002), Hungary (2002, 2006), Ireland (2002, 2008), Portugal (2010), and Slovakia (2008).

individuals see credit as a potential substitute for some of the insurance functions that social safety nets provide. However, the question does not reference specific lending sources. These sources could include financial intermediaries or friends and family members, who remain a popular source of credit especially in Mediterranean countries (Demirguc-Kunt et al., 2015). We submit that this item is a reasonable proxy for bank credit for three reasons. First, responses aggregated at the survey level correlate positively with bank credit-to-GDP ratios, which are an objective measure of credit availability. Second, respondents in countries where borrowing from family and friends is common (e.g. Spain) exhibit among the lowest average reported values for credit access, which speaks against a "social network" interpretation of the survey item. Third, within-country variation in the ability to borrow over time further corroborates our interpretation of the survey item as an indicator of access to bank credit: countries in which the banking sector was hit severely during the global financial crisis (e.g. Ireland and Great Britain) show the largest drops in reported access to credit in post-crisis waves; in contrast, countries that weathered the crisis relatively well and that benefited from lower interest rates (e.g. Germany) display constant or even increasing aggregate levels of credit access after the crisis hit.

We include individual-level controls for *income* and *employment in a routine job*. The relative income position of individuals is the single most important driver of their attitudes toward redistribution, because more affluent individuals are net contributors and low-income respondents are more likely to be net beneficiaries of welfare transfers. We consider a standardized measure of self-reported income to capture this possibility.[3] *Employment in a routine job* speaks to potential risk of job loss in a workplace in which such occupations can be easily off-shored or may even be substituted by robots.[4] Based on our theoretical expectations about the kinds of individuals for whom the credit–welfare trade-off may be more obvious, we include in alternative models an interaction between *credit access*, on the one hand, and *income* and *employment in a routine job*,

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[3]The framing of the question on household income changed slightly after the third wave of the ESS surveys (for a more detailed discussion, see Rueda, 2018). Following Thewissen and Rueda (2017), we recode self-reported household total net income into 2010 Purchasing Power Parity (PPP)-adjusted US dollars using exchange rate information from the OECD and standardize the income level using the square root of the household size to account for differences in household size. Income is thus consistently measured across all waves and normalized by household size. For Estonia (2004, 2006), France (2002), Hungary (2002, 2006), Ireland (2002, 2008), Portugal (2010), and Slovakia (2008) we have no information on household income and, therefore, exclude them from the sample.

[4]We rely on the routine occupational indicator created by Oesch (2013).

on the other.

A number of individual-level factors could additionally account for a potential correlation between *credit access* and *redistributive preferences*. We control in our models for socio-economic status and demographic factors that presumably drive credit access and are important determinants of individuals' attitudes toward the welfare state. These variables include years of education and indicators for unemployment, age, and gender. We perform multiple imputation routines at the survey level to avoid potential bias from non-random missing attrition. Within each survey, we seek to approximate a "missing at random" assumption by imputing missing values based on all of the individual-level predictors that we incorporate in our models.[5]

Research design and model

We model $y_{is} \in \{1, \ldots, 5\}$, the *support for redistribution* response of individual i in survey s, as an observed outcome of a latent continuous variable y_{is}^*. In combination with a set of survey-specific cutpoints τ_{js} ($j \in \{1, \ldots, 4\}$), y_{is}^* determines an individual's ordered categorical answer y_{is}, as shown in Equation 1:

$$
y_{is} = \begin{cases}
1 & \text{if} \qquad\quad y_{is}^* \leq \tau_{1s} \\
2 & \text{if } \tau_{1s} < y_{is}^* \leq \tau_{2s} \\
3 & \text{if } \tau_{2s} < y_{is}^* \leq \tau_{3s} \\
4 & \text{if } \tau_{3s} < y_{is}^* \leq \tau_{4s} \\
5 & \text{if } \tau_{4s} < y_{is}^*
\end{cases}
\tag{1}
$$

Survey-specific cutpoints τ_{js} allow the possibility that individuals with similar characteristics may have different redistributive preferences in different surveys (for example, a low-skilled male worker in Spain may support redistribution, whereas a similar individual in Sweden might not).[6] We link latent support for redistribution y_{is}^* to individual-level covariates, as shown in the following

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[5]At this point, our inferences are based on a single multiply-imputed dataset. We use Amelia to carry out imputations (Honaker and King, 2010; Honaker, King and Blackwell, 2011).

[6]As we explain below, survey-specific τ_{sj} parameters are "centered" around random intercepts α_s to achieve identification.

statements:

$$y_{is}^* = \alpha_s + \delta_s \cdot \text{credit access}_{is} + \mathbf{X}_{is}\boldsymbol{\beta}_s$$

$$\beta_s \sim \mathcal{N}\left(0,\ \sigma_\beta^2\right)$$

$$\alpha_s \sim \mathcal{N}\left(\overline{\mathbf{X}}_s\boldsymbol{\mu},\ \sigma_\alpha^2\right)$$

$$\delta_s \sim \mathcal{N}\left(\overline{\mathbf{X}}_s\boldsymbol{\lambda},\ \sigma_\delta^2\right) \tag{2}$$

Individual-level covariates $\mathbf{X}_{is}$ have unmodeled random coefficients $\boldsymbol{\beta}_s$ that vary across surveys. We treat such random coefficients as nuisance parameters that account for potential cross-survey heterogeneity in the influence of confounders. The quantity of interest in this setup is δ_s, which captures the survey-specific impact of *credit access* on latent support for redistribution. Note in the statements in Equation 2 that both α_s and δ_s are modeled as a function of survey-level averages $\overline{\mathbf{X}}$ of individual-level covariates $\mathbf{X}$ (Mundlak, 1978; Bell and Jones, 2015). This modeling choice reduces "heterogeneity bias" in random-effects models and helps us understand the role of within- and cross-survey variation in identifying the impact of *credit access* on *support for redistribution*. We concentrate on estimates of the partially-pooled parameters δ_s that are based on within-survey variation at the individual level to make the point that, across time and space, individuals with access to credit are less likely to report high levels of support for redistribution. Later, we also show estimates of the completely-pooled effects of individual-level variables — including *income*, and *employment in a routine job* — to make statements about "average" reactions to *credit access*.[7]

Results

We present graphic summaries of coefficient estimates from three models. Model 1 corresponds exactly to the statements contained in (1) and (2); Models 2 and 3 are based on that same specification, but include interactions between *credit access*, on the one hand, and *income* (Model

