Université de Montréal

Out of Sight, Out of Mind?
Economic Perceptions in Everyday Settings

par

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Résumé

Comment les individus forment-ils leur perception des questions économiques ? Dans cette thèse, je présente trois chapitres qui visent à démontrer que les individus sont influencés par leur environnement immédiat dans la formation de leurs perceptions de l'économie nationale ou de leur statut économique.

Dans le chapitre 1, j'utilise la cohabitation entre les jeunes adultes et leurs parents comme indicateur des difficultés économiques rencontrées par les individus âgés de 18 à 34 ans. À l'aide de données de sondages provenant de 32 pays, je montre que l'exposition quotidienne des parents aux difficultés de leur enfant adulte influence négativement leur perception de l'économie nationale ainsi que leur perception de la performance du gouvernement en place.

Le chapitre 2 traite des perceptions de la situation économique d'un individu. Je montre que la hausse des prix de l'immobilier entraîne une anxiété économique chez les locataires en raison de la crainte d'un embourgeoisement dans leur localité, ainsi que des obstacles économiques à l'accession à la propriété. Mes résultats sont tirés de deux expériences par sondage, l'une menée aux États-Unis, l'autre à Montréal.

Enfin, dans le chapitre 3, j'adopte une approche plus traditionnelle pour étudier le lien entre le contexte économique local et les perceptions de l'économie nationale. Pour ce dernier chapitre, je propose de reconsidérer le contexte économique local en prenant en compte non seulement le taux de chômage du lieu de résidence mais aussi celui du lieu où les individus adultes passent une grande partie de leur temps, c'est-à-dire leur travail. Mes résultats montrent que si le niveau de chômage local est effectivement corrélé avec la perception de l'économie nationale, la prise en compte du taux de chômage moyen à la destination affaiblit

cette corrélation. En revanche, une mesure globale prenant en compte la zone résidentielle ainsi que le lieu de déplacement quotidien des individus est mieux corrélée avec la perception de l'économie nationale.

Mots clés: perceptions économiques, vote économique, opinion publique, méthodes quantitatives, logement, contexte local

Abstract

How do individuals form their perceptions of economic matters? In this thesis I present three chapters which aim to demonstrate that individuals are influenced by their immediate environment in shaping their perceptions of the national economy or their economic status.

In Chapter 1, I use cohabitation between young adults and their parents as a proxy for the economic difficulties experienced by individuals aged between 18 to 34. Using survey data from 32 countries, I show that parents' daily exposure to their adult child's difficulties negatively influences their perception of the national economy as well as the performance of the government.

Chapter 2 deals with perceptions of an individual's economic status. I show that rising housing prices lead to economic anxiety among renters because of a fear of gentrification in their locality, as well as economic barriers to become home owner. My results are drawn from two survey experiments, one conducted in the United States, the other in Montreal.

Finally, in Chapter 3 I take a more traditional approach to investigate the link between the local economic context and perceptions of the national economy. For this last chapter, I propose to reconsider the local economic context by taking into account not only the unemployment rate at the place of residence but also the place where adult individuals spend a large part of their time, i.e. their work. My results show that while the level of local unemployment is indeed correlated with the perception of the national economy, taking into account the average unemployment rate at the destination weakens this correlation. On the other hand, a global measure that takes into account the residential area as well as where

individual's use to go on a daily basis is better correlated with the perception of the national economy.

Keywords: economic perceptions, economic voting, public opinion, quantitative methods, housing, local context

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List of acronyms and abbreviations

ANES	American National Election Survey
CBSA	Core-Based Statistical Area
CCES	Cooperative Congressional Election Study
DA	Dissemination Area
ESS	European Social Survey
LEHD	Longitudinal Employer-Household Dynamics
LODES	LEHD Origin-Destination Employment Statistics
MAUP	Modifiable Areal Unit Problem

MSA	Metropolitan Statistical Area
NHGIS	National Historical Geographic Information System
OLS	Ordinary Least Square
ZCTA	ZIP Code Tabulation Areas
ZHVI	Zillow Home Value Index

Dédicace

À mes deux grands-mères,

Aline et Souad.

Acknowledgements

During my Ph.D., I often found myself thinking about the acknowledgements section. I had mixed feelings about it, knowing that writing the acknowledgements would signify the end of my time in Montreal, as UdeM is linked to my Canadian experience. And, as is typical for me, I ironically worked on this crucial section - at least for me - at the very last minute. Therefore, I will attempt to the best of my ability to express in few words my gratitude to the many people I met during my Ph.D. and, more broadly, during my time in Montreal.

Inevitably, I must begin with Ruth Dassonneville. I owe Ruth a great deal. To thank Ruth is to acknowledge not just my thesis supervisor but the person who taught me how to do research and how to teach.

To Ruth, my thesis supervisor: thank you for granting me considerable freedom during my Ph.D. Despite my strong opinions, a penchant for debate, and a somewhat relaxed sense of time, you were fantastic at guiding me. If I enjoyed my time at UdeM so much, it was primarily due to the freedom you allowed me in all my pursuits, even when I chose to explore topics slightly outside your own interests. Ruth, thank you for providing an ideal working environment, encouraging me to think "outside the box," and for your constant support.

Being an academic also involves teaching. I must also thank Ruth for the trust she placed in me as a TA. It was a privilege to assist Ruth for three years. It was not just enjoyable to work with her, but she also had a fantastic way of involving me in the course by frequently seeking my opinion. This might not seem like much, but it's precisely what helps a young

scholar develop and gain confidence. Thanks to having the best possible mentor, I had no trouble teaching my first courses as a lecturer.

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The Ph.D. is sometimes a bit challenging, but it's more pleasant when you're in good company. I'd also like to thank my de facto supervisor, Jean-François Daoust, for reading all kinds of drafts when they were still in a not-so-presentable state.

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Paris, June 30th 2023.

[1]Note for Juliette: this is ironic.

Introduction

While writing the final chapters of the thesis, I went on a writing retreat cabin that is located more than an hour's drive away from my home in the center of Montreal. My home, which I share with active, financially independent roommates, is in the Mile End neighbourhood, an urban and diverse area that straddles two of Montreal's most desirable boroughs: Le Plateau and Outremont. Both areas have experienced a significant increase in housing prices in recent years, and, as a result of gentrification, the socio-economic characteristics of new tenants and buyers arriving in the Mile End in 2023 likely differ from those who have been living there for several years.

To reach the cabin, we had to leave Montreal Island and cross its suburbs, which are marked by real estate developments that are as sprawling as they are towering, with company headquarters, mineral quarries, and theme parks. Once we left the suburbs behind, we found ourselves in communities that were free from the visible signs of gentrification, large highways, urban sprawl, or a booming economy. The landscape was dominated by classic, uncluttered single-family homes, which were scattered around a minimal, spatially limited city center. It is probable that these towns are primarily residential, and their residents likely take the opposite route than I was taking when they have to get to work. This is my perception of the environment between my residential area and the cabin. This description may be familiar to many readers, but as mundane as it may be, it is directly relevant to the focus of this thesis.

I am convinced that small everyday experiences can leave an imprint on people that will, eventually, influence their political attitudes or opinions. The aim of my thesis is as simple as that: to verify the intuition that an individual's everyday setting and repeated exposure to a

familiar environment shape their perceptions, particularly their economic perceptions. In our daily lives, we are exposed to visible elements that, over time, due to their repetition, can help us form an opinion on a complex issue. For instance, the *Broken Window* theory suggests that continuous exposure to neighbourhood decay can generate a sense of insecurity (Hinkle and Weisburd, 2008). What is noteworthy here is that this exposure is not sudden or exceptional, but rather a part of individuals' long-term everyday setting, a familiar environment that can be evaluated and comprehended. This persistent impression can be used to form an opinion on national issues or our own economic status.

Everyday life offers several cues that can influence our opinions on various issues. This dissertation focuses specifically on the economy due to its significance as a determinant of voting and the importance of considering factual elements of everyday life over the usual objective measures retrieved by the literature on economic voting. The dissertation includes three empirical chapters. In the first article, I examine households and how the economic difficulties encountered by one person in the household affect the economic perceptions of the others. As mentioned earlier, my flatmates are young adults who are active and financially independent. However, for the age group that composes my household (26-34 years old), living away from the parents' house is not the main living arrangement in most Western countries.[2] In fact, an increasing number of young adults are unable to achieve independence and are forced to cohabit with their parents due to housing prices, low salaries, and the difficulty of finding a first job. The first article studies the consequences of this phenomenon by investigating whether parents' daily exposure to their adult children's economic hardships affects their perceptions of the economy and their satisfaction with the government's performance. The key factor here is the use of cohabitation as a proxy for the economic difficulties faced by young adults. In addition, on a daily basis, these young adults interact with peers of the same age group who may face different degrees of difficulty in becoming independent. For young adults who are forced to live with their parents for economic reasons, I show that these living conditions are associated with a more negative perception of the economy when compared to their peers of the same age who enjoy their independence.

[2]See Figure A1 in the appendix for a trend in cohabitation in Western countries.

I mentioned earlier the increase in real estate prices in my neighborhood, the Mile End (Montréal, Canada). This trend of rising prices has affected the entire island of Montreal for the past decade, with an even greater impact since the onset of the Covid-19 pandemic. This phenomenon is not unique to Montreal but is also observed in most medium to large Canadian cities, as well as in the United States and various European countries. The reasons for this increase are numerous and outside the scope of this thesis. However, the consequences of these price changes are relevant when examining how individuals perceive their economic status relative to peers, such as their neighbours. To assess whether the increase in real estate prices contributes to economic anxiety among residents of affected areas, I conducted two experiments which are described in the second empirical chapter of the dissertation. One of these experiments was carried out in the United States with a large sample of individuals (owners and renters) residing in a Metropolitan Statistical Area, representing approximately 80% of the American population. I use the trend in prices for single-family homes as a treatment to inform participants on the extent of the increase, as well as the minimum annual income needed to afford a typical single-family home in their locality. Renters are, as expected, more prone to react negatively to the increase in prices by adjusting their economic status compared to renters who were not informed about the trend in prices in their locality. In the same fashion, renters appear to react to housing prices by showing fear of being priced out or depreciating their financial capacity to afford a move. Owners who are informed about the trend are not different from those lacking the information, implying that information on housing prices does not trigger economic anxiety or economic confidence among this social group.

Let's now come back to the journey from Montreal, a bustling city, to the cabin where I wrapped up the introduction of my thesis; a cabin nestled between two lakes and scattered communities. Such journeys exemplify the mobility of working-age individuals, who are seldom confined to a single economic reality. For individuals living in this setting (i.e, residence in rural area, workplace in urban setting), differences may exist, to varying degrees, between the socio-economic conditions of their place of residence and that of their place of

destination, such as their workplace. The third article of my thesis examines this issue, by aiming to question the use of place of residence as a reference point for gauging the effect of the local economic context on people's perceptions of the national economy. To conduct this study, I leveraged large databases that allowed me to quantify commuting to and from work for all workers in the United States between 2011 and 2017, down to the Census block level, the smallest administrative unit. Aggregating this data to the Zip code level, I then computed the share of the population that had been unemployed in the past year at both the origin and destination of the commutes, using the number of unemployment benefits reported in Tax returns. The results reveal that the level of local unemployment is indeed correlated with people's perception of the national economy, which is consistent with prior research on the topic. However, accounting for the average unemployment rate at the destination weakens the correlation between the unemployment rate of the place of residence and people's perception of the economy. While an overall measure that takes into account the residential area as well as where individuals commute on a daily is more strongly correlated with perceptions of the national economy. These findings underscore the importance of the local context, but also suggest the need to consider individuals' mobility in their daily lives when inferring the state of the national economy.

Article	**Title and publication information**
1	The Implications of Cohabitation Between Working Age Children and Parents for Political Opinions, *European Journal of Political Research* https://doi.org/10.1111/1475-6765.12601
2	Rising Prices Fuel Economic Anxiety, *working paper*
3	Economic Perception in Motion: The Role of Commuting from Home to Work, *working paper*

Note: All papers are single-authored. Articles' identifying numbers are used through the dissertation.

Table 1. Overview of articles in the dissertation

The dissertation, *Out of Sight, Out of Mind? Economic Perceptions in Everyday Settings*, consists of three main parts: an introduction, the three articles, and a conclusion. In the introduction I locate my work within the broad literature on perceptions, context, and economic voting. I also provide an overview and discussion of my theoretical arguments,

and the main findings. The conclusion provides the implications of my findings, the limits of my research, and features avenues of research. The research articles included in the dissertation are listed in Table 1.

The Argument in a Nutshell

My research question is as follows: How do individuals form their perception of economic conditions? My main hypothesis, tested trough three articles, is that individuals use their everyday setting to form these opinions. Therefore, the objective of this thesis is to provide empirical evidence that individuals are influenced by elements of their daily lives when forming an opinion about the national economy or evaluating their economic status. Besides theoretical considerations, I provide evidence that individuals are indeed "*not fools*" (Key Jr, 1966). They seem to react rationally to factual economic information retrieved from their daily environment.

The thesis uses and discusses the roles of three important concepts that I introduce and detail in the following pages: perception, daily experiences (alternatively named everyday setting or context), and economic conditions.

Perception refers to the understanding of an event based on an individual's environment. The environment is the context, which encompasses the "*features of the local environment in which someone lives and works*" (Nathan and Sands, 2023). The context can refer to the locality as well as a social group. As for economic conditions, this thesis examines two aspects: the national economy and an individual's economic status.

In the introduction, I will delve into the importance of focusing on how individuals perceive the economy, at least for scholars of public opinion and voting behaviour, specifically retrospective and economic voting. Then, I will explain what I mean by context (the everyday setting), and why I believe it is an influential environment in shaping individuals' perceptions of economic conditions.

Starting Point: Perceptions of Economic Matters

The motivation to study perceptions on economic matters derives directly from their importance as a determinant of the vote, and more broadly, the accountability mechanism. The literature on retrospective voting is vast and well established. I will therefore briefly outline the main principles of this area of research before returning in detail to the relevance of perceptions for voting decisions, and more precisely, the impact of the context on economic perceptions. It worth noting that the thesis is not about the full mechanism of retrospective or economic voting, but rather on one of its principal component, i.e. the understanding of the economy.

Broadly defined, the dissertation contributes to the study of retrospective voting. This literature adopts the mantra of the rational choice theory, i.e., that voters' decisions are driven primarily by a simple assessment of the costs and benefits associated with a vote (Downs, 1957). Their decisions are the product of both retrospective and prospective considerations, the relative weight of which differs from one individual to another (Key Jr, 1966; Fiorina, 1981). A prospective evaluation, that is, an anticipation of the benefits that a voter could expect, requires a high level of political knowledge from citizens. A prospective perspective implies that voters must be able to know and evaluate candidates' promises and their effects. Retrospective voting, i.e. choosing a candidate or party based on an evaluation of past-events, in contrast, is less demanding. Retrospection requires that voters evaluate the incumbent using their living conditions during the previous year (Fiorina 1981 and Key Jr 1966 but also Stiers et al. 2020 and Wlezien 2015 for a different timeline). As put by Fiorina (1981, p.5):

> «*in order to ascertain whether the incumbents have performed poorly or well, citizens only need to calculate the changes in their own welfare. If jobs have been lost in a recession, something is wrong. If sons have died in foreign paddies, something is wrong. If thugs make neighbourhoods unsafe, something is wrong. If polluters foul food, water, or air, something is wrong.* »

Citizens form their choice (to vote for or against the incumbent) based on their personal experience (referred to as egotropic, see Fiorina 1981 and Key Jr 1966) as well as their understanding of the incumbent performance for the society as a whole (called sociotropic voting, see Kinder and Kiewiet 1981). The quotation from Fiorina suggests that retrospection is cognitively fairly easy. In practice, it is however subject to numerous biases — as a consequence of political preferences or an individual's level of knowledge — which can lead to a faulty attribution of responsibility.

One of the applications of retrospective voting that illustrates both the importance of retrospective voting on the choice of voters and the difficulties of assessing it correctly is the economic vote. This hypothesis refers to the mechanism by which voters punish or reward the incumbent based on their evaluation of the economy (Kramer, 1971; Lewis-Beck, 1990; Markus, 1988; Tufte, 1978). Although straightforward and intuitive, the theory of economic voting brings up numerous questions on how individuals assess the economy, and which economy matters.

Many sources of bias can influence citizens' perception of the economy. There are cognitive biases such as partisan preferences (Bisgaard, 2015), but also structural biases such as individuals' level of sophistication (De Vries and Giger, 2014; Godbout and Bélanger, 2007). Researchers have proposed new avenues to reconsider how individuals understand the economy. Among them was benchmarking (Kayser and Peress, 2012). One of the most interesting theoretical components of the idea of benchmarking is the reference point theory, i.e the relative evaluation of the economy to recent outcomes in the country or in a cross-national perspective, which contrasts to absolute evaluations of economic conditions (Aytaç, 2018). Theoretically seductive although very demanding in terms of cognitive abilities, the benchmarking literature lacks consistent findings due in part to model (mis)specification (Arel-Bundock, Blais and Dassonneville, 2019). Others have preferred to reconsider the conventional approach using objective measures, while changing the level of analysis, i.e. taking into account the local level (Ansolabehere, Meredith and Snowberg, 2014; Bisgaard, 2015; Larsen et al., 2019; Reeves and Gimpel, 2012). The common denominator of these studies is

that they all assume that voters will rely mostly on the objective local economy, which is the one they are supposed to be most familiar with, to assess the incumbent's performance and vote accordingly. Focusing on the local level, i.e. a sub-national level, helps to address the main criticisms raised against the economic vote, i.e. to reconsider the measures, theories and voters' conception of the economy and their abilities to assess it. It also helps to take into account the heterogeneity of evaluations.

The heterogeneity of evaluations is what I intend to expand on with my thesis. Before I present my contribution, I should state what has already been achieved by the literature and what are unanswered questions.

In accounting for local factors, the literature has been mainly restricted to traditional objective measurements of local economic conditions. Unemployment rates seem to be the most used indicators. This could be due, partly, to the difficulty of gathering data regarding the local GDP, but also because unemployment rates may be the most salient local economic indicators for voters. In addition, unemployment is an indicator for which data at the desired (i.e., local) level are available, for example coming from census data. The same does not hold for GDP or inflation. Weatherford (1983) was probably the first to provide evidence of a correlation between unemployment rates at the local level and perceptions of the national economy. Since his contribution, that focused on the 1974 elections in the United Sates, findings on the issue are more mixed. Books and Prysby (1999) used local and national unemployment rates from 1992 and connected these with survey data from the ANES. They found a clear effect of the state unemployment on retrospective evaluations of the national economy while community level of unemployment has little to no effect. Whereas Eisenberg and Ketcham (2004), relying this time on eight elections from 1972 to 2000, test whether the national or the local economy is more important, using per capita income and unemployment rates as county level economic measures. They find that the national economic conditions are much more important than local ones, thus supporting the results from a previous analysis at the state level this time, but in the same country, the United States (Strumpf and Phillippe, 1999). These results have later on been challenged by Hansford and Gomez (2015) who used

county income and unemployment rate as an instrumental variable for sociotropic evaluation of the economy, by means of the ANES data from 1980 through the 2008 U.S. presidential elections. They find that both indicators shape sociotropic evaluations of the economy. The list of studies that have taken into account 'traditional' measures such as unemployment rates at the local level is extensive (Auberger and Dubois, 2005; Healy, Persson and Snowberg, 2017; Hill, Herron and Lewis, 2010; Kim, Elliott and Wang, 2003; Rogers, 2014). The most important conclusion to be drawn from this literature is the similarity with the results found in the conventional economic voting literature, i.e. that focusing on the impact of national economic indicators. In other words, those results are mixed. This is not surprising since these studies conduct analyses that are very similar to research studying how national economic indicators shape the vote choice with the only real change being an analysis at a sub-national level, but still at a large level of aggregation. They are part of an approach that takes up the principle that voters will become aware of objective indicators, but this time at the local level. We can assume that this makes the perception of government performance more complex. If we consider that not all voters are sophisticated enough to know the economic conditions at the national level (De Vries and Giger, 2014), how can we expect voters to use an even finer and richer knowledge of economic conditions at the local level?

Another strand of the literature on local economic factors and economic voting went a little further by reconsidering the notion of the economy. Those studies seek to understand what voters mean by "*economy*". The theory is more focused on what voters are likely to use as information in order to leverage their power to reward or punish. The seminal paper of this line of research on the economic vote is from Reeves and Gimpel (2012). Using data from the Cooperative Congressional Election Study (CCES) for the 2008 US election, they find that local factors shape economic evaluations, but only for political independents. As local factors they considered unemployment, fuel prices and foreclosures, with the last two measures representing a new addition to the literature. Reeves and Gimpel's theoretical framework is particularly novel and convincing, at least as far as concerns on the mechanism of voters' assessment of the economy. They assume that "voters derive their national

economic evaluations from living out their lives in particular localities which may or may not be experiencing the conditions that affect the nation as a whole " (Reeves and Gimpel, 2012). In other words, they do not make the assumption that there is a single, objective economy (as Van der Brug, Van der Eijk and Franklin (2007) do) but rather a multitude of economic contexts that can be subjectively evaluated by voters. One of the limitations of the study of Reeves and Gimpel (2012), however, lies in their definition of what is *local*. Although the authors mention the risk in using administrative boundaries on a subjective aspect such as locality, they have chosen a level of study that seems to be quite far from their theory, since locality is defined on a regional basis (multiple counties). Nonetheless, their paper paved the way to innovative (re)consideration of the economic voting mechanism and especially regarding which aspect of the context matters for economic perceptions. In their steps, researchers have broadened the concept of "economy" to include new indicators. For some, the economy can be inferred from unemployed people part of a specific social group such as relatives and social network (Ansolabehere, Meredith and Snowberg, 2014), or is reflected in fluctuations in the real estate market in one's locality (Larsen et al., 2019).

The literature on economic voting at the local level has made significant progress in the past few years. But findings are rather mixed, and that might be due at least in part to a focus on different geographical levels or because of a reliance on imperfect indicators such as GDP growth. The ambition of this dissertation is to move away from the usual way of measuring economic perceptions, and to reconsider how individuals can use their everyday setting to form on opinion on economic matters, either the national economy or their own status.

Before discussing the context, what remains to be established is why individuals would use their daily environment to infer the state of the national economy or their economic standing. The most straightforward answer is that the everyday environment is more accessible compared to national figures. Understanding how the economy works is a complex process. Inferring the state of economic matters from one's experiences, on a daily basis,

makes the assessment more accessible than abstract figures at the national level that might not an individual's economic experience.

This is not a new assertion. Kramer (1983) already stressed that variation in economic perceptions are a consequence of exogenous factors. One explanation of this noise described by Kramer (1983) sits at the level of analysis, that is either the micro or macro level. Indeed, Ansolabehere, Meredith and Snowberg (2014) show that evaluations of the economy are at a *mecro-economic* level, or as defined by Kiewiet and Lewis-Beck (2011), a level that is "spatially, phenomenologically, and linguistically located between the microeconomy of the individual and the macroeconomy of the country as a whole." My contribution is to underline the importance of the mecro level and consider the experiences of individuals that are linked to their daily environment. To do so, I consider the following away from the traditional measures: parents forced to live with their adult children because of the latter's economic difficulties, the comparison between young adults according to their ability to be independent, the cost of being a homeowner for tenants, and finally, the economic context outside the neighbourhood of residence, i.e., places that residents visit quite often. This logic—using familiar cues—refers back to schema theory as theorized by Axelrod (1973). In other words, individuals interpret cues schematically and then form their own opinions and beliefs about the issues at stake. The heterogeneity in opinion is then explained by the heterogeneity of contexts.

Which Context?

The core contribution of the thesis is the use of everyday settings as a cue to understand economic perceptions. Each empirical chapter that is included in the dissertation provides a test of the main hypothesis, that is, that individuals react to economic cues from their environment to form an opinion and an evaluation of economic matters.

By everyday, I mean a mundane setting. An ordinary environment in which an individual evolves on a daily basis. The question then is which everyday setting / context matters? Mundane contexts include the household, the residential area, the workplace, as well as places

where individuals go shopping, meet relatives or friends. No emotional ties are needed to consider a specific place as part of the everyday setting. This conception of context is close to *the theory of action* conceptualized by Parsons and Shils (2017). Specifically, they define the *"situation of action (...) [as] that part of the external world which means something to the actor whose behavior is being analyzed. It is only part of the whole realm of objects that might be seen. Specifically, it is that part to which the actor is oriented and in which the actor acts. The situation thus consists of objects of orientation"*.

In more concrete terms, the *situation of action* that I consider and study varies in the thesis. In article 1, the action takes place in the household. In article 2, this the neighbourhood, with varying spatial boundaries, depending on the study (Montreal or the United States). In article 3, I oppose a static measure of context (i.e, the residential area alone) to a dynamic one that encompasses both home and where individuals work. As such, the boundaries are by definition flexible depending on the commuting habits of residents in a given locality.

In addition to geographical boundaries, one must consider the interactions among individuals who regularly come together within a specific spatial setting. Consequently, my definition of context incorporates social boundaries, specifically pertaining to social groups. In two of the articles (1 and 2), I posit that individuals compare their economic situation with those of fellow members within the same social group. In the case of article 1, being a young adult who cohabits with their parents becomes more problematic if the majority of individuals in the same age group are living away from their parents. I theorize that such comparisons, arising from casual interactions with peers, help individuals to position themselves economically relative to others who share similar circumstances. A similar scenario arises in article 2, where I test whether individuals evaluate their economic standing in relation to that of their neighbours. In this case, the social group comprises individuals residing in the same neighbourhood. Due to residential sorting (Mummolo and Nall, 2017), individuals residing in the same neighbourhood are likely socially similar, leading to strong correlations with political attitudes and even party preferences. In the realm of economic

voting literature, comparisons often involve one economic group versus another or the economic situation of a group in relation to the overall economic performance of the country. In contrast, my approach deviates from this practice as it recognizes that such comparisons also occur among members of the same group. And it helps individuals to form an opinion on economic matters, such as the national economy or their own economic standing.

Overview of the thesis

The following three chapters each contain an article answering the central question of the thesis: How do individuals form their perception of economic conditions? Below I present the research question for each article, and I provide a brief description of the results. Following these three articles, in the conclusion I discuss my main contributions, the empirical limitations of each article and, finally, I suggest avenues for further research based on my conclusions.

Article 1 - Research question: Does cohabitation between young adults and their parents influence their political opinions?

In the first empirical chapter of my thesis, I show that exposure to economic hardship within the same family influences perceptions of the economy and government performance. To do this, I focus on constrained cohabitation between young European adults and their parents, using cohabitation as a proxy for the economic hardship that young adults face. Many people aged between 18 and 34 are forced to stay at home with their parents, mainly because of property prices combined with the difficulties encountered by this age group in finding their first job. This is particularly the case in Europe, but it is also a widespread social trend outside Europe. The various public policies designed to help young adults become independent attest the importance of the problem (see, for example, mobili-jeune aid for the under-30s in France or Porta 65-jovem in Portugal for the under-35s). My results show that the anxiety induced by daily exposure to their children's economic difficulties (via constrained cohabitation) leads parents to have more negative opinions about the state of the economy and government performance. The state of the economy should explain these

difficulties, as well as the government, an actor that is supposed to support young adults and thus help them overcome the problem. In addition, the same result applies to the young adults of working age (18-34) who are economically forced to stay at home, as they have more negative views of the economy and the government than their independent peers of the same age. This article is the first to deal with the political consequences of young adults living with their parents. The negative consequences of this type of living arrangement are, however, widely discussed in other fields of social science, because the effects are protean. They range from depressive symptoms in parents and children who are forced to cohabit, to an impact on fertility levels, social mobility and income disparities over the long term. It was therefore appropriate to draw the attention of political scientists to this important societal issue. Especially as the 18 to 34 year old and their parents represent a significant proportion of the electorate.

Article 2 - Research question: Do rising housing prices fuel economic anxiety?

Article 2 deals with the influence of property prices on tenants' perception of their economic status. Three elements are important for this chapter: the reference to neighbours to assess economic status, the cost of home ownership, and finally the reaction of tenants to rising costs. The cost of housing in a neighbourhood can be used to assess the economic standing of its residents, or the attractiveness of the locality. Both factors are linked to the concept of gentrification. When a tenant learns that house prices in his or her neighbourhood are rising to the point where home ownership is becoming difficult to access, this should trigger a degree of economic anxiety among those who are most at risk of having to leave their homes or who will find it more difficult to access home ownership, i.e., tenants. From a theoretical point of view, the link between property prices and economic perceptions is not new. It is present in many studies that connect house prices to political reactions (vote choice or satisfaction with the government), focusing essentially on homeowners. The purpose of this article is to show that tenants also react to the costs of owning a home. In a context of sharp increases in housing prices, I show that tenants who are informed about the costs devalue their economic status, are less confident about their ability to move, and believe that they

are more at risk of being forced to leave their neighbourhood in the coming years as a result of gentrification. My results are based on survey experiments carried out in two different contexts: the United States and the city of Montreal in Canada. In both experiments, the control group received no information about property prices. The treatment group, on the other hand, received precise and real information on the cost of being a homeowner, i.e. the price of a typical house, the cost of the monthly mortgage, down-payments, and finally the minimum wage required to be a homeowner in their locality. Participants received this information according to their place of residence (Study 1 in the United States) or for each neighbourhood in the same city (Study 2 in Montreal). The aim of showing precise, local information on the costs of housing is to make the treatment credible and relevant, since property prices vary greatly from one locality to another.

Article 3 - Research question: Does the perception of the national economy solely rely on a static measure?

After employing novel measures of the everyday economic context, such as cohabitation and the cost of home ownership, the third and final article reverts to a more traditional conception of the everyday economic context. It revisits a classic contribution of economic voting by examining the connection between perceptions of the national economy and local unemployment rates.

Regarding the influence of the local context, the existing literature shows variation based on the chosen level of aggregation. However, there is consistent evidence suggesting that the immediate economic environment is strongly correlated with national economic perceptions. By immediate environment, the current literature usually refers to the place of residence, which is operationalized by means of an individual's zip code or their municipality level. In this article, I expand upon this literature by introducing a second relevant location that influences individuals' perceptions, namely the workplace. As adults—those approached for election surveys and those eligible to vote—commute to work, I take into account the unemployment rate at the the place of work to explore how economic conditions in this

location contribute to economic perceptions. To accomplish this, I make use of fine grained contextual and opinion data.

For the contextual measures, I employ data collected at the census block level and aggregate it at the zip code level to quantify residence-work trips for all US residents from 2011 to 2017. The economic context is measured by taking the proportion of individuals reporting receipt of unemployment compensation in a given year. This information is reported in tax returns, and the data is publicly available at the zip code level from the US revenue agency. In order to account for the commuting habits of people living in a specific locality, I measure commuting flows between the place of residence and the place of work, both at the zip code level. This information on commuting patterns combined with economic data allow me to create a contextual variable for a locality's level of economic exposure. My results show that while the unemployment rate at the place of residence is indeed correlated with the perception of the national economy, a measure that takes into account the general economic context of a locality based on economic indicators of that locality and of the places that people residing there typically commute to, seems more relevant.

First Article.

The Implications of Cohabitation Between Working Age Children and Parents for Political Opinions

by

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Abstract. A large number of young adults still live with their parents because they have difficulties entering the job market, because of low wages, or the cost of housing. Despite much research in social science on the consequences of this salient social trend, we lack an understanding of its implications for public opinion. This research note fills this gap by investigating whether such living arrangements between working age children and their parents is correlated with household members' political stances. Specifically, I expect that the anxiety induced by seeing their children having difficulties to become independent will lead parents to hold more negatives political stances, while the same outcome is expected from working age children who failed to fly the nest compared to their independent peers. Using data from the European Social Survey in 32 countries covering the period between 2002 and 2016, I show that, for both parents and young adults, cohabitation is associated with negative evaluations of the national economy and of the government's performance. Studies that do not take into account the situation of other household members might miss an important part of the opinion formation puzzle.

Keywords: contextual factors; cohabitation; economic voting; housing; opinions

1. Introduction

In Western countries, living with parents is a reality for many young adults aged between 18 and 34 years old (see Appendix A1). In 2019, across Europe, 49 per cent of the 18–34 year old cohabited with their parents, while they were 32 per cent to do so among the 25–34 age group.[3] Cohabitation can be the result of multiple factors ranging from the length of time spent in school, low wages at the beginning of a career, the difficulty of landing a first job, the cost of housing or any life shocks that prompt emerging adults to stay with their parents. Several consequences of this living arrangement are already well documented by social scientists. These include depressive symptoms among parents (Tosi, 2020) or young adults living with parents (Copp et al., 2017), or children's lower income later in life (Billari and Tabellini, 2010).

Despite much research in social science on living arrangements between emerging adults and their parents, we lack an understanding of its implications regarding political stances.

[3]Raw figures were obtained from Eurostat using the *ilc_ lvps08* indicator. Aggregated figures are the author's calculation.

My focus on the implications of this social trend for political opinions is motivated by the literature on everyday life experience and economic anxiety. We know from previous research that the spatial or social context in which individuals live influences their perception of the economy. For instance, a high share of unemployed individuals in a neighbourhood is associated with a negative assessment of the national economy (Bisgaard, Sønderskov and Dinesen, 2016). Being aware of economic difficulties in one's social circle influences the perception of the economy, just as much as discussing politics between spouses or relatives can influence people's political opinions and behaviour in a social group (Newman et al., 2015; Daenekindt, de Koster and van der Waal, 2020). Hence, we might expect that economic difficulties affecting children will render parents more anxious about the overall economic conditions, mimicking a contagion effect among household members. Since cohabitation between parents and young adults is mostly explained by economic difficulties (Matsudaira, 2016), it likely triggers negative evaluations among children regarding the current state of the national economy and political actors; since both can be held accountable for the economic difficulties encountered by young adults.

Based on these motivations, I investigate whether cohabitation between young adults and their parents is correlated with negative opinions about the national economy and government performance among parents and working age children. By seeing their children struggle to achieve emancipation, parents are likely to form a more pessimistic view of the country's economic situation and evaluate the government's performance more negatively; while young adults who remain with their parents are also expected to become more negative as their age increases and social norms regarding the need of flying the nest become more pressing.

My contribution to the field of public opinion research is twofold. First, I provide further evidence of the importance of everyday life context for opinion formation. Being exposed to someone's economic uncertainty on a daily basis, through cohabitation, might influence the economic attitudes of household members. Second, my results underline the importance of accounting for the presence of young adults in the household when studying both parent's and children's opinions. Traditional studies in opinion formation usually take into account

the household economic context by controlling for the household material well-being or employment situation between partners. However, economic hardship faced by working age children can affect political views within the household just as much as the economic uncertainty of one partner on the other. Since the co-residence between young adults and their parents is widespread in Western countries, social scientists should consider this factor when studying political opinion.