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[7]This framework corresponds to a "modeled varying intercept, modeled varying slopes" (Gelman and Hill, 2007) or "intercepts-as-outcomes plus slopes-as-outcomes" (Raudenbush and Bryk, 2002) model. We estimate the model within a Bayesian inferential framework, since only in this way we can guarantee full propagation of estimation uncertainty through all parameters, including variance parameters. We stipulate wide conjugate normal distributions for parameters θ, ζ, α, β, γ, and τ, and uniform distributions on the range [0,50] for σ_α^2 and σ_δ^2. For each model, inferences are based on 300 scans for each of two MCMC chains thinned every five observations after an initial burn-in phase of 30,000 iterations. Data are from a single multiply-imputed dataset to avoid listwise deletion. Gelman-Rubin's $\hat{R}$ statistic return no evidence of non-convergence.
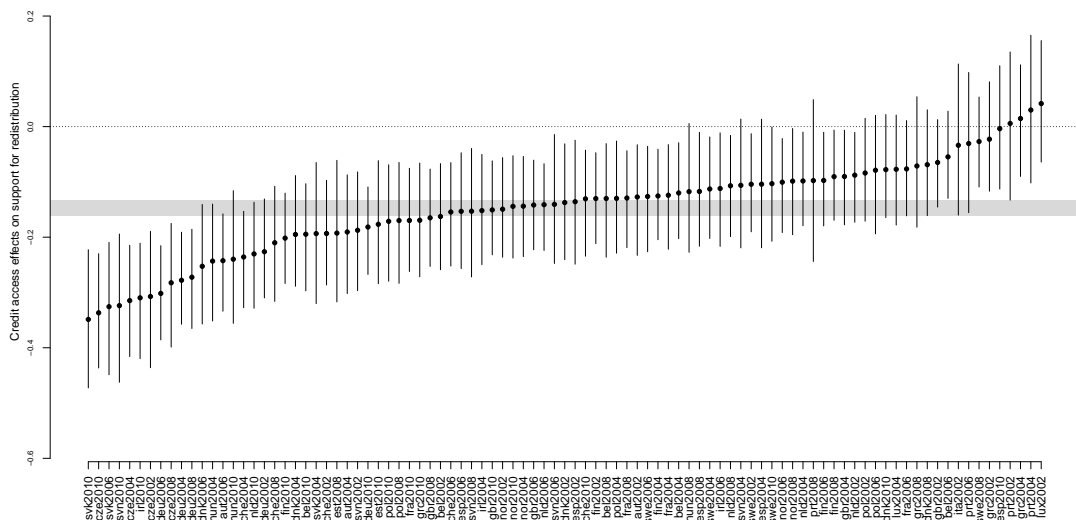
Figure 1: Survey-level partially-pooled effects of *credit access* on *support for redistribution* (each vertical bar displays 2.5^{th}, 50th, and 97.5^{th} percentiles of the posterior distribution of parameter δ_s). The gray bar is a 95% highest posterior density interval for the completely-pooled effect of *credit access* on *support for redistribution*.

2) and *job routinization risk* (Model 3), on the other. Our starting point is Figure 1, which contains survey-specific estimates of the partially-pooled effects of *credit access* on *support for redistribution*. Each vertical bar comprises the 95% highest posterior density of parameters δ_s. As is obvious from this graph, there are a number of surveys in which we detect no trade-off between *credit access* and *support for redistribution*, but in a majority of surveys the effect of *credit access* is distinctly negative. Confirming this finding, the vertical gray line in Figure 1 captures the completely-pooled estimate of the effect of *credit access*. We see then that, on average, those that self-report access to credit systematically show less support for redistribution.

This negative estimate obtains after controlling for an individual's age, gender, years of education, employment status, routine job status, and income, as can be seen in the left plot of Figure 2. All coefficient estimates in those plots correspond to completely-pooled effects, even though our models additionally estimate survey-level partially-pooled coefficients for all of these confounders.[8] We see that older individuals, unemployed individuals, and those holding routine jobs are more likely to express support for redistribution. Women, those with more years of education, and

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[8]We also control at the survey level for average values of all individual-level covariates. These estimates are not shown for the sake of space. With the exception of *average access to credit*, which slightly increases *average support for redistribution*, we find little of interest to report.
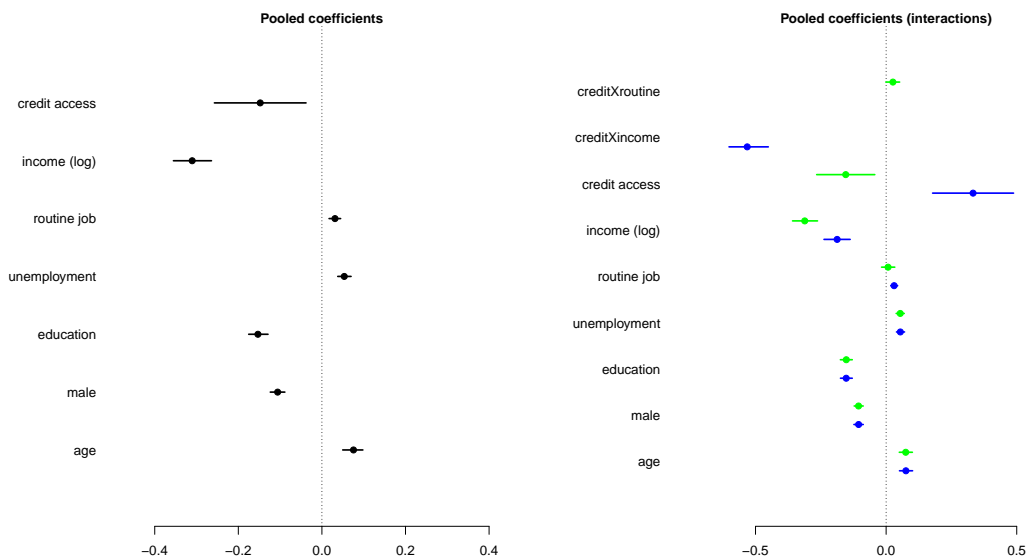
Figure 2: Completely-pooled effects of individual-level variables on *support for redistribution* (each horizontal bar displays 2.5[th], 50th, and 97.5[th] percentiles of the posterior distributions of the mean of random coefficients).

richer individual are less supportive of redistribution. These results are generally consistent with previous findings in the literature.

On the right plot of Figure 2 we portray estimates for the completely-pooled effects of individual-level variables from Models 2 and 3. These models add interactions with *credit access* to Model 1. In Model 3 (the green lines in Figure 2), we see that the main effect of *credit access* remains negative, and the coefficient for the interactive term is of small magnitude. In Model 2 (the blue lines in Figure 2), in contrast, we see that the main effect of *credit access* abruptly changes signs, but note as well that the coefficient corresponding to the interaction term is negative. In order to understand how the effect of *credit access* on *support for redistribution* changes conditionally on varying-levels of income and on an individual's employment in a routine job status, we show in Figure 3 the completely-pooled marginal effect of *credit access* on *support for redistribution* conditional on income (left plot) and routine job (right plot).[9]

On the right plot of Figure 3 we display the effect of *credit access* on *support for redistribution* conditional on whether an individual holds a routine job or not. Recall that we follow extant literature in considering employment in a routine job as relatively risky, and thus expect that individuals in such jobs would be less likely to trade-off more credit for lower support for the

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[9]In other words, we trace $\left.\dfrac{\partial y^*}{\partial \text{credit access}}\right|_{\text{income}}$ and $\left.\dfrac{\partial y^*}{\partial \text{credit access}}\right|_{\text{routine job}}$.
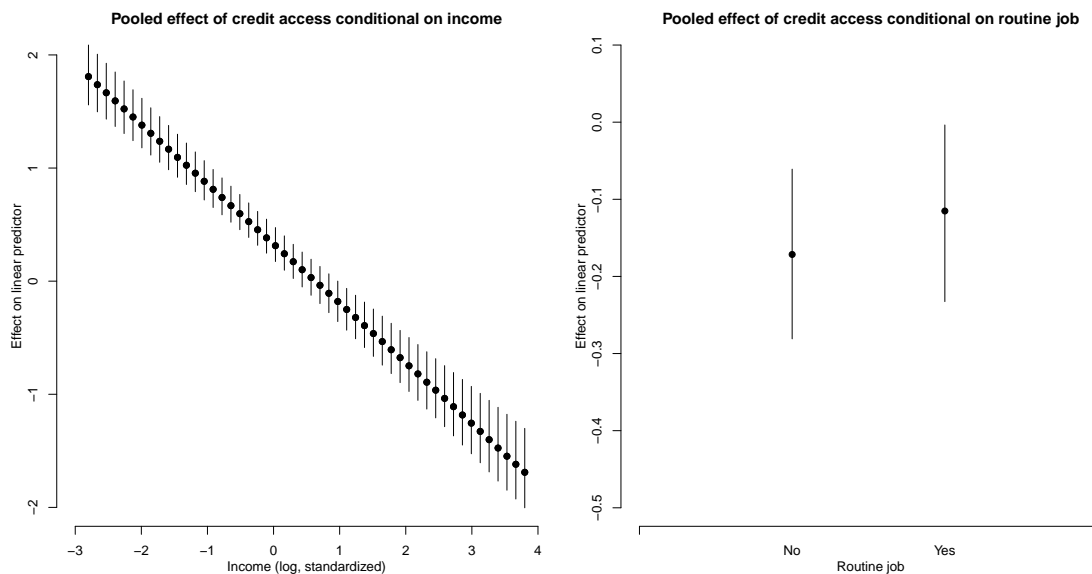
Figure 3: Completely-pooled marginal effect of *credit access* on *support for redistribution* conditional on values of *income* and *routine job* (each vertical bar displays 2.5^{th}, 50th, and 97.5^{th} percentiles of the posterior distribution of the marginal effect).