2. Constrained Cohabitation as a Proxy for the Economic Uncertainty

Facing high unemployment rates (see Appendix A2) and a housing affordability crisis, young adults can use different strategies to adapt to a disadvantageous socioeconomic context. One of these strategies is to stay or return to their parent's place which allows them to save on rent at least and rely on material help from parents at best (Swartz et al., 2011). That economic conditions motivate children's moving-out decision is already well grounded in the economic literature (Matsudaira, 2016). An unfavourable economic context undermines young adults' ability to face rental cost let alone home ownership. Because difficulties in accessing the housing market are a precursor of young adults' economic uncertainty, some European countries have tried to mitigate those difficulties by providing emerging adults with financial help in order to make housing more affordable for youngsters.[4] If social benefits are not provided by the state, parents themselves might be able to help their children financially, by providing financial support for living costs during their studies or when they enter the labour market. Lacking such support from either parents or the state, young adults may be forced to stay or return to live with their parents if they are unable to afford their independence.

This observation is crucial when considering the economic context in which an individual evolves and how this context is studied. Much research measures the economic situation of

[4]For instance, France has taken measures to partially cover rents of citizens under the age of 30 by means of the *Aide mobili-jeune*. Similar program have been also put in place in Portugal via the *Porta 65-Jovem* for young adults between 18 and 35 years old.

an individual by means of their income, employment situation or assets. Others have drawn attention to the fact that individuals are not isolated but are affected by their surroundings, with a focus on neighbourhood effects (Newman et al., 2015). These factors usually serve as proxies for estimating the economic conditions of a respondent in opinion surveys, since one's personal economic situation can influence opinions on many topics, especially economic ones. But with equal earnings as well as the same (un)employment status, some young adults can be financially helped by their parents – or the state when they have access to subsidies – and hence experience independence, whereas others who lack such support might be constrained to stay with their parents. Given the specific difficulties of the younger generations who in recent years have faced housing crises, high unemployment rates, precarious contracts and low wages, traditional measures are particularly problematic for capturing their economic conditions. For this reason, I make use of the constrained cohabitation with parents as a proxy that captures the economic conditions that young adults face. I expect cohabitation to be negatively correlated with citizens' perceptions of the state of the national economy.

I conceive cohabitation as a proxy for the economic situation of young cohorts as a whole and not the respondent alone. Precisely, cohabitation can soften the blow of job loss or low wages. With parental help through cohabitation, a young adult will then be sheltered as regard to material well-being and perhaps even be able to save some money. Yet, this does not alter the fact that such young adults are unable to become independent which likely fosters frustration about the economic situation reserved for the vast majority of emerging adults. I assume that cohabitation likely has an influence on personal economic perceptions too, but here my interest is in perceptions of the state of the national economy.[5]

[5]While some might find a theoretical ground to study the effect of cohabitation on an egotropic evaluation, I am not able to provide such analysis given the question wording offered by the ESS. Egotropic evaluations are measured as follows in the ESS: *Which of the descriptions on this card comes closest to how you feel about your household's income nowadays?*. The formulation is particularly problematic for a young adult cohabiting with parents since it refers to household income, and not their own income alone. Since the understanding of the question should vary between independent and non-independent young adults, I do not think it can serve as a useful measure of youngsters' egotropic evaluation.

3. Hypotheses

In this research note, I test two hypotheses that are primarily motivated by the literature on the role of the household context on political attitudes (Huckfeldt and Sprague, 1995), peer effects (Dahl, Løken and Mogstad, 2014) and the economic voting literature (Lewis-Beck and Stegmaier, 2000). First, I argue that young adults living with parents evaluate the economy and the government more negatively compared to independent individuals of the same age (I label this hypothesis the *Children hypothesis*). This hypothesis relies on the peer effect theory and social stigma associated with long-lasting cohabitation with parents. The premise being that, as a young adult grows older, more and more of their peers no longer live with their parents. As such, those who are lagging behind in acquiring their independence will tend to worry about their situation when comparing themselves to their independent peers and have more pessimistic opinions overall. Hence, I expect the negative effect of cohabitation among young adults to be conditional on their age.[6]

> HYPOTHESIS 1. *Children hypothesis.* As age increases between 18 and 34 years old, living with parents is associated with a lower level of satisfaction with the [*economy/government*] compared to young adults living without their parents.

Second, mirroring their children's political opinions, parents who are exposed on a daily basis to the economic difficulties faced by their adult children – that materialize by means of cohabitation – should also be less satisfied with the economy or the government's performance compared to parents living with children under 18 or childless individuals (*Parents hypothesis*). The crucial element from the parents' perspective is the psychological dimension of seeing their adult child unable to become independent. Seeing their children struggle to become independent should induce anxiety among parents mimicking a contagion – effect

[6]Changes in opinion formation could also result from other factors that vary with age. For instance, if political interest varies over an individual's life-cycle that could lead them to pay more or less attention to economic conditions when forming opinions about it. The inclusion of an interaction between age and cohabitation, however, allows to account for the role of age-variation in other factors (such as interest in politics). Specifically, it allows me to focus specifically on the effect of cohabitation between individuals of the same age.

that translates into negative political stances. Hence, parents might be tempted to blame the economy and actors responsible for it such as the government.

> HYPOTHESIS 2. *Parents hypothesis.* Living with adult children is associated with lower satisfaction with the [*economy/government*] compared to parents who do not cohabit with adult children.

Before turning to the empirical results, I briefly consider the possibility that the effects of cohabitation are gendered. We know from previous research that parenthood affects political preferences (see, for instance, Banducci et al. (2016) on the consequences of parenthood in Europe). Importantly, we also know that parenthood can trigger different reactions between mothers and fathers (Burlacu and Lühiste, 2021; Klar, Madonia and Schneider, 2014). Given that parenthood is gendered, it could be argued that the parental role moderates the association between cohabitation and political views. In the supplementary materials (in Appendix A13), I, therefore, explore heterogeneity in the association based on parents' gender. The results show that, compared to fathers, mothers cohabiting with a young adult tend to hold more negative opinions on the economy and government's performance. However, this difference is not statistically significant.

4. Research Design and Data

To test my two hypotheses, I use the European Social Survey (ESS) from 2002 to 2016 (8 waves, every 2 years), in 32 countries.[7] I use two dependent variables, the respondent's satisfaction with the economy and with government performance, both are measured on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied.[8]

[7]See Appendix 3 for a breakdown of respondents by year and country. Data from the ESS is available here: https://www.europeansocialsurvey.org/data/.

[8]Such questions are not retrospective assessments, but rather focus on the state of the economy and the government's performance at the time of the survey. This is an advantage over retrospective questions asking for an appraisal over the past year because I have no way of knowing how long the cohabitation situation has lasted.

The main independent variable varies depending on which hypothesis is tested. For the *Children hypothesis*, the coefficient of interest is the interaction between a binary variable capturing whether the respondent still lives with their parents (variable named *Cohabitation with parents*) and their age. The cohabitation variable is coded 1 if the respondent lives with her parents, 0 if not, and age is measured in years, that is continuously. Due to my theory, the *Children hypothesis* focuses on a restricted sample of respondents, that is, individuals aged less than 34 years old. The choice of a cut-off at 34 is partly arbitrary but motivated by the traditional use of the 18 to 34 age group (as the *ilc_ lvps08* indicator from Eurostat) when referring to young adults. The incorporation of older respondents could then cover the scenario of children taking care of their parents who become non-independent due to their health condition, which is out of this study's scope. With respect to the *Parents hypothesis*, the main explanatory variable is *Cohabitation with children*. I use a binary measure, where 1 refers to the presence of over 18 years-old and under 34 years-old children in the household, 0 otherwise (e.g., parents with only children under 18, parents who do not cohabit with their children or childless individuals). A binary measure is in line with the theory since it allows a comparison between parents who cohabit with young adults and those who do not. However, this coding might hide important information in terms of household composition. To address concerns about heterogeneity in household composition, I provide an alternative measure that contains five categories: (1) never had children at home, (2) have had children at home but not currently, (3) only children under 18 at home, (4) mixed household (children under and above 18 at home), (5) only children above 18 at home.

As for the *Children hypothesis*, young adults taken into account for the *Parents hypothesis* are only those from 18 to 34 years old, in order to fit with my theoretical expectations and to minimize measurement errors as much as possible. This brings me to mention a potential bias regarding both cohabitation variables. The main unobserved factor is whether living with their parents is a choice or a constraint for children. I can only assume that, from a certain age, the majority of young adults will want to gain independence. This desire for independence should grow as one gets older as expected from the peer effect theory and social

stigma associated with long-lasting cohabitation between working age children and parents. Hence, if not socially or personally desired, remaining with one's parents reflects constraints motivated by economic conditions. Since information on the motivations for cohabitation with parents is not available, it can be seen as a measurement error in the independent variable (i.e., the cohabitation variable, for both hypotheses).

I control for a respondent's age in years, the household total income, the respondent's level of education (in years) and whether the respondent is unemployed and actively looking for a job at the time of the survey (1 if unemployed, 0 if not). To account for change in the economic context from year to year within each country, I control for the yearly unemployment rate.[9] When testing the *Children hypothesis*, I also control for the respondent being at school or not at the time of the survey (coded 1 if at school 0 otherwise). The information regarding the enrolment of children at school is only used for the *Children hypothesis*. The ESS survey provides information on occupation for the respondent and their partner only, and not for other household members. Therefore, models for the *Parents hypothesis* do not control for whether children are still at school. I decided to not include support for the incumbent party in the main models since doing so might introduce post-treatment bias.[10] However, controlling for identification with the incumbent party yields similar results through various coding decisions (see appendices A5, A6, A8 and A9). Question wordings are listed in Appendix A section *Measurement* and descriptive statistics of all variables in Appendix A2.

Finally, both hypotheses are estimated by means of a linear regression with country and year fixed effects, standard errors are double clustered at the level of year and country and I consistently apply post-stratification weights. Further justification of the method as well as equations for testing each hypothesis are available in Appendix A section *Methodology*.

[9]See Appendix A section *Measurement* for a description of the variables.

[10]Both opinion variables can be the outcome of party identification. Partisanship can shape one's perception of the economy and the perception of how the incumbent performed. But we can not fully reject the possibility that the level of satisfaction with the economy and government's performance can affect respondent's closeness to the incumbent's party. It should be noted that I use partisanship in the discussion but the logic also applies to vote choice or feeling thermometer toward parties or candidates.

Finally, the full tables for each model presented in the paper as well as those for the robustness checks are presented in the appendices.

5. Results

The *Children hypothesis* aims to assess whether, as age increases, living with parents is associated with lower levels of satisfaction with the economy or the government's performance compared to independent adults.

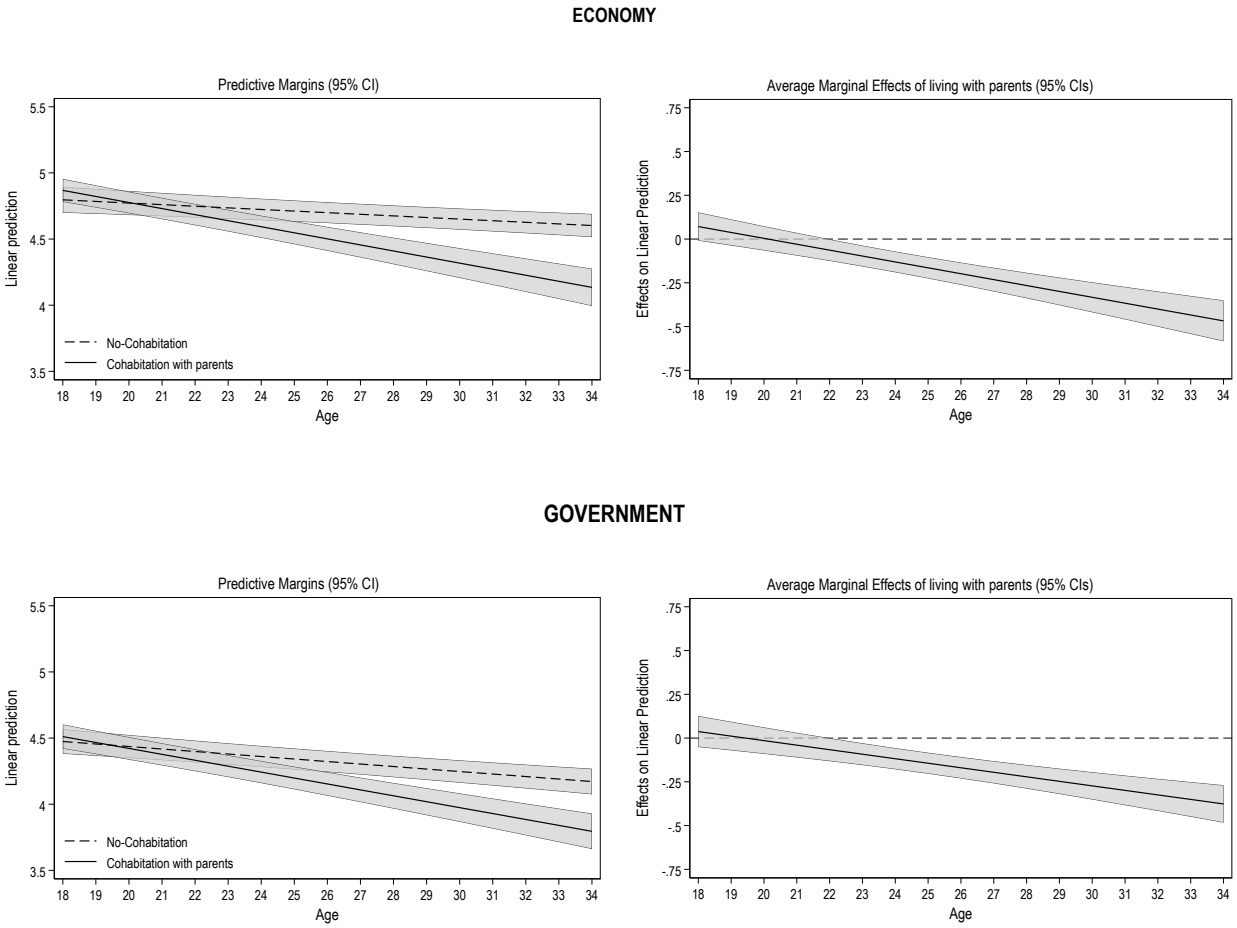


Fig. 1. Predictive margins and marginal effects of living with parents on children's level of satisfaction with the economy or government's performance

Note: Derived from the Model 4 presented in the Appendix, Table A3 for the economy (top panels) and Model 8, Table A4 for the government's performance (bottom panels).

Figure 1 shows the results in two ways. The left panels show the linear prediction of satisfaction with the economy (top panel) or the government (bottom panel), conditional

on whether the respondent lives with their parents, as well as their age at the time of the survey. The right panels show the average marginal effect on satisfaction with the economy or government of a shift in cohabitation from 0 (no cohabitation) to 1 (cohabitation with parents). As can be seen in the left panels of Figure 1 (the predictive margins), as age increases, young adults living with their parents tend to hold more negative views of the economy (top panel) or government performance (bottom panel) compared to those who do not. The dashed line (*No-cohabitation*) looks almost stable across age in both left panels meaning that age is not associated with meaningful change in opinion regarding the economy or the government conditional on being independent. The solid line (*Cohabitation*) pictures a slightly different behaviour: among individuals who cohabit with their parents, as one gets older their satisfaction with the economy or government decreases to a greater extent. The average marginal effects (right panels) for both dependent variables show when the differences between groups are significant. Thus, before reaching 22-23 years, young adults cohabiting with their parents do not hold different views of the economy or the government compared to their independent peers. In other words, there is a difference between both groups, but it is not significant at the conventional level. Perhaps, since living with parents appears to be the norm among this age group, children might not find their living arrangement abnormal compared to their independent peers, or they do not really feel worried about their situation. Hence, the evaluation of both the economy or the government is not correlated with the living arrangement. However, the path diverges and the difference becomes significant in the mid-twenties: after 23 years old, the gap between the two groups widens as age increases. The pattern is similar for both dependent variables.

The results are in line with the distribution of cohabiting and non-cohabiting individuals in different age groups. More specifically, Figure 2 shows that around the age of 30 years old and onward, non-independents become a minority and hence being independent becomes the norm. While this cannot be entirely proved through the data, this more negative turn in the opinions of the non-independents is probably the outcome of a comparison with their peers, e.g. in their circle of friends or colleagues, where the norm becomes to be independent.

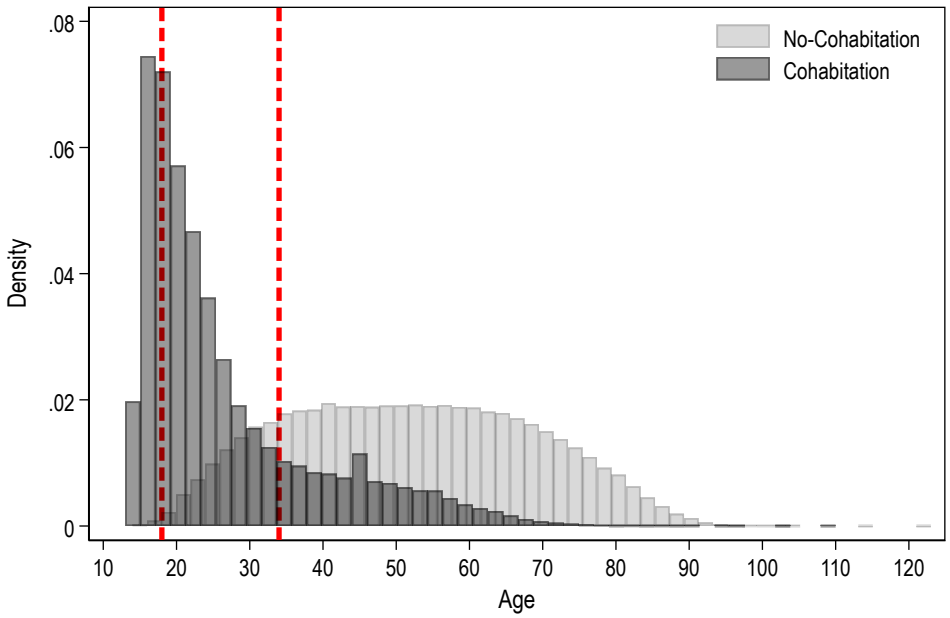


Fig. 2. Distribution of the respondents according to whether they live with their parents or not.

Note: The first red line indicates 18 years of age for the x-axis, while the second red line indicates 34.

Since I assume that cohabitation is constrained by economic reasons, additional effects of seeing one's peers gain independence might explain this increasing gap between groups and the decreasing satisfaction with both the economy and the government.

The aim of the *Parents hypothesis* is to assess whether, among parents, having young adults in the household is correlated with a lower level of satisfaction with the economy or government performance compared to parents with no child at home or only children under 18. Before discussing the results, I would like to bring the reader's attention on the rationale behind the restrictions I made regarding the sample. First, in line with the *Children hypothesis*, the *Cohabitation with children* variable takes into account cohabitation with young adults aged between 18 to 34 year olds (coded 1) and under 18 or no child at home (coded 0). This age restrictions serve to rule out the case where parents would live at their children's place due to their care giving needs. Obviously, it is impossible to entirely rule out that individuals over 34 years of age may still be living at their parents' home for economic reasons. However, in order to minimise measurement errors as much as possible, it seems

important to proceed with the most rational scenario taking into account the limitations of the survey. Hence, I assume that beyond 34 years old, individuals living with their parents are more likely to be in a position to take care of them rather than the reverse. In addition to the limitation to the 18-34 age group in the coding of the main explanatory variable, I opted to exclude from the analysis the respondents aged between 18 to 34 years old. Retaining this age group as part of the analysis of the *Parents hypothesis* implies that children still living with their parents or not would be studied under both hypotheses, which would introduce a bias by means of measurement error.

Top panel from Figure 3 shows the association between a cohabitation with children aged between 18 and 34 and the satisfaction with the economy or government's performance among parents compared to parents without children over 18 at home. As can be seen, the presence of young adults in the household is associated with less satisfaction with the economy or government performance compared to the baseline category. More specifically, when looking at the results using the binary variable, having children above 18 and under 34 in the household compared to no child or under 18 decreases the satisfaction with the economy by 0.16 points on a scale ranging from 0 to 10 (see Model 1 in Appendix A7). Although effects are quite comparable for the second dependent variable *Government*, i.e. a negative coefficient among parents with only children over the age of 18, the coefficient's size is smaller (-0.11, Model 3, Appendix A7).

Results from the categorical variable (see bottom panel, Figure 3) allow to reach similar conclusion since only households with children above 18 years old (see "Only above 18") are less satisfied with the economy compared to households who have had children at home but not currently. However, regarding the satisfaction with the government's performance, the coefficient is close to 0 and not significant at the conventional level (see category "Only above 18" in Model 4, Appendix A7). Overall, the results support the main hypothesis that living with young adults might induce anxiety among parents; and this anxiety can be expressed by a dissatisfaction toward factors that are more likely to be seen as the reason behind the difficulties encountered by those non-independent children, i.e. the economy and

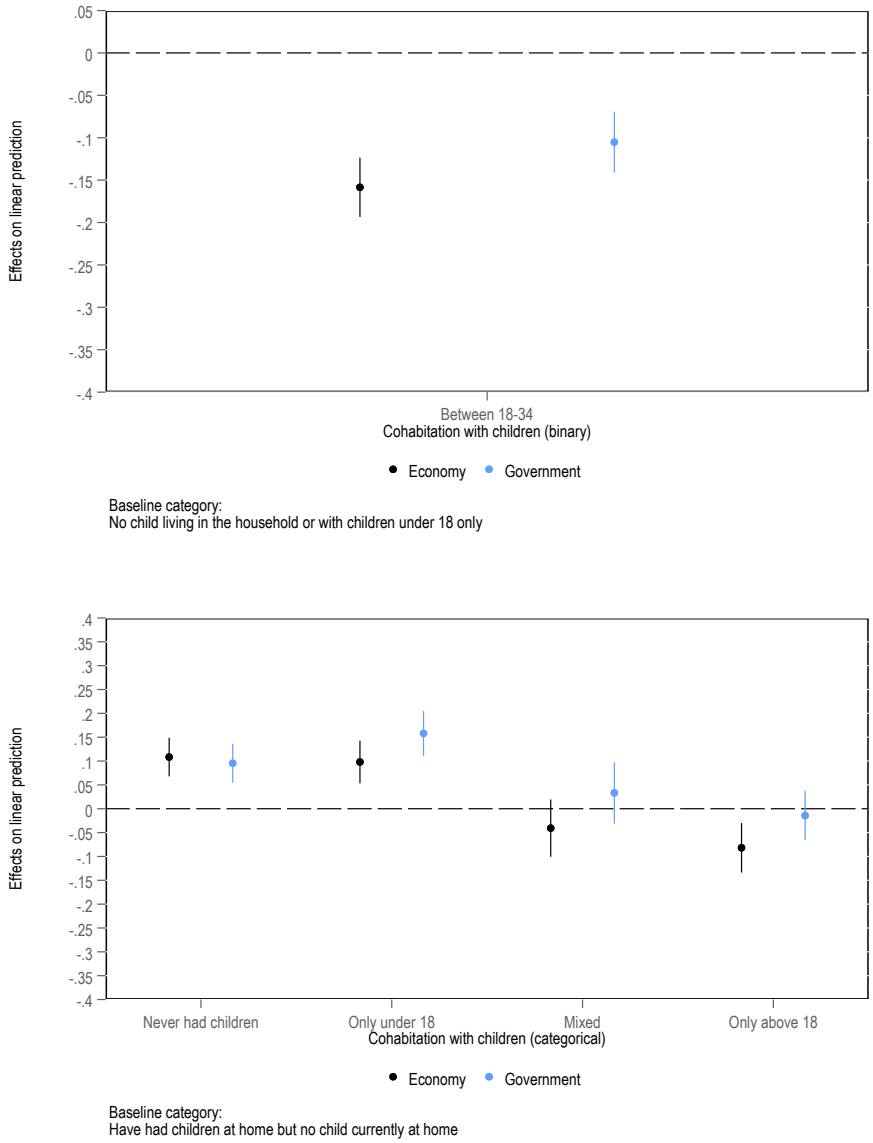


Fig. 3. Effects of household composition on satisfaction with the economy or government's performance.

the government. As expected, having only young adults aged 18 or older in the household yields the most substantial effect regarding the satisfaction with the economy.

Finally, I provide several robustness checks in the appendix. These robustness checks include 1) a regression for each country in order to rule that effects are driven by a subset of countries, 2) estimates with adjusted p-values in order to address the potential multiple comparisons problem using Benjamini and Hochberg's (1995) method 3) estimates for all

models with party identification with the incumbent party as a control variable through various coding decision and 4) a test with a variable that captures having children at home between 25-34 compared to 18-34 as employed in the main analysis. All robustness checks produce similar results to those presented in the main analysis regarding the size of the coefficients as well their significance levels.

6. Conclusion

I examined a behaviour that is socially widespread but somewhat neglected by political scientists: the large and increasing number of young adults staying in the family home and its implications for the understanding of opinion formation. The analysis shows that both parents and working age children who cohabit hold more negative opinions on items largely used in the public opinion literature, such as the assessment of the economy and the government's performance. These results are consistent with various mechanisms studied in public opinion such as the influence of the surrounding economic context on opinions.

My findings are relevant for different actors. Policy-makers should be conscious about the fate of young adults and their economic difficulties. While the youngest generations do not turn out in large numbers their parents do and based on my findings, the economic situation of their working age children may have an effect on their opinions towards the economy and satisfaction with the government's performance. Since opinions on policy performances might lead voters to reward or punish the incumbent, policy-makers and candidates should keep an eye on this social trend that affects a large part of the electorate, that is parents and voting age children. More generally, this study calls attention to the consequences of a salient social trend that might be of an interest for social scientists, and more specifically scholars of political behaviour. Future research may fruitfully explore the implications of cohabitation identified in this study on vote choice, notably in favour of extreme parties or even for abstention. Failure to reach independence might foster a resentment among young adults with the potential to drive them to extreme parties.

Regarding the analysis, while the estimates appear to be robust, the study does not provide causal evidence of the mechanism at work. I have theoretically presented cohabitation as a causal factor but the evidence remains correlational. Future research should extend the analyses by means of a causal identification. Panel data would be an excellent way to go if appropriate measures are available.

Finally, this research note has implications for survey design and calls for the inclusion of additional questions regarding the living arrangements beyond the usual considerations such as being an owner or renter, or cohabitation with a partner. While housing crises in large cities, change in living arrangements due to Covid-19 and unemployment rates are more likely to affect young adults, accounting for the cohabitation with parents might provide a better proxy in order to capture the more accurate economic situation of those young voters.

Second Article.

Rising Housing Prices Fuel Economic Anxiety

by

Alexandra Jabbour[1]

This article is a working paper.

ABSTRACT. Do surging housing prices fuel economic anxiety? Recent research linking housing prices and electoral outcomes suggests that they do. However, this literature often takes for granted that individuals follow the market and re-evaluate their economic standing accordingly. This paper interrogates this key assumption by testing whether renters react to housing market information provided to them. By means of two experiments conducted in the United States and Canada in which participants are exposed to fine grained data on local housing prices, I show that informing respondents of the cost of home ownership in their locality triggers economic anxiety among tenants. This information also affects their perceived financial capacity to move elsewhere and their fear of being priced out from their neighbourhood. The results highlight the effective fear of gentrification among tenants. It entails important implications for our understanding of the political consequences of housing prices, the economic anxiety it may generate, and for whom.

Keywords: economic perception, economic anxiety, neighbourhood, housing, gentrification, experiment

1. Introduction

In many countries, especially in large cities, it is becoming increasingly difficult for residents to find affordable housing. The unaffordability crisis affects both renters, who have to allocate a substantial share of their income to cover their rent, and homeowners, who have to face a substantial mortgage, even more in times of surging interest rates and housing costs. Regardless of whether an individual is a renter or an owner, housing can impose a significant financial burden, leading to anxiety regarding households' capacity to bear the costs of housing. Aside from the financial aspect, housing also has symbolic importance due to the status that society places on home ownership. Policies such as Margaret Thatcher's *Right to Buy*, designed to achieve "a country of homeowners," perpetuate the idea that home ownership is a socially desirable goal that provides protection during economic hardship, a placement toward pension, or an asset to pass on to children (Ansell, 2014). As such, home ownership is both desirable and costly, creating a combination that has the potential to exert economic pressure on renters who may perceive this goal as being necessary but also difficult to reach.

Since home ownership (or the lack thereof) serves as a social and economic marker, numerous studies are examining its influence as a determinant of political attitudes and behaviour (Adler and Ansell, 2020; Ansell et al., 2022; Hankinson, 2018; Han and Shin, 2021; Larsen et al., 2019). Such studies usually describe a correlation between trends in housing prices and vote choices: when prices increase, homeowners tend to support the incumbent, whereas when prices decrease, they tend to support populist parties. The usual theoretical expectation is that individuals react politically to perceived variations in housing prices by voting in line with their perceived status of winner or loser in the housing market. Importantly however, the economic consequences of rising housing prices are usually assumed and not directly examined.

In this study, I take a step back in order to bring new insights to research that link housing prices to political behaviour. First, I examine whether surging housing prices indeed trigger economic anxiety among renters. I thus seek to evaluate whether economic barriers to home ownership lead to economic anxiety. Second, I also verify how the cost of becoming a home owner affects those who potentially wish to aspire to be one, i.e. renters. I expect that—renters—effectively react to surging housing prices by showing signs of economic anxiety. Learning that prices are going up in their locality informs them that their neighbourhood is gentrifying, meaning that there is change in the social composition of their locality. By being informed about the cost of becoming a homeowner in their neighbourhood in a context of soaring prices, renters might alter their perceived economic standing as well as their assessments of their financial capacity to afford a move. In other words, they should exhibit signs of economic anxiety upon realizing that home ownership is increasingly becoming out of reach for them.

To test the hypothesis that renters express signs of economic anxiety when learning about the increasing cost of home ownership, I conducted two survey experiments, one in the United States, the other in Canada. These are two housing markets with different rules that are both marked by a steep increase in prices during the last 3 years (2020-2023). Respondents from the treatment group were exposed to fine grain real-world information on current housing

prices in their locality (taking into account home prices, down payments, mortgages, related costs such as reserve funds, insurance, and the minimal annual income needed to afford the cost). On the other hand, respondents from the control group were not informed about such prices. In both studies, renters who were informed about the current costs of home ownership were more likely to feel economically worse off compared to renters who were not informed about it. Information about housing prices also altered the perceived financial capacity to afford a home in a specific neighbourhood or the fear of gentrification, that is, being priced out in the near future. All outcome variables analyzed indicate that renters who were informed about housing prices assess their economic standing based on the housing market. In short, current housing prices matter for pocketbook and social considerations among renters.

This study makes three contributions to the growing body of literature on the political consequences of housing and social status more generally; one theoretical and two empirical. As for the theoretical contribution, I argue that surging housing prices—that is the perceived economic barrier to home ownership—trigger economic anxiety among renters. Learning about the cost of housing in one's locality helps individuals to situate themselves economically compared to peers who can afford such prices, i.e, neighbours. Feeling that one cannot keep up economically combined with the risk of being pressured to relocate can be interpreted as a sign of economic downgrading, or social backsliding, compared to neighbours. I provide evidence that even for renters who are not willing to move any time soon, information on the cost of being an owner in their locality can affect their perceived economic standing.

The remaining contributions are empirical. First, previous research assumes but does not empirically test whether individuals react economically to the housing market. My study gives credence to past and future work that studies the political consequences of housing by showing that even for a group of individuals—renters with no intention to move—that is not directly affected by an increase in housing prices, surging housing prices can trigger economic anxiety. Second, renters are rarely the main focus of research that studies the political consequences of housing (for some notable exceptions see Abou-Chadi, Cohen and Kurer,

2023, Cohen, 2023, and Hankinson, 2018). My focus on this specific group complements the findings from a field that is primarily driven by an interest in homeowners.

2. The Argument

2.1. Fear of Gentrification Fuels Economic Anxiety

The central argument of this paper is that learning about the increasing costs of home ownership in one's locality elicits economic anxiety. Anxiety is expected to arise among a particular group of individuals who may aspire to achieve home ownership in the long run, namely renters. Learning that local housing prices are surging signals two main changes to renters. First, it helps renters and residents more generally to evaluate their economic standing based on their ability to afford a home in their locality. When prices are up, owners should be virtually richer. For those without such asset, learning that the costs of being an owner increase should lead them to re-evaluate their economic standing in face of the market.

The second change is related to the signal sent to renters regarding the change in the social composition of their neighbourhood. The skyrocketing housing prices should induce a fear of being priced out due to the inability to keep up with the cost of living in the neighbourhood. This mechanism is nicely explained by Huber and Wolkenstein (2018):

> « *The sometimes-steep increase in prices, rents, and living costs caused by the processes set in motion by gentrification can subject less privileged residents to severe economic pressure and duress, to the point where they have no choice but to move elsewhere; they are 'priced out' of their neighbourhood.* »

A surge in housing prices is part of the gentrification process as noted by Huber and Wolkenstein. Being aware of the extent of the increase should weaken renters' perceived capacity to move elsewhere as well of a fear of being displaced in the near future. I consider these two reactions (the perceived financial capacity to afford a move and fear of displacement) as a sign of economic anxiety caused by surging housing prices, and more generally, by gentrification of one's locality.

2.2. The Role of In-Group Comparison

When individuals become aware of changes in housing prices in their locality, I expect them to re-evaluate their economic status compared to a group of people that is similar to them. The appropriate comparison group in this case is their neighbours. This assumption is based partly on a mechanism used in the literature on benchmarking in economic voting, where individuals use a reference point to evaluate the incumbent's economic performance (Aytaç, 2018; Kayser and Peress, 2012, but see also Arel-Bundock, Blais and Dassonneville, 2019 for a reassessment of the findings). The reference point is used as a cue to help assess the economic performance of one' s country. In the proposed theoretical framework of this study, it is suggested that individuals use their everyday experience, such as their locality and neighbours, to locate themselves on the social ladder and evaluate their own economic standing. Selective sorting makes it reasonable to expect that individuals will use their neighbours as a point of comparison. When choosing a new home, people generally consider their needs, personal preferences, and housing costs. Often, the economic dimension is key, as it allows filtering into neighbourhoods according to financial capacities (Mummolo and Nall, 2017). As such, individuals are likely to opt for a neighbourhood that they can afford, a process referred to as selective sorting. As a result, individuals in the same residential place are likely to be quite similar in terms of their economic standing.

The critical question is whether individuals pay attention to others who live in their neighbourhood. A study conducted in Canada by Wong et al. (2020) that looked at the definition of a "local community" (especially from a spatial perspective) found that respondents overwhelmingly identified their neighbourhood as the place they had in mind when asked to draw their community (for 75% of the respondents in the first study, 83% in the second). More importantly, respondents indicated that their drawings were based on individuals with whom they frequently interacted and who were spatially close to them (Wong et al., 2020). Therefore, the neighbourhood appears to be an important spatial and social reference group for individuals, particularly when assessing their own interests, identities, and economic status.

In addition, home prices are highly location-dependent. A home that is located in an attractive, or touristic area is likely to fetch a higher price than a similar property in a town with no particular appeal. As a result, when it comes to informing residents about property prices, it seems more appropriate to communicate the trend in house prices in individuals' own neighbourhood rather than exposing them to national figures. Having information on current housing prices can provide valuable insights into the economic standing of a neighbourhood's residents. Consequently, when changes in housing prices occur in a particular neighbourhood, people are expected to use this information to assess their own economic standing. The intuition is that, when respondents are informed about current prices, in the context of an increase, they should have the following reasoning: "*I was able to move in this neighbourhood X years ago, but I would not be able to do so today based on current prices. I am lagging behind economically compared to my neighbours*". Or, to put it differently, "*if newcomers can afford something I can't then I don't belong to this neighbourhood anymore*". Therefore, if respondents devalue their perceived economic standing after being exposed to current prices, in the context of an increase, it can be inferred that housing matters when it comes to evaluating wealth.

Learning about the role of housing prices on perceptions is important for our understanding of the sources of economic anxiety more generally; a distress often linked to political behaviour. For instance, perceived economic decline, and fear of status decline are often correlated with political discontent, that is a vote for radical parties (Bolet, 2023; Gest, Reny and Mayer, 2018; Gidron and Hall, 2017). In what follows, I detail how to locate the contribution of the study within the current literature on the political consequences of housing and gentrification, especially with regard to its economic dimension.

3. Implications in Political Behaviour

A rapidly growing body of literature investigates the relationship between housing prices and political behaviour and/or political preferences. Broadly speaking, this literature can be divided into two groups: those who view housing as an asset and those who see it as a

proxy for the national / local economic performance. The former perspective is in line with an egotropic approach as considered by the literature on economic voting, while the latter follows a sociotropic or geotropic approach.

Scholars who adopt an egotropic perspective commonly regard housing as a financial asset and, as such, a key determinant of an individual's economic well-being (Lewis-Beck, Nadeau and Foucault, 2013; Persson and Martinsson, 2018). The *permanent income hypothesis* as introduced by Ansell (2014) is based on the assumption that housing captures the financial standing of an individual. Being a homeowner provides an insurance during hard times and to some extent can also replace the role of the welfare state (Castles, 1998; Kemeny, 1981). Such an economic advantage should explain why, faced with a devaluation of their assets, homeowners are more likely to adopt conservative stances toward redistribution (André and Dewilde, 2016; Ansell, 2014; Van Gunten and Kohl, 2020), taxation (Halsberger and Bokobza, 2022), and trade preferences (Guisinger, 2017; Scheve and Slaughter, 2001). They are also more likely to cast a vote for a right-wing party (Adler and Ansell, 2020; Han and Shin, 2021) and more likely to turnout to vote (Hall and Yoder, 2022).

However, some scholars consider housing as an economic cue instead of a personal asset. From their perspective, housing prices can inform individuals about the economic standing of their locality, and can serve as an indication of how well the national economy is doing. Building on the geotropic perspective as theorized by Reeves and Gimpel (2012), Larsen et al. (2019) found that an increase in house prices is associated with higher levels of support for the governing party. This effect is due to the signal sent by the intense activity of the housing market. The rationale being that the 'for sale' signs make the housing market salient to voters since it is a visible mark of the housing market activity, hence a booming economy. As such, the local cues retrieved from the daily life of voters are (expected to be) used retrospectively to punish or reward the incumbent (Fiorina, 1981).

For both approaches, the theoretical expectation is that housing prices (be it their levels or changes in prices) influence voting choices or political preferences due to their economic dimension. An assumption that is always present in this field but never properly tested is that

individuals readjust their economic perceptions in line with the housing market before reacting politically to it. From a theoretical point of view, we can expect economic perceptions to interfere between housing prices and political reactions. This mediating effect is especially significant when considering housing as a proxy for permanent income. When prices go down, owners may feel anxious about the value of their asset. Such economic downturn might then trigger a negative reaction toward the incumbent. Therefore, by showing that an increase in the cost of home ownership fuels economic anxiety among renters, the present study gives credence to the assumption that housing prices shape economic perceptions.

On a final note, as mentioned earlier, surging housing prices are markers of a process of gentrification (Huber and Wolkenstein, 2018). The economic stress that gentrification causes among the less protected residents, i.e. renters, is not harmless politically. From previous research, we know that gentrification can affect the social composition of electoral districts (Chou and Dancygier, 2021). Left wing voters tend to perceive negatively the lack of solutions to offset the rise in house prices which can lead to political sanction in time of elections. When voters of leftist parties are priced out of their district, these parties in particular should face electoral defeat or, in the long run attract voters from higher social status (Chou and Dancygier, 2021).

As such, my study contributes directly to a growing field of research by providing evidence of the economic distress among renters caused by surging housing prices. This result is of interest for scholars who study the political consequences of housing as well as those investigating the causes of socio-economic backsliding.

4. Hypotheses

Before presenting the hypotheses, it is necessary to introduce briefly the context of the study and the population that is surveyed. For the experiments, I used real data, which provided respondents with information about the cost of housing in their locality. More information on these data is described in the sub-section *Treatment* of each study. The common feature of these data is that they were collected in a context of rising prices. Accordingly,

the hypotheses are intended to describe a reaction that would essentially be expected in a context of rising prices. It is therefore important to bear in mind the context of rising prices in order to fully understand the expected effects.

Furthermore, the hypotheses are framed in terms of expectations for a specific group, namely renters. Renters are included in both studies because they are the focus of the research. However, in Study 1, the analyses are also presented with a sub-sample of homeowners, while Study 2 focuses only on renters due to budget constraints. In Study 1, the analyses with owners are treated as a placebo test since I do not expect any reaction from this group due to the framing of the questions and my theoretical expectations. All the hypotheses tested with tenants were pre-registered, while for owners, no expectations were pre-registered.[11]

According to my theory, three main hypotheses can be tested and two take into account potential moderating effects discussed below. My first hypothesis is that renters who are informed about the costs of housing in their locality alter their perceived economic standing compared to renters who are not informed about it. To this end, the first hypothesis (*economic status*) is framed as follows:

Hypothesis 1. ***Economic status.*** *Subjects exposed to objective information on housing prices are more likely to feel economically worse off compared to their neighbours than subjects in the control group.*

The *economic status* hypothesis is identical in both studies (United States and Montreal). The second and third hypotheses aim to capture the financial capacity of renters to keep up with prices. The hypothesis is phrased differently in the two studies (United States and Montreal) to fit with the context of each experiment. As such in Montreal, the hypothesis is tested using a question that captures the fear of not being able to afford a move (see H2).

[11]The pre-registration of Study 1 is available here: https://osf.io/m42th, and that for Study 2 can be found here: https://doi.org/10.17605/OSF.IO/4JY9V.

The renter-friendly conditions in Montreal justify the inclusion of a question on the financial capacity to afford a move, as renters in Montreal are protected from arbitrary eviction by landlords and can oppose sharp rent increases. In contrast, in the United States, where renter protections are generally comparatively weaker, addressing the fear of being priced out becomes more relevant. As such, for the experiment carried out in the United States, the hypothesis is framed differently (see H3).

Hypothesis 2. ***Mobility.*** *Subjects exposed to objective information on housing prices feel less mobile than subjects in the control group.*

Hypothesis 3. ***Displacement.*** *Subjects who are exposed to housing prices will report more fear of being displaced than subjects in the control group.*

Finally, Study 1 in the United States provides a larger sample size and more variation in the treatment. This allows for investigating the heterogeneity of the effects. I anticipate observing larger effects among renters who reside in localities where prices have experienced substantial increases (H4), as well as among low-income renters (H5). As for H5, it is important to note that the term "low-income" varies depending on the locality, and as such respondents with incomes below the minimum annual income required to afford a house in a given locality are classified as having a "low income" compared to those who can afford it.

Hypothesis 4. ***Interaction with housing prices in the metro area.*** *The differences between treatment and control group specified in Hypotheses 1 (economic status) and 3 (displacement) will be larger for respondents who live in the metro areas where prices have increased the most.*

Hypothesis 5. ***Interaction with income.*** *The differences between treatment and control group specified in Hypotheses 1 (economic status) and 3 (displacement) will be larger for low-income respondents.*

5. Methodology

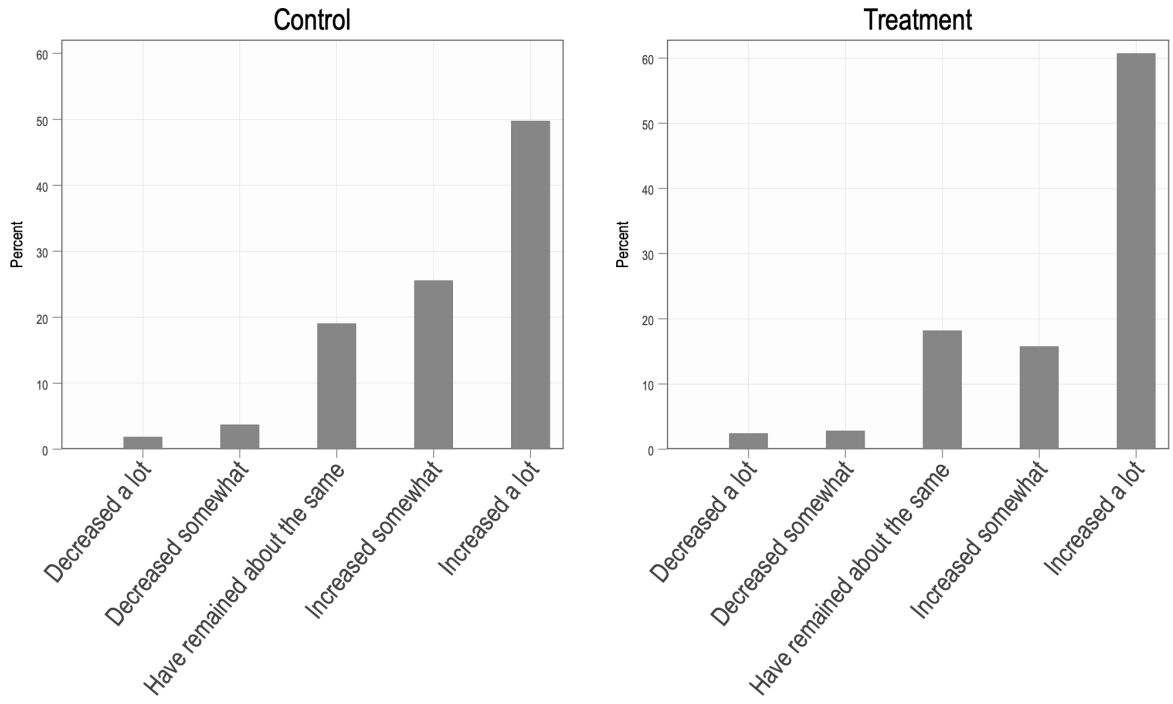
5.1. Experimental design and measures

To test my hypotheses, I employ a straightforward two-arm experimental design for both studies. The experiment includes two groups: the control group and the treatment group. The control group remains inactive, meaning that respondents assigned to this group do not receive any information. In contrast, subjects assign to the treatment group are provided with objective information regarding the average housing prices of the survey year (i.e., 2021 for Montreal, 2022 for the US), as well as the minimal annual income needed to afford a typical home in their locality, taking into account interest, down payment, and related costs.

Since the rise in house prices receives extensive media coverage, it is likely that the respondents are in some way pre-treated (Druckman and Leeper, 2012; Linos and Twist, 2018), in both experimental groups. For example, for Study 2 in Montreal, due to federal and municipal campaigns held during the last quarter of 2021, Canadians were made aware of the difficulty in affording housing prices and the housing frenzy in Canada, which received significant media coverage. However, it is assumed that while respondents were aware of the upward trend in prices, they were not well-informed about the specific magnitude of the increase or the exact median prices in their community.

The same reasoning applies to Study 1 in the United States. For this experiment, respondents from both groups were asked to assess the extent of the increase at the end of the survey, meaning after the treatment for treated respondents. As shown in Figure 4, renters from the control group were already well aware of the surge in prices in their locality, with nearly 50% of them considering that the prices of homes and apartments in their metropolitan area had *increased a lot* from 2020 to 2022. It corroborates the suspicion of pre-treatment. However, for those assigned to the treatment group, learning about the exact

cost of a typical home in a given locality deepened their perception of the increase, as slightly over 60% agreed with the label "increase a lot" to describe the direction and the extent of the change in prices. The implications of this pre-treatment effects are twofold. First, it supports the intuition that individuals are aware of the direction of the increase but not about the extent of it. Second, based on the difference between the two groups as shown in Figure 4, it appears that respondents might have underestimated the extent of the increase. The data used in Figure 4 is based on a sub-sample following to the same criteria as those applied for the analyses, i.e. tenants, with no intention of moving, living in a CBSA. The same analysis using the full sample (renters, owners, with and without the willingness to move in the near future) are presented in the appendix B1 leading to the same conclusions.



Note: The data is drawn from the sample of Study 1 in the United States, and restricted to renters who are not willing to move in the near future, as applied for the analyses. N in control group = 215 ; N in treatment group = 247

Fig. 4. Study 1 - United States - Perceptions of the trend in housing prices

After being randomly assigned to either the control or treatment group, respondents were redirected to a common set of questions, i.e. the outcome variables for H1, H2, and H3. To test the first hypothesis, I rely on the following question:

> «*You probably have an opinion about the socio-economic situation of your neighbourhood. Do you feel that you are economically similar to other people living in your neighbourhood?*
> »

Respondents were asked to answer this question using a scale running from -5 to 5. A response of 0 means that they feel completely similar to their neighbours. The more they move the slider toward 5, the more they indicate that they feel economically better-off than their neighbours, and moving the slider toward -5 indicates that they feel worse-off. Only the values -5 (worse-off), 0 (similar) and 5 (better-off) were labelled in the questionnaire.

The second and third hypotheses require measures of the financial constraints faced by the respondents and, by extension, their potential economic anxiety driven by the cost of home ownership. Since Study 1 and 2 rely on different treatment information, the questions used in both surveys differ as well. In Study 1 in the United States, the data used captures the trend in prices since 2010, aggregated at the level of the metropolitan statistical area (MSA). The question aims to capture the financial capacity to keep up with prices, and was framed by asking respondents to report the probability of being displaced from their locality within the next 5 years (Hypothesis 3). The question is as follows:

> «*How likely do you think it is it that you will no longer be able to afford to live in your neighbourhood within the next five years?*
> »

Respondents were asked to evaluate the risk of being displaced by means of a continuous variable, ranging from 0 to 10, where 0 refers to a lack of fear of being displaced, and 10 to the to certainty of being forced to leave.

In Study 2 (Montreal), the data is more fine grained and the costs of home ownership available for each neighbourhood. As such, participants were asked to evaluate their financial capacity to move to the neighbourhood of their choice in the city (Hypothesis 2). The question was phrased as follows:

> «*Regardless of your willingness to move, as of today, how would you rate your financial capacity to afford housing in the neighbourhood of your choice in Montreal? On a scale from 0 to 10, 0 means you are not financially capable, 10 you are financially capable.* »

5.2. Estimation strategy

To investigate the effect of informing respondents on the cost of home ownership on their perceived economic standing, their capacity to afford a move or the fear of being displaced, I rely on a simple difference in means. In appendix B2 and B5, I also provide the results by means of an OLS regression with robust standard errors in the form of:

$$y_i = \beta T_i + \varepsilon_i \tag{5.1}$$

where y_i is the outcome of interest for respondent i, T_i is the treatment status coded 1 if the respondent is assigned to the treatment group 0 if not, and ε_i is the error term. For Study 1 in the United States, I estimate the OLS models with standard errors clustered at the metro-area level; clustering is not needed in the case of Study 2 because it was conducted in a single city (Montreal). Some restrictions were placed regarding the sample, they are discussed in depth in the following sections that provide details for each of the two studies.

Study 1 conducted in the United States allows the investigation of the heterogeneity of the results as discussed in the *hypotheses* section. To test the moderating effect of housing prices (Hypothesis 4), I have computed the relative change in prices (Z) per locality as follows:

$$\Delta Z = \frac{\text{Last typical price} - \text{Initial Typical price}}{\text{Initial price}} \times 100\% \tag{5.2}$$

As such, I estimate a regression in the following form for testing the moderating effect of housing prices:

$$Y_i m = \beta_0 + \beta_1 T_i m + \beta_2 Z_m + \beta_3 (T_i m \times Z_m) + \varepsilon_i m \tag{5.3}$$

where Z_m is the relative change in prices in metropolitan area m and β_3 is the coefficient of interest, i.e. the interaction between the experimental status and the housing price moderator. While $Y_i m$ is the dependent variable of interest, that is the perceived economic status or the fear of displacement.

Finally, in line with H5, I anticipate that the differences between the treatment and control groups outlined in Hypotheses 1 and 3 will be more pronounced for low-income respondents in Study 1. To capture the affordability differences across metropolitan areas, I use a variable that reflects the minimum annual income required to afford a typical single-family home in each Core-Based Statistical Area (CBSA), as presented in the treatment (for example, an annual income of $56 560 for the CBSA Rutland in Vermont in Figure 5). Specifically, I investigate whether respondents reported a household income (I) that is *less* (1) or *more* (0) than the minimum income needed to afford a typical single-family home in their area. This approach accounts for the varying cost of living and helps us understand whether the treatment effect is stronger for those who are more vulnerable (coded 1) to housing unaffordability compared to wealthier renters/owners (coded 0).

For this second model testing the heterogeneity of the results (H5), I estimate regressions of the following form:

$$Y_i m = \beta_0 + \beta_1 T_i m + \beta_2 I_i m + \beta_3 (T_i m \times I_i m) + \varepsilon_i m \tag{5.4}$$

where β_3 is the coefficient of interest, i.e. the interaction between the experimental status and the income moderator.

Having presented the similarities between the two studies, I will now present separately the characteristics of each study, followed by their results.

6. Study 1 - The United States

6.1. Treatment

The treatment used in this experiment involved a single graph displaying trends in housing prices in the metropolitan area in which a respondent lives, using monthly data points from January 2010 to February 2022. Information on housing prices was obtained from Zillow.com, an American real estate marketplace company. The analysis utilized three measures of the Zillow Home Value Index (ZHVI): top-tier prices (homes within the 65th to 95th percentile range in a given geographic level), bottom-tier prices (homes that fall within the 5th to 35th percentile range), and the typical value for a single-family home. Each graph also displayed the minimum annual income required to afford a typical single-family home in the respondent's area. To estimate annual income, I calculated the monthly mortgage cost using the calculator provided by Zillow.com, which is based on the price of a typical single-family home in February 2022 in a given region minus a 20% down payment, a 30-year fixed loan[12], property taxes, and home insurance. All information was provided in the graph, in the form of a note. Figure 5 provides an example of one of the 908 graphs created for the experiment.[13]

6.2. Sample

The respondents for this study were recruited by the company *YouGov* between June 2 and June 25, 2022. The sample is representative of the United States. To ensure the accuracy of the treatment, only respondents living within a CBSA were eligible. To assign the appropriate vignette to members of the treatment group, respondents were asked to provide their 5-digit postcode. Based on this information, participants were assigned to a graph corresponding to their CBSA. For example, in the Rutland, Vermont CBSA, only

[12]At the time of the estimation (i.e. April 4 2022), the representative national interest rate was set at 4.938%.
[13]All graphs created for the experiment are available online: https://osf.io/cyg2u/?view_only=11a789c0f8334d90bf7c9420081a8c75.

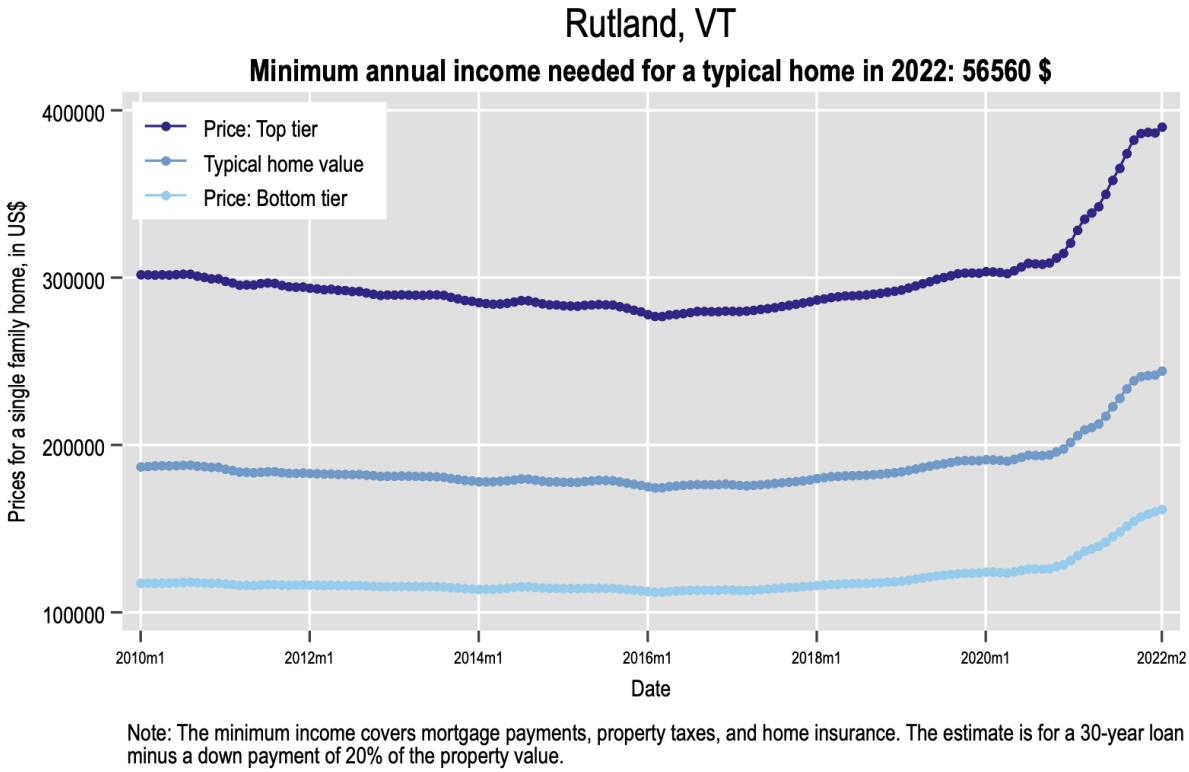


Fig. 5. Study 1 - United Sates - Treatment - Example using the CBSA Rutland in Vermont

potential participants with a postcode linked to this CBSA were shown the graph provided in Figure 5 if they were assigned to the treatment group.

Before discussing the results, it is important to outline the restrictions that were placed on the sample (see Figure 6). Respondents who did not live in a CBSA, typically in rural areas, were automatically assigned to the control group and excluded from the final data set to prevent any impact on another project running concurrently. These ineligible respondents were removed from the analysis, accounting for 159 individuals out of the initial 3037 respondents. Additionally, 44 respondents provided a fake zip code and were also excluded from the analysis. Only respondents who were not currently looking for a home were included in the analysis to avoid any confounding effects from pre-treatment. Of the remaining eligible respondents (2834 individuals), 740 were looking for a new home at the time of the experiment, and 2094 were not. It is worth noting that despite these restrictions, the control and

treatment groups are quite similar, as demonstrated by the balance test in the appendix, Table B1.

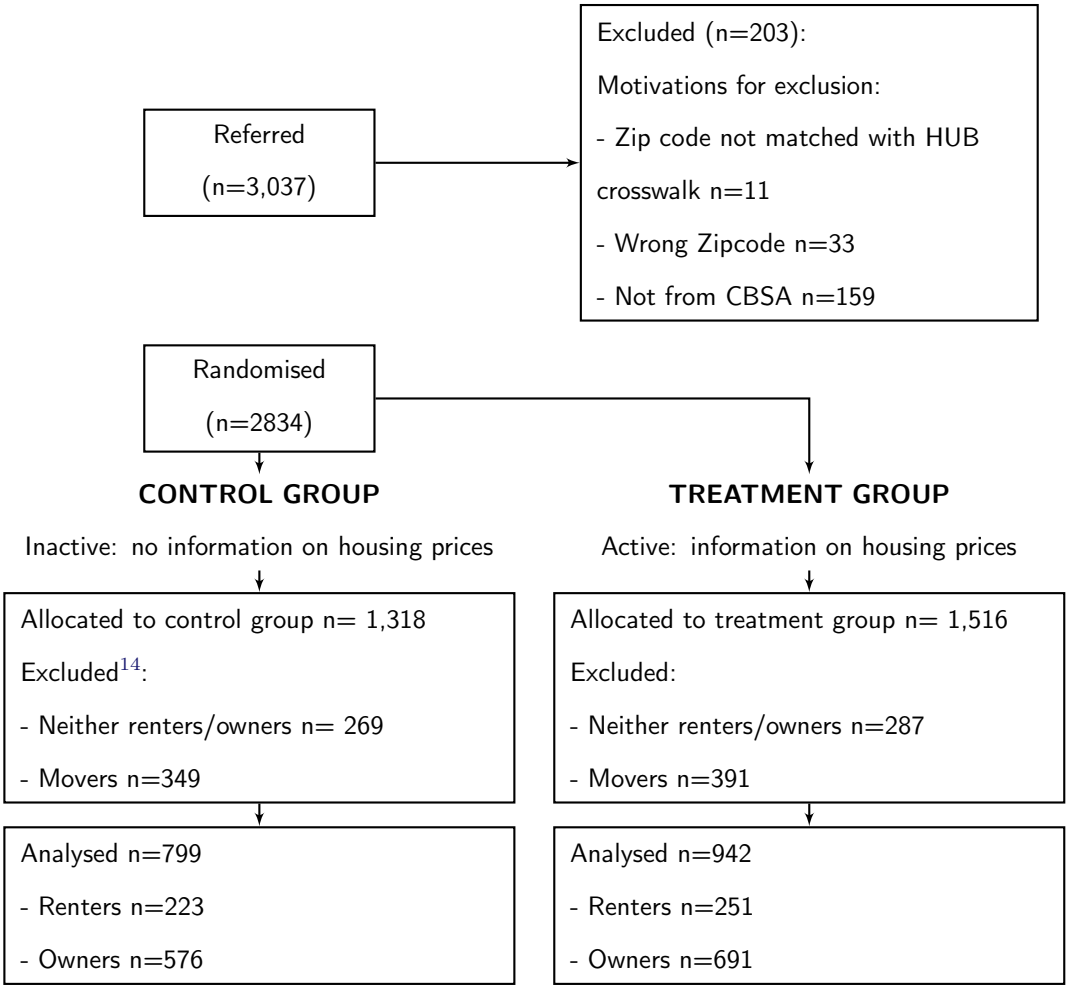


Fig. 6. CONSORT-Style Diagram - Study 1 - United States

6.3. Results

The results are displayed in Figures 7 for renters, and 8 for owners (a placebo group). Starting with panel (a) of Figure 7, renters who were informed about property prices in their metropolitan area tended to perceive themselves as worse off economically compared to non-informed renters. Specifically, on average, non-treated renters already perceived themselves as being worse-off economically compared to their neighbours, with a mean of -0.25 on a scale from -5 to 5 (sd: 2.41, N=223). Whereas renters who were informed about the exact

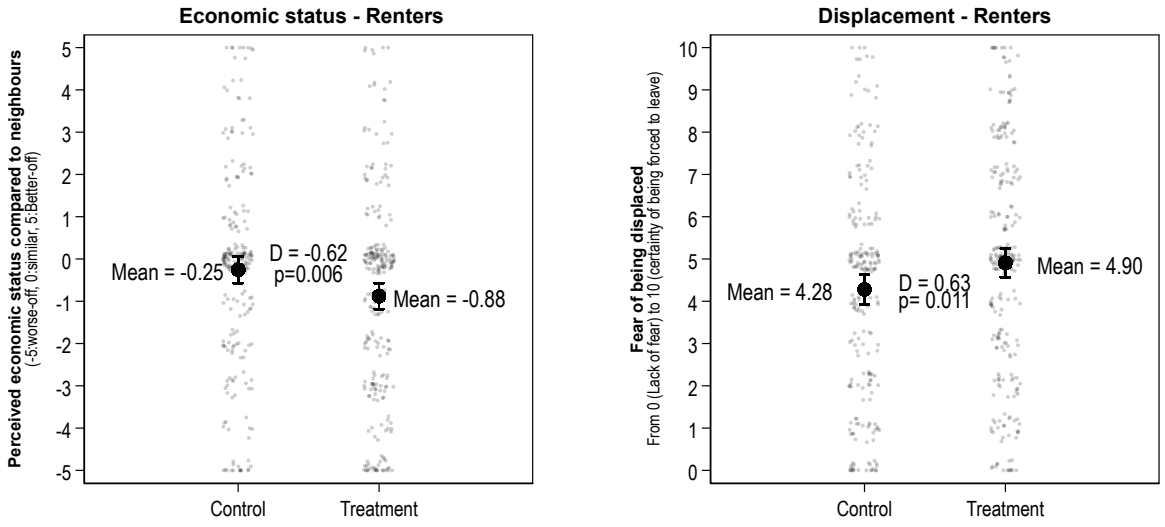
[14]Overlap for few respondents between the two subgroups

extent of the increase in prices as well as the cost to home ownership (i.e., the treatment group) evaluated their economic status more worse off compared to the control group with a mean of -0.88 (sd: 2.47, N=251). The difference between the means is -0.62, and it is statistically significant at p=0.006. These results suggest that providing individuals with accurate housing price information (in this case, a stark increase and accurate costs to afford a home) makes them more aware of the economic burden of housing costs, leading them to adjust their perceived economic status accordingly.

The next hypothesis was phrased to fit the American experiment (see H3) and aimed to capture the fear of being displaced or priced out within the next five years. I expected that renters who were informed about the prices in their CBSA would be less confident about being able to afford to stay in their neighbourhood than those in the control group. As a reminder, the scale runs from 0 to 10, where 0 refers to a lack of fear of being displaced, and 10 means being certain to be forced to leave. As shown by panel (b) of Figure 7, the expectation is confirmed since renters from the treatment group (mean: 4.90, sd: 2.72 , N=251) reported being more anxious to be displaced in the next fear years compared to renters assigned to the control group (mean: 4.28, sd: 2.64, N= 223). Again, the difference-in-means is significant at p=0.011 with a substantial effect of 0.63.

In the case of owners, as mentioned in the section *Hypotheses*, I do not expect a difference between the two groups due to the phrasing of the questions and the context of the experiment (rising prices), which is indeed the case based on the difference in means presented in Figure 8. In both tests, owners from the treatment condition did not react to information on housing prices compared to those from the control group. It is worth nothing that, on average, non-treated owners are already confident in their ability to remain in their locality (see panel b and a mean of 3.01), and they are also confident regarding their economic status compared to neighbours with a mean at 0.25.

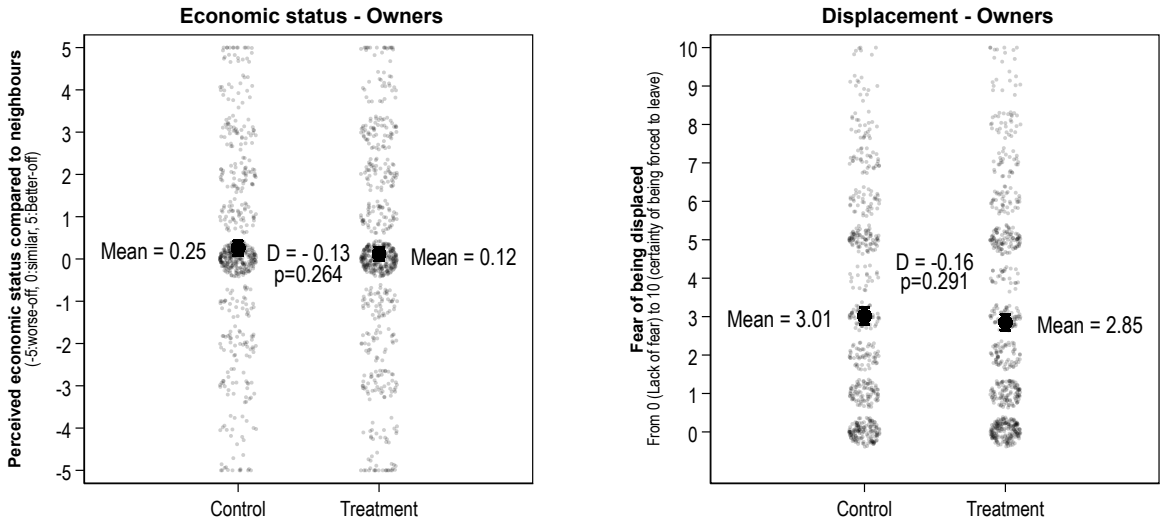
Moving to the heterogeneity of the results, Figure 9 shows the effect of the interaction between the relative change in prices and the experimental condition on two dependent variables (focusing on renters): the perceived economic status and the fear of displacement



(a) Difference in means (n=474)

(b) Difference in means (n=474)

Fig. 7. Study 1 - United States - H1 and H3 among renters



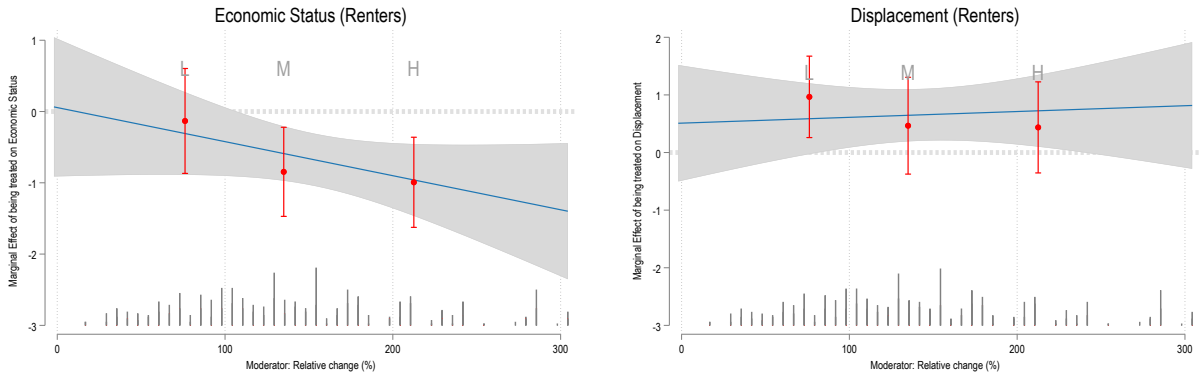
(a) Difference in means (n=1 267)

(b) Difference in means (n=1 267)

Fig. 8. Study 1 - United States - H1 and H3 among owners

(see H4). The X-axis shows a large variation in price change over the period covered by the

data, with an average increase of 144.19% (min:-1.9, max: 304.30, sd: 67.28).[15] In panel (a) of Figure 9, we observe a significant moderating effect of a relative change in prices for renters: the greater the increase, the more renters who are informed about the property prices in their metropolitan area tend to perceive themselves as economically worse off compared to renters from the control group. Panel b of Figure 9 presents the results testing the moderating effect on the housing prices - displacement nexus for renters. In this case, I find no moderating effect regardless of the magnitude of the price increase. This means that the treatment effect found in Figure 7 (for H1 and H3, the main results) cannot be explained by the magnitude of the price change, or in others words by variation in the treatment. In fact, no matter the extent of the increase in prices, renters exposed to information on the state of the housing market present a fear of being displaced.