welfare state. In fact, we do not see a statistically significant difference among individuals in routine vs. non-routine jobs as they think about this trade-off. In contrast, we see in the left plot of Figure 3 that the *credit access* effect on *support for redistribution* among high-income individuals is negative and statistically significant. These are of course individuals that do not depend much on either the redistributive or insurance functions of the welfare state to begin with. When these individuals report having access to credit, they are even more likely to withhold support for redistribution. The flip side of this finding is that low-income individual with access to credit appear to express higher-than-average support for redistribution. This conclusion may be the consequence of model dependence, especially of our decision to model a linear independent effect.[10]

Causal study

The observational analysis provides important insights into the existence of a link between better access to credit and reduced support for fiscal redistribution in a large number of advanced industrialized countries in Europe. Yet, the correlational analysis relies on observational survey data and any causal inferences we could make from it are therefore suspect. For one, we lack

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[10]We will relax this assumption in future work.

a complete understanding of the mechanisms that lead individuals to report different levels of access to credit, which means that uncontrolled covariates may confound the credit access effect we attempt to measure. Moreover, the very willingness to report high access to credit may depend on the structure of the welfare state: individuals with poor access to credit may see this as more than sufficient if they live in an environment with generous unemployment insurance. In this case, measurement error would be systematic, and would not be overcome even by controlling for the confounder that produces it (i.e., the structure of the welfare state). On the other hand, we rely on a single measure of individuals' redistributive preferences that does not allow us to distinguish between respondents' demands for the spending areas and revenue side of the welfare regime.

In the following section we therefore aim to provide causal evidence on the alleged link between better credit access and support for the welfare state by conducting an experimental conjoint analysis that allows cleaner identification of a causal credit access effect on preferences for redistribution. Conjoint experiments overcome the limitation of traditional survey experiments that vary one dimension or attribute at a time, and thus help us gain insight into individuals' preferences across different dimensions (Hainmueller, Hopkins and Yamamoto, 2014). The experiment allows us to disentangle what type of credit (credit card loans; mortgage loans) affects the spending and taxation preferences of individuals in the United Kingdom. In line with our theoretically derived expectations about the different facets of welfare regimes that matter for the relevant subgroups — i.e. low-income, high-risk — our experimental setup distinguishes between demand for the welfare state's *redistribution function* (social assistance for low-income families) and for its *insurance function* (unemployment benefits) as well as the *revenue side* of social policies (income taxation). We are thus able to link different forms of bank credit with preferences over the different dimensions of the welfare state.

Survey design

Our conjoint experiment in the United Kingdom asks respondents to sequentially compare six pairs of countries that vary along five attributes. Respondents are then asked to choose between the two countries, a "forced-choice" design that enables us to evaluate the role that each attribute trait plays in selecting one country profile over another. The fictitious countries vary along two *welfare spending* attributes (basic social assistance for low-income families; unemployment support), a *revenue* attribute (average income tax), and two *credit access* dimensions (credit card

Table 1: Five different attributes with corresponding traits employed in the conjoint analysis

Attribute	Traits
Credit card loans (average interest rate)	1: 5% 2: 15% 3: 25%
Housing loans (average interest rate)	1: 2% 2: 6% 3: 10%
Unemployment support	1: None 2: Up to 12 months 3: Up to 24 months
Basic social assistance for low-income families	1: None 2: 33% of average income 3: 66% of average income
Average income tax	1: 15% 2: 25% 3: 35%

loans; housing loans). These attributes, along with their respective traits, appear in Table 1.[11] In Section , we developed hypotheses about who is willing – high-income, low-risk individuals – and unwilling – low-income voters and high-risk individuals – to accept the better access to credit as a substitute for a generous welfare regime. The conjoint experiment allows us to model these tradeoffs and to distinguish between the three aspects of the welfare state, i.e. it enables us to analyze if, in fact, mainly high-income individuals alter their preferences over fiscal redistribution as credit becomes more cheaply available.

Following Hainmueller, Hopkins and Yamamoto (2014), we randomize across respondents the order in which attributes appear in the survey so as to avoid primacy bias, but hold this order constant within the survey to avoid confusion. Attribute traits for all dimensions are fully randomized — hence, no combinations of traits are ruled out (no "blocking"). With unblocked traits, we also guarantee that predictors will be orthogonal, which is an assumption that we need to satisfy in order to estimate average marginal interaction effects (Egami and Imai, 2019).[12]

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[11] Though the countries that respondents see are fictitious, the traits that they assess are conceivable within limits set by current policy debates in the United Kingdom. In fact, in most cases we have chosen the "middle" trait within each attribute to correspond to current practice; the one exception is credit card loans, where we set the "highest" level to correspond to current practice. Appendix lists sources of information for current levels of all these attributes in the United Kingdom. In our experiment, we simplified these policies to make them more understandable, but always with an eye to keeping alternative levels within conceivable ranges.

[12] To address concerns about unrealistic combinations, for instance expansive welfare spending traits with very low

The survey was conducted in January 2019 using a respondent pool from Bilendi. It includes 1,286 respondents and is representative by age, gender, location, and education.[13] In addition to the experimental element in the survey, we asked respondents a number of questions about their perceived labor market risk, their political leaning, and their socio-economic backgrounds that allow us to explore effect heterogeneity that is crucial in order to empirically test our theory. Most importantly, to test our theoretical expectations we ask respondents about their overall household income, including income from all sources (ten income brackets), and their perceived unemployment risk as well as reemployment prospects (both at a scale ranging from 1–5). In order to analyze effect heterogeneity across income subgroups, we compare individuals in the lowest four income deciles with individuals in the highest four income deciles. Risk groups are created using a five-point scale measure about individuals' perceived unemployment risk. Individuals that report an unemployment risk of four or five as well as those that are currently unemployed are part of the high-risk group; all others are considered to face low labor-market risk.[14]

Estimation

Our arguments call for the estimation of interaction effects among specific traits on the choice of a country. In particular, we inspect interactions between, on the one hand, two different types of credit (credit card loans and mortgage loans) and, on the other, three different social welfare policies (fiscal burden, unemployment insurance, and income support for the poor). Because we refrained from blocking traits in the conjoint experiment — i.e., levels of fiscal burden are guaranteed in our design to be orthogonal to levels of unemployment insurance and income support for the poor — we can consider all six sets of interaction effects without needing to adjust for potential combinations of levels that do not appear in paired comparisons. That is, lack of blocking guarantees that all $3^5 = 243$ combinations of traits among five different attributes are equally

tax levels, we present results for analyses excluding atypical profiles in the Appendix as suggested by Hainmueller, Hopkins and Yamamoto (2014).

[13]The sample consists of adult respondents of which 53% are female; 21% are below 35 years, 55% are between 35–64 years, and 24% are 65 years or older; 60% have no university degree; and 13% live in Greater London.