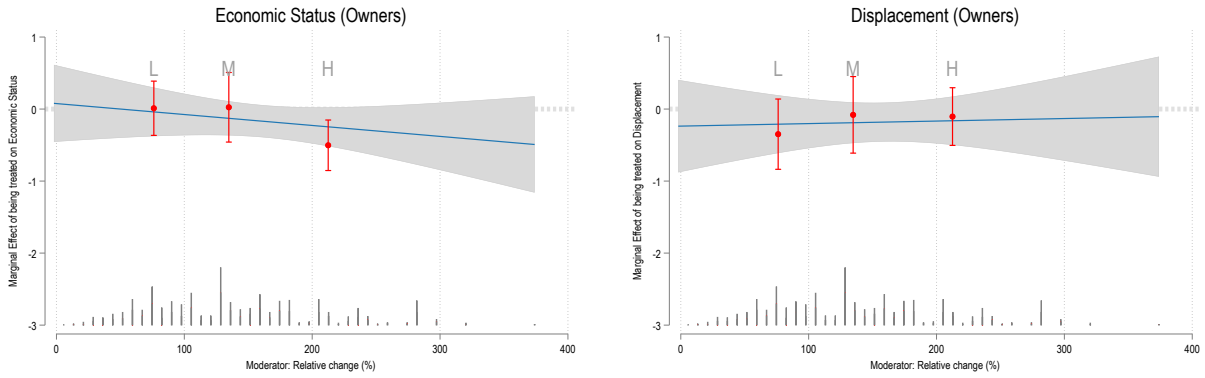
(a) Renters - Economic status

(b) Renters - Displacement

Fig. 9. Study 1 - United States - H4 - Moderating effect of the relative change in housing prices among renters

A final test of heterogeneity addresses the role of income. I anticipate the differences between the treatment and control groups outlined in Hypotheses 1 and 3 to be more pronounced for low-income renters compared to wealthier renters. As a reminder, to capture the affordability differences across metropolitan areas, I use a dummy variable that captures the objective capacity to afford a typical single-family home in each CBSA. More vulnerable

[15]Descriptive statistics regarding the distribution of both moderators (relative change and income) are available in appendix Fig B2 and Fig B3. Full models for Fig 9 and Fig 10 are presented in Table B3 in the Appendix.



(a) Owners - Economic status

(b) Owners - Displacement

Fig. 10. Study 1 - United States - H4 - Moderating effect of the relative change in housing prices among owners

renters are coded 1 (respondents who earn less than the minimal annual income needed to afford a typical dwelling in their CBSA) while wealthier renters are coded 0 (respondents who earns more than the minimal annual income required).

	Model 1	**Model 2**	**Model 3**	**Model 4**
Sub-sample	Renters	Renters	Owners	Owners
Dependent variable	Status	Displacement	Status	Displacement
Treatment	-0.15	0.41	0.17	-0.60***
	(0.33)	(0.41)	(0.14)	(0.18)
Unaffordable	-0.29	0.52	-0.26	0.62*
	(0.32)	(0.35)	(0.19)	(0.24)
Treatment × Unaffordable	**-0.58**	**0.21**	**-0.65****	**0.91****
	(0.43)	(0.52)	(0.21)	(0.31)
Constant	-0.06	3.94***	0.36***	2.77***
	(0.25)	(0.28)	(0.10)	(0.15)
Observations	474	474	1,267	1,267
R-squared	0.03	0.02	0.03	0.05

Note: Each column is an OLS regression. Robust clustered standard errors by CBSA. In Models 1 and 3 the dependent variable is the perceived economic status compared to neighbours on a scale from -5 to 5. While for Models 2 and 4, the dependent variable is the fear of being displaced running from 0 (no fear) to 10 (fear).
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 2. Study 1 - United States - H5 - Moderating effect of income on economic status (Models 1 & 3) and fear of displacement (Models 2 & 4)

The graph presented to participants (see the example Figure 5) includes information on the income required to afford a typical property in their metropolitan area. This information may prompt respondents to compare their own income to the amount indicated and react accordingly. However, the results displayed in Table 2 do not support this hypothesis, except for owners, a rather unexpected finding. The coefficients for renters (see in bold for models 1 and 3) are in the expected direction following H5, but not significant at the conventional level. The absence of significant results for renters might be due to the lack power to perform an interaction with the given sample size (n=474). The fact that the number of observations for owners is more substantial gives further credence to the unexpected results. Models 3 and 4 suggest that owners with a lower income than the one that is needed to afford a home in their CBSA, are more likely to feel worse-off compared to owners in the same economic situation but not informed about the current prices. An attitude in line with my expectations for renters. What is more surprising is that the same owners seem to fear displacement even more than renters (see Model 4 in Table 2). Economically at-risk homeowners behave like renters by expressing fear of being displaced from their locality by wealthier newcomers. This result is interesting as it signals that gentrification is not only a source of economic anxiety for renters but also for homeowners who are lagging behind economically compared to their peers. It supports the main expectation of the study that is, individuals are sensitive to variation in housing prices in their locality by comparing their economic standing to their neighbours.

7. Study 2 - The City of Montreal (Canada)

One may argue that the experiment conducted in the United States is limited in its scope due to the specific political and housing context. In addition, the treatment has a broad geographical context. In order to test the argument in a different context and smaller level of aggregation, I provide a second test of the hypotheses, with a representative sample of 600 respondents living in Montreal. This replication allows for the extension of the analysis

using more fine grained data and a different housing market. This experiment was carried out in October 2021, before Study 1 in the United States (data collected in June 2022).

7.1. Treatment

The housing sales figures utilized in this study and shown to respondents assigned to the treatment condition were sourced from a French-language digital newspaper based in Montreal.[16] The newspaper reported on data that were shared by a reputable Canadian firm, *Centris*, which provides data to real estate brokers. In addition, data on rental markets were collected from the *Coalition of Housing Committees and Tenants Associations of Quebec*.[17] The average monthly rent of $1302 was collected from *Kijiji*, a popular Canadian website for local classified advertising similar to *Craiglist* for the American market. The rental price figures were also corroborated by another high-quality Quebec newspaper, *Le Devoir*.[18] Therefore, the treatment group was exposed to recent and factual information on rental and sales prices for Montreal in 2021.[19]

To better represent the cost of housing for households, I provided different pieces of financial information to participants. The treatment includes information on the cost of a 20% down payment for a home in a specific neighbourhood based on the median price. Additionally, the monthly cost to afford a typical home is calculated by considering the mortgage, taxes, and a reserve fund; all of which is retrieved from the newspaper. Participants are also presented with information on the minimum annual income required to afford a home in Montreal, either as a renter or an owner, for two household types: a couple or a single person. This information is particularly important since a non trivial share of tenants in Montreal are single (see Figure B6 in the Appendix). The goal of this treatment was to provide all participants with easily understandable facts without forcing some to make a calculation on their own. To determine the minimum annual income needed to afford a home, the rule of

[16]The article from *La Presse* entitled *"Combien faut-il gagner pour acheter une maison ?"* by Vincent Brousseau-Pouliot published online on June 6th, 2021 is available here (in French)
[17]Data and methodology available here (in French)
[18]Olivia Gélinas, Roxane Léouzon, and Clémence Pavic's article titled *"Les loyers grimpent et s'affolent, à Montréal comme ailleurs"* published on April 8th, 2021 is available here (in French).
[19]Data sources were not provided to respondents in order to avoid priming of any sort.

Rental cost in Montreal in 2021

Dwelling	Monthly average rent (Charges not included)	Change from 2020	Minimum annual income needed
Studio	873$	-2.4%	34 720$
3 ½	1092$	+2%	43 680$
4 ½	1349$	+11%	53 960$
5 ½ and +	1716$	+15%	68 640$

Neighborhood	Sales prices in Montreal in 2021			Minimum annual income needed	
	Median prices	20% Down payment	Monthly cost (mortgage, taxes, reserve fund)	Couple (Per person)	Single
Sainte-Anne-de-Bellevue	792 000$	158 400$	4 753$	127 746$	303 351$
Lachine/LaSalle	646 250$	129 250$	3 833$	96 767$	232 413$
Verdun/Sud-Ouest	759 500$	151 900$	4 531$	120 114$	286 177$
Ahuntsic / Cartierville	755 000$	151 000$	4 489$	118 678$	282 944$
Notre-Dame-de-Grâce	1 012 500$	202 500$	6 000$	171 375$	399 450$
Outremont / Westmount	2 110 000$	422 000$	12 439$	416 409$	895 975$
Villeray	600 000$	120 000$	3 570$	88 810$	212 401$
Hochelaga / Maisonneuve	525 000$	105 000$	3 142$	76 567$	181 629$
Anjou / Saint-Léonard	567 000$	113 400$	3 418$	84 452$	201 447$
Rivière-des-Prairies	424 250$	84 850$	2 551$	59 599$	139 599$
Montréal-Nord	395 000$	79 000$	2 381$	54 780$	128 063$
L'Île-des-Sœurs (condo)	570 000$	114 000$	3 393$	83 752$	199 689$
Ville-Marie (condo)	436 500$	87 300$	2 569$	60 165$	140 953$
Plateau-Mont Royal (condo)	497 097$	99 419$	2 950$	71 060$	167 785$
Rosemont (condo)	425 000$	85 000$	2 529$	59 009$	138 187$

Fig. 11. Study 2 - Montreal - Treatment - English version

thumb of 30% of income is applied, although it may not be suitable for every potential buyer. Low-income households may end up spending more than 30% of their income on housing, while those with higher incomes may fall below 30%. Single households are also more likely to exceed this threshold. Despite its imperfections, mortgage lenders and private landlords often utilize this 30% threshold to evaluate the financial capacity of a potential owner or tenant. It is worth nothing that, at the time of the experiment, that is in 2021, the median income in Montreal was $42,000.[20] The minimum income listed in Figure 11 implies that,

[20]See Figure B5 for a trend regarding the median income since 2010, compared to the trend in housing prices during the same period of time in Montreal in Figure B4.

for the median household in Montreal, either as a couple or single, housing prices are out of reach in all neighbourhoods. In particular, the less expensive neighbourhood, Montreal-Nord, required a minimum annual income of $54,000 per person for a couple, or $128,063 for a single household. To ensure that participants understand the vignette, they were asked to specify the minimum annual income required for a condo in the Rosemont neighbourhood. This question appears directly under the vignette, on the same page as the treatment.

Finally, it is important to note that given that Montreal is bilingual city the treatment is presented in either English or French based on the respondent's preferred language, which they could specify at the beginning of the survey.[21]

7.2. Sample

Participants were recruited by *Leger Marketing*, one of the main Canadian market research and analytic firms. I applied quotas using census data from Statistics Canada for Montreal inhabitants regarding age, gender, citizenship and household composition (single or not).

[21]On the first page of the survey, even before the screening questions, participants were asked to choose between English and French. They were given the option to switch languages at any stage of the survey.

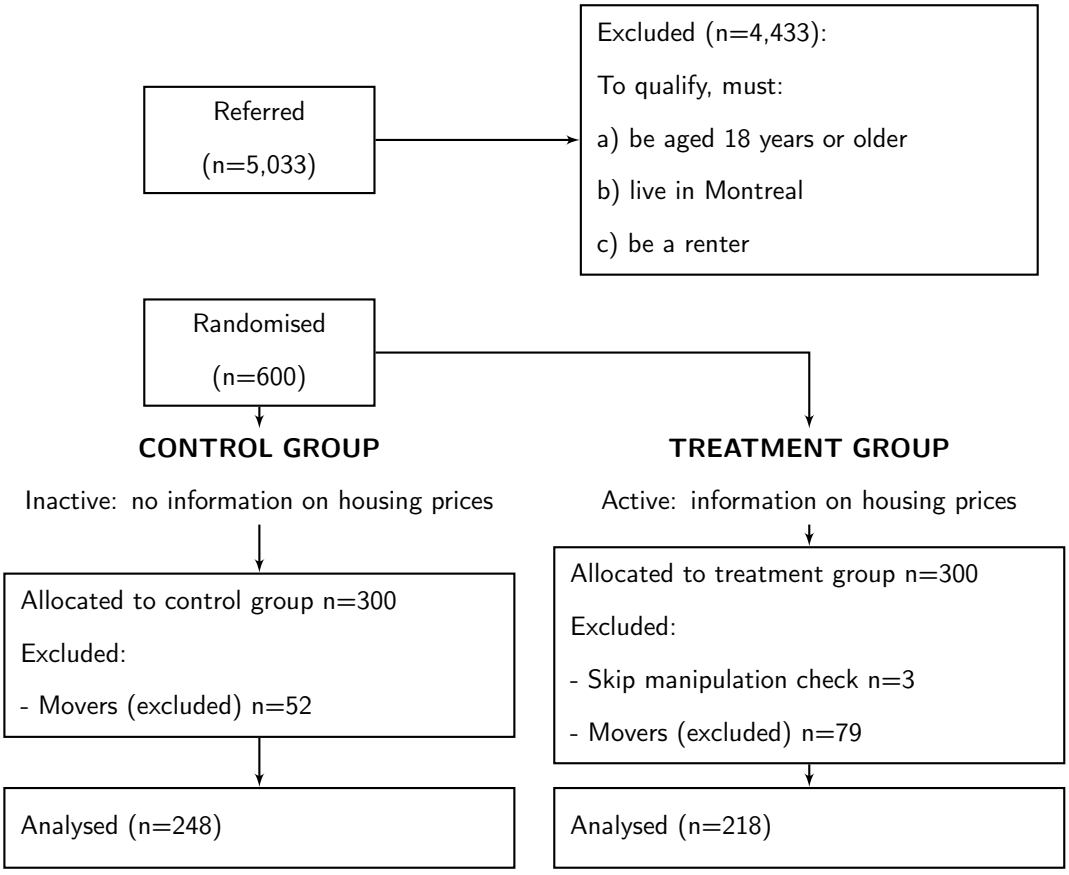


Fig. 12. CONSORT-Style Diagram - Study 2 - Montreal

The total sample size includes 600 respondents, 300 of whom were assigned to the control group, the remaining 300 to the treatment group. Importantly, only renters who lived on the island of Montreal were eligible to participate. After the screening (i.e. residential area, age and housing situation) and pre-treatment questions, the respondents were randomly assigned to the control or treatment groups, as described in section *Methodology*.

The data was collected from October 22 to November 4, 2021, during a period in-between two important elections: the Federal election held on September 20 and the Municipal election on November 7 of the same year. It is worth noting that respondents from both groups were likely exposed to candidates' reactions and propositions regarding the state of the housing market in Canada for the Federal election, and Montreal in particular for the municipal election. However, this information is expected to have affected all respondents equally by informing them that housing prices are on the rise. To ensure that respondents were not exposed to more specific pre-treatment information, the sample was limited to individuals

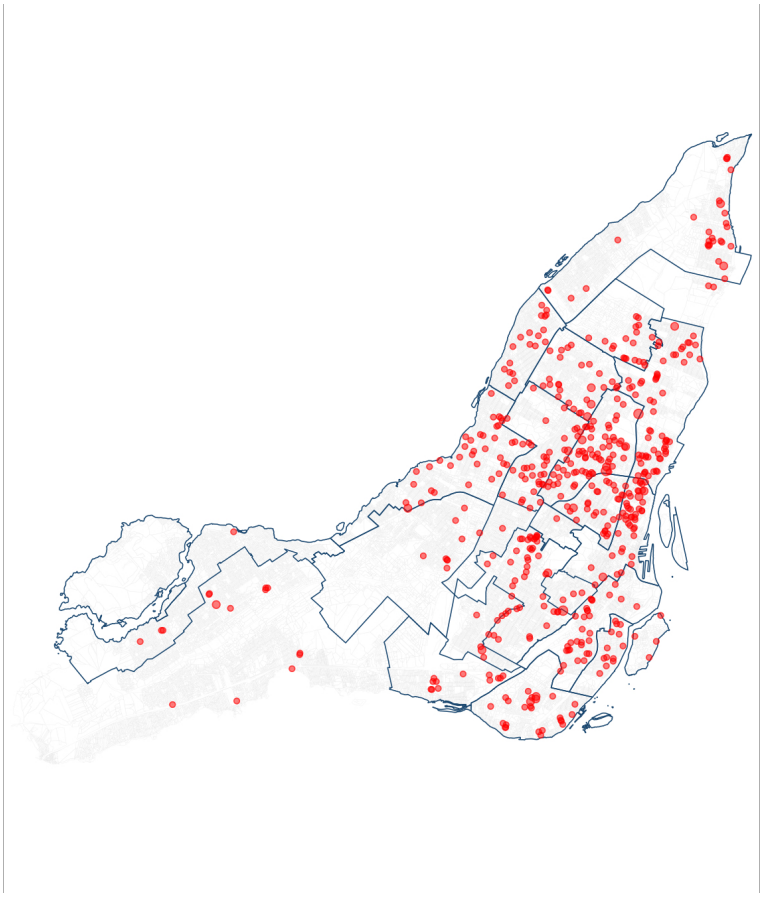


Fig. 13. Study 2 - Montreal - Distribution of Respondents (Experiment)

who were not actively seeking a new home at the time of the survey (this question was asked prior to random assignment to the treatment or control group). This restriction did not alter the conclusion of the findings but did reduce the final sample size from 596 to 466 respondents (see Figure 12).

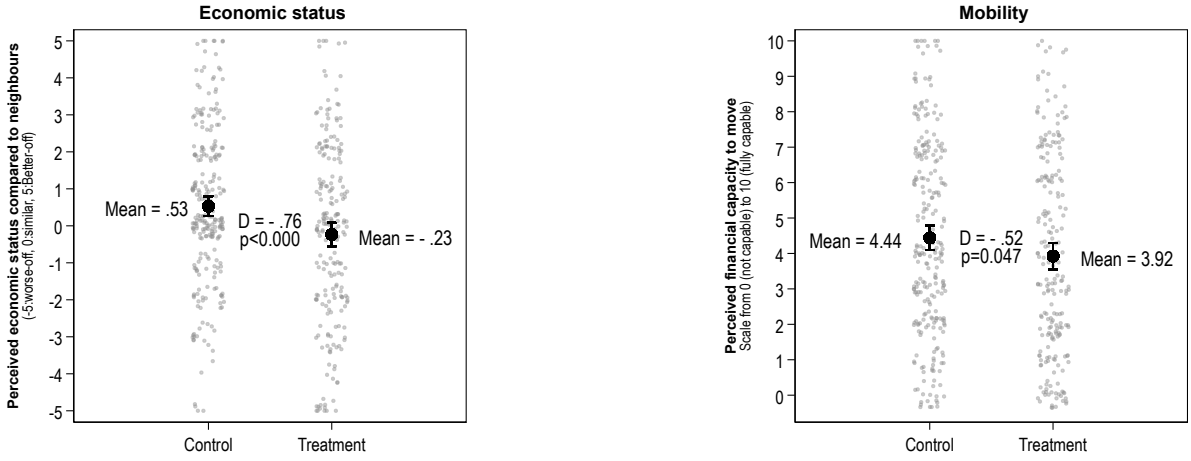
As shown in Figure 13, the majority of respondents are located in the center of the island (a red dot = a respondent), which was expected since it is where most tenants are located, as shown Figure 14 using the census data for 2021. Appendix 3 presents a balance test on usual socio-demographic variables. Overall, the control and treatment groups are well balanced across all demographics, with no statistical differences between them.

Fig. 14. Study 2 - Montreal - Actual distribution of renters in Montreal (Census)

7.3. Results

Figures 15 presents the difference-in-means for hypotheses 1 and 2 of the study. As a reminder, hypothesis 1 examines economic status, exploring the impact of exposure to housing prices on participants' perception of their economic status in comparison to their neighbours. The results in panel a in Figure 15 indicate that the individuals in the control group feel similar to their neighbours, as the mean is around 0.53 on a scale of -5 to 5 (sd: 2.13, N=248). This finding is expected, given that individuals tend to choose to live in areas with similar economic and social characteristics. In contrast, those who received information on housing prices for their neighbourhood and others in Montreal had a slightly different response. On average, treated respondents perceived themselves as slightly worse off than their neighbours, with a mean of -0.23 (sd: 2.43, N=217). The difference in means between the two groups is significant at the p value $<$0.000, with a difference of 0.76.

Panel b in Figure 15 shows the results of the second hypothesis. In this case, the aim was to investigate whether exposure to housing prices affects participants' perceived financial



(a) Difference in means (n=465)

(b) Difference in means (n=463)

Fig. 15. Study 2 - Montreal - H1 and H2 (renters only)

capacity to afford a move, which should reflect their economic anxiety. Being unable to move to a new neighbourhood due to financial constraints is a sign of being economically left behind compared to others, particularly newcomers. Thus, the dependent variable captures participants' financial capacity to afford a move, as assessed on a scale from 0 to 10, where 0 refers to not being financially capable, and 10 being financially capable. The mean for the control group is 4.44 (sd: 2.8, N=248). Meaning that even without being informed of current housing prices, participants from the control group are, on average, fairly pessimistic about their financial capacity to afford a home elsewhere. This finding supports the intuition of pre-treatment, as all participants are likely to be aware of the increase in housing prices in their city due to the salience of the issue, the elections, and media coverage. However, this awareness may lead to an underestimation of the true effect of exposure to housing prices on economic perceptions. Moving to the treatment group, the mean this time is 3.92 (sd: 2.82, N=215). The difference between the control and treatment group is about 0.52, and again is statistically significant (p-value=0.047, 95% CI). Therefore, exposure to housing prices significantly affects individuals' perceived financial capacity to afford a move within their city.

In conclusion, the two experiments, study 1 and study 2, lead to the same conclusions, namely that for renters, knowing the cost of home ownership leads to economic anxiety. Despite the differences in context, and with a year's difference between the two studies in terms of data collection, the results are fairly similar.

8. Conclusion

This article challenges a commonly-held assumption in the study of the role of housing prices in shaping political attitudes. Through the use of two experiments, I demonstrate that respondents, particularly renters, are sensitive to changes in real estate prices, which can lead to a re-evaluation of their economic status and financial capacity. Importantly, these results hold true in two vastly different contexts, namely Montreal where renters enjoy strong rent increase protections and the US where such protections are less pronounced.

These findings are highly relevant for researchers studying the political consequences of housing crises and gentrification. Given the significant impact of housing prices on economic anxiety, it is essential that future research examines the role of changes in housing prices in shaping political attitudes, especially among renters who have been largely overlooked in previous studies. Additionally, the findings of this study highlight the need for policymakers to consider the political implications of housing market fluctuations, especially in vulnerable communities affected by gentrification and housing crises. Overall, this study provides important insights for scholars of political behaviour or attitudes using housing prices as an explanatory variable.

Third Article.

Economic Perception in Motion: The Role of Commuting from Home to Work

by

Alexandra Jabbour[1]

This article is a working paper.

Abstract. While it is widely acknowledged that local economic conditions influence economic perceptions, current studies overlook residents' travel patterns, thereby limiting the extent to which such measures capture the economic conditions that individuals are exposed to. This research note aims to overcome this empirical barrier by accounting for precise commute habits from home to work, enabling a more comprehensive assessment of the local economic context. By analyzing extensive data on workers' travel patterns from home to work in the United States over a span of seven years, in conjunction with unemployment rates (US Census) and economic perceptions from the Cooperative Election Study (CES), my findings confirm the significance of economic conditions at an individual's place of residence. However, results improve when using a weighted measure. This measure reflects the overall economic context citizens encounter, tailored to their commute habits for each zip code. These findings not only reaffirm the presence of spatial myopia among voters, as supported by the existing literature on economic voting, but also shed light on the crucial role of commuting patterns in shaping economic perceptions.

Keywords: Economic voting, local context, neighbourhood, perceptions

A sizable literature investigates the influence of the context on perceptions of political matters. Simply put, the word *context* refers to the "features of the local environment in which someone lives and works" (Nathan and Sands, 2023). As such, studies that focus on the effect of context usually take into account individuals' networks, material cues, i.e., the everyday setting. Economic perceptions are no exception to this pattern and are also shaped by contextual factors. The literature provides ample evidence that local context shapes perceptions of the national economy (Bisgaard, Sønderskov and Dinesen, 2016; Bisbee and Zilinsky, 2022; Newman et al., 2015; Ansolabehere, Meredith and Snowberg, 2014; Reeves and Gimpel, 2012).

These findings are important to understand how voters form their perceptions and how these are influenced by objective cues. As such these findings provide support for the argument that citizens pay attention to their immediate environment and use it as a heuristic when deciding on their policy preferences or voting choice (Key Jr, 1949). However, studies that focus on the local economy often rely on one aspect of an individual's living environment only: their residential area.

Yet, it is reasonable to question whether the economic conditions of the place of residence alone shape an individual's perception of the national economy. One potential issue is the omission of a significant bias, specifically the economic heterogeneity between the places where citizens spend the majority of their time, such as their home and workplace. An individual can be exposed to one economic context at home and a very different economic context in the workplace. Therefore, the main hypothesis of this study is that the economic context of the workplace can provide information to citizens in addition to the economic conditions of their residential area, helping them to form a perception of the national economy. In a nutshell, the main objective of the study is to determine which information environment is the most important in terms of perceptions of the national economy.

To address concerns that the perception of the national economy is not only the product of the economic context of the neighbourhood but also the places that individuals visit most frequently, I rely on large administrative data provided by the US Census Bureau, which includes information on where workers live and work, as well as survey data on the perception of the national economy over 7 years. I capture the economic context of both residential areas and workplaces using US citizens' tax return information at the zip code level.

The purpose of this study is twofold. Firstly, this study builds on previous research by providing further evidence of the relationship between local economic conditions in the neighbourhood and perceptions of the national economy. Secondly, this study extends previous work by examining more comprehensive and better-targeted measures of the local economic settings to which individuals are exposed in their daily lives. Since individuals encounter diverse economic conditions on a daily basis, their perception of the national economy should be influenced not only by the residential area but also by the economic conditions experienced during the commute between home and work. Thus, this study aims to contribute to a better understanding of the factors that shape individuals' perception of the national economy.

The Information Environment and Perceptions of the National Economy

I argue that the local context in which people live and interact with others determines their perception of the national economy. This argument is informed by a large number of contributions in the public opinions literature. For example, Bisgaard, Sønderskov and Dinesen (2016) found that the unemployment rate in a radius of 80 to 250 meters (0.05 to 0.15 miles) from home is better correlated with perceptions of the national economy compared to more distant levels (up to 2 500 meters; i.e., 1,55 miles). These results retrieved from Denmark are corroborated in the United States, since zip code and commuting zone are more prone to explain economic perception compared to the higher aggregate levels (Bisbee and Zilinsky, 2022).

But, while important, most previous work that studies the influence of local contexts adopts a restricted measure of context. By 'restricted measures', I refer to measures based on the assumption that individuals are exposed to only one reality, a single environment, specifically their residential area. For those who usually stay at home, the information on the economy might be the product of the media coverage of the economy (whether via the TV, internet, newspaper, radio), the economic context of their locality, or by means of discussion with others (neighbours, family, friends, etc). Yet, we know that many individuals commute on a daily basis, be it for work, to visit friends or relatives, go shopping, etc. For the majority of the voting age population, we can assume that the residential area and the workplace would be the two most visited places, followed by places where friends and family live (Wong et al., 2020). Such a commute from home to work alters the social experience of individuals. For example, in the Unites States, the change in demographic composition between day and night—such as more Blacks workers in mostly White residential area—is correlated with less vote for the Democrats and an increase in racial resentment (Hamel and Wilcox-Archuleta, 2022). The main take-away of this study by Hamel and Wilcox-Archuleta (2022) is that, relying on a static approach and focusing only on racial composition of residents likely does not capture the variety of contexts one can be exposed to since individuals are rarely staying

in the same place all the time (i.e., statics), but instead move for their daily activities (i.e., dynamics). This study follows the same rationale. By being mobile and moving in and out of their neighbourhood individuals go through different geographical spaces. Commuters will sample the economic cues they encounter in transit, which should influence their overall perceptions of the national economy. The economic conditions in these other spaces could also leave an imprint on and shape their opinion of the state of the economy in addition to the economic context of their residential area. The social cues that mobile citizens collect on a daily basis can either corroborate those of their place of residence or add a different perspective.

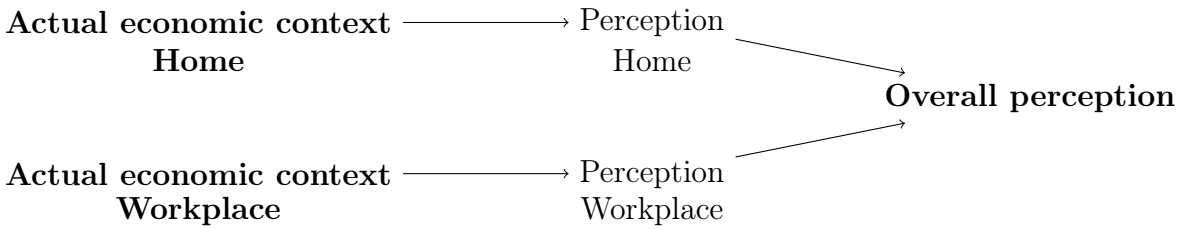
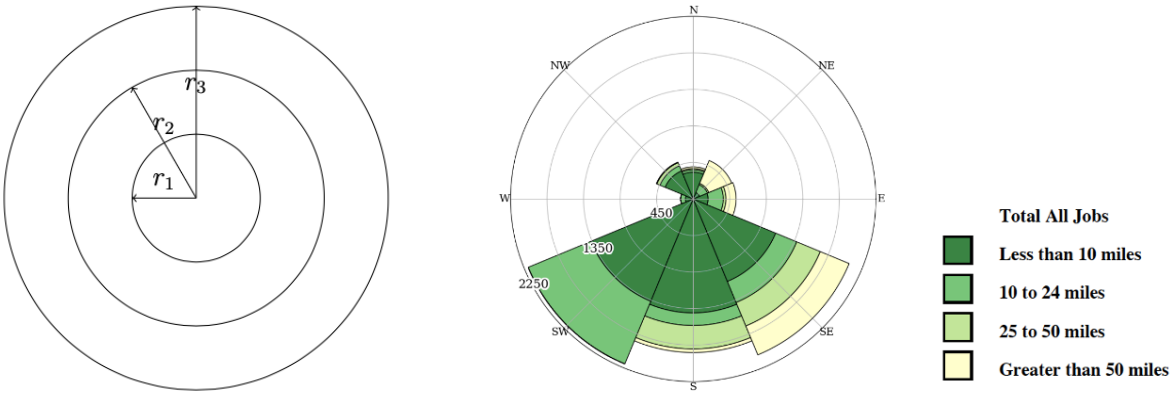


Fig. 16. Actual economic context and overall perception of the economy
Note: Perception at home and the workplace are unobserved while actual figures (in bold) and the overall perception can be measured. Arrows show possible causal effects.

Figure 16 depicts the theoretical model. Both places – Home and Work – shape the overall perception of the national economy. In the scenario where a given individual travels in two economically similar environments (i.e., economic conditions in the two are highly correlated), adding information on the workplace will not have an additional effect on their economic perceptions, either in the sense of strengthening or weakening. What might be strengthened is probably an individual's confidence in forming an objective judgment of the country's economic situation (Ortoleva and Snowberg, 2015), but investigating this possibility is out of the scope of the study. However, this scenario should be relevant for a specific set of individuals such as those who live and work in the same zip code or a nearby zip code that is economically very similar.

Few studies directly questioned the geographic boundaries of the local economic context, except, to my knowledge, two important contributions, namely work by Bisgaard, Sønderskov



(a) Traditional aggregation of economic context

(b) Actual direction and distance of jobs in Berkeley (zip code 94706)

Note: The left panel (a) is a stylistic representation of the usual aggregation of local economic context, from the lowest (r1) to the largest level (r3), following administrative boundaries. The right panel (b) is an actual representation of commute pattern among residents from the zip code 94706 in Berkeley in 2020. Data used for this figure (unemployment rate, distance, and coordinates) were retrieved from the United States Census Bureau. The darker the colour, the shorter the distance. Numbers describe the aggregated number of jobs.

Fig. 17. Theoretical versus factual direction for zip code 94706 (Berkeley, CA)

and Dinesen (2016) and Bisbee and Zilinsky (2022). These two papers come to the same broad conclusion that the context for which economic conditions correlate best with the perception of the national economy is the most proximate context. To reach this common conclusion, these two papers use relevant but slightly different methods.

Bisbee and Zilinsky compare the accuracy of different but often used levels of aggregation in the United States: Nation, Census region, State, Designated market area (DMA), congressional district, Commuting zone, County, and zip code. By using various measures of the economic conditions that describe these different geographical areas (Gini inequality, aggregate gross income, and unemployment compensation) and verifying their correlation with individuals' economic perceptions, the authors conclude that with each additional level of aggregation there is a decline in the predictive accuracy of the economic indicators. In other words, they thus find that the economic conditions at the lowest level are most predictive of how individuals evaluate the state of the national economy. Looking at Figure 17, their aggregation will fit the model described in panel (a), where each circle could represent an

administrative level used such as the zip code, country, commuting zone, and so on. Importantly for the theoretical argument of this study, the authors make the assumption that all areas within a certain radius to the place of interest are equally influential, not accounting for the fact that people may only go to one part of the circle that is drawn by the radius approach.

Similar to Bisbee and Zilinsky (2022), a study by Bisgaard, Sønderskov and Dinesen (2016) takes into account all unemployed people living within a given geodesic distance, taking advantage of fined-grained data provided by the national Danish registers. The scale that is used in this study ranges from a radius of 80 meters to one of 2,500 meters. If we take the example shown in panel (a) of Figure 17, the minimum distance of 80 meters could be covered by radius r_1, i.e., all unemployed individuals living within this circle. As we aggregate the economic context, the greater the distance, the greater the spatial area covered, which would correspond to radii r_2 and r_3, etc. The essential advantage of this approach is to be able to aggregate the unemployment rate without being dependent on administrative geographical limits. That is a solution to the Modifiable Areal Unit Problem (MAUP). However, as for the first study, considering economic conditions at different levels of aggregation still does not take into account the place to which they commute for work (i.e., the direction).

Ideally, when considering the economic context of individuals, one would take into account individuals' mobility patterns and exclude places that are not part of people's daily lives. This argument is exemplified in panel (b) of Figure 17. The illustration is taken from the US Census Bureau's data for zip code 94706, representing the city of Berkeley in California. The colours ranging from green to pale yellow represent the commuting directions and distance taken by residents of this zip code to reach their workplaces. The darker the colour, the closest to the center of the centroid. It is quite clear that a significant proportion of residents commute to the south and southeast, where the majority of jobs are located. The southwestern direction is also prominent, corresponding to jobs located in direction to

Panel a Zip code of Origine: 04101 (Portland)		Panel b Zip code of Origine: 04450 (Kenduskea)	
zip code at destination	Share flow	zip code at destination	Share flow
40196	10 %	04605	3 %
04105	2 %	04473	3 %
04103	10 %	04468	3 %
04101	36 %	04444	3 %
04092	5 %	04427	2 %
04074	4 %	04412	6 %
-	-	04401	56 %
-	-	04330	3 %

Note: Focus on the state of Maine using data from 2017. For clarity, only destinations that account for at least 2% of the flow from origin to destination are displayed. Data used is retrieved from the Origin-Destination Employment Statistics (LODES) a database from the US Census Bureau, parts of the Longitudinal Employer-Household Dynamics (LEHD.

Table 3. Commute pattern for workers from two different zip codes: 04101 in Portland (panel a) and 04450 in Kenduskea (panel b)

San Francisco, not far from Berkeley.[22] Notably, for the main argument of this study, very few jobs are located to the north of the given zip code, as that area primarily consists of residential blocks.

With the traditional approach, which aggregates context without considering the direction of travel, the northern part of the zip code would have been included in various measures, resulting in imperfect representation of the economic context. Therefore, the main contribution of this study is to account for this direction by considering both the economic context of the zip code of origin (where individuals live) and the economic context of the zip code at destination (where individuals work).

Finally, while the direction is essential, it is also important to take into account the proportion of individuals in the same locality who move from one zip code to another, or in the terms I will use in the analyses, the weighted destination.

To illustrate the importance of the weighted destination, let's take the case of Maine. Table 3 displays two distinct commuting patterns that demonstrate the significance of moving

[22]See Figure C1 in the Appendix for a map of job distribution near Berkeley using real geographical boundaries.

habits between zip codes when assessing exposure to the economic context. Panel A presents the flow of workers residing in zip code 04101 in Maine in 2017. This zip code corresponds to a central neighbourhood in Portland with a population of 66,739 inhabitants in 2017. Portland is the largest city in Maine, and it is reasonable to expect that workers living in the city center would work within their zip code or nearby, at least within the same city. The table indicates that 36% of workers residing in zip code 04101 work in the same zip code, while 31% commute to nearby zip codes all of which are situated in Portland. Therefore, residents of zip code 04101 are likely to experience a similar economic environment, at least with regard to the economic well-being of their community. For them, a *static* view of the economy, be it at the zip code or city level, may fit their perception of the economy.

In contrast, panel B presents a different commuting pattern. Residents of zip code 04450 reside in Kenduskeag, a rural area in Maine with 1,348 inhabitants in 2017. Of these residents, 56% commute to zip code 04401 for work, which corresponds to the city of Bangor, a larger city in the same state. In this case, more than half of the workers from Kenduskeag live in an area where 4.7% of the population receives unemployment compensation (i.e., zip code 04450) while working in a place where only 2.6% of the local residents receive it (that is, the unemployment rate in zip code 04401). This highlights the variation in exposure to the economic context and the impact of the commuting pattern on it.

As such, the relevance of mobility should be important various subsets of the population. More specifically, for individuals who encounter various economic contexts – because economic conditions in their work environment differ strongly from those in their residential neighbourhood – taking into account the residential area alone might fail to explain their experience of the economy. The scenario of almost perfect congruence between Home and Work might apply to a socially advantaged group that can afford to live close to their workplace such as in urban centres where jobs are located. By living in an area where neighbours are well integrated in the workforce while going to work in city centres, those advantaged individuals are less likely to face economic deprivation as depicted by Jahoda, Lazarsfeld and Zeisel (2017) regarding the visible effects of unemployment in a community. This stress the

importance of spatial sorting when considering the asymmetrical economic context. With respect to the choice of location, we know that citizens sort when it comes to define their place of residence (Mummolo and Nall, 2017). The better-off are able to choose their place of residence according to the benefits offered by a community. Even in a highly politically polarized context such as the United States, individuals still favour material advantages over being surrounded by politically like-minded people (Mummolo and Nall, 2017). Because personal interests converge among citizens, selection leads to economic segregation between those who can afford to choose their place of residence and those who cannot. Hence, sorting has a twofold effect. Firstly, it helps create economically and socially homogeneous areas, since people who share the same interests and preferences tend to live in the same place. Secondly, sorting should make the workplace's context salient for certain groups if the economic context varies from their residential area. The assumption is that some individuals might experience strongly divergent economic contexts in their everyday life. Individuals who live in a predominantly disadvantaged residential environment might work in prosperous context and encounter individuals with economic backgrounds that do match what they are exposed to in their residential neighbourhood. In short, residential sorting does not prevent individuals of being exposed to divergent economic contexts because even when they sort residentially they still commute for work and gather economic information during their transit. Hence, in a scenario of asymmetric environment (i.e., economic conditions in the home environment differ from those in the work environment), the economic context out of the neighbourhood is expected to stack on the effect of residential economic context on the perception of the economy.

Expectations

This study is mainly an empirical contribution regarding the measure of the economic context that best correlates with perceptions of the national economy. To do so I examine the effects of three different operationalizations of the individuals' local context. As a first step, I will test whether perceptions of the national economy correlate with the level of

unemployment rate at the residential zip code level. I examine the association between economic indicators and perceptions of the national economy that are measured on a scale from a negative perception (lowest value) to a positive one (highest value), implying that I expect a negative coefficient when regressing the perception of the national economy on the unemployment rate at Home. In other words, an increase in the unemployment rate at Home should decrease the perception of the national economy (Hypothesis 1). This corresponds to the usual way of studying the effect of the neighbourhood's economic context on perceptions of the national economy. However, my theory implies to consider the economic context encounter by an individual outside their residential area which can be done by means of two different approaches. First, I will add the overall unemployment rate at destination (work) on top of the unemployment rate at the origin (home); this is an additive model (hypothesis 2). I expect both coefficients on the unemployment rate to be negatively correlated with the perception of the national economy. Finally, in the third model, I rely on a variable that captures the overall weighted economic context (home and work); a variable that captures the overall economic context of a zip code taking into account the economic context at home and the economic context of locality where residents commute to. The expectation is in line with the two previous ones, that is, a negative correlation between the overall weighted economic context and the perception of the national economy.

Data and Methodology

The data comes from a variety of sources and warrant a detailed presentation. In the method section I also present the design of the database in order to justify a number of choices, especially regarding aggregation.

Data

This study relies on two types of data: administrative data (at the aggregate level) and survey data (individual level). Measures tapping political behaviour and public opinion are retrieved from the Cooperative Congressional Election Study (CCES). I use the cumulative

file that combines surveys covering seven years from 2011 to 2017, including two presidential elections (2012, 2016). Responses are collected by means of an online survey in November of each year. The CCES comprises a total of 82,602 respondents for the years from 2011 to 2017. Along with individual-level covariates needed for an analysis relying on survey (income, news interest, partisan identity and reported vote choice), the CCES offers a question on the retrospective evaluation of the national economy. To measure the perception of the economy, I use the following traditional question asked every year in the CCES: *"Over the past year the nation's economy has gotten much better, gotten better/somewhat better, stayed about the same, gotten worse/somewhat worse, gotten much worse, not sure?"*. The original categories have been recoded from 5 to 3 categories, keeping a positive evaluation ('Gotten better', coded 3), no perceptible change ('Stay about the same', coded 2) and a negative evaluation ('Gotten worse', coded 1).

Importantly, the CCES gives information on the zip code of residence for each respondent. This allows me to use this information as a key variable, and merge this individual-level measures retrieved from the CCES with administrative data regarding contextual factors at the level of the zip code. As shown in Figure 18, the number of respondents by zip code varies from year to year with some outliers in 2015 and 2016 in the states of New York, Pennsylvania and Virginia (see label over the dot in the figure indicating states and zip codes).

With respect to flows between home and the workplace, I rely on the Origin-Destination Employment Statistics (LODES), a database from the US Census Bureau, and parts of the Longitudinal Employer-Household Dynamics (LEHD). These data includes information on employment mobility in the United States covering most of the states from 2002 to 2020 depending on the variables of interest. The LODES offers three types of data: the Origin-Destination (OD), Residence Area Characteristics (RAC) and the Workplace Area Characteristics (WAC), all data being at the census block geographic detail. The OD file provides information on where workers live and work, and how many of them who work in census block D (destination) live in census block O (origin).

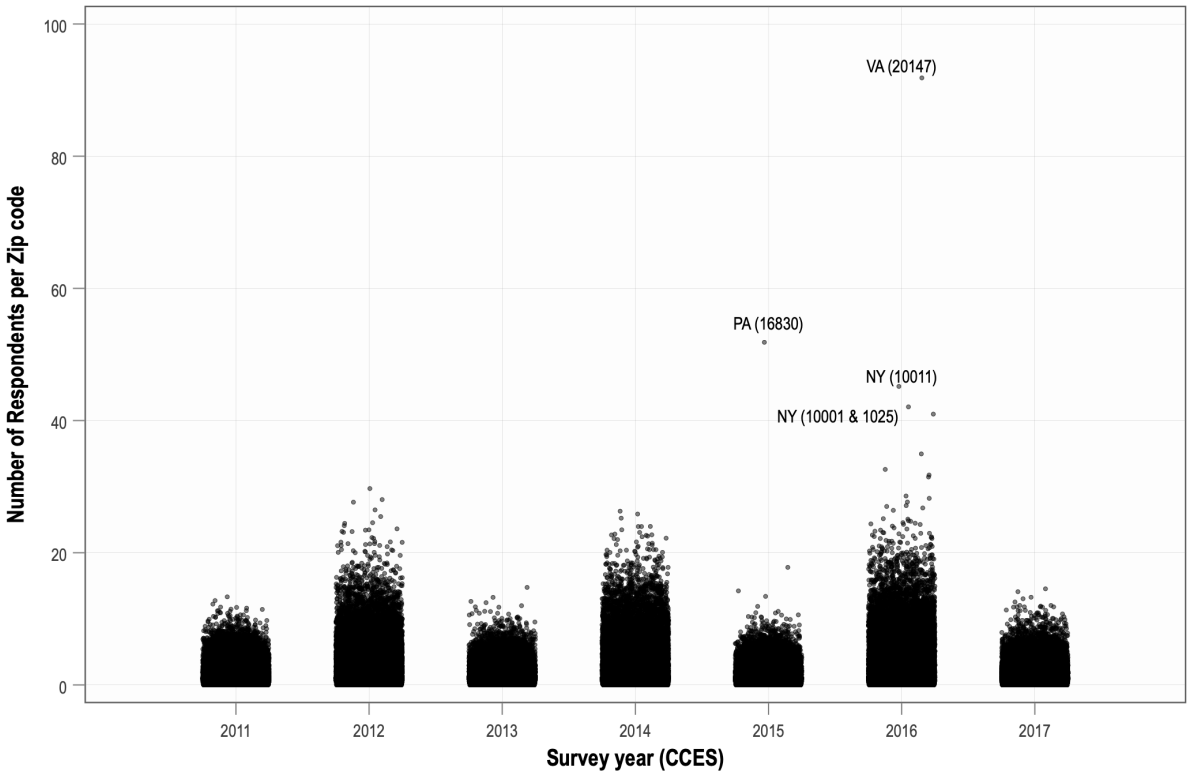


Fig. 18. Number of respondent per zip code (CCES data, full sample). A dot = a zip code

From the data available at the census block level, I aggregated the available information—i.e. the flux of workers—to the zip code level; which leads to an initial database of hundreds of millions of observations.[23] I did so since both political attitudes and objective economic information are not available at the census block level, but at the zip code level. At the end, only observations related to zip codes included in the CCES database have been retained for the analyses.

Regarding the economic context, I use the same data as Bisbee and Zilinsky (2022) regarding unemployment, but with a slightly different coding decision, which I will explain below. The Internal Revenue Service (IRS) is responsible for collecting tax returns for the US federal government. For the years 2011 to 2017, the administration provides publicly available files with individual income tax statistics for each zip code. These data are particularly useful for determining the number of people who received unemployment compensation in a given

[23]Due to computational limitations, I have not been able to add the flow of workers for the year 2017 in California.

year for each zip code. By dividing the number of returns with unemployment compensation by the number of returns, I can estimate the share of officially unemployed individuals for a given zip code. Such estimates are free of potential under-reporting of unemployment compensation as it might be the case with surveys since it comes directly from a governmental source. Beyond the accuracy of reporting, the use of tax returns is advantageous compared to the American Community Survey (ACS), because tax returns are more fine-grained. In contrast, the ACS only provides unemployment rates based on a 5-year estimates. However, the IRS dataset may underestimate the share of inactive individuals because one can be unemployed but not receive any unemployment compensation depending on the eligibility criteria. Despite the potential underestimation of inactivity within localities, I chose the IRS dataset as it was more suitable for the purpose of the study with an unbiased yearly estimates of unemployment compensation.

Finally, while I rely on the share of household receiving unemployment compensation per zipcode, Bisbee and Zilinsky (2022) used the unemployment compensation per return in logged thousands of dollars + 1. The unemployment compensation rate should be closer to the usual measure used in economic voting, such as the study from Bisgaard, Sønderskov and Dinesen (2016). Finally, my preference for the unemployment rate is also motivated by the relevance of a measure when it comes to perceptions of the local economic context. The main motivation is that people without activities are more easily perceived than the variation or level of GDP, for example. As a study by Jahoda, Lazarsfeld and Zeisel (2017) shows, the presence of people who are inactive in a city is visible to other simply from the way they are moving around. In the same way, the presence of unemployed people in an individual's social environment is likely to influence perceptions (Ansolabehere, Meredith and Snowberg, 2014). This supports the intuition that the unemployment rate is a measure that can be perceived by individuals.

To account for neighbourhood characteristics, I control for the set of variables presented in Table 4: the size of the population, median age, the proportion of residents who are White alone or a combination with one or more other races, the median household income in the

past 12 months, and the proportion of homeowners. I have also added the median year a householder has moved into a unit to account for the familiarity between neighbours. The median house value is meant to capture the cost of living in a given zip code.

Variable	Description	Level	Source
Economic perception	the national economy has gotten worse (1), stay about the same (2), or gotten better (3) over the last year	Mean perception by zip code	CCES
Unemployment at home	Share of unemployment beneficiaries over the last year	ZCTA	US Census Bureau, Tax returns
Unemployment at work	Share of unemployment beneficiaries over the last year	ZCTA	US Census Bureau, Tax returns
Population	Total population, all age	ZCTA	NHGIS
Age	Median age, total population	ZCTA	NHGIS
White	% of White Alone or in Combination with One or More Other Races	ZCTA	NHGIS
Income	Median Household Income in the Past 12 Months	ZCTA	NHGIS
Owner	Share of owners	ZCTA	NHGIS
Moving	Median Year Householder Moved into Unit among owners	ZCTA	NHGIS
Prices	Median House Value (Owner-occupied housing units)	ZCTA	NHGIS

Table 4. Description of the Variables

Methodology

First, all analyses are performed at the aggregate level.[24] As such, the dependent variable captures the mean economic perception by zip code for a given year, that is, a continuous variable that can possibly be between 1 ("Gotten worse") to 3 ("Gotten better").[25] The main explanatory variable is the unemployment rate at home; a measure detailed in the next section. For the second hypothesis, i.e., the additive model, the additional explanatory

[24]Analyses performed at the individual level yields to same the results as shown in appendix C1. In addition to control variables that account for the local context as presented in Table 4, I also control for individual characteristics such as support for the incumbent, being unemployed or not, age in years, and being White or not.

[25]See appendix C2 for a breakdown of the mean per year.

variable is the weighted unemployment rate at destination, i.e, at work. To capture exposure to economic context out of the residential area, I create a weighted measure of unemployment for residents from a given zip code:

Weighted Mean Unemployment rate at Destination:

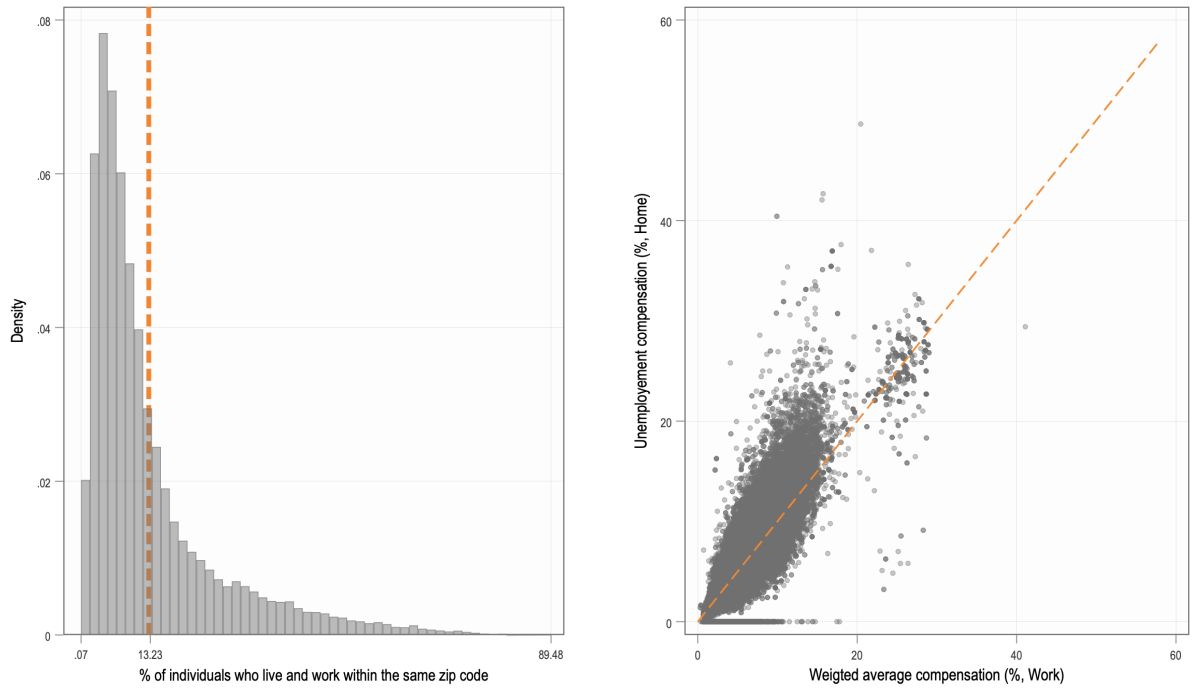
$$= \frac{\sum(\text{Flow to D from O} \times \text{Unemployment rate at D})}{\sum \text{all Weights}} \tag{0.1}$$

This variable captures the overall economic experience encountered by the residents in a given zip code depending on where workers commute to go to work. It should be noted that the weighted Mean Unemployment rate at Destination does not take into account the unemployment rate at home. Panel a of Figure 19 presents the distribution of zip code depending on the share of residents who live and work within the same zip code. On average 13.23% of residents do not move out their zip code for work (sd: 12.95, min: 0.07, max: 89.48).

Panel b of Figure 19 shows the correlation between both measures of unemployment, at Home and at Destination. If both measures were perfectly correlated, they would align perfectly with the orange dashed line presented in panel b. Instead, we can see that the unemployment rate at home tends to be higher than at work since a majority of the dots are on the left side of the 45-degree reference line. Instead, it is quite clear that the majority of observations depicts a higher unemployment rate at home (y-axis) compared to destination (x-axis). This illustrates that the environments encountered by residents who travel outside their zip code for work tend to differ from the economic context of their place of residence.

For testing the hypotheses, I rely on OLS regressions with robust standard errors. The regression model for the first hypothesis is as follows:

$$\text{Perception}_{zj} = \alpha + \beta_1 \text{Unemployment rate}_{zj} + \gamma \text{Controls}_{jz} + \lambda year + \phi_{DMA} + \epsilon_{zj} \tag{0.2}$$



(a) Share of residents living and working in the same zip code (2011-2017) - Data from LODES

(b) Unemployment compensation rate by zip code (2011-2017) - Data from the Tax returs and LODES

Fig. 19. Contextual information on the commute from Home to Work and share of unemployment

where Perception$_{zj}$ is the outcome variable, that is the mean perception of the national economy within a zip code z (residential area), a year j. β_1 Unemployment rate$_{jz}$ is the explanatory variable, i.e., the unemployment rate a year j, within a residential area z. γ Controls$_{zj}$ is a set of control variables for a zip code z a year j such as median age, share of Whites, population size (all age), proportion of owners, median year householder moved into the unit among owners, and the median house value for owner-occupied housing units. Finally, λ_{year} is a vector of year fixed effects, ϕ_{DMA} a vector of fixed effects for the Designated Market Area (DMA), and ϵ_{jz} the error term.

The decision to incorporate a fixed effect for the Designated Market Area (DMA) is driven by prior research highlighting the significance of such boundaries in shaping both political knowledge (Moskowitz, 2021) and perceptions (Kim, Shepherd and Clinton, 2020). For instance, voters who live in in-state media markets are better informed on local political matters compared to voters who live in out-of-state media markets (Moskowitz, 2021). Since

media coverage of the economy influences perceptions on the same issue, it is important to account for the geography of the media market, a geography that does not fit administrative boundaries.

As for the second hypothesis, the coefficients of interest are the unemployment rate at home and the weighted measure of unemployment at destination. Hence, the regression model for the second hypothesis is similar to the first with an additional variable, the Weighted Unemployment rate at Destination (β_2) :

$$\text{Perception}_{zj} = \alpha + \beta_1 \text{Unemployment rate}_{zj} + \beta_2 \text{Weighted Unemployment rate at D}_{dj} + \lambda \text{Controls}_{zj} + \lambda_{year} + \phi_{DMA} + \epsilon_{zj} \quad (0.3)$$

Finally, by means of the third hypothesis, I test whether the overall economic context leads to stronger effect compared variables used in the two previous models. As such the explanatory variable is the overall weighted unemployment rate (β_1), keeping other variables from the two previous models:

$$\text{Perception}_{zj} = \alpha + \beta_1 \text{Overall Weighted Unemployment rate}_{dj} + \lambda \text{Controls}_{zj} + \lambda_{year} + \phi_{DMA} + \epsilon_{zj} \quad (0.4)$$

Results

Interpreting the results (presented in Table 5) is relatively straightforward. The initial three models are bi-variate regressions, lacking adjustments for potential biases. Models 4, 5, and 6 correspond to the equations outlined in the methodology section. Model 4 serves as a test for hypothesis 1 and confirms a correlation between the unemployment rate in the immediate proximity to the residential area and the perception of the national economy.

Specifically, a one percentage point increase in the proportion of residents in a zip code receiving unemployment benefits is associated with a 0.10 decrease on a 1 to 3 scale for

Dependent variable	Model 1 Economy	Model 2 Economy	Model 3 Economy	Model 4 Economy	Model 5 Economy	Model 6 Economy
Unemployment (%, Home)	-0.026*** (0.001)	-0.009*** (0.001)		-0.010*** (0.001)	-0.004** (0.001)	
Unemployment (%, Work)		-0.024*** (0.002)			-0.017*** (0.003)	
Unemployment (%, Home-Work)			-0.034*** (0.001)			-0.023*** (0.002)
Median Age				-0.002*** (0.001)	-0.002** (0.001)	-0.001** (0.001)
Population size				0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Median Year moved				0.002+ (0.001)	0.003* (0.001)	0.003* (0.001)
Median House Value				0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
% White				-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
% Owners				-0.004*** (0.000)	-0.004*** (0.000)	-0.004*** (0.000)
Constant	2.044*** (0.004)	2.078*** (0.005)	2.081*** (0.005)	-2.947 (2.659)	-3.330 (2.665)	-3.438 (2.646)
Year FE				✓	✓	✓
DMA FE				✓	✓	✓
Observations	79,322	78,879	79,322	78,997	78,558	78,997
R-squared	0.02	0.02	0.02	0.11	0.11	0.11

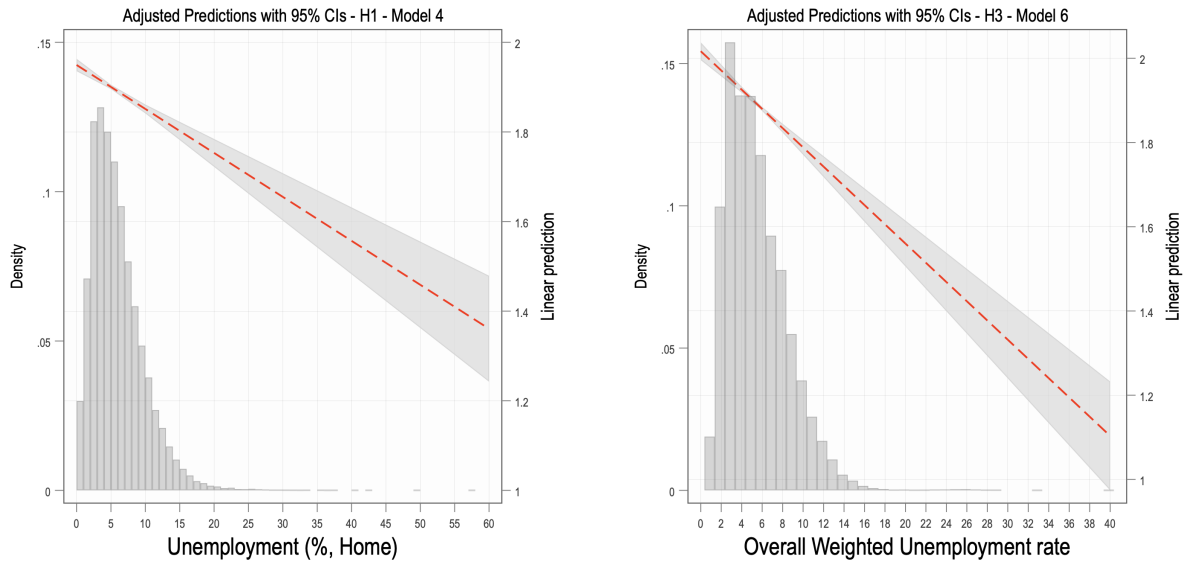
Note: Each column is an OLS regression. Robust clustered standard errors. The dependent variable is the mean perception of the national economy in a given zip code, with a scale running from 1 (Gotten worse) to 3 (Gotten better). + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 5. Tests of hypotheses 1, 2, and 3

the perception of the national economy. Figure 20 helps to better understand the extent of the effect. Although the effect is small, it aligns with previous studies, including Bisgaard, Sønderskov and Dinesen (2016) and Bisbee and Zilinsky (2022), who also found a correlation between very local unemployment rates and economic perception.

Now, turning our attention to models 5 and 6, these models constitute the central contributions of the current study. Model 5 specifically tests hypothesis 2, aiming to demonstrate the additive effect of the economic context at the destination. Model 5 takes into account two economic contexts: the conditions at home and the weighted economic conditions experienced by zip code residents during their commute to work. Both economic variables are significant and in the expected direction. Notably, an increase in the proportion of individuals receiving compensation for inactivity corresponds to a decline in the perception of

the national economy. However, it is the economic context at the destination that exerts a stronger impact on perception compared to the economic context at the place of residence. Additionally, the coefficient for the local economic context is half the magnitude of that in model 4. These results are not surprising in terms of the direction of the correlation, i.e. a negative sign. However, the fact that the economic context at work has a greater effect on perception than residential area is somewhat surprising, at least with regards to the size of the effect. These results suggest that individuals pay way more attention to or value more the economic context at work than at home. These results are somewhat consistent with the findings of Bisbee and Zilinsky (2022), since those authors found that economic measures aggregated at the commuting zone level improved the accuracy of their model better than other geographic boundaries.



(a) Results from Model 4 in Table 5

(b) Results from Model 6 in Table 5

Fig. 20. Adjusted predictions for models 4 and 6

Finally, model 6 assesses the third and final hypothesis. The unique coefficient of interest relates to the overall economic context encompassing both the place of residence and the destination, as well as the direction and the size of the flux of workers. Remarkably, the coefficient of interest is twice as large (-0.023) as the economic context of the place of residence reported in model 4 (-0.010). These results bear out to some extent those obtained for

hypothesis 2. It also underscores the importance of more precise account of where individuals tend to spend most of their time when assessing the link between local context and the economic perceptions.

Conclusion

The literature has consistently supported the influence of the everyday environment on people's perceptions. When considering a localized issue like the economy, which exhibits variations across different areas, it is natural to examine whether perceptions align with individuals' experiences. However, empirical evidence in the literature on economic voting can sometimes yield mixed results. One contributing factor to this variation is the level of aggregation that researchers consider. To account for the local economic context, it is crucial to have access to sufficiently detailed data on both the economic conditions and the residential information of survey respondents. In the absence of fine-grained data, many studies rely on levels of aggregation that deviate somewhat from their intended theoretical scope.

In this United States-based study, I aggregated data to reflect the economic context respondents experience, considering their travel habits. The results of my study demonstrate that while the unemployment rate in the proximity of one's place of residence correlates with the perception of the national economy, it is still essential to consider the broader economic context experienced by individuals within the same locality.

Consequently, this study introduces a novel form of aggregation that partially overcomes the challenges posed by administrative-level aggregation (MAUP). However, the implementation of this approach depends on obtaining similar information in other countries. Replicating this measure relies on the availability of such data or similar information. Nonetheless, this study may serve as an impetus for researchers to include inquiries about respondents' most common destinations alongside their place of residence in surveys. This additional information can contribute to a more comprehensive understanding of the environment in which individuals reside.

Finally, this study challenges the notion of American citizens nationalizing their political opinions to some extent. My findings reveal that on a politically charged subject like the economy, citizens' views align with both their immediate environment and broader local conditions. On a positive note, this suggests that citizens can assess critical aspects of governmental performance, like the economy, with an unbiased perspective.

Conclusion

In this dissertation, I set out to investigate how individuals form their perceptions of economic matters. The three empirical chapters provide different answers to this question. In what follows I present the main contributions of the thesis. I then highlight some limitations linked to the methodology used and the theoretical framework. Finally, I conclude by presenting future research avenues related to the conditions under which context should matters for economic perceptions.

Main contributions to the literature

The first contribution deals with how individuals use their everyday environment to form perceptions of economic matters. This is the main objective of this dissertation, i.e., to provide evidence that citizen's perceptions of economic matters depend to a large extent on the economic context in which an individual evolves. Article 1 shows that an individual's place of residence influences their perception of the national economy, but also of the performance of the government. What I show is that exposure to the difficulties of one member of the household influences the perceptions of other members. This contribution is noteworthy in that it highlights the importance, at the individual level, of considering what happens within the family home. More broadly, Article 1 is also the first in political behaviour and public opinion to address the consequences of working-age children living with their parents. This situation is becoming increasingly common, not least because of the difficulties in accessing housing. It was therefore important to study the consequences of a widespread lifestyle that affects a significant proportion of the electorate.

In Article 2, the everyday setting is the locality, either the neighbourhood (in Study 2) to the metropolitan area (in Study 1). This empirical chapter underlines the role that local housing prices play in shaping economic perceptions—in the case of the experiment, the personal economic standing. The contribution of Article 2 is mostly empirical as it provides credence to a long-standing assumption that residents perceived housing prices and react to them by adjusting their perceive economic standing. Even though a large literature makes the assumption that individuals respond in this way to housing prices, this intuition has never been directly tested. My dissertation helps to fill that gap through two experiments.

Finally, Article 3 extends what the literature on economic voting and local context usually considers in terms of geographical boundaries. I provide evidence that a more precise measure of the local economic context that takes into account not only the economic conditions of a residence but also the economic conditions at places to which citizens commute matters more when assessing the perceived national economy compared to the economic context at home only.

The second main contribution of this dissertation relates to the attention it draws to the role of comparisons between social groups when it comes to assessing economic matters. This contribution is important as it tends to confirm the problem raised by Kramer (1983), i.e. that the questions in surveys alone do not make it possible to correctly estimate the evaluation of the economy. My results show that economic evaluations must be considered according to an individual's position to a relevant social group. The first two empirical chapters of the dissertation assume a direct and explicit comparison of this kind. In Article 1, the influence of peers is taken into account, i.e. comparison between individuals of the same age. What is expected—and verified—is that young adults who are struggling to become independent have more negative opinions about the state of the economy than young adults of the same age who are already independent. In Article 2, the comparison is with neighbours. In general, an individual chooses where to live based on lifestyle preferences, financial capabilities, and possibly aesthetic considerations. Consequently, it can be assumed

that, within a locality, neighbours constitute an in-group with whom residents might identify. In the experiments that I conducted as part of Article 2, this comparison with in-group members is leveraged to highlight the economic reaction of individuals when they learn about the cost of home ownership in their neighbourhood. The intuition is that individuals who are not (yet) homeowners will feel that they are worse-off economically when they learn what their neighbours can afford financially. The results show that this comparison indeed leads to a difference in perception, in this case, a devaluation of economic status once individuals are informed of the costs of home ownership.

These contributions speak to a broad literature on perceptions, local contexts, and economic voting. But as for any empirical work, some limitations need to be discussed.

Limitations

Many methodological challenges appear if one wants to study context and perceptions, and it is, therefore, important to justify the methodological choices that one makes as a researcher. Below, I outline three methodological challenges encountered in my dissertation: unobserved mechanism, how to define the context, and measurement of perceptions.

Unobserved Mechanism

In my dissertation, I suggest that individuals gather daily information that enables them to form opinions about economic matters. However, observing and proving evidence of this mechanism is challenging. The fact that individuals think of economic matters based on their environment remains an assumption of what happens in people's minds. Two of the three articles in this dissertation (1 and 3) test this hypothesis through correlations, and one (Article 2) provides empirical evidence from an experimental setting.