[14]The results are robust to alternative codings and measures of the risk variable.

probable to appear in our sample.[15]

We estimate these interaction effects in six different models, inspecting one two-way interaction at a time. In all of these six models, $Y_i(\mathbf{t}) \in \{0, 1\}$ is the preference that respondent i expresses for a country with characteristics $\mathbf{t}$, where $\mathbf{t}$ includes *credit card loans*, *access to housing loans*, *unemployment support*, *social assistance for low-income families*, and *average income tax*. For example, one of our hypotheses calls for estimating interaction effects between *credit card loans* and *unemployment insurance*. As is common in the analysis of conjoint experiments, we fit a linear probability model to estimate the interactive effect of *credit card loans* and *unemployment insurance* on country choice:

$$
\begin{aligned}
Y_i(\mathbf{t}) = \mu &+ \sum_{j=1}^{2} \beta_{1j}{\cdot}\text{credit card}_{ij} + \sum_{l=1}^{2} \beta_{2l}{\cdot}\text{unemployment}_{il} \\
&+ \sum_{j=1}^{2}\sum_{l=1}^{2} \gamma_{jl}{\cdot}\text{credit card}_{ij}{\times}\text{unemployment}_{il} \\
&+ \sum_{k=1}^{2} \lambda_1{\cdot}\text{mortgage loans}_{ik} + \sum_{m=1}^{2} \lambda_2{\cdot}\text{income tax}_{im} + \sum_{n=1}^{2} \lambda_3{\cdot}\text{social assistance}_{in} + \varepsilon_i
\end{aligned}
$$

As evidenced in the recent literature on the analysis of conjoint experiments (Egami and Imai, 2019; Hainmueller, Hopkins and Yamamoto, 2014), there are a number of quantities of interest that one can estimate based on a model like that in the equation above. Obtaining estimands for the theoretically relevant quantities is not straightforward.[16] To see why, consider that in any

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[15]As suggested by Hainmueller, Hopkins and Yamamoto (2014), we identify conjoint comparisons of fictitious countries that involve "atypical countries". We classify those country profiles as atypical that combine very generous welfare policies with very low income tax levels. To corroborate the robustness of our findings and ensure that the empirical conclusions are not driven by atypical profiles, we present in the Appendix the main analyses using subsample that excludes comparisons of atypical profiles (Figure A4 and Table A1). The findings are largely robust to the exclusion of atypical profiles and become even considerably larger for the subgroup of high-income individuals.

[16]In our pre-analysis plan we committed to reporting a number of quantities, including marginal means and average marginal effects for a model that omits interactions, as well as average marginal conditional effects (AMCE) and average marginal interaction effects (AMIE) for models that include interactions. In addition, we committed to avoiding the piecemeal elimination of irrelevant traits within attributes, a practice that promotes data mining, and instead use Egami and Imai's Grouping and Selection using Heredity in ANOVA regularization method (Egami and Imai, 2019), which allows us to collapse "unnecessary" levels of ordered factors in a consistent manner that is independent of our preferences.

interaction there are three levels (i.e., three traits) for each of two ordered factors (i.e., attributes) of interest. As an example, consider the interaction between factor 1 and factor 2, each of which has three traits, namely, 1a, 1b, 1c, and 2a, 2b, 2c. The interaction of these two factors produces nine possible conditions: 1a×2a, 1a×2b, ..., 1c×2c. Rather than presenting *all* possible expected probabilities of choosing one country over another conditional on which of the nine interactions obtains, we look here at differences in average marginal conditional effects. We start by calculating the average marginal conditional effect that obtains when moving from the lowest level on factor 1 (1a) to the highest level on factor 1 (1c) while holding factor 2 at its lowest level (2a). We then calculate the same average marginal conditional effect, this time holding factor 2 at its highest trait (2c). In other words, the difference in average marginal conditional effects is defined as:

$$\big(\mathsf{E}(Y|1c, 2c) - \mathsf{E}(Y|1a, 2c)\big) - \big(\mathsf{E}(Y|1c, 2a) - \mathsf{E}(Y|1a, 2a)\big) \tag{3}$$

We conclude that an interaction effect exists when this difference is statistically significant.[17] We proceed in two steps that follows the analysis of the observational data. In a first step, we estimate the interaction effects for a pooled sample of all respondents in order to assess whether better access to credit is causally related to lower support for the welfare state in a fully experimental setup. In a next step, we calculate these differences in average marginal conditional effects for discrete groups of respondents, namely high vs. low income and high vs. low risk individuals in order to explore effect heterogeneity and to test our theoretical expectation about the groups that are particularly attracted by the tradeoff between publicly-provided welfare and better access to credit.[18]

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[17]Thus, for example, a negative interaction — where, remember, higher interest rates on credit card loans correspond to less affordable credit — means that we should see the largest difference in support for the most and least generous levels of unemployment support when we condition on high levels of *credit card loans*, i.e., on the most expensive loan rates for credit card debt. That means, we expect that respondents' preferences become *less* sensitive to changes in the generosity of welfare spending measures and *more* sensitive to unpopular high income taxation as credit is more cheaply accessible.

[18]We also report basic statistics of the conjoint analysis, such as the Average Marginal Component Effects, in the Appendix, Table A1, Table A2, and Table A3.

Results

In the following, we lay out the experimental evidence on whether individuals with better access to bank credit demand lower levels of welfare. A brief recall of the theoretical expectations developed in Section : we speculate that bank credit can serve as a substitute for the welfare state, but only incompletely; therefore, only some individuals alter their preferences over publicly-provided welfare support in response to better access to credit – namely the affluent and those in low-risk employment. In contrast, we do not expect that individuals with low incomes and jobs that expose them to high unemployment risk alter their demands for welfare in reaction to better access to bank credit.

We present the results by reporting the "differences-in-differences" expressed in equation 3, i.e. the point estimates represent the difference in support for the most compared to the least generous welfare spending policy and highest and lowest level of income taxation, respectively, when bank credit is expensive (E(Y|1c,2c) - E(Y|1a,2c)) minus the differences for highest and lowest attribute trait in scenarios with cheap bank credit (E(Y|1c,2a) - E(Y|1a,2a)). Standard errors are calculated by drawing simulations from the (assumed) multivariate normal distribution of model coefficients centered around point estimates and with variance matrix equal to the variance matrix of the estimates. We expect that this "difference-in-difference" is negative for interactions between credit measures and welfare spending policies, i.e. individuals are *less* sensitive to changes in the generosity of publicly-provided welfare when private insurance through credit markets is cheaply available. We speculate that the reverse is true for income taxation: when bank credit provides an affordable insurance alternative to tax-funded public welfare, voters become more opposed, i.e. *more* sensitive, to changes in the tax burden. Standard summary statistics for the conjoint analysis, such as average marginal component effects, are not of central importance for this analysis, but are reported in Figure A1 in the Appendix.

Full Sample

Although we argue that credit can serve as a privately-funded insurance and thus replace publicly-funded forms of welfare, our main hypotheses are about subgroup heterogeneity. have strong ex-ante expectation about the effects of credit on respondents' demands for welfare in the full sample as the pooled responses do not allow us to disentangle the different motives of the various societal groups. Hence we do not expect to find that individuals' demands for generous welfare transfers, unemployment benefits, and lower taxation are less pronounced as credit becomes more cheaply

Table 2: Difference-in-Difference: Access to Bank Credit and Demand for Taxation, Welfare Transfers, and Unemployment Benefits

	Full Sample
Income Tax × Credit Card Loans	−0.039
	(0.037)
Income Tax × Home Loans	0.027
	(0.040)
Social Assistance × Credit Card Loans	0.050
	(0.038)
Social Assistance × Home Loans	−0.022
	(0.039)
Unemployment Benefits × Credit Card Loans	0.000
	(0.039)
Unemployment Benefits × Home Loans	−0.009
	(0.039)
Number of respondents	1,286

Note: *p<0.1; **p<0.05; ***p<0.01
Each row presents a separately estimated coefficient. Standard errors in parentheses clustered at the respondent level.

available in the full sample.