In Article 1, cohabitation is used as an indicator of economic hardship for working-age people living with their parents. The underlying intuition is that parents who live with their working-age children will witness their child's struggles to gain independence on a daily basis. While this type of living arrangement involves regular exposure, it is

unlikely that parents consciously adjust their economic views based on seeing their child at home. However, the expectation is that the difficulties faced by young adults who still live at home will lead parents to understand that the economy may not be positive for new generations, thus perceiving it negatively with the challenges young people face in social integration. For citizens' responses in terms of satisfaction with government the reasoning is similar, with more economic hardship for young adults being interpreted as the outcome of government policies or the lack thereof, whether it pertains to addressing unemployment among newcomers to the job market or ensuring access to housing.

In Article 3, the mechanism that I cannot observe is whether individuals are effectively aware of the number of unemployed people in their local area. There are strong theoretical and empirical motivations to assume that, at least in sparsely populated areas, residents might be aware of the employment situation of their neighbours or the neighbourhood more broadly. Here, the intuition is that becoming aware of the inactivity of individuals in one's locality should allow residents to use this information to form an opinion about the national economy. This assumption finds empirical support in Denmark (Bisgaard, Sønderskov and Dinesen, 2016) as well as in the United States (Bisbee and Zilinsky, 2022). My theoretical contribution to this literature is that incorporating the unemployment rate at the location that residents of a certain neighbourhood commute to also contributes to the perception of the national economy. The intuition here is that individuals consider the overall conditions of their everyday setting (home and work) and not just the context of their place of residence. Again, this is a presumed reasoning from survey respondents used to test the hypothesis, through correlation analyses.

Article 2 is the only one in the thesis that provides a causal test of the underlying mechanism in an experimental setting. Therefore, the reasoning is more direct due to the treatment used, which involves informing participants about real estate prices and comparing their perceptions with those of the control group. The difference in averages between the treatment and control groups can be attributed to the effect of the information, without bias. More precisely, the costs of housing (prices and mortgages) in a given locality of interest are

used as an economic cue to incite respondents to compare their economic standing to a relevant in-group, i.e. the neighbours.

How to define the context

As previously stated, Noah L. Nathan and Melissa L. Sands (2023) define context as the "features of the local environment in which someone lives and works". The definition is short and somewhat vague, but it reflects the umbrella of possibilities as well as the blurred boundaries of the concept. To this definition, I add that measures of context might be founded on objective or subjective boundaries. As such, the second limitation of this dissertation relates to the definition of context, as an objective or subjective one, as well as the difficulty to operationalize context in a way that matches with the definition. Table 6 summarizes the perspective used and the context involved for each of the articles. In what follows I present the motivations behind all choices made in the dissertation regarding the contextual features.

Article	Data	Context	Measure
1	ESS, cross-sectional	at home and network	Mixed
2	Survey experiment (Montreal)	Each neighbourhoods in Montreal	Objective
2	Survey experiment (United States)	Metropolitan Statistical Area	Objective
3	CCES, cross-sectional	Residential area and workplace	Mixed

Table 6. Summary of level of analysis

In Article 1, two contexts are considered. From the parents' point of view, what matters is the daily exposure to their young adult children who cohabit with them; an indication of the economic hardship faced by their child as well as by their offspring's generation. The main context in terms of influence is thus the home. In this case, the boundaries are objective and well-defined. What can be added, with more blurred boundaries, are two things. First, a comparison by parents with their own past living conditions when they had the same age. Second, parents might also discuss with individuals of the same age, and get to know through casual discussion with friends, neighbours, coworkers the living arrangement of young adults

children in other households, and as such benchmark the economic situation of their own child with that of acquaintances. These two comparisons involve blurred boundaries on top of the more objective setting that is the household.

For the second hypothesis, that focuses on the Children's perspective, the context differs a bit but relies on the same mechanism. Constrained cohabitation influences children's views as it will usually be motivated by financial limitations. Again, the main context—an individual's residence—is objective. Also, there is a direct comparison with individuals of the same age. From a certain age onward (around 30 years according to Table 2 in article 1), the majority of young adults are independents. By becoming aware of their own living conditions, a non-independent young adult might feel that they are lagging behind those of their age and thus evaluate the economy or even the general performance of the current government more negatively.

In Article 2, the context is easier to define as I have set the boundaries within the framework of two survey experiments. Therefore, I consider these boundaries objective due to the geographical limits I imposed on respondents (at least the treated ones). In the experiment that was conducted in Montreal, the treatment focused on the housing prices of each borough on the island. The experiment that was fielded in the United States involved the price trend for the Metropolitan Statistical Area (MSA). In both studies, treated respondents are instructed to look at measures that were retrieved from a defined context and to evaluate their economic status on this basis.

The third article, finally, considers aggregated measures of unemployment based on administrative boundaries. It taps directly into the usual problem of ecological fallacy. As put by Openshaw (1984), the areal units (zonal objects) used in many geographical studies are arbitrary, modifiable and subject to the whims and fancies of whoever is doing or did the aggregating.' This problem, known as the 'Modifiable Areal Unit Problem' (MAUP), has mostly empirical consequences. But first I discuss how I define the unit of analysis (i.e. what is *local context*) of Article 3, and then its empirical implications.

Take a look at Figure 21, which shows three individuals, A, B, and C, who all reside in the same locality in the administrative meaning, i.e., in this example, the same Zip code (see dotted line). The plain line defines the boundaries of what each of these individuals perceives to be the geographical representation of their locality. According to A, what is "local" is larger than what it is for individual B or C. For a researcher who favours a subjective measure, there is therefore not one definition but three definitions of the locality. Conversely, a researcher opting for an objective definition would consider the place of residence and would link it to some administrative level. In this case, there would be a common definition, for example the Zip code of residence of these three individuals. The obvious limitation of such an approach is that the Zip code, again using Figure 21 as an example, is only an approximate reflection of people's perception. From the perspective of a researcher, the choice of favouring one measure over another depends on the research question. If perception matters, as does this dissertation, the subjective definition would be more relevant. However, whenever experiment or an original data collection is not feasible either technically or financially data availability issues limit the indicators of locality that can be used and studied. Therefore, when I use the term locality in Article 3 (or otherwise noted), although theoretically, it is a perception, I rely on administrative boundaries. One might think that, if administrative boundaries do not fit those defined by individuals, it could result in biased estimates. However, the literature shows that administrative boundaries do not necessarily lead to biased results when looking at the impact of context at the local level (Velez and Wong, 2017). When individuals are asked to self-define the demographic composition of their locality, their prediction of the socio-demographic characteristics of their locality is even more consistent with the objective definition (in the article, the Zip code), than with a factual estimate derived from the limits defined by themselves.

When relying on objective boundaries, a research still has to define the administrative level that is used in analyses. Which level is more relevant? The most straightforward answer is *it depends*. Data availability should not be used to make arbitrary decisions on what level to opt for. But data availability remains a limitation that may affect the level

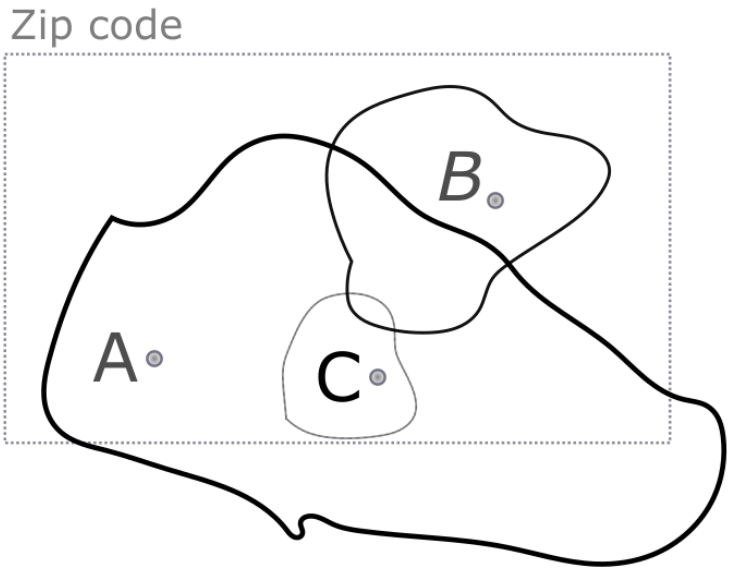


Fig. 21. Individual-defined boundaries versus Administrative boundaries

of analysis chosen. Especially since the focus of this dissertation is on citizens' perceptions, a measure drawn from surveys that requires enough respondents per locality. To conciliate theory and data limitations, I adopted a two-step process. First, for Article 3, I have defined the level that would make most sense theoretically. Since what matters for the theoretical framing is the individual's daily encounters with unemployed individuals, one of the smallest levels should be the right one. Usually, the smallest unit is between the census block, the postal code, and the municipal level, followed by the county/region, province/state, and so on. Based on Wong et al. (2020), when respondents were asked to draw a map of their "Local community", the majority (75% in Survey 1, 83 % in Survey 2) mentioned having their neighbourhood in mind, 65-68% (in Survey 1, 71% in Survey 2), the places/people seen regularly or weekly. In terms of area, the median community size is 12km^2 (at least in Canada, a median size that might not hold in Denmark, for example). Based on those descriptive statistics, the adequate level of a local community seems to be the census block, as a first option, or just above the census block (i.e., the postal code level) as a second option. That is the first step. Once I have defined the ideal level of analysis, I needed to see if the

data were available at the level of the census block, if not just above that ideal level. This is the second step. In short, in the article, the census block level was the ideal target, but due to data availability, I opted for the postal code knowing that it could be a limitation.

Measuring perceptions

Measuring perceptions, and more specifically individuals' understanding of an environment, involves posing questions to assess their feelings. In my research, this implies using individual data, especially for the dependent variable. As indicated in Table 7, the dependent variable in each article primarily comes from surveys, whether experimental or not. The cross-sectional surveys are prone to biases, particularly regarding perceptions of economic matters, such as biases related to partisanship or, more specifically, contextual factors, which is the focus of this dissertation.

Article	Main outcome variable
1	On the whole how satisfied are you with the present state of the economy in [country]? Responses are coded from 0 to 10, from the least satisfied to the most.
2	You probably have an opinion about the socio-economic situation of your neighbourhood. Do you feel that you are economically similar to other people living in your neighbourhood? Respondents were asked to answer this question using a scale running from -5 (worse off) to 5 (better off), which means they feel similar.
3	Would you say that over the past year, the nation's economy has...? Responses are coded from Gotten much worse (1) to Gotten much better (5)

Table 7. Overview of the outcome variables for each article

The specific question that are used to capture perceptions vary somewhat between the surveys and chapters. In the case of Article 1, the question captures respondents' satisfaction with the national economy. Traditionally, the economic voting literature makes use of a retrospective question that allows respondents to assess the performance of the outgoing government, which is also the question that is used in Article 3. However, the question from the European Social Survey (ESS) that is used in Article 1 measures contemporaneous satisfaction at the time of the survey. While this measure differs from more traditional

measures of economic evaluations, it is ideal for my research question because the context in which people live may change throughout the year. Additionally, in the context of the first article, a young adult may have recently moved back to their parent's home a few weeks before the survey, which could influence the parents' perceptions of the economy. A retrospective question would be more difficult to interpret in terms of theoretical expectations given the hypotheses in Article 1.

As already mentioned, Article 3 is based on a more traditional question to capture economic perception (Lewis-Beck and Stegmaier, 2000). Compared to the question used for Article 1, it fits the expectations from the literature on Economic voting, and more broadly retrospective voting by asking respondents to assess the performance of the economy (and indirectly the Government), over the last year. One challenge is the ability of the respondents to make the effort of evaluating the entire past year, an assumption that cannot be tested.

Finally, the measure of perceptions in Article 2 is less of a challenge since I have designed the questionnaire of the experiment to fit my theoretical expectations.

Future research

From an empirical perspective, future research may well build on the insights from this dissertation by considering the role of other contexts that are not considered in this dissertation but that also likely influence economic perceptions. This could be, for example, the decline of a locality in terms of services as a sign of economic decline, or cross-border commuting, which is quite common in Europe, leading the people who cross border to live in divergent economic environments. But a relevant way of expanding this dissertation would be to go beyond empirical considerations, and investigate which individuals are most sensitive to the local context and under what conditions the local economic context becomes salient.

Context can lean toward an expression of place-identity, which follows the definition of contextual factors (the identity derived from a place) and its distinction with the compositional factors (the socio-demographics characteristics). Citizens can develop a place identity that is a psychological attachment toward a group, in this case a locality. We already know from previous research that localism can be a predictor of vote choice or mobilization (Key Jr, 1949; Lawler, 1992; Panagopoulos and Bailey, 2020; Ziblatt, Hilbig and Bischof, 2020). Other studies also show that place-based identity can shape how individuals perceive the political landscape and influence the way they think about out-group and politics in general (Cramer, 2016; Cutler, 2007; Jacobs and Munis, 2019; Walsh, 2012). Since place-based identity can shape perceptions of politics, vote choice and policy preferences, it might also influence how those individuals use cues retrieved from their environment to infer the state of the national economy.

The question then is to whom, when and how this place-identity becomes salient at a point that it can be used by citizens. As for any social identity, such as partisanship, the strength of a social/political identity can vary and lose power depending on the period and the respondent. For some, the strength of place-based identity might be constant over time. For others it can be dormant, and hence, has to be activated in order to matter and shape one's opinions. Existing scholarship shows that identities are more likely to be activated under political or economic competition (Turner et al., 1987). And this activation is enhanced when the threat or prejudice is readily visible (Bosak, Asbrock and Meyer, 2021). Being exposed on a daily basis to economic deprivation should then trigger a place identity and shape one's perception of the economy based on the local environment.

Finally, among the constellations of contextual factors, It would be interesting the see whether individuals' media diet can make the local context more salient for some voters. This intuition brings the usual determinants of the economic voting literature: sophistication, partisanship and the media. In the context of the nationalization of political life (Hopkins, 2018), strong partisans are likely to pay more attention to the rhetoric of national elites through the media, and as such, form an assessment of the economy that is more in line with

the traditional effect of partisanship on the perception of the economy, i.e., a bias one in favour of their party. Their perception of the economy should be an echo of national debates. Conversely, weak partisans or non-partisans should be more receptive to their local context. Those voters will probably turn their attention to considerations that are more relevant to their daily lives by following local news or being more receptive to local cues to form their perception of the economy. Hence, among individuals with no or weak ties with a party, the perception of the economy should be correlated with the economic situation of the core cities of a local media market.

References

Abou-Chadi, Tarik, Denis Cohen and Thomas Kurer. 2023. "Rental Market Risk and Radical Right Support." Unpublished manuscript.

Adler, David and Ben Ansell. 2020. "Housing and populism." *West European Politics* 43(2):344–365.

André, Stéfanie and Caroline Dewilde. 2016. "Home ownership and support for government redistribution." *Comparative European Politics* 14:319–348.

Ansell, Ben. 2014. "The political economy of ownership: Housing markets and the welfare state." *American Political Science Review* 108(2):383–402.

Ansell, Ben, Frederik Hjorth, Jacob Nyrup and Martin Vinæs Larsen. 2022. "Sheltering Populists? House Prices and the Support for Populist Parties." *The Journal of Politics* 84(3).

Ansolabehere, Stephen, Marc Meredith and Erik Snowberg. 2014. "Mecro-economic voting: Local information and micro-perceptions of the macro-economy." *Economics & Politics* 26(3):380–410.

Arel-Bundock, Vincent, André Blais and Ruth Dassonneville. 2019. "Do Voters Benchmark Economic Performance?" *British Journal of Political Science* pp. 1–13.

Auberger, Antoine and Eric Dubois. 2005. "The influence of local and national economic conditions on French legislative elections." *Public Choice* 125(3-4):363–383.

Axelrod, Robert. 1973. "Schema theory: An information processing model of perception and cognition." *American political science review* 67(4):1248–1266.

Aytaç, Selim Erdem. 2018. "Relative economic performance and the incumbent vote: a reference point theory." *The Journal of Politics* 80(1):16–29.

Banducci, Susan, Laurel Elder, Steven Greene and Daniel Stevens. 2016. "Parenthood and the polarisation of political attitudes in Europe." *European Journal of Political Research* 55(4):745–766.

Benjamini, Yoav and Yosef Hochberg. 1995. "Controlling the false discovery rate: a practical and powerful approach to multiple testing." *Journal of the Royal Statistical Society: series B (Methodological)* 57(1):289–300.

Billari, Francesco C and Guido Tabellini. 2010. Italians are late: Does it matter? In *Demography and the economy*. University of Chicago Press pp. 371–412.

Bisbee, James and Jan Zilinsky. 2022. "Geographic Boundaries and Local Economic Conditions Matter for Views of the Economy." *Political Analysis* pp. 1–7.

Bisgaard, Martin. 2015. "Bias will find a way: Economic perceptions, attributions of blame, and partisan-motivated reasoning during crisis." *The Journal of Politics* 77(3):849–860.

Bisgaard, Martin, Kim Mannemar Sønderskov and Peter Thisted Dinesen. 2016. "Reconsidering the neighborhood effect: Does exposure to residential unemployment influence voters' perceptions of the national economy?" *Journal of Politics* 78(3):719–732.

Bolet, Diane. 2023. "The janus-faced nature of radical voting: Subjective social decline at the roots of radical right and radical left support." *Party Politics* 29(3):475–488.

Books, John and Charles Prysby. 1999. "Contextual effects on retrospective economic evaluations the impact of the state and local economy." *Political Behavior* 21(1):1–16.

Bosak, Janine, Frank Asbrock and Bertolt Meyer. 2021. Salience of category. In *Encyclopedia of Evolutionary Psychological Science*. Springer pp. 6786–6793.

Burlacu, Diana and Maarja Lühiste. 2021. "Parenthood and social policy preferences: A gender and time sensitive examination." *European Journal of Political Research* 60(2):255–274.

Castles, Francis G. 1998. "The Really Big Trade-Off: Home Ownership and the Welfare State in tne New World and the Old." *Acta Politica* 33(1):5–19.

Chou, Winston and Rafaela Dancygier. 2021. "Why parties displace their voters: Gentrification, coalitional change, and the demise of public housing." *American Political Science Review* 115(2):429–449.

Cohen, Denis. 2023. "Preferences for rent control: Between political geography and political economy." *Politische Vierteljahresschrift* 64(1):183–205.

Copp, Jennifer E, Peggy C Giordano, Monica A Longmore and Wendy D Manning. 2017. "Living with parents and emerging adults' depressive symptoms." *Journal of Family Issues* 38(16):2254–2276.

Cramer, Katherine J. 2016. *The politics of resentment: Rural consciousness in Wisconsin and the rise of Scott Walker*. University of Chicago Press.

Cutler, Fred. 2007. "Context and attitude formation: Social interaction, default information, or local interests?" *Political Geography* 26(5):575–600.

Daenekindt, Stijn, Willem de Koster and Jeroen van der Waal. 2020. "Partner Politics: How Partners Are Relevant to Voting." *Journal of Marriage and Family* 82(3):1124–1134.

Dahl, Gordon B, Katrine V Løken and Magne Mogstad. 2014. "Peer effects in program participation." *American Economic Review* 104(7):2049–74.

De Vries, Catherine E and Nathalie Giger. 2014. "Holding governments accountable? Individual heterogeneity in performance voting." *European Journal of Political Research* 53(2):345–362.

Downs, Anthony. 1957. "An economic theory of democracy.".

Druckman, James N and Thomas J Leeper. 2012. "Learning more from political communication experiments: Pretreatment and its effects." *American Journal of Political Science* 56(4):875–896.

Eisenberg, Daniel and Jonathan Ketcham. 2004. "Economic voting in US presidential elections: Who blames whom for what." *Topics in Economic Analysis & Policy* 4(1).

Fiorina, Morris P. 1981. *Retrospective voting in American national elections*. Yale University Press.

Gest, Justin, Tyler Reny and Jeremy Mayer. 2018. "Roots of the radical right: Nostalgic deprivation in the United States and Britain." *Comparative Political Studies* 51(13):1694–1719.

Gidron, Noam and Peter A Hall. 2017. "The politics of social status: Economic and cultural roots of the populist right." *The British journal of sociology* 68:S57–S84.

Godbout, Jean-François and Éric Bélanger. 2007. "Economic voting and political sophistication in the United States: A reassessment." *Political Research Quarterly* 60(3):541–554.

Guisinger, Alexandra. 2017. *American opinion on trade: Preferences without politics*. Oxford University Press.

Hall, Andrew B and Jesse Yoder. 2022. "Does homeownership influence political behavior? Evidence from administrative data." *The Journal of Politics* 84(1):000–000.

Halsberger, Matthias, Elkjaer Mads Andreas Ansell Ben Cansunar Asli Nyrup Jacob and Laure Sarah Bokobza. 2022. "Why Is It So Difficult to Counteract Rising Wealth Inequality?" *APSA Annual Conference* .

Hamel, Brian T and Bryan Wilcox-Archuleta. 2022. "Black Workers in White Places: Daytime Racial Diversity and White Public Opinion." *The Journal of Politics* 84(3):1828–1833.

Han, Sung Min and Mi Jeong Shin. 2021. "Housing Prices and Government Approval: The Impact of Housing Booms on Left-and Right-Wing Governments in 16 Advanced Industrialized Countries." *Canadian Journal of Political Science/Revue canadienne de science politique* 54(1):163–185.

Hankinson, Michael. 2018. "When do renters behave like homeowners? High rent, price anxiety, and NIMBYism." *American Political Science Review* 112(3):473–493.

Hansford, Thomas G and Brad T Gomez. 2015. "Reevaluating the sociotropic economic voting hypothesis." *Electoral Studies* 39:15–25.

Healy, Andrew J, Mikael Persson and Erik Snowberg. 2017. "Digging into the pocketbook: Evidence on economic voting from income registry data matched to a voter survey." *American Political Science Review* 111(4):771–785.

Hill, Seth J, Michael C Herron and Jeffrey B Lewis. 2010. "Economic crisis, Iraq, and race: A study of the 2008 presidential election." *Election Law Journal* 9(1):41–62.

Hinkle, Joshua C and David Weisburd. 2008. "The irony of broken windows policing: A micro-place study of the relationship between disorder, focused police crackdowns and fear of crime." *Journal of Criminal justice* 36(6):503–512.

Hopkins, Daniel J. 2018. *The increasingly United States: How and why American political behavior nationalized*. University of Chicago Press.

Huber, Jakob and Fabio Wolkenstein. 2018. "Gentrification and occupancy rights." *Politics, Philosophy & Economics* 17(4):378–397.

Huckfeldt, R Robert and John Sprague. 1995. *Citizens, Politics and Social Communication: Information and Influence in An Election Campaign*. Cambridge University Press.

Jacobs, Nicholas F and B Kal Munis. 2019. "Place-based imagery and voter evaluations: Experimental evidence on the politics of place." *Political Research Quarterly* 72(2):263–277.

Jahoda, Marie, Paul F Lazarsfeld and Hans Zeisel. 2017. *Marienthal: The sociography of an unemployed community*. Routledge.

Kayser, Mark Andreas and Michael Peress. 2012. "Benchmarking across borders: electoral accountability and the necessity of comparison." *American Political Science Review* 106(3):661–684.

Kemeny, Jim. 1981. *The Myth of Home-ownership: Private Versus Public Choices in Housing Tenure*. Routledge.

Key Jr, Valdimer O. 1949. *Southern Politics in State and Nation*. New York: Alfred A. Knopf.

Key Jr, Valdimer O. 1966. The responsible electorate. In *The Responsible Electorate*. Harvard University Press.

Kiewiet, D Roderick and Michael S Lewis-Beck. 2011. "No man is an island: self-interest, the public interest, and sociotropic voting." *Critical Review* 23(3):303–319.

Kim, Eunji, Michael E Shepherd and Joshua D Clinton. 2020. "The effect of big-city news on rural America during the COVID-19 pandemic." *Proceedings of the National Academy of Sciences* 117(36):22009–22014.

Kim, Jeongdai, Euel Elliott and Ding-Ming Wang. 2003. "A spatial analysis of county-level outcomes in US Presidential elections: 1988–2000." *Electoral Studies* 22(4):741–761.

Kinder, Donald R and D Roderick Kiewiet. 1981. "Sociotropic politics: the American case." *British Journal of Political Science* 11(2):129–161.

Klar, Samara, Heather Madonia and Monica C Schneider. 2014. "The influence of threatening parental primes on mothers' versus fathers' policy preferences." *Politics, Groups, and Identities* 2(4):607–623.

Kramer, Gerald H. 1971. "Short-term fluctuations in US voting behavior, 1896–1964." *American political science review* 65(1):131–143.

Kramer, Gerald H. 1983. "The ecological fallacy revisited: Aggregate-versus individual-level findings on economics and elections, and sociotropic voting." *American political science review* 77(1):92–111.

Larsen, Martin Vinæs, Frederik Hjorth, Peter Thisted Dinesen and Kim Mannemar Sønderskov. 2019. "When do citizens respond politically to the local economy? Evidence from registry data on local housing markets." *American Political Science Review* 113(2):499–516.

Lawler, Edward J. 1992. "Affective attachments to nested groups: A choice-process theory." *American Sociological Review* pp. 327–339.

Lewis-Beck, Michael S. 1990. *Economics and elections: The major Western democracies*. University of Michigan press.

Lewis-Beck, Michael S and Mary Stegmaier. 2000. "Economic determinants of electoral outcomes." *Annual Review of Political Science* 3(1):183–219.

Lewis-Beck, Michael S, Richard Nadeau and Martial Foucault. 2013. "The compleat economic voter: New theory and British evidence." *British Journal of Political Science* pp. 241–261.

Linos, Katerina and Kimberly Twist. 2018. "Diverse pre-treatment effects in survey experiments." *Journal of Experimental Political Science* 5(2):148–158.

Markus, Gregory B. 1988. "The impact of personal and national economic conditions on the presidential vote: A pooled cross-sectional analysis." *American Journal of Political Science* pp. 137–154.

Matsudaira, Jordan D. 2016. "Economic conditions and the living arrangements of young adults: 1960 to 2011." *Journal of Population Economics* 29(1):167–195.

Moskowitz, Daniel J. 2021. "Local news, information, and the nationalization of US Elections." *American Political Science Review* 115(1):114–129.

Mummolo, Jonathan and Clayton Nall. 2017. "Why partisans do not sort: The constraints on political segregation." *The Journal of Politics* 79(1):45–59.

Nathan, Noah L and Melissa L Sands. 2023. "Context and contact: Unifying the study of environmental effects on politics." *Annual Review of Political Science* 26.

Newman, Benjamin J, Yamil Velez, Todd K Hartman and Alexa Bankert. 2015. "Are citizens "receiving the treatment"? Assessing a key link in contextual theories of public opinion and political behavior." *Political Psychology* 36(1):123–131.

Openshaw, Stan. 1984. "Ecological fallacies and the analysis of areal census data." *Environment and planning A* 16(1):17–31.

Ortoleva, Pietro and Erik Snowberg. 2015. "Overconfidence in political behavior." *American Economic Review* 105(2):504–35.

Panagopoulos, Costas and Kendall Bailey. 2020. ""Friends-and-Neighbors" mobilization: A field experimental replication and extension." *Journal of experimental political science* 7(1):13–26.

Parsons, Talcott and Edward A Shils. 2017. *Toward a general theory of action: Theoretical foundations for the social sciences*. Routledge.

Persson, Mikael and Johan Martinsson. 2018. "Patrimonial economic voting and asset value–new evidence from taxation register data." *British Journal of Political Science* 48(3):825–842.

Reeves, Andrew and James G Gimpel. 2012. "Ecologies of unease: Geographic context and national economic evaluations." *Political Behavior* 34(3):507–534.

Rogers, Jonathan. 2014. "A communotropic theory of economic voting." *Electoral Studies* 36:107–116.

Scheve, Kenneth F and Matthew J Slaughter. 2001. "What determines individual trade-policy preferences?" *Journal of International Economics* 54(2):267–292.

Stiers, Dieter, Ruth Dassonneville and Michael S. Lewis-Beck. 2020. "The abiding voter: The lengthy horizon of retrospective evaluations." *European Journal of Political Research* 59(3):646–668.

Strumpf, Koleman S and John R Phillippe. 1999. "Estimating presidential elections: The importance of state fixed effects and the role of national versus local information." *Economics & Politics* 11(1):33–50.

Swartz, Teresa Toguchi, Minzee Kim, Mayumi Uno, Jeylan Mortimer and Kirsten Bengtson O'Brien. 2011. "Safety nets and scaffolds: Parental support in the transition to adulthood." *Journal of Marriage and Family* 73(2):414–429.

Teorell, Jan, Aksel Sundström, Sören Holmberg and Bo Rothstein. 2022. "The Quality of Government Standard Dataset, version Jan22.".
URL: *https://www.gu.se/en/quality-government/qog-data*

Tosi, Marco. 2020. "Boomerang kids and parents' well-being: adaptation, stressors, and social norms." *European Sociological Review* 36(3):460–473.

Tufte, Edward R. 1978. *Political control of the economy.* Princeton University Press.

Turner, John C, Michael A Hogg, Penelope J Oakes, Stephen D Reicher and Margaret S Wetherell. 1987. *Rediscovering the social group: A self-categorization theory.* basil Blackwell.

Van der Brug, Wouter, Cees Van der Eijk and Mark Franklin. 2007. *The economy and the vote: Economic conditions and elections in fifteen countries.* Cambridge University Press.

Van Gunten, Tod and Sebastian Kohl. 2020. "The inversion of the 'really big trade-off': homeownership and pensions in long-run perspective." *West European Politics* 43(2):435–463.

Velez, Yamil Ricardo and Grace Wong. 2017. "Assessing contextual measurement strategies." *The Journal of Politics* 79(3):1084–1089.

Walsh, Katherine Cramer. 2012. "Putting inequality in its place: Rural consciousness and the power of perspective." *American Political Science Review* 106(3):517–532.

Weatherford, M Stephen. 1983. "Evaluating economic policy: A contextual model of the opinion formation process." *The Journal of Politics* 45(4):866–888.

Wlezien, Christopher. 2015. "The myopic voter? The economy and US presidential elections." *Electoral Studies* 39:195–204.

Wong, Cara, Jake Bowers, Daniel Rubenson, Mark Fredrickson and Ashlea Rundlett. 2020. "Maps in people's heads: Assessing a new measure of context." *Political Science Research and Methods* 8(1):160–168.

Ziblatt, Daniel, Hanno Hilbig and Daniel Bischof. 2020. "Wealth of tongues: Why peripheral regions vote for the radical right in Germany." *SocArXiv. April* 25.

Chapter A - Appendix to Article 1

This is the supplementary materials for Article 1, "The Implications of Cohabitation Between Working Age Children and Parents for Political Opinions". Full replication data and syntax are available in the Harvard dataverse: https://doi.org/10.7910/DVN/HVUU6X. The article is available online at the EJPR website: https://doi.org/10.1111/1475-6765.12601.

Cohabitation between young adults and their parents in Europe

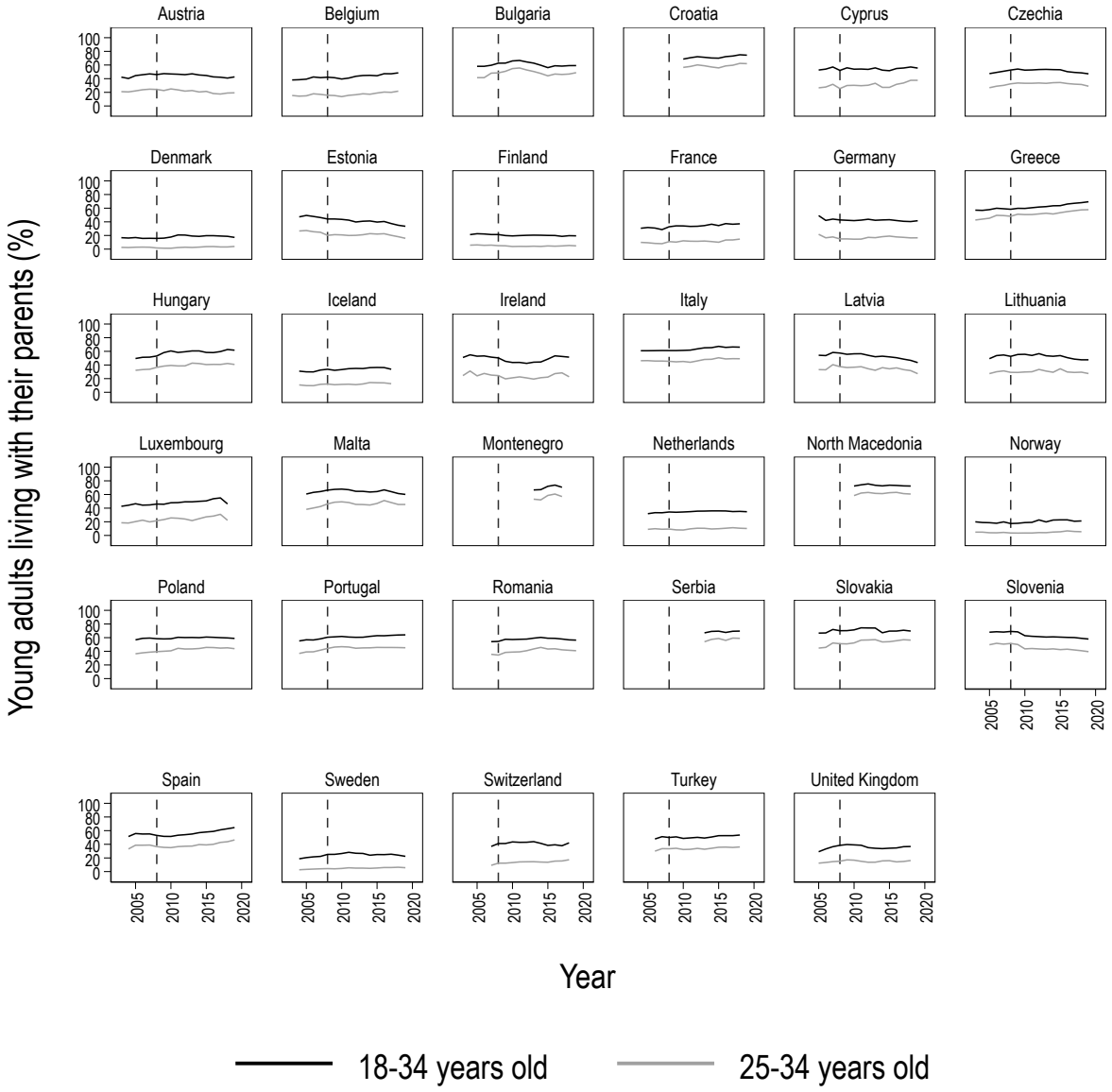


Fig. A1. Share of young adults living with their parents in Europe
Note: The vertical line indicates the economic crisis in 2008 for the x-axis. Raw figures were obtained from Eurostat using the ilc_lvps08 indicator. Aggregated figures are the author's calculation.