Table 2 presents the findings along the lines explained above. Each row represents one interaction (2 credit attributes × 3 welfare state attributes = 6 interactions). Clearly, none of the "difference-in-differences" is significant at any conventional level of statistical significance, and we find little evidence that voters consistently demand lower levels of publicly-provided welfare as credit becomes more cheaply available *in the fully pooled sample.* Hence, our expectation about the average differential effect of the two types of credit are complicated by pre-treatment heterogeneity among respondents.

Effect heterogeneity

To test the theoretical expectations laid out in this paper, the analysis of subgroup heterogeneity – namely variation in the effect across income and risk groups – is more important. Table 3 therefore presents the same estimands as in Table 2, yet separated by income groups. Column 1 of Table 3 presents the "differences-in-differences" for high-income respondents, column 2 those for low-income respondents. Analyzing the two groups comparatively unearths important subgroup

heterogeneity: neither high- nor low-income individuals demand lower levels of publicly-provided unemployment insurance or welfare transfers to the poor when credit is more cheaply available. Yet, high-income respondents are more likely to oppose high income taxation when credit card loans and mortgage loans are available at low interest: the "difference-in-difference" estimand shows that high-income voters are an *additional* 12 percentage points less likely to choose a country with the highest income tax rate (35% average tax) compared to one with the lowest tax rate (15% average tax) when credit card loans are easy to obtain compared to being expensive.[19] Similarly, respondents with high incomes oppose high income tax levels more when they have better access to home loans and are additional 8 percentage points less likely to choose a country with the highest income tax rate compared to one with the lowest tax rate.[20] At the same time, we do not find evidence that individuals from low-income households update their preferences over taxation in response to better availability of bank credit. This provides statistical support for our claim that changes in the affordability of both *credit card loans* and of *housing credit* strongly affect affluent voters' willingness to accept high income taxation as they become considerably more reluctant to carry the fiscal burden of the welfare state while preferences of the poor over any form of welfare spending or revenue are inelastic to the availability of bank credit.

Before discussing the remarkable variation in effects across different welfare dimensions — namely that we only find significant updating of welfare preferences in the area of taxation preferences — we comparatively analyze respondents facing high and low labor-market risk. Columns 1 and 2 in Table 4 present the estimands for individuals in low- and high-risk employment respectively. Similar to the analysis of the different income groups, Table 4 shows no statistically significant effects of credit availability on demands for social assistance and the generosity of unemployment benefits for low- or high-risk individuals. Only in the area of income taxation do low-risk individuals oppose higher income tax rates more severely as credit card loans become more cheaply available (by additional 7 percentage points[21]); in contrast to the analysis for the

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[19]When credit card loans are expensive, high-income respondents are 23% less likely to choose a country with high income taxes compared to a country with low taxes, compared to a 35% difference when credit card loans are cheap.

[20]When home loans are expensive, high-income respondents are 25% less likely to choose a country with high income taxes compared to a country with low taxes, compared to a 33% difference when mortgage loans are cheap.

[21]When credit card loans are expensive, respondents with low labor market risk are 24% less likely to choose a

Table 3: Difference-in-Difference: Access to Bank Credit and Demand for Taxation, Welfare Transfers, and Unemployment Benefits

	High Income	*Low Income*
Income Tax × Credit Card Loans	0.117***	−0.040
	(0.044)	(0.037)
Income Tax × Home Loans	0.085**	0.027
	(0.042)	(0.040)
Social Assistance × Credit Card Loans	0.017	0.049
	(0.043)	(0.038)
Social Assistance × Home Loans	−0.038	−0.022
	(0.045)	(0.039)
Unemployment Benefits × Credit Card Loans	0.048	0.001
	(0.045)	(0.039)
Unemployment Benefits × Home Loans	−0.036	0.010
	(0.045)	(0.039)
Number of respondents	356	450

Note: *p<0.1; **p<0.05; ***p<0.01
Each row presents a separately estimated coefficient. Standard errors in parentheses clustered at the respondent level.

different income groups, we do not find a similar pattern for interactions with the alternative credit measure, home loans. This provides indicative support that individuals in low-risk jobs are more attracted by the tradeoff between bank credit and welfare policies, and that the channel is mainly through taxation (i.e. the financing of social policies).

Interpretation

The findings from the subgroup analysis of the conjoint experiment provide us with a much more nuanced picture of the tradeoff between better access to credit and lower demands for redistribution. The experimental setup addresses endogeneity issues that plague the observational analysis providing causal evidence that it is, indeed, the group of voters with high incomes and low labor market risks for whom bank credit is an attractively private insurance that can replace costly

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country with high income taxes compared to a country with low taxes, compared to a 31% difference when credit card loans are cheap.

Table 4: Difference-in-Difference: Access to Bank Credit and Demand for Taxation, Welfare Transfers, and Unemployment Benefits

	Low Risk	High Risk
Income Tax × Credit Card Loans	0.071*	−0.031
	(0.037)	(0.028)
Income Tax × Home Loans	0.043	0.025
	(0.035)	(0.029)
Social Assistance × Credit Card Loans	−0.002	0.038
	(0.035)	(0.029)
Social Assistance × Home Loans	−0.027	−0.034
	(0.035)	(0.029)
Unemployment Benefits × Credit Card Loans	−0.050	−0.000
	(0.036)	(0.030)
Unemployment Benefits × Home Loans	−0.020	−0.002
	(0.036)	(0.030)
Number of respondents	492	794

Note: *p<0.1; **p<0.05; ***p<0.01
Each row presents a separately estimated coefficient. Standard errors in parentheses clustered at the respondent level.

publicly-provided welfare.[22] Moreover, we show that the socioeconomic position of an individual not only determines *how much* redistribution she demands and how she reacts to better access to bank credit, but it also shapes *what dimensions of the welfare regime* matter to her. Credit mainly alters welfare preferences of the affluent and those facing low unemployment risk, but only in the area of income taxation; preferences over welfare spending policies are not attenuated by the availability of bank credit. An affluent voter with a safe job is unlikely to ever benefit from generous social assistance and therefore supports low levels of social assistance regardless of the availability of bank credit.

The remarkable effect of bank credit on demands for welfare among low-risk, affluent voters might be due to the very function of the welfare state that these individuals rely on. Consider an individual with high income and a safe job: it is unlikely that this person will ever benefit from either generous social assistance or from long periods of unemployment benefits, and thus has little incentive to support high levels of welfare spending regardless of the availability of bank credit.

[22]We acknowledge that pre-treatment subgroups are not experimentally assigned and we therefore do not claim that income and/or unemployment risk *causally* determine the effect of bank credit on welfare preferences.

Much to the contrary, these individuals are likely to be the most important contributors to tax-funded welfare policies. It should come as no surprise that high-income and low-risk respondents mainly alter their preferences in the area of income taxation: as credit becomes more affordable, they get access to an affordable private alternative to publicly-provided insurance against adverse economic shocks that they traditionally obtain through tax payments.

In addition, the findings shed light on whether affluent voters form their welfare preferences because they obtain access to a private insurance net *for themselves* or because they expect poorer households to rely on credit markets instead of publicly-provided welfare. We find no evidence that affluent, low-risk individuals change their preferences over the generosity of welfare spending; instead, they demand a lower tax bill for themselves when bank credit flows more freely. This is consistent with the view that affluent voters are motivated by self-interest and become unwilling to financially support the welfare state when they can rely on private insurance mechanisms through credit markets.