Unemployment rate in Europe

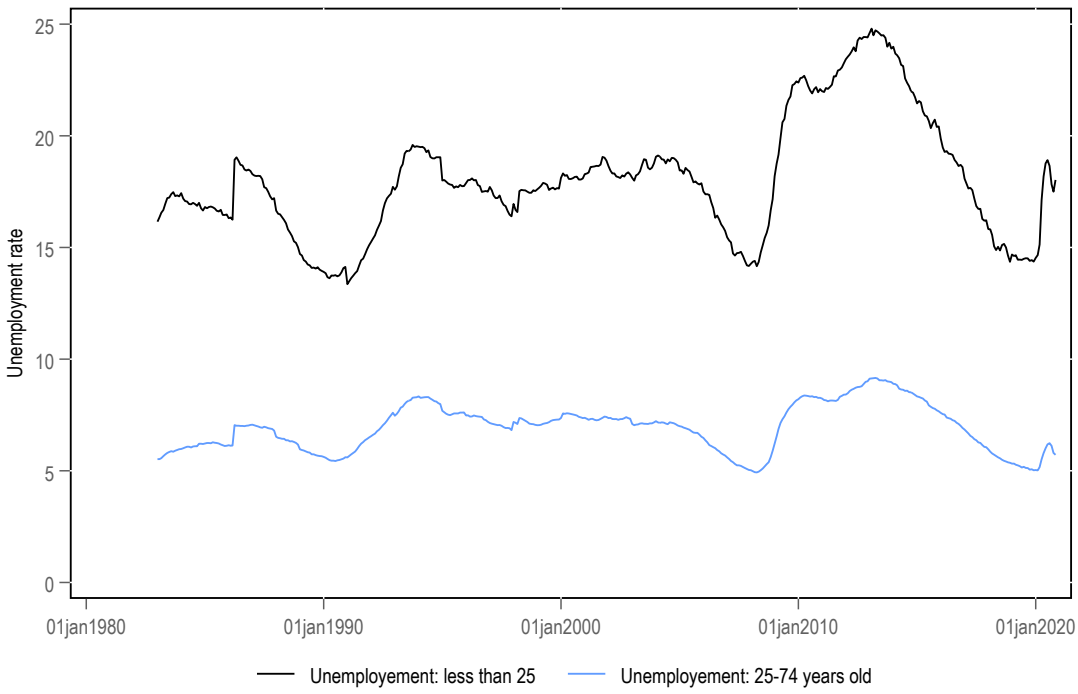


Fig. A2. Unemployment among two age groups: less than 25 and 25-74 years old
Note: Data retrieved from Eurostat using the UNE_RT_M indicator. Only one country was excluded from the initial database, i.e. the United States, since it is not part of the geographical scope of the study. The remaining 32 countries are identical to those covered in this study (see Appendix 3 for a country list). Estimates are obtained by averaging the unemployment rate from the countries composing the sample at a given point in time. The mean is not adjusted based on the country size.

Measurement

Main analysis

- **Economy:** All waves. On the whole how satisfied are you with the present state of the economy in [country]? Responses are coded from 0 to 10, from the least satisfied to the most.
- **Government:** All waves. Now thinking about the [country] government, how satisfied are you with the way it is doing its job? Responses are coded from 0 to 10, from the least satisfied to the most.
- **Age:** All waves. Calculated using respondent's year and date of birth at the time of the interview.
- **Income:** Waves 1, 2, 3 : Using this card, if you add up the income from all sources, which letter describes your household's total net income? If you don't know the exact figure, please give an estimate. Use the part of the card that you know best: weekly, monthly or annual income. Waves 4, 5, 6, 7, 8 : Using this card, please tell me which letter describes your household's total income, after tax and compulsory deductions, from all sources? If you don't know the exact figure, please give an estimate. Use the part of the card that you know best: weekly, monthly or annual income. The answers are recoded in decile by country and wave.
- **Education:** All waves. About how many years of education have you completed, whether full-time or part-time? Please report these in full-time equivalents and include compulsory years of schooling.
- **At school:** All waves. Using this card, which of these descriptions applies to what you have been doing for the last 7 days? In education (not paid for by employer) even if on vacation. Coded 1 if in education, 0 otherwise. Used only for the *Children hypothesis*.

- **Unemployed:** All waves. Using this card, which of these descriptions applies to what you have been doing for the last 7 days? Responses are coded 1 for "Unemployed and actively looking for a job" and 0 otherwise.
- **Cohabitation with children (18-34) - Binary:** Responses are coded 0 or 1 - 0 refers to no child living in the household or with children under 18 only, and 1 refers to the presence of children in the household aged between 18 to 34.
- **Cohabitation with children (18-34) - Categorical:** Responses are coded as follow:
  (1) Never had children at home
  (2) Ever had children at home but no child currently at home (baseline category)
  (3) Only children under 18 at home
  (4) Mixed household: children under and above 18 at home
  (5) Only children above 18 at home
- **Cohabitation with parents:** Responses are coded 1 for respondents living with their parents, 0 otherwise.
- **Unemployment rate:** "share of the labor force that is without work but available for and seeking employment" (Teorell et al., 2022). Figures from the *QoG Standard TS dataset* (Teorell et al., 2022) using the *wdi_unempne* variable. Primary source of data is the World bank.

Robustness checks

- **Cohabitation with children (25-34):** Responses are coded 0 or 1. 0 refers to no child living in the household or with children under 25 only, and 1 refers to the presence of children in the household aged between 25 to 34.
- **Incumbent partisanship (binary)**: All waves. Which party feel closer to [country]. Responses are re-coded into a binary variable, where 0 includes respondents who identified with opposition parties, while 1 refers to respondents who identified with the incumbent party. Respondents with no attachment to a party, those who refused

to answer or don't know which party they feel close to are coded as missing. This variable only includes identifiers and therefore analyses are restricted to a sample of identifiers.

- **Incumbent partisanship (3 categories)**: All waves. Which party feel closer to [country]. Responses are re-coded into a categorical variable, where 0 refers to respondents with no tie to a party, 1 refers to respondents who identified with opposition parties, while 2 refers to respondents who identified with the incumbent party.

A note on coding decisions regarding both incumbent variables:

The ESS dataset does not provide incumbency status. Also, ESS survey years do not follow the electoral calendar of participating countries. As a consequence, several ESS rounds might take place under the same government. Thus, in order to allocate incumbency status to the party referenced by the respondent, I needed to rely on an external sources. I therefore make use of *PartyFacts* and *Parlgov* databases for stable party codes, election dates and incumbency status for each party at the time of the ESS fieldwork.

Data Availability

Country	2002	2004	2006	2008	2010	2012	2014	2016	Total
AT	2,257	2,256	2,405	2,255	2,259	0	1,795	2,010	15,237
BE	1,899	1,778	1,798	1,760	1,704	1,869	1,769	1,766	14,343
BG	0	0	1,400	2,230	2,434	2,260	0	0	8,324
CH	2,040	2,141	1,804	1,819	1,506	1,493	1,532	1,525	13,860
CY	0	0	995	1,215	1,083	1,116	0	0	4,409
CZ	1,360	3,026	0	2,018	2,386	2,009	2,148	2,269	15,216
DE	2,919	2,870	2,916	2,751	3,031	2,958	3,045	2,852	23,342
DK	1,506	1,487	1,505	1,610	1,576	1,650	1,502	0	10,836
EE	0	1,989	1,517	1,661	1,793	2,380	2,051	2,019	13,410
ES	1,729	1,663	1,876	2,576	1,885	1,889	1,925	1,958	15,501
FI	2,000	2,022	1,896	2,195	1,878	2,197	2,087	1,925	16,200
FR	1,503	1,806	1,986	2,073	1,728	1,968	1,917	2,070	15,051
GB	2,052	1,897	2,394	2,352	2,422	2,286	2,264	1,959	17,626
GR	2,566	2,406	0	2,072	2,715	0	0	0	9,759
HR	0	0	0	1,484	1,649	0	0	0	3,133
HU	1,685	1,498	1,518	1,544	1,561	2,014	1,698	1,614	13,132
IE	2,046	2,286	1,800	1,764	2,576	2,628	2,390	2,757	18,247
IL	2,499	0	0	2,490	2,294	2,508	2,562	2,557	14,910
IS	0	579	0	0	0	752	0	880	2,211
IT	1,207	0	0	0	0	960	0	2,626	4,793
LT	0	0	0	0	1,677	2,109	2,250	2,122	8,158
LU	1,552	1,635	0	0	0	0	0	0	3,187
NL	2,364	1,881	1,889	1,778	1,829	1,845	1,919	1,681	15,186
NO	2,036	1,760	1,750	1,549	1,548	1,624	1,436	1,545	13,248
PL	2,110	1,716	1,721	1,619	1,751	1,898	1,615	1,694	14,124
PT	1,511	2,052	2,222	2,367	2,150	2,151	1,265	1,270	14,988
RU	0	0	2,437	2,512	2,595	2,484	0	2,430	12,458
SE	1,999	1,948	1,927	1,830	1,497	1,847	1,791	1,551	14,390
SI	1,519	1,442	1,476	1,286	1,403	1,257	1,224	1,307	10,914
SK	0	1,512	1,766	1,810	1,856	1,847	0	0	8,791
TR	0	1,856	0	2,416	0	0	0	0	4,272
UA	0	2,031	2,002	1,845	1,931	2,178	0	0	9,987
Total	42,359	47,537	43,000	54,881	54,717	52,177	40,185	44,387	379,243

Table A1. Descriptive statistics: number of respondents by country and year (full sample before restrictions)

Descriptive Statistics - All variables (weighted)

	min	mean	sd	max	count
Dependent variables					
Satisfaction: Economy	0	4.46	2.51	10	369971
Satisfaction: Government	0	4.20	2.47	10	364407
Independent variables					
Parents: Cohabitation with children (18-34)	0	0.15	0.36	1	379243
Parents:Cohabitation with children (25-34)	0	0.06	0.23	1	379243
Parents: Cohabitation (5 cat.)	1	2.40	1.31	5	379243
Children: Cohabitation with parents	0	0.20	0.40	1	379243
Age	13	45.87	18.63	123	377554
Income	1	5.23	2.80	10	282793
Education (in years)	0	12.19	3.97	56	375036
At school	0	0.12	0.33	1	379243
Unemployed	0	0.05	0.21	1	379243
Unemployment rate	3	8.09	3.82	25	379243
Incumbent partisans (Binary)	0	0.50	0.50	1	90230
Incumbent partisans (3 cat.)	0	0.35	0.68	2	379243

Table A2. Descriptive statistics

Correlation between both dependent variables

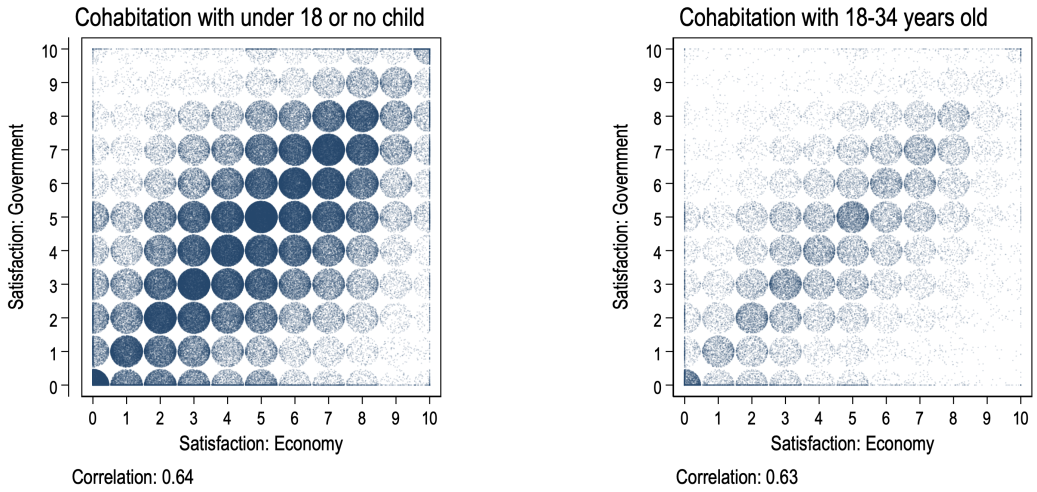


Fig. A3. Parents sample - Correlation between the two dependent variables, that is the satisfaction with the economy and government's performance

Note: Data is taken from the ESS. A dot represents a respondent.

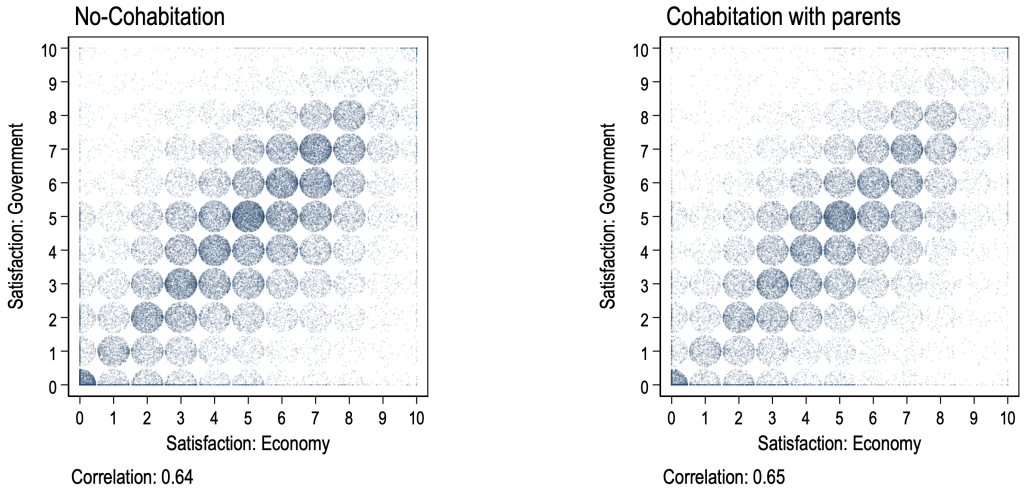


Fig. A4. Children sample - Correlation between the two dependent variables, that is the satisfaction with the economy and government's performance

Note: Data is taken from the ESS. A dot represents a respondent.

Methodology

Models and Equations

To test the *Parents hypothesis*, that is the association between the cohabitation with young adults and parents' political opinion, I apply a linear model that takes the following form:

$$\text{Opinion}_i = \beta_1 \text{Cohabitation with children}_i + \gamma \text{Controls}_i + \alpha_1 \text{Year} + \alpha_2 \text{Country} + \epsilon_i \quad (.0.5)$$

where $Opinion_i$ is respondent's satisfaction with—alternatively—the economy and the government ; β_1 is the coefficient of interest named *Cohabitation with children*, that is the living arrangement within the household, γ refers to a vector of control variables discussed in the manuscript (Age, Income, Education, Unemployment status, Unemployment rate), α_1 refers to a vector of year fixed-effects, α_2 to a vector of country fixed-effects and ϵ is the disturbance term.

For the *Children hypothesis*, I still rely on a linear model, with the same two dependent variables, as well as the same fixed-effects. The control variables are Age, Income, Education (level), being currently at school or not, Unemployment status, and the Unemployment rate. To test the *Children hypothesis*, the variables of interest change compared to the parents hypothesis, and thus I introduce an interaction (β_3) between a dummy variable (named *Cohabitation with parents*) capturing whether the respondent cohabits or not with her parents and the age of the respondent (the moderator). The linear model for the *Children hypothesis* is as follows:

$$\begin{aligned}\text{Opinion}_i = \beta_1 \text{Cohabitation with parents}_i + \beta_2 \text{Age}_i + \\ \beta_3 \text{Cohabitation with parents}_i \times \text{Age}_i + \gamma \text{Controls}_i + \alpha_1 \text{Year} + \alpha_2 \text{Country} + \epsilon_i \quad (.0.6)\end{aligned}$$

Fixed-effects, clusters, weight

The choice of fixed effects should also be justified. The use of fixed-effects depends on the research question. For this study, I am primarily interested in comparison of one individual to another at the same point in time, within the same country. I do not conduct a comparison between countries because cultural differences with regard to the age at which young adults tend to fly the nest and public subsidies toward young adults that might foster independence could drive such differences. The use of year fixed-effects takes into account the trend in satisfaction with the economy or the incumbent's performance, and cohabitation with parents among young adults. Hence, I use country and time fixed-effects in the empirical analysis. These choices allow me to answer the following question: *How satisfied with the economy are parents living with young adults compared to parents living without them, at any point in time in a given country?* Models are also estimated with robust standard errors clustered at the country and year level. Clustering allows me to take into account the within-country and year variation on opinion. Finally, I also take into account the survey design and data collection by means of weights. Since some countries in the ESS use address-based sampling, not applying weights can lead to estimates skewed towards people living alone which can be a major issue owing the research question. For that reason, I only present weighted results to avoid misleading estimates. Hence, I use the post-stratified design weight (variable *pspwght*) provided by the ESS. On a final note, all models are estimated using the *svy* command in Stata 16.

Main model - Full Table - Children hypothesis - DV: Economy

	Model 1	Model 2	Model 3	Model 4
Cohabitation with parents	-0.18***	-0.17***	0.57***	0.68***
	(0.03)	(0.03)	(0.13)	(0.12)
Age	-0.03***	-0.03***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.09***	0.08***	0.09***	0.08***
	(0.01)	(0.00)	(0.01)	(0.00)
Unemployed	-0.58***	-0.49***	-0.57***	-0.48***
	(0.04)	(0.04)	(0.04)	(0.04)
Education (in years)	0.02***	0.03***	0.03***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)
At school	0.29***	0.32***	0.26***	0.28***
	(0.03)	(0.03)	(0.03)	(0.03)
Unemployment rate		-0.17***		-0.17***
		(0.02)		(0.02)
Cohabitation with parents×Age			-0.03***	**-0.03*** **
			(0.01)	(0.00)
Constant	5.15***	6.09***	4.77***	5.67***
	(0.24)	(0.24)	(0.25)	(0.25)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	70,635	70,635	70,635	70,635
R-squared	0.25	0.27	0.25	0.28

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficient of interest in bold. Baseline category not shown. The dependent variable is the satisfaction with the economy, on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. Sample restricted to the 18 - 34 years old age group for all models.
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A3. Main results - Children hypothesis - DV: Economy

Main model - Full Table - Children hypothesis - DV: Government

	Model 5	Model 6	Model 7	Model 8
Cohabitation with parents	-0.15***	-0.15***	0.43***	0.50***
	(0.03)	(0.03)	(0.13)	(0.12)
Age	-0.03***	-0.03***	-0.02***	-0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.07***	0.06***	0.06***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)
Unemployed	-0.42***	-0.37***	-0.42***	-0.36***
	(0.04)	(0.04)	(0.04)	(0.04)
Education (in years)	0.00	0.01	0.01	0.01+
	(0.01)	(0.01)	(0.01)	(0.01)
At school	0.23***	0.24***	0.20***	0.21***
	(0.04)	(0.04)	(0.04)	(0.04)
Unemployment rate		-0.11***		-0.11***
		(0.02)		(0.02)
Cohabitation with parents×Age			-0.02***	**-0.03*** **
			(0.01)	(0.00)
Constant	4.72***	5.33***	4.43***	5.01***
	(0.23)	(0.26)	(0.24)	(0.27)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	69,759	69,759	69,759	69,759
R-squared	0.14	0.15	0.14	0.15

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficient of interest in bold. Baseline category not shown. The dependent variable is the satisfaction with the government's performance, on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. Sample restricted to the 18 - 34 years old age group for all models. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A4. Main results - Children hypothesis - DV: Government

Main results - Children hypothesis controlling for incumbent partisanship (Binary variable)

	Economy Model 1	Economy Model 2	Economy Model 3	Government Model 4	Government Model 5	Government Model 6
Cohabitation with parents	-0.22**	0.10	0.18	-0.21**	0.18	0.22
	(0.07)	(0.33)	(0.32)	(0.06)	(0.32)	(0.32)
Age	-0.02*	-0.01+	-0.01	-0.03***	-0.03***	-0.02***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Income	0.08***	0.08***	0.08***	0.06***	0.06***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Unemployed	-0.48***	-0.48***	-0.42***	-0.20*	-0.20*	-0.16+
	(0.08)	(0.08)	(0.08)	(0.09)	(0.09)	(0.08)
Education (in years)	0.03***	0.03***	0.04***	0.01+	0.02+	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
At school	0.22***	0.21***	0.25***	0.14+	0.13+	0.15*
	(0.06)	(0.06)	(0.06)	(0.07)	(0.08)	(0.07)
Incumbent partisans	0.50***	0.50***	0.44***	1.36***	1.36***	1.32***
	(0.07)	(0.07)	(0.07)	(0.10)	(0.10)	(0.10)
Cohabitation with parents×Age		-0.01	**-0.02**		-0.02	**-0.02**
		(0.01)	(0.01)		(0.01)	(0.01)
Unemployment rate			-0.19***			-0.11***
			(0.02)			(0.03)
Constant	4.83***	4.69***	5.68***	4.20***	4.03***	4.60***
	(0.34)	(0.35)	(0.37)	(0.35)	(0.34)	(0.39)
Country FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	14,318	14,318	14,318	14,266	14,266	14,266
R-squared	0.27	0.27	0.29	0.19	0.19	0.19

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficients of interest in bold. Baseline category not shown. The dependent variable is the satisfaction with the economy (see *Economy* in the header) or government's performance (*Government* in the header), on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. Sample restricted to the 18 - 34 years old age group for all models. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A5. Main results - Children hypothesis controlling for incumbent partisanship (Binary variable)

Main results - Children hypothesis controlling for incumbent partisanship (3 categories)

	Economy Model 1	Economy Model 2	Economy Model 3	Government Model 4	Government Model 5	Government Model 6
Cohabitation with parents	-0.18***	0.58***	0.69***	-0.15***	0.47***	0.53***
	(0.03)	(0.13)	(0.12)	(0.03)	(0.13)	(0.12)
Age	-0.03***	-0.01***	-0.01***	-0.03***	-0.02***	-0.02***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.09***	0.09***	0.07***	0.06***	0.06***	0.05***
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)
Unemployed	-0.57***	-0.56***	-0.48***	-0.40***	-0.40***	-0.35***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Education (in years)	0.02***	0.02***	0.03***	0.00	0.01	0.01
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
At school	0.29***	0.26***	0.28***	0.23***	0.20***	0.21***
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)
Baseline: Independents						
Opposition	-0.09+	-0.08+	-0.09*	-0.34***	-0.34***	-0.34***
	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)
Incumbent partisans	0.45***	0.45***	0.38***	1.07***	1.07***	1.02***
	(0.07)	(0.07)	(0.06)	(0.10)	(0.10)	(0.10)
Cohabitation with parents×Age		-0.03***	**-0.03*** **		-0.02***	**-0.03*** **
		(0.01)	(0.00)		(0.01)	(0.00)
Unemployment rate			-0.17***			-0.10***
			(0.02)			(0.02)
Constant	5.12***	4.74***	5.63***	4.67***	4.36***	4.90***
	(0.24)	(0.25)	(0.25)	(0.22)	(0.24)	(0.26)
Country FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	70,635	70,635	70,635	69,759	69,759	69,759
R-squared	0.25	0.25	0.28	0.16	0.16	0.17

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficients of interest in bold. Baseline category not shown. The dependent variable is the satisfaction with the economy (see *Economy* in the header) or government's performance (*Government* in the header), on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. Sample restricted to the 18 - 34 years old age group fo all models. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A6. Main results - Children hypothesis controlling for incumbent partisanship (3 categories)

Main model - Full Table - Parents hypothesis

	Economy Model 1	Economy Model 2	Government Model 3	Government Model 4
Cohabitation Between 18-34	**-0.16*** **		**-0.11*** **	
	(0.02)		(0.02)	
	(0.02)		(0.02)	
Age	0.01***	0.01***	0.01***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.10***	0.10***	0.07***	0.07***
	(0.01)	(0.01)	(0.00)	(0.00)
Unemployed	-0.55***	-0.55***	-0.34***	-0.34***
	(0.04)	(0.04)	(0.04)	(0.04)
Education (in years)	0.02***	0.02***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Unemployment rate	-0.19***	-0.20***	-0.12***	-0.12***
	(0.02)	(0.02)	(0.02)	(0.02)
Baseline: Ever had children at home but not currently				
Never had children		0.11***		0.10***
		(0.02)		(0.02)
Only under 18		0.10***		0.16***
		(0.02)		(0.02)
Mixed		-0.04		0.03
		(0.03)		(0.03)
Only above 18		**-0.08** **		**-0.01**
		(0.03)		(0.03)
Constant	5.02***	4.88***	3.58***	3.38***
	(0.26)	(0.26)	(0.23)	(0.24)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	204,579	204,579	203,542	203,542
R-squared	0.30	0.30	0.14	0.14

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficients of interest in bold. The dependent variable is the satisfaction with the economy (see *Economy* in the header) or government's performance (*Government* in the header), on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A7. Main results - Parents hypothesis- Binary and categorical measures of cohabitation

Full Table - Parents hypothesis controlling for incumbent partisanship (binary variable)

	Economy Model 1	Economy Model 2	Government Model 3	Government Model 4
Cohabitation with children	-0.20***	**-0.20*** **	-0.12**	**-0.12** **
	(0.04)	(0.03)	(0.04)	(0.04)
Age	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.09***	0.09***	0.05***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)
Unemployed	-0.71***	-0.59***	-0.35***	-0.28***
	(0.07)	(0.06)	(0.08)	(0.07)
Education (in years)	0.02***	0.03***	0.01+	0.01*
	(0.00)	(0.00)	(0.00)	(0.00)
Incumbent partisans	0.62***	0.52***	1.58***	1.52***
	(0.07)	(0.07)	(0.11)	(0.11)
Unemployment rate		-0.21***		-0.12***
		(0.03)		(0.02)
Constant	3.97***	5.03***	2.44***	3.03***
	(0.27)	(0.27)	(0.25)	(0.31)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	55,533	55,533	55,501	55,501
R-squared	0.31	0.33	0.21	0.22

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficients of interest in bold. Baseline category not shown. The dependent variable is the satisfaction with the economy (see *Economy* in the header) or government's performance (*Government* in the header), on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A8. Main results - Parents hypothesis controlling for incumbent partisanship (binary)

Full Table - Parents hypothesis controlling for incumbent partisanship (3 categories)

	Economy) Model 1	Economy Model 2	Government Model 3	Government Model 4
Cohabitation with children	-0.16***	**-0.16*** **	-0.11***	**-0.10*** **
	(0.02)	(0.02)	(0.02)	(0.02)
Age	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.11***	0.10***	0.07***	0.06***
	(0.01)	(0.01)	(0.00)	(0.00)
Unemployed	-0.66***	-0.55***	-0.39***	-0.33***
	(0.05)	(0.04)	(0.04)	(0.04)
Education (in years)	0.01***	0.02***	0.01**	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Baseline: Independents				
Opposition	-0.04	-0.06	-0.36***	-0.36***
	(0.05)	(0.05)	(0.08)	(0.08)
Incumbent partisans	0.61***	0.51***	1.26***	1.20***
	(0.05)	(0.05)	(0.09)	(0.08)
Unemployment rate		-0.18***		-0.10***
		(0.02)		(0.02)
Constant	3.92***	4.87***	2.79***	3.31***
	(0.27)	(0.25)	(0.22)	(0.23)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	204,579	204,579	203,542	203,542
R-squared	0.28	0.30	0.16	0.17

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficients of interest in bold. Baseline category not shown. The dependent variable is the satisfaction with the economy (see *Economy* in the header) or government's performance (*Government* in the header), on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A9. Main results - Parents hypothesis controlling for incumbent partisanship (Independents, Opposition, Incumbent partisan)

Parents hypothesis by country

In order to detect whether the effect is driven by a subset of countries, I test the *Parents hypothesis* for each country in the ESS. Those estimates are obtained by means of an OLS regression for each country, with year fixed-effects, robust standard errors and post-stratified design weight. Country Fixed-effects are not applicable here since I performed one regression per country. As doing so requires 64 regressions (via two regressions per country, one for each dependent variable), I opted for only presenting the coefficients and 95% confidence intervals of the main explanatory variable. Figure A5 shows that, for the economy (top panel), out of 32 countries, in only two countries—Bulgaria (BG) and Portugal (PT)—parents with only children aged between 18 and 34 years old in their household are not different from parents with no child or with children under 18 at home. For the remaining 30 countries, the effect is in the expected direction, i.e. negative. With 47% of significant estimates for the economy (top panel in Figure A5), the relationship seems to be shared by a large portion of countries composing the sample. In contrast, the models for the second dependent variable (bottom panel), that is satisfaction with the government's performance, yield less significant results since only 6 models are significant at the conventional level (*see Figure A5*).

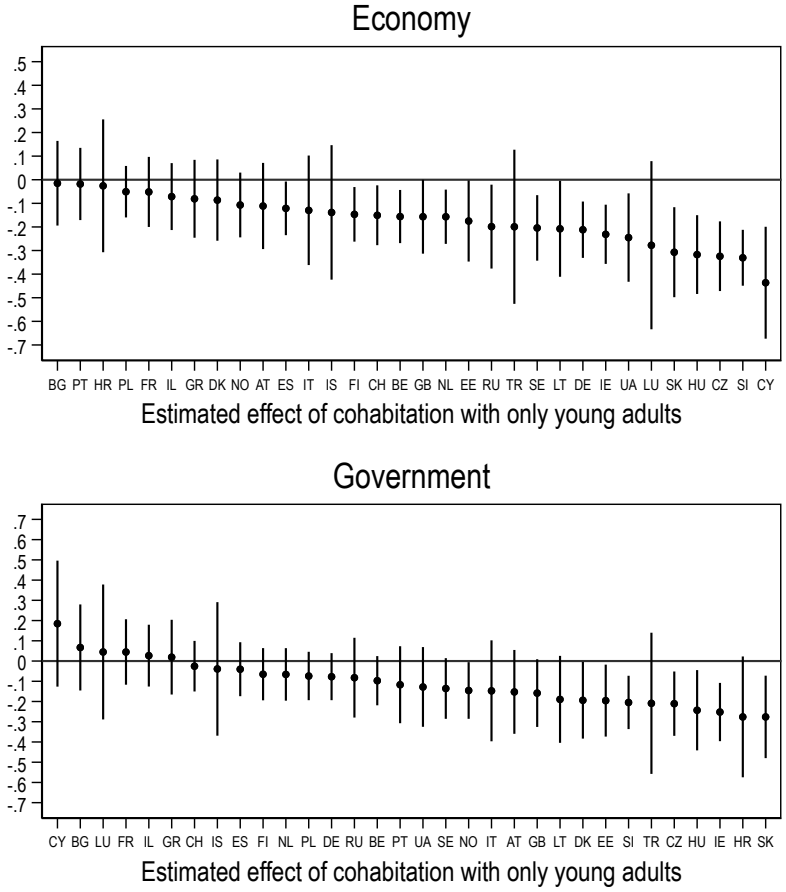


Fig. A5. Effects of having children aged between 18 and 34 years old in the household on parents' level of satisfaction with the economy or government's performance. Models estimated using control variables such as age, income, education, employment status, unemployment rate, and year fixed-effects.

Full Table - Parents hypothesis - Cohabitation with 25 to 34 years old

Since it is not possible to perform an interaction between the variable capturing cohabitation with children and the age of each children who cohabits with their parents, I provide an alternative approach by modeling the threshold. As a reminder, for the main analyses, I applied a binary variable, that is *cohabitation with children*, where 0 refers to no child living in the household or with children under 18 only, and 1 refers to the presence of children in the household aged between 18 to 34. For the following models, the explanatory variable still split the sample in two groups but this time 0 refers to no child living in the household or with children under 25 only, and 1 refers to the presence of children aged between 25 to 34. As can been in the following table, all conclusion remain unchanged despite changing the threshold.