A final observation on which this study can only provide preliminary evidence relates to the question about the type of credit that can credibly serve as a substitute to publicly-provided insurances. In order to constitute a credible insurance against risk and uncertainty, credit needs to be available immediately, hence not all forms of bank credit are equally suitable as substitutes for a publicly-provided insurance net. In cases of financial emergency, households require short-term access to financial means in order to smooth consumption. Some types of bank loans, such as credit card loans, can be accessed easily without thorough examination of the creditworthiness of the debtor, while other forms of credit, such as mortgage loans, require longer lead times and benefits accrue not directly but rather in the future when investments pay off. While the empirical analyses presented in this paper do not unveil obvious differences in the effects of both types of credit, the "difference-in-difference" estimand for credit card loans in Table 3 is larger than the one on home loans, and in Table 4 only the interaction for consumer credit is statistically reliable. This indicates that different forms of bank credit are better suited to serve as a substitute for publicly-provided welfare than others, yet our analyses do not allow a conclusive empirical assessment of those claims.

Conclusion

We acknowledge that bank credit provides a substitute for the function of *intertemporal personal redistribution* of the welfare state, but cannot substitute for permanent redistribution of income

and wealth. Thus, whether better access to credit can serve as a substitute for publicly-provided welfare is conditional on how individuals make use of the welfare state: bank credit offers an attractive alternative insurance mechanism for *net contributors to the welfare state* that rarely depend on income transfers over their life-cycles and only need to insure against temporary adverse shocks to their income (*within-individual redistribution*); in contrast, citizens who are *net beneficiaries* of income and wealth transfers confront a significantly more costly trade-off when faced with the decision between access to credit and an expansive welfare system, as credit cannot replace permanent redistributive transfers (*cross-individual redistribution*).

The theory we put forward has a rather gloomy predictions about the implications of expanding credit markets for the future of the welfare state. Existing research argues that powerful coalitions of voters have prevented far-reaching welfare state retrenchment (Pierson, 1996), and this coalition even includes affluent voters (Rueda, 2018). On the one hand, if our theoretical musings are valid, the evidence we provide in this paper suggests that credit markets might undermine this support coalition by offering a substitute to the welfare state to those individuals that are net contributors to social policies, and whose support is essential to sustain generous welfare regimes. On the other hand, credit-based welfare does not provide a viable alternative to publicly-funded welfare for voters who benefit from the welfare state the most. Thus, instead of helping overcome economic and social hurdles and inequality, credit markets may well contribute to polarization over social policies by furthering the gap between net contributors and beneficiaries of redistributive policies. By exploring the limits of the credit-for-welfare trade-off, this study adds an important facet to the rich literature on the determinants of support for fiscal redistribution.

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Borrowing Welfare:

Access to Credit and Preferences for Redistribution

Appendix

Contents

Sources of information for current attribute levels in the United Kingdom

For each attribute, we sought information that UK citizens would readily find in a typical website based on a cursory internet search. Each attribute entry in the following table links to one such website:

Attribute	Basic policy
Unemployment support	Unemployment benefits are contribution-based for the first six months, but means-tested and income-based after that
Social security for low-income families	Social security comprises a variety of different subsidies, transfers, and compensation packages that are difficult to price. In consequence, we have offered options that are multiples of the average income. In this case, the high level corresponds to about £20,000, the middle level to about £10,000.[†]
Average income tax	The average tax rate is 20% (the average income is around £30,000)
Credit card loans	The average credit card interest rate is currently at around 23%.
Housing loans	A typical mortgage interest rate is somewhere between 2 and 4%, depending on factors like size of the down payment and loan maturity.

[†]We decided to suggest multiples of average income as the formulation that was easiest to understand.

Average Marginal Component Effects

Figure A1 shows the average marginal component effects for the full sample of 1,286 respondents. It highlights that preferences in all dimensions are as expected: respondents are 11% less likely to choose a country if housing credit is expensive (10% interest) compared to when it is cheaply available (2%). Similarly, respondents prefer cheap credit card loans by 9% compared to regimes with expensive consumer credit. Individuals are 20% more likely to choose a country with basic social security of 66% of average income compared to no social assistance, and are 20% more likely to choose a country with unemployment support paid for 24 months compared to no unemployment support at all. Finally, respondents prefer countries with low average income taxation (15%) by 25% relative to countries with a high income tax rate (35%). The AMCEs for all traits within each attribute are statistically different from each other.

As is evident from Figure A2, respondents in the high-income group react much more strongly to the availability of housing loans; this alludes to the fact that high-income individuals are more likely to have experience with housing loans and therefore are more sensitive to changes in the availability of access to this type of credit. We do not actually see any noticeable difference in
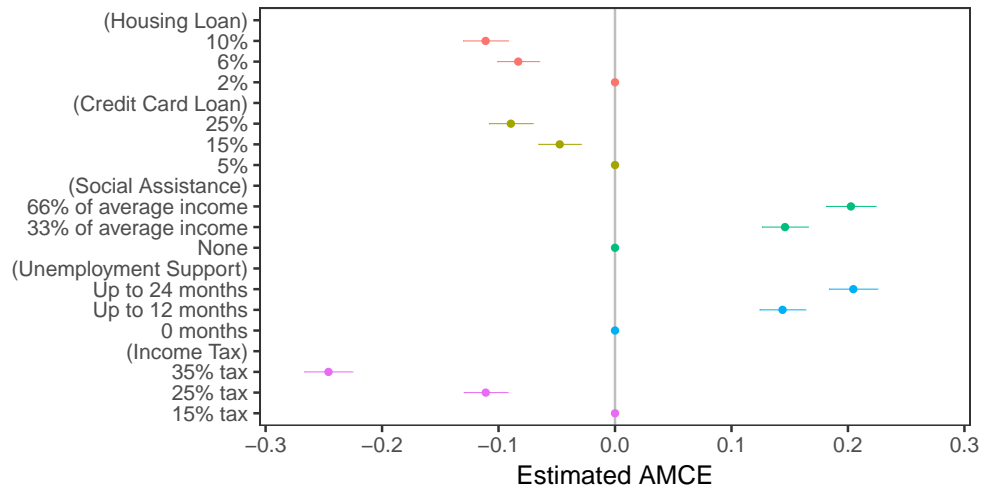
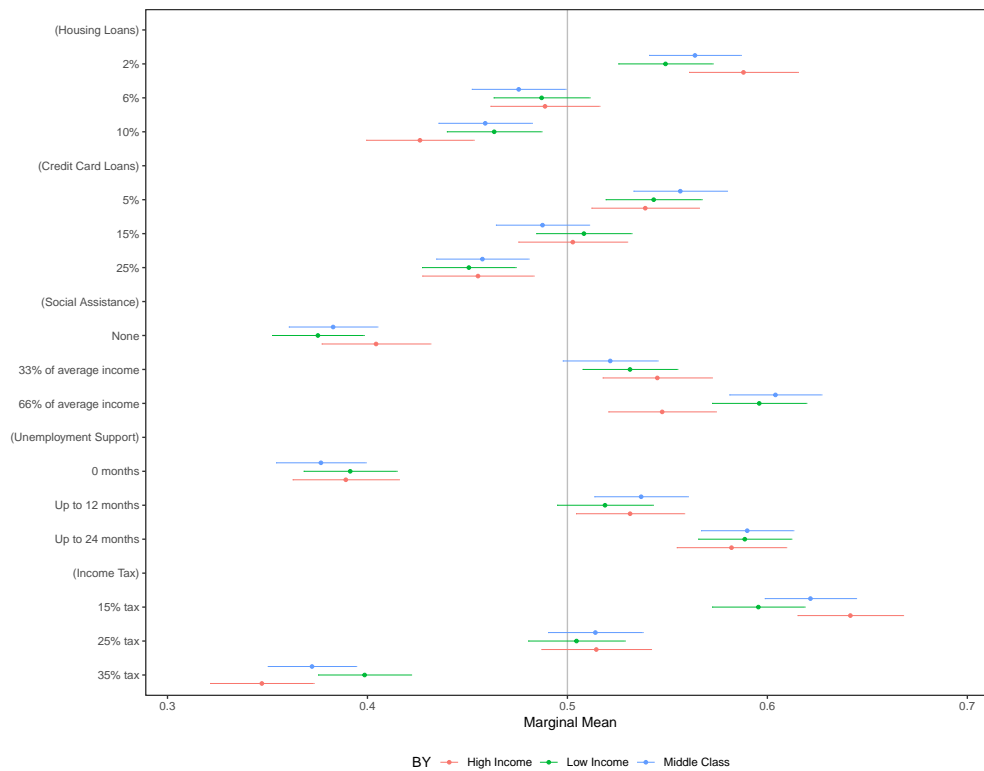Figure A1: Average Marginal Component Effect, Full Sample