	Economy Model 1	Economy Model 2	Government Model 3	Government Model 4
Cohabitation with Children (25-34)	-0.17***	-0.18***	-0.11***	-0.11***
	(0.03)	(0.03)	(0.03)	(0.03)
Age	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.11***	0.10***	0.07***	0.07***
	(0.01)	(0.00)	(0.01)	(0.00)
Unemployed	-0.67***	-0.55***	-0.41***	-0.34***
	(0.05)	(0.04)	(0.04)	(0.04)
Education (in years)	0.02***	0.02***	0.01**	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Unemployment rate		-0.20***		-0.12***
		(0.02)		(0.02)
Constant	3.94***	4.96***	2.92***	3.55***
	(0.26)	(0.26)	(0.22)	(0.23)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	204,579	204,579	203,542	203,542
R-squared	0.27	0.30	0.12	0.14

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficients of interest in bold. Baseline category not shown. The dependent variable is the satisfaction with the economy (see *Economy* in the header) or government's performance (*Government* in the header), on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A10. Parents hypothesis with an alternative cutoff regarding the explanatory variable

FDR adjusted p-value - Parents hypothesis - Economy

I also address the potential multiple comparisons problem using Benjamini and Hochberg's method for adjusting p-values (Benjamini and Hochberg, 1995). The results from the various regressions with uncorrected p-value and FDR-adjusted p-value are available bellow. While the p-value might differ in most cases, only 3 out of 32 estimates with uncorrected p-value (2 with economy as dependent variable, 1 with government, see in red) became insignificant at the conventional level once the p-value were adjusted.

cntry	estimate	stderr	p	min95	max95	qval
AT	-.1113193	.093115	.2319302	-.2938523	.0712137	.2530147
BE	-.1560137	.0574042	.0065843	-.2685393	-.0434882	.0106995
BG	-.014907	.0915096	.870604	-.1943157	.1645016	.870604
CH	-.1505801	.0646489	.0198723	-.277308	-.0238522	.0234854
CY	-.4364206	.1209264	.0003159	-.6735929	-.1992483	.0005054
CZ	-.3240699	.0752802	.0000169	-.4716393	-.1765005	.0000254
DE	-.2118084	.0608951	.0005062	-.3311705	-.0924462	.0005062
DK	-.0863141	.0878455	.325854	-.2585174	.0858893	.325854
EE	-.1748802	.0876293	.0460225	-.3466719	-.0030885	.0460225
ES	-.1212331	.0579899	.0365976	-.2349092	-.0075571	.0432517
FI	-.1466566	.0589865	.0129237	-.2622808	-.0310324	.0140006
FR	-.0517235	.0757443	.4947061	-.200199	.096752	.4947061
GB	-.1565899	.0798722	.0499623	-.313154	-.0000258	.0590464
GR	-.0807594	.0841443	.3372173	-.2457206	.0842017	.3372173
HR	-.0257652	.1435379	.857566	-.3072984	.2557679	.857566
HU	-.3171636	.0851144	.0001963	-.4840228	-.1503045	.0002399
IE	-.2311622	.0639634	.0003032	-.3565448	-.1057797	.0005197
IL	-.0715279	.0723137	.322632	-.2132844	.0702287	.3943279
IS	-.1385375	.1453159	.3405828	-.4236091	.1465341	.4541104
IT	-.1295854	.1183492	.2736781	-.3616904	.1025195	.312775
LT	-.2078697	.1036873	.0450405	-.4111419	-.0045976	.0579092
LU	-.2775093	.1817159	.1269755	-.6340131	.0789944	.1777657
NL	-.1569091	.0586504	.0074774	-.2718754	-.0419429	.0074774
NO	-.1069959	.0700205	.1265312	-.2442519	.0302601	.1370755
PL	-.0507614	.0556254	.3615058	-.1598035	.0582807	.3916313
PT	-.0180595	.0780409	.8170038	-.1710482	.1349292	.8170038
RU	-.1987437	.0906639	.0284069	-.3764735	-.0210138	.0473448
SE	-.2042449	.0707842	.0039172	-.3429969	-.0654929	.0063654
SI	-.3306057	.0604209	4.63e-08	-.4490521	-.2121595	8.61e-08
SK	-.3070724	.0972513	.0016062	-.4977547	-.1163901	.0024094
TR	-.1992526	.1665626	.2317403	-.5259132	.127408	.363919
UA	-.2450123	.0954986	.01034	-.4322497	-.0577748	.016544

Table A11. Estimates of *Cohabitation with parents* per country with corrected p-value - Dependent variable: satisfaction with the economy

FDR adjusted p-value - Parents hypothesis - Government

cntry	estimate	stderr	p	min95	max95	qval
AT	-.1524964	.105679	.1490602	-.3596586	.0546658	.1626111
BE	-.0971533	.0620278	.1173172	-.2187422	.0244355	.1386476
BG	.0670933	.1085051	.5363837	-.1456353	.2798219	.5363837
CH	-.0254825	.0637722	.6894713	-.1504921	.0995271	.6894713
CY	.1848742	.1588309	.2445957	-.1266446	.496393	.3261276
CZ	-.2107377	.0810892	.0093717	-.3696944	-.0517809	.011246
DE	-.0772802	.0593029	.192547	-.1935215	.0389612	.192547
DK	-.1938351	.0967227	.0451048	-.3834404	-.0042298	.0676573
EE	-.1955729	.0907133	.0311359	-.3734111	-.0177347	.0400319
ES	-.04042	.0680075	.5522981	-.1737336	.0928935	.5522981
FI	-.0651438	.0658344	.3224358	-.1941912	.0639036	.3224358
FR	.0446724	.0825068	.5882176	-.1170591	.206404	.6416919
GB	-.158401	.0853004	.0633413	-.3256053	.0088033	.0823436
GR	.0190789	.094232	.8395604	-.1656596	.2038173	.8395604
HR	-.2760679	.1523156	.0700945	-.5748198	.0226839	.1635538
HU	-.2431409	.1011706	.0162834	-.4414774	-.0448044	.0199019
IE	-.2519699	.0734482	.000605	-.395945	-.1079948	.0010371
IL	.0267227	.0779328	.7316886	-.1260493	.1794948	.7316886
IS	-.0390323	.1683794	.816721	-.3693575	.2912929	.8261852
IT	-.1472056	.1272427	.2474601	-.396752	.1023409	.2474601
LT	-.1894035	.1095858	.0839858	-.4042396	.0254327	.0839858
LU	.0447755	.1700842	.7923983	-.2889133	.3784643	.7923983
NL	-.0660818	.0662274	.3183988	-.1959004	.0637368	.3183988
NO	-.1455557	.0714012	.0415229	-.2855182	-.0055932	.0490725
PL	-.073938	.0609593	.2252051	-.1934363	.0455602	.2439722
PT	-.1171155	.0970775	.2277074	-.3074232	.0731922	.2484081
RU	-.082314	.10055	.4130218	-.2794233	.1147953	.4130218
SE	-.1356942	.0764272	.0758527	-.285508	.0141197	.0821737
SI	-.2046521	.0672217	.0023413	-.3364308	-.0728734	.0039617
SK	-.2761668	.103925	.0079152	-.4799344	-.0723992	.0118728
TR	-.2088589	.1779624	.2406939	-.5578759	.1401581	.3369714
UA	-.1280994	.1005026	.2025387	-.325148	.0689493	.2314728

Table A12. Estimates of *Cohabitation with parents* per country with corrected p-value - Dependent variable: satisfaction with the government

Full table - Parents hypothesis - Control for parental role

	Economy Model 1	Government Model 2	Economy Model 3	Government Model 4
Cohabitation with children (18-34)	**-0.15*** **	**-0.10*** **		
	(0.02)	(0.02)		
Age	0.01***	0.01***	0.01***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.10***	0.07***	0.10***	0.07***
	(0.00)	(0.00)	(0.00)	(0.00)
Unemployed	-0.57***	-0.34***	-0.57***	-0.34***
	(0.04)	(0.04)	(0.04)	(0.04)
Education (in years)	0.02***	0.01***	0.02***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Mother	-0.21***	-0.06***	-0.21***	-0.06***
	(0.02)	(0.02)	(0.02)	(0.02)
Unemployment rate	-0.19***	-0.12***	-0.20***	-0.12***
	(0.02)	(0.02)	(0.02)	(0.02)
Baseline: Ever had children at home but not currently				
Never had children			0.09***	0.09***
			(0.02)	(0.02)
Only under 18			0.10***	0.16***
			(0.02)	(0.02)
Mixed			-0.03	0.04
			(0.03)	(0.03)
Only above 18			**-0.07** **	**-0.01**
			(0.03)	(0.03)
Constant	5.14***	3.62***	5.01***	3.42***
	(0.26)	(0.23)	(0.26)	(0.24)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	204,501	203,464	204,501	203,464
R-squared	0.30	0.14	0.30	0.14

Note: Each column is an OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficients of interest in bold. Baseline category not shown. The dependent variable is the satisfaction with the economy (see *Economy* in the header), on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A13. Parents hypothesis when controlling for parental role

Full table - Parents hypothesis - Interaction with gender

	Economy Model 1	Government Model 2	Economy Model 3	Government Model 4
Cohabitation				
Between 18-34	-0.14***	-0.09***		
	(0.02)	(0.02)		
Mother	-0.21***	-0.06**	-0.17***	-0.03
	(0.02)	(0.02)	(0.03)	(0.02)
Between 18-34 × Mother	**-0.02**	**-0.02**		
	(0.03)	(0.03)		
Age	0.01***	0.01***	0.01***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.10***	0.07***	0.10***	0.07***
	(0.00)	(0.00)	(0.00)	(0.00)
Unemployed	-0.57***	-0.34***	-0.57***	-0.34***
	(0.04)	(0.04)	(0.04)	(0.04)
Education (in years)	0.02***	0.01***	0.02***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Unemployment rate	-0.19***	-0.12***	-0.20***	-0.12***
	(0.02)	(0.02)	(0.02)	(0.02)
Baseline: Ever had children at home but not currently				
Never had children			0.10***	0.10***
			(0.03)	(0.03)
Only under 18			0.16***	0.20***
			(0.02)	(0.03)
Mixed			0.05	0.08*
			(0.04)	(0.04)
Only above 18			-0.06+	0.00
			(0.03)	(0.03)
Never had children × Mother			-0.02	-0.01
			(0.04)	(0.04)
Only under 18 × Mother			-0.11***	-0.08**
			(0.02)	(0.03)
Mixed × Mother			-0.16***	-0.09+
			(0.04)	(0.05)
Only above 18 × Mother			**-0.02**	**-0.03**
			(0.04)	(0.04)
Constant	5.14***	3.62***	4.99***	3.40***
	(0.26)	(0.23)	(0.26)	(0.24)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	204,501	203,464	204,501	203,464
R-squared	0.30	0.14	0.30	0.14

Note: OLS regression. Robust clustered standard errors by country and year in parentheses. Coefficients of interest in bold. The dependent variable is the satisfaction with the economy (see *Economy* in the header) or the government (see *Government* in the header), on a scale running from 0 to 10, where 0 refers to extremely dissatisfied and 10 refers to extremely satisfied. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A14. Parents hypothesis - moderating effect of parental role

Chapter B - Appendix to Article 2

This is the supplementary materials for Article 2, "Rising Housing Prices Fuel Economic Anxiety".

Study 1 - United States - Potential pre-treatment - Full sample

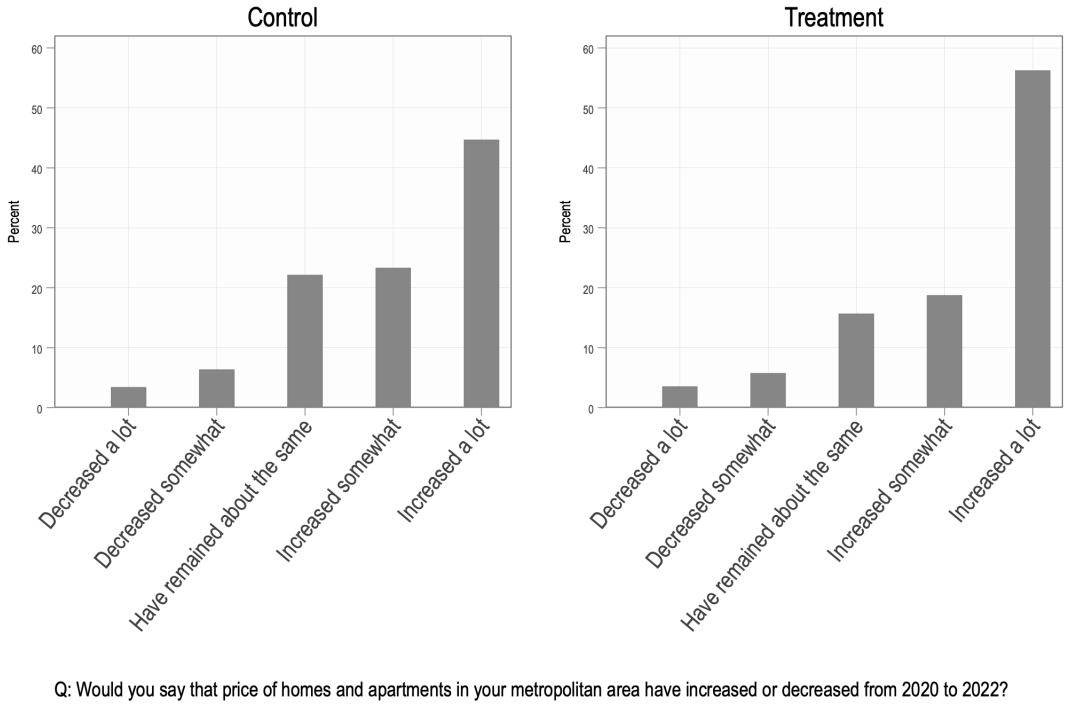


Fig. B1. Study 1 - United States - Knowledge of the trend in housing prices

Note: The data is drawn from the full sample (renters and owners) of Study 1 in the United States. N in control group = 1255 ; N in treatment group = 1440

Study 1 - United States - Balance tests

	Control			Treatment			
	n	mean	sd	n	mean	sd	Diff
Education	1318	2.03	0.97	1516	2.03	1.00	-0.017
Race	1318	1.32	0.65	1516	1.33	0.65	0.004
Housing Situation	1049	0.33	0.47	1229	0.31	0.46	-0.013
Household income	1318	17.85	29.65	1516	15.74	27.58	-1.539

Note: The 'Diff' column is the coefficient of a regression of treatment status on the variable, with robust clustered standard errors at the CBSA level. None is significant.

Table B1. Study 1 - United States - Balance test

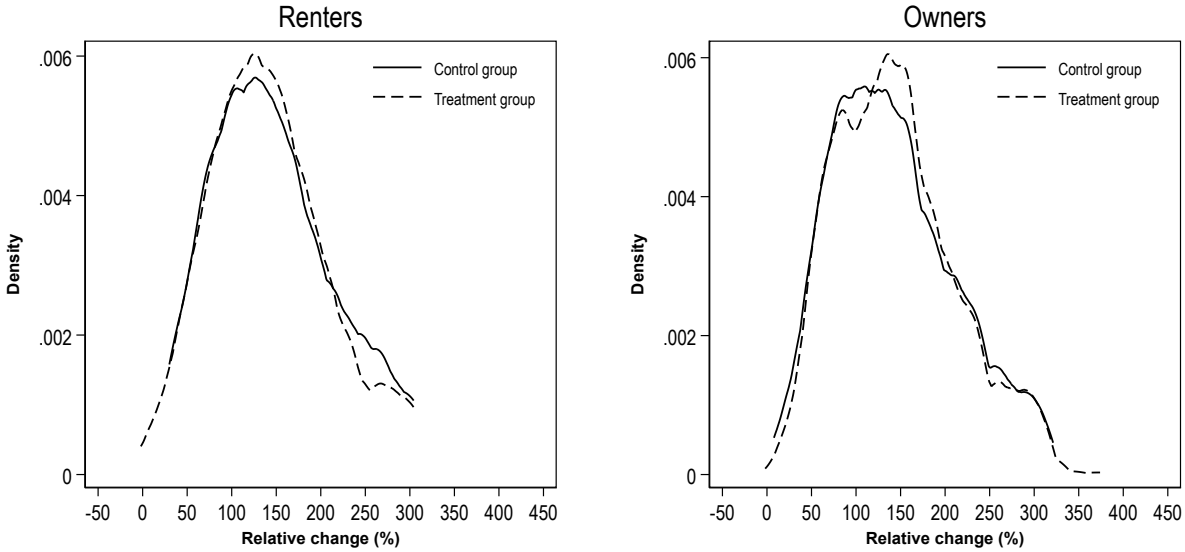
Study 1 - United States - Full tables - Economic status (H1) & Displacement (H3)

	Model 1	**Model 2**	**Model 3**	**Model 4**
Sub-sample	*Renters*	*Owners*	*Renters*	*Owners*
Dependent variable	Status	Status	Displacement	Displacement
Treatment	-0.62**	-0.14	0.63**	-0.16
	(0.19)	(0.12)	(0.23)	(0.14)
Constant	-0.26+	0.26**	4.28***	3.01***
	(0.15)	(0.09)	(0.18)	(0.14)
Observations	474	1,267	474	1,267
R-squared	0.02	0.00	0.01	0.00

Note: Each column is an OLS regression. Robust clustered standard errors by CBSA. In Models 1 and 2 the dependent variable is the perceived economic status compared to neighbors on a scale from -5 to 5. While for Models 3 and 4, the dependent variable is the fear of being displaced running from 0 to 10. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table B2. Study 1 - United States - Full tables for H1 and H3

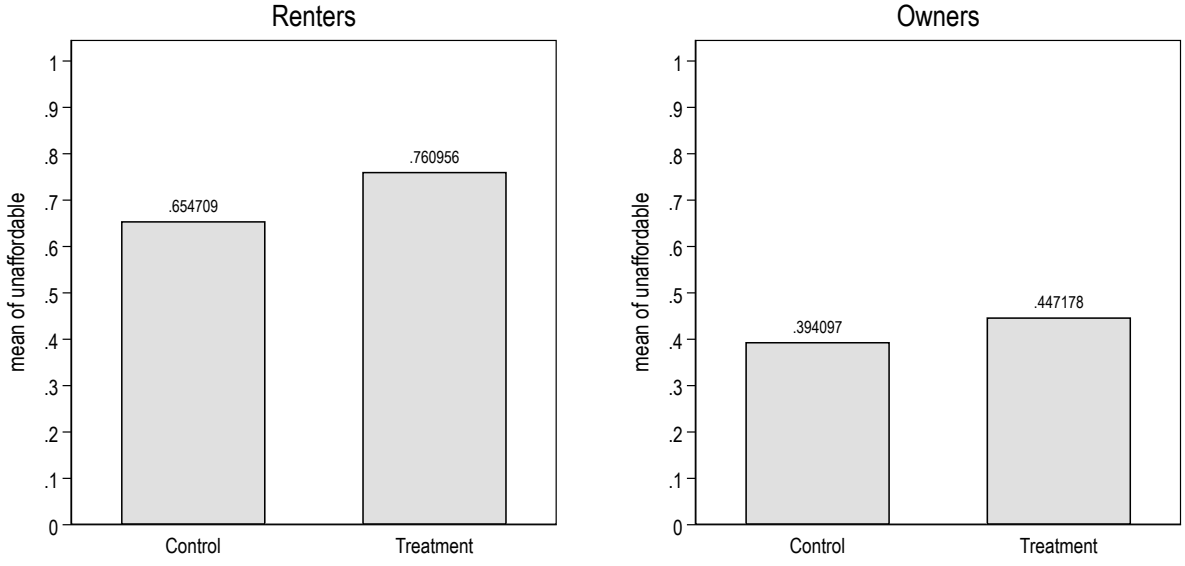
Study 1 - United States - Descriptive statistics of the moderators used in H4 and H5



(a) Owners - Economic status

(b) Owners - Displacement

Fig. B2. Study 1 - United States - Kernel density plot of the relative change in housing prices for renters (a) and owners (b)



(a) Owners - Economic status

(b) Owners - Displacement

Fig. B3. Study 1 - United States - Level of affordability for each experimental condition

Study 1 - United States - Full table - Heterogeneity of the results - Relative change in housing costs (H4)

	Model 1	**Model 2**	**Model 3**	**Model 4**
Sub-sample	*Renters*	*Owners*	*Renters*	*Owners*
Dependent variable	Status	Status	Displacement	Displacement
Treatment	0.055	0.076	0.510	-0.237
	(0.493)	(0.270)	(0.510)	(0.324)
Relative change (%)	0.001	0.002	0.005*	0.005*
	(0.002)	(0.001)	(0.002)	(0.002)
Treatment × Relative change (%)	**-0.005**	**-0.002**	**0.001**	**0.000**
	(0.003)	**(0.002)**	**(0.003)**	**(0.002)**
Constant	-0.394	-0.020	3.571***	2.372***
	(0.385)	(0.197)	(0.388)	(0.323)
Observations	474	1,264	474	1,264
R-squared	0.02	0.00	0.03	0.01

Note: Each column is an OLS regression. Robust clustered standard errors by CBSA. In Models 1 and 2 the dependent variable is the perceived economic status compared to neighbors on a scale from -5 to 5. While for Models 3 and 4, the dependent variable is the fear of being displaced running from 0 to 10. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table B3. Study 1 - United States - Full tables for H4

Study 2 - Montreal - Trends in housing prices in Montreal before, during and after data collection

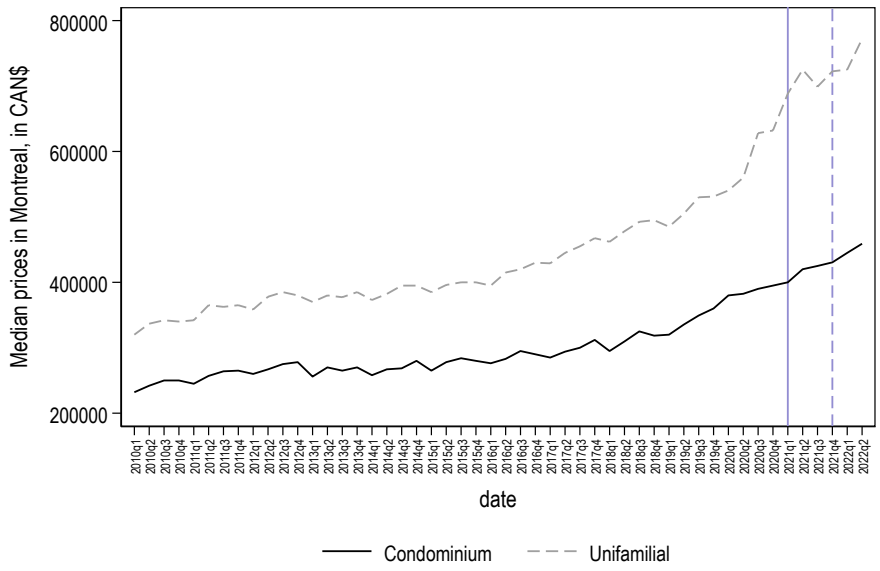


Fig. B4. Montreal Houses Prices (2010-2022)
Note: The solid vertical line refers to data collection of housing prices used for the treatment, while the dotted vertical line refers to the period when the experiment was conducted. Data from APCIQ and Centris.

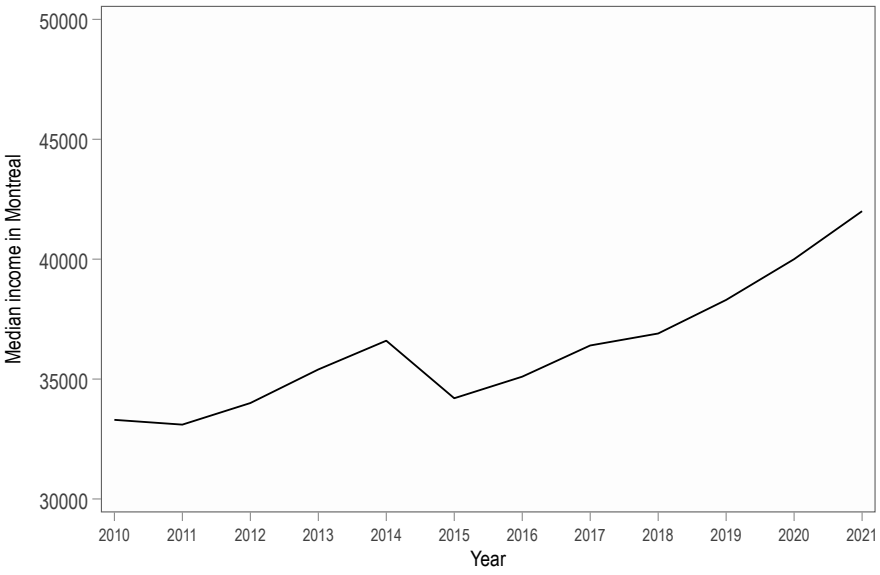


Fig. B5. Median Income in Montreal (excluding zeros) (2010-2021)
Note: Data retrieved from Statistics Canada, Table 11-10-0239-01

Study 2 - Montreal - Average household size (2021)

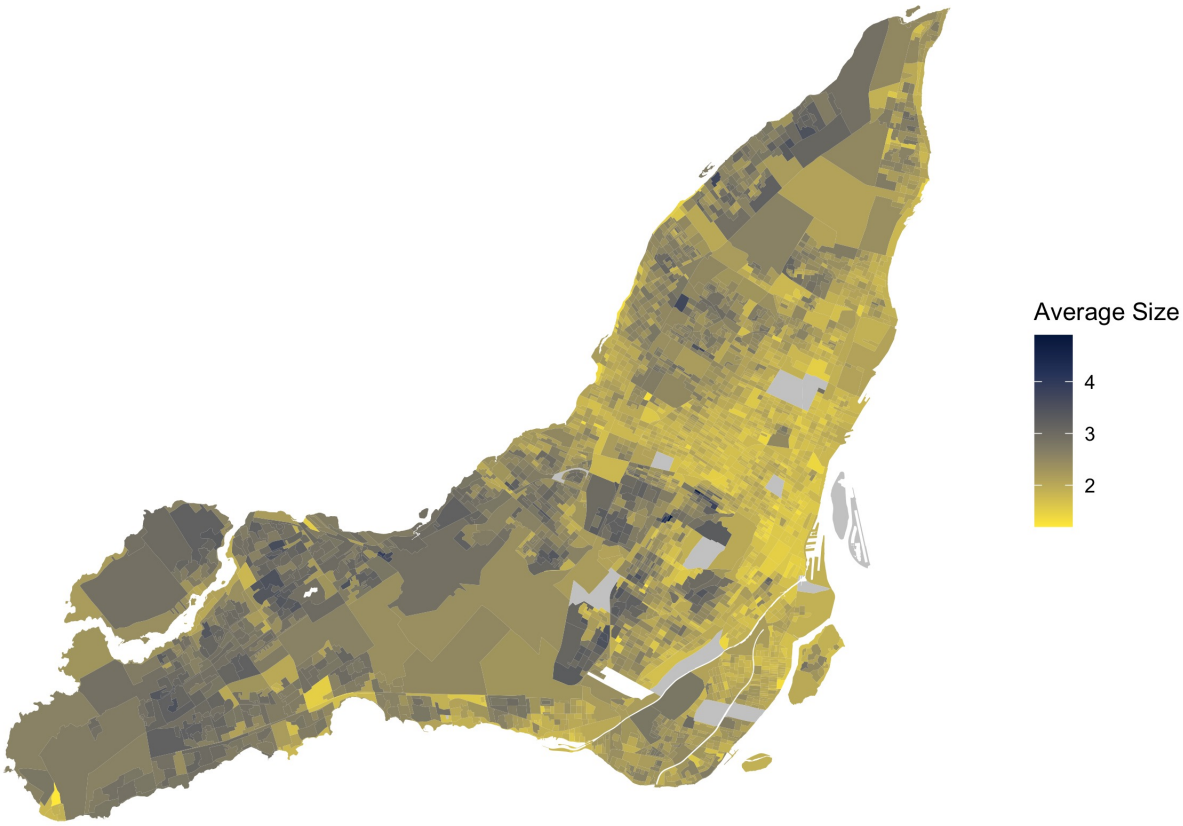


Fig. B6. Average household size in Montreal (Census data from 2021)

Study 2 - Montreal - Balance test

	Control			Treatment			
	n	mean	sd	n	mean	sd	Diff
Age	300	46.70	16.83	297	46.14	16.20	1.203
Income	284	3.60	1.37	278	3.57	1.43	-0.058
Citizenship	300	1.08	0.34	297	1.08	0.34	-0.024
Female	300	0.50	0.50	297	0.52	0.50	0.010
Alone	300	0.20	0.40	297	0.19	0.39	-0.042
French	300	0.70	0.46	297	0.74	0.44	0.025

Note: The 'Diff' column is the coefficient of a regression of treatment status on the variable, with robust standard errors. None is significant.

Table B4. Study 2 - Montreal - Balance test

Study 2 - Montreal - Full tables - Economic status (H1) & Mobility (H2)

	Model 1	**Model 2**	**Model 3**	**Model 4**
Sub-sample	*Full*	*Non-movers only*	*Full*	*Non-movers only*
Dependent variable	Status	Status	Mobility	Mobility
Treatment	-0.78***	-0.76***	-0.54*	-0.52*
	(0.19)	(0.21)	(0.23)	(0.26)
Constant	0.48***	0.53***	4.39***	4.44***
	(0.14)	(0.14)	(0.16)	(0.18)
Observations	596	465	594	463
R-squared	0.03	0.03	0.01	0.01

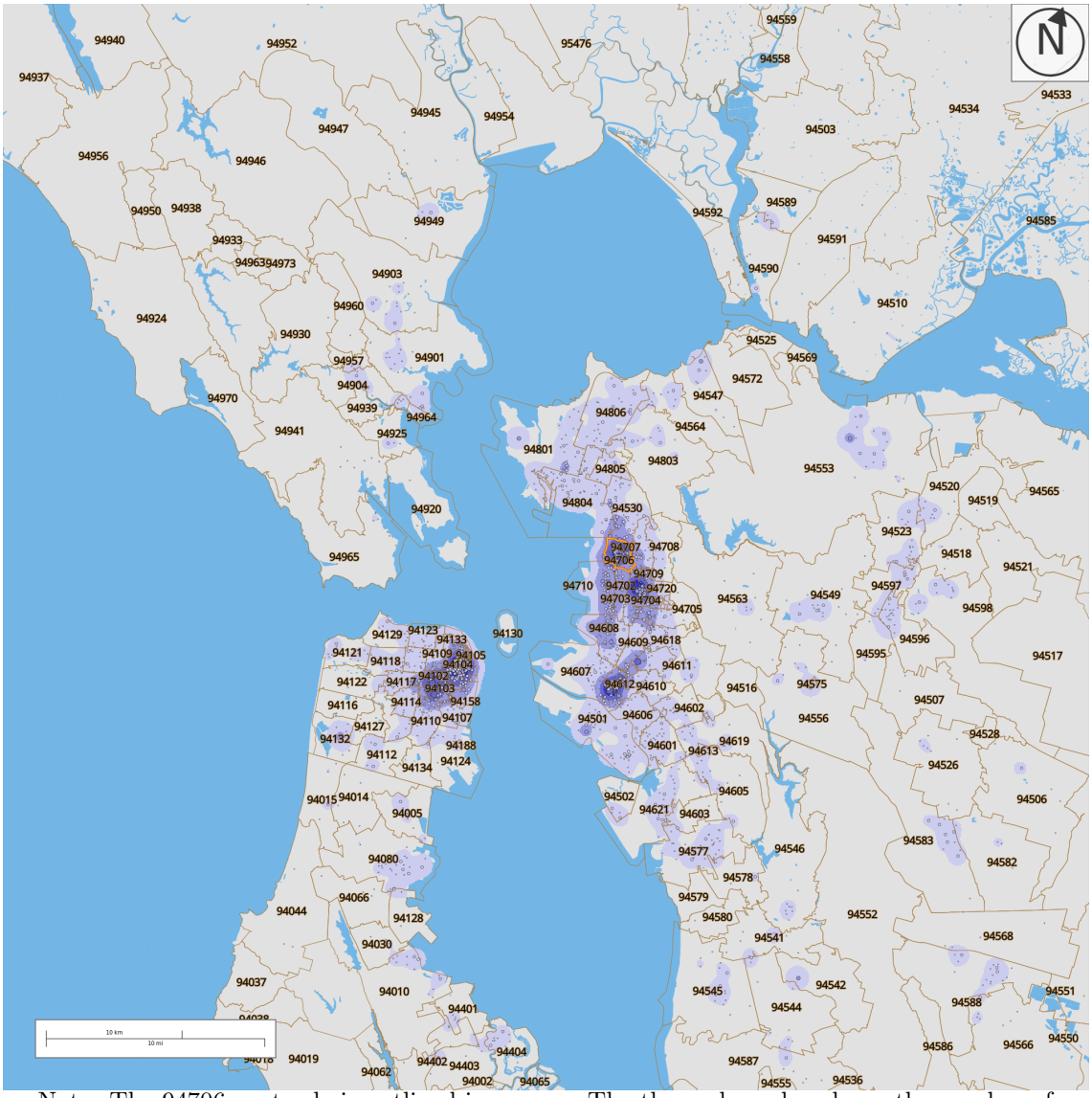
Note: Each column is an OLS regression. Robust standard errors. In Models 1 and 2 the dependent variable is the perceived economic status compared to neighbours on a scale from -5 to 5. While for Models 3 and 4, the dependent variable is the financial capacity to move running from 0 to 10. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table B5. Study 2 - Montreal - Full tables for H1 and H2

Chapter C - Appendix to Article 3

This is the supplementary materials for Article 3, "Economic Perception in Motion: The Role of Commuting from Home to Work".

Distance and Direction for all jobs in 2020 near Berkeley



Note: The 94706 postcode is outlined in orange. The thermal overlay shows the number of jobs per square mile. The darker the colour, the more jobs. Data and Map were obtained from the US Census using https://onthemap.ces.census.gov.

Fig. C1. Distance and Direction for all jobs in 2020 near Berkeley, CA

Distribution of dependent variable per year

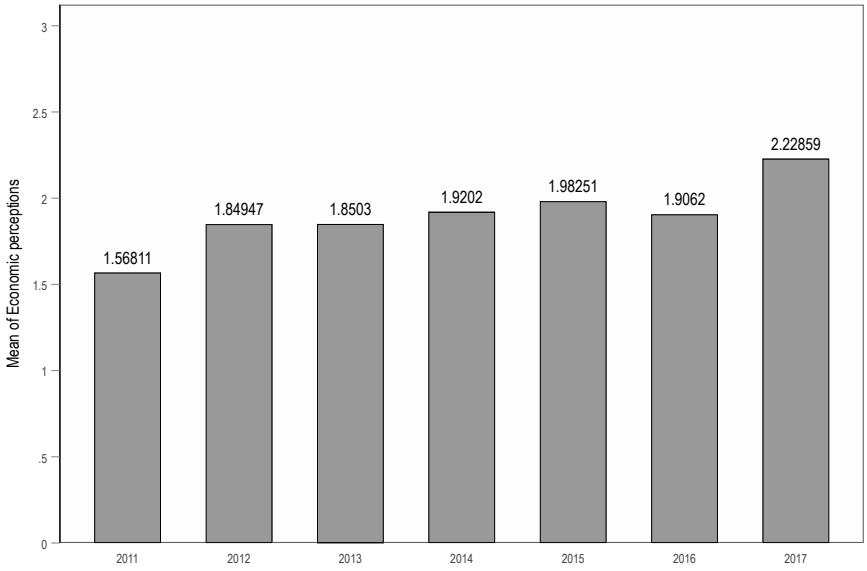


Fig. C2. Mean perception of the national economy by year - Data from CCES

Robustness check - Results for analyses at the individual level

Dependent variable	Model 1 Economy	Model 2 Economy	Model 3 Economy	Model 4 Economy	Model 5 Economy	Model 6 Economy
Unemployment (%, Home)	-0.025*** (0.001)	-0.010*** (0.002)		-0.014*** (0.001)	-0.010*** (0.001)	
Unemployment (%, Work)		-0.020*** (0.002)			-0.011*** (0.003)	
Unemployment (%, Home-Work)			-0.031*** (0.001)			-0.025*** (0.002)
Incumbent partisans				0.364*** (0.005)	0.364*** (0.005)	0.364*** (0.005)
Opposition				-0.089*** (0.005)	-0.089*** (0.005)	-0.089*** (0.005)
Unemployed				-0.197*** (0.007)	-0.197*** (0.007)	-0.197*** (0.007)
Age				-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)
White				-0.118*** (0.005)	-0.117*** (0.005)	-0.116*** (0.005)
Median Age				-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Population size				0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Median Year moved				0.008*** (0.001)	0.008*** (0.001)	0.009*** (0.001)
Median House Value				0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
% White				-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)
% Owners				-0.003*** (0.000)	-0.003*** (0.000)	-0.002*** (0.000)
Constant	2.076*** (0.005)	2.097*** (0.005)	2.099*** (0.005)	-13.442*** (2.624)	-14.411*** (2.635)	-15.736*** (2.614)
Year FE				✓	✓	✓
DMA FE				✓	✓	✓
Observations	234,267	233,148	234,267	212,812	211,786	212,812
R-squared	0.01	0.01	0.01	0.13	0.13	0.13

Table C1. Results for H1-H3 at the individual level