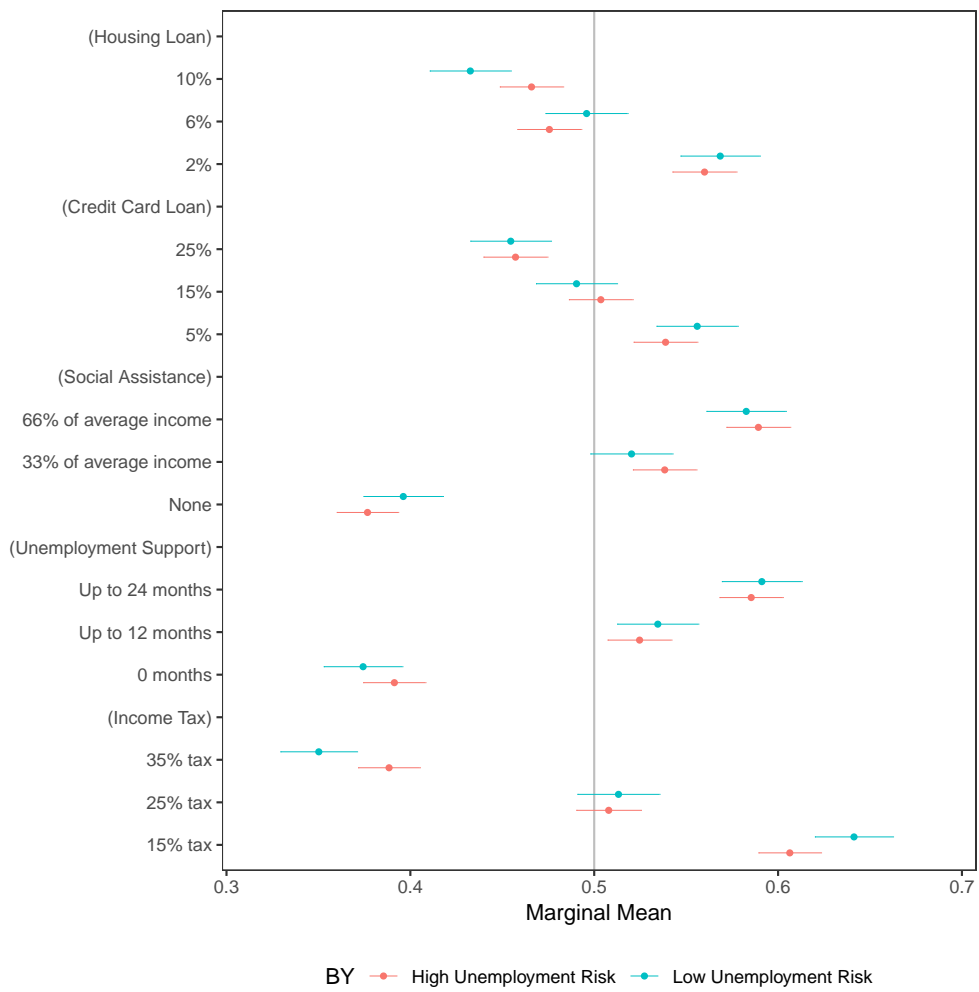Figure A2: Marginal mean support by income groups

Figure A3: Marginal mean support by risk groups

respondent preferences for easy or difficult access to credit card loans across low-, mid-, and high-income individuals. Moreover, high-income individuals' preferences are less sensitive to changes in the generosity of social assistance policies: they have a lower aversion to the absence of a social security system than middle-class and low-income respondents, and are significantly less likely to support very generous social security; this is in line with our hypothesis that affluent individuals are less likely to be affected by positive or negative changes to social safety nets and are therefore less sensitive to changes in the traits of these attributes. Preferences and preference elasticity regarding the generosity of unemployment support do not differ across the three income groups. This might be driven by the fact that — as we describe above — all working individuals might temporarily rely on unemployment benefits. All three income groups clearly prefer lower to higher taxes, yet high-income individuals are considerably more sensitive to changes in the average income tax. In fact, we see — as expected — that sensitivity to changes in the tax rates declines from high-income respondents over middle class to low-income households.

Left-Right Scale

Table A1: Difference-in-Difference by Ideology

	Left	*Right*
Income Tax × Credit Card Loans	−0.044	0.045
	(0.051)	(0.040)
Income Tax × Home Loans	0.0185	0.062
	(0.054)	(0.045)
Social Assistance × Credit Card Loans	−0.029	−0.046
	(0.050)	(0.041)
Social Assistance × Home Loans	0.039	−0.059
	(0.052)	(0.043)
Unemployment Benefits × Credit Card Loans	−0.035	0.056
	(0.053)	(0.044)
Unemployment Benefits × Home Loans	−0.121**	0.047
	(0.052)	(0.046)
Number of respondents	229	371

Note: *p<0.1; **p<0.05; ***p<0.01
Each row presents a separately estimated coefficient. Standard errors
in parentheses clustered at the respondent level.
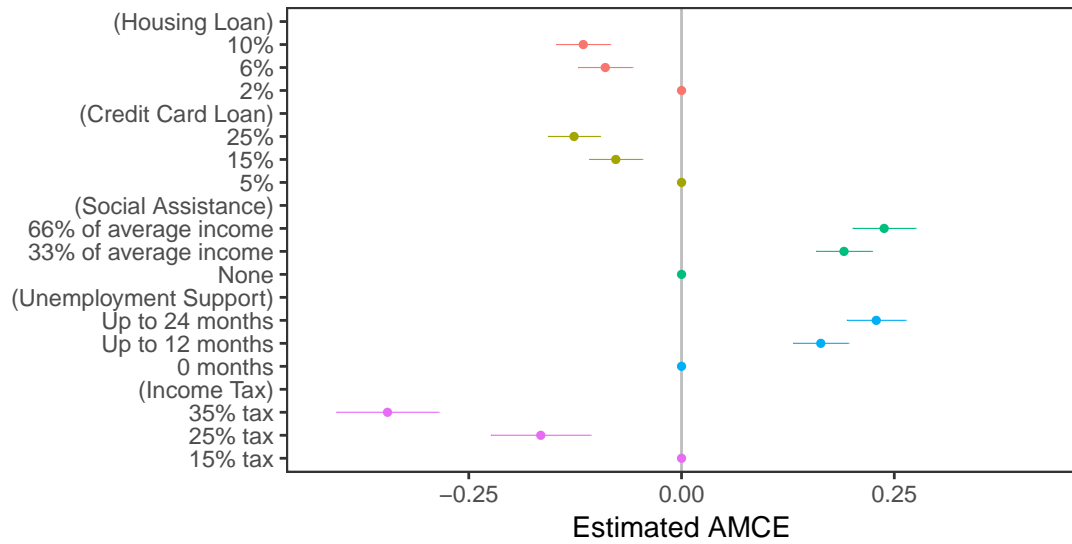
Excluding atypical profiles

Figure A4: Average Marginal Component Effect, Excl. atypical profiles

Table A2: Difference-in-Difference: excl. atypical profiles

	Full Sample	High Income	Low Income	Low Risk	High Risk
Income Tax × Credit Card Loans	−0.070 (0.116)	0.297** (0.128)	−0.073 (0.116)	0.180 (0.120)	0.055 (0.083)
Income Tax × Home Loans	0.106 (0.113)	0.044 (0.136)	0.108 (0.114)	−0.080 (0.115)	0.045 (0.079)
Social Assistance × Credit Card Loans	0.037 (0.064)	0.054 (0.073)	0.036 (0.065)	0.003 (0.064)	0.023 (0.047)
Social Assistance × Home Loans	0.010 (0.068)	−0.007 (0.077)	0.011 (0.068)	0.004 (0.064)	−0.058 (0.051)
Unemployment Benefits × Credit Card Loans	−0.023 (0.067)	0.062 (0.079)	−0.022 (0.067)	−0.059 (0.067)	−0.045 (0.050)
Unemployment Benefits × Home Loans	−0.032 (0.071)	−0.093 (0.081)	−0.031 (0.071)	−0.122** (0.064)	−0.032 0.052
Number of respondents	1,187	328	408	459	728

Note: *p<0.1; **p<0.05; ***p<0.01
Each row presents a separately estimated coefficient. Standard errors in parentheses clustered at the respondent level.
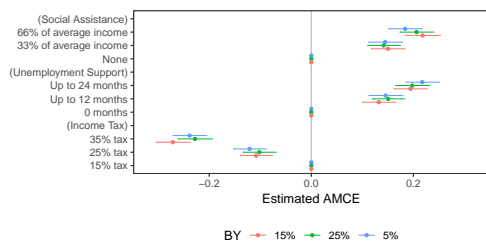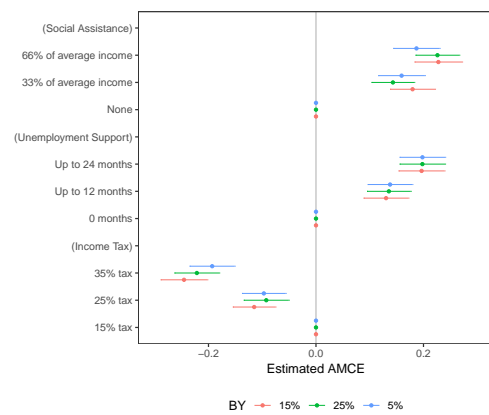
(a) Full Sample
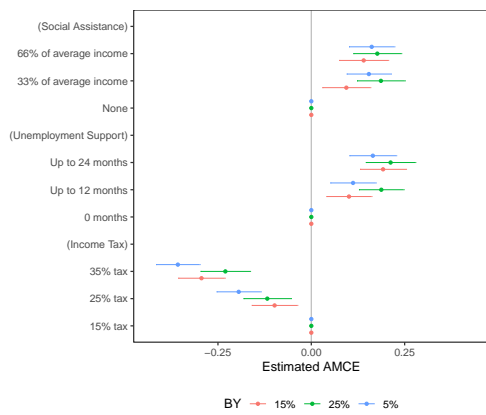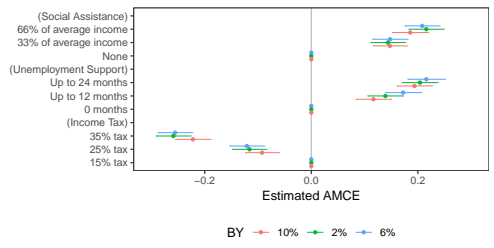

(b) High Income
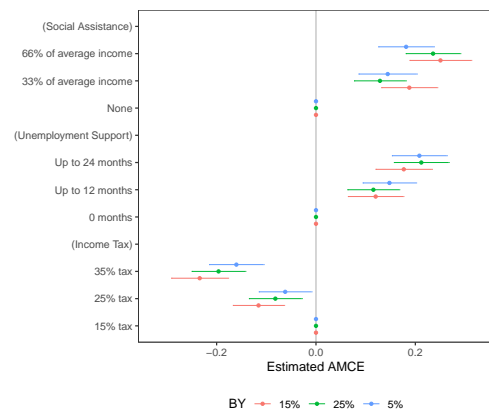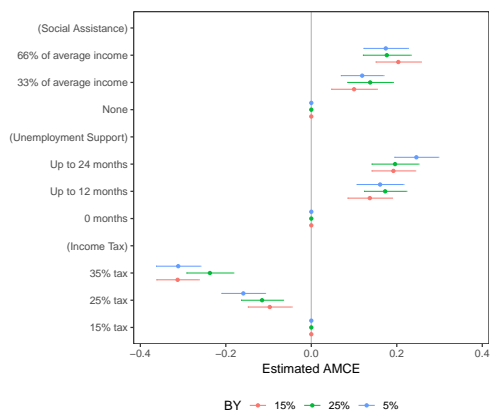
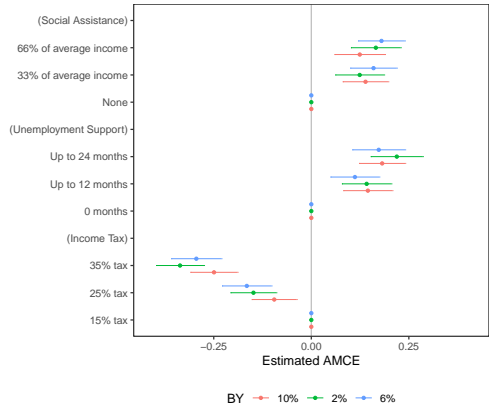(c) Low Income

(d) Low Risk
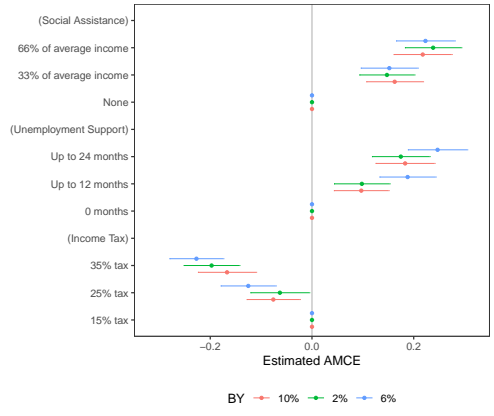

(e) High Risk

Figure A5: Plotted Effects: Interactions with Credit Card Loans
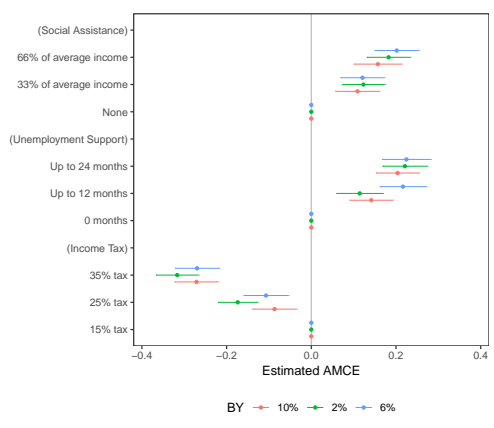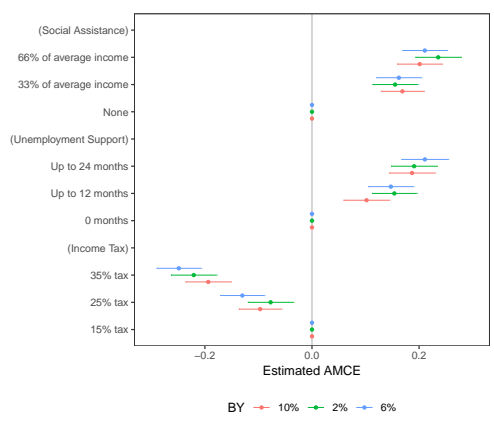
(a) Full Sample

(b) High Income

(c) Low Income

(d) Low Risk

(e) High Risk

Figure A6: Plotted Effects: Interactions with Mortgage Credit