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Housing Prices and Government Approval: The Impact of Housing Booms on Left- and Right-Wing Governments in 16 Advanced Industrialized Countries

Sung Min Han  and Mi Jeong Shin*

School of Public Economics and Administration, Shanghai University of Finance and Economics, 111
Wuchuan Road, Shanghai, China

*Corresponding author. Email: mjshin0815@gmail.com

Abstract

In this article, we argue that rising housing prices increase voter approval of incumbent governments because such a rise increases personal wealth, which leads to greater voter satisfaction. This effect is strongest under right-wing governments because those who benefit from rising prices—homeowners—are more likely to be right-leaning. Non-homeowners, who are more likely to vote for left-leaning parties, will view rising housing prices as a disadvantage and therefore feel the government does not serve them well, which will mitigate the advantage to left-wing governments. We find support for our arguments using both macro-level data (housing prices and government approval ratings in 16 industrialized countries between 1960 and 2017) and micro-level data (housing prices and individuals' vote choices in the United Kingdom using the British Household Panel Survey). The findings imply that housing booms benefit incumbent governments generally and right-wing ones in particular.

Résumé

Cet article soutient que la hausse des prix du logement augmente la cote d'approbation du gouvernement parce qu'elle accroît le patrimoine personnel, amenant à une plus grande satisfaction des électeurs. Cet effet est plus prononcé sous des gouvernements conservateurs parce que ceux qui bénéficient de la hausse des prix - les propriétaires - se situent plus à droite de l'échiquier politique. Les non-propriétaires - qui sont plus susceptibles de voter pour des partis de gauche - considéreront la hausse des prix de l'immobilier comme un désagrément desservant mal leur cause, ce qui atténuera l'avantage des gouvernements de gauche. Notre argumentation s'appuie autant sur des macrodonnées (prix des logements et cote d'approbation du gouvernement dans 16 pays industrialisés entre 1960 et 2017) que des microdonnées (prix des logements et choix électoraux individuels au Royaume-Uni, d'après la British Household Panel Survey). Les résultats tendent à confirmer que les booms immobiliers profitent aux gouvernements en fonction en général et à ceux de droite en particulier.

Keywords: housing prices; government approval; government partisanship; cross-country analysis; time-series analysis

Mots-clés: prix du logement; cote d'approbation du gouvernement; partisanerie gouvernementale; analyse transnationale et analyse des séries chronologiques

1. Introduction

Homeownership and the housing market have recently received considerable scholarly attention across disciplines. Economists have examined how housing markets affect a wide range of issues, including consumption, investment, economic growth and development (Davis and Heathcote, 2005; Hirayama, 2003; Wasco, 2002). In political science and related fields, scholars have assessed how international and domestic factors affect changing housing prices (Johnston and Regan, 2017; Schwartz and Seabrooke, 2008). Others have explored how homeownership influences social policy preferences and welfare policy outcomes (Ansell, 2014; Conley and Gifford, 2006; Doling and Ronald, 2010; Lowe et al., 2012; Schwartz and Seabrooke, 2008; Watson, 2009).

While many economists and social policy scholars have examined the effects of housing on economic and welfare policy outcomes, political scientists have focused more on the role of asset ownership in voting behaviour, which is called “patrimonial economic voting” in the broad context of economic voting literature (Adler and Ansell, 2020; Hellwig and McAllister, 2019; Larsen et al., 2019; Lewis-Beck and Nadeau, 2011; Lewis-Beck et al., 2013; Persson and Martinson, 2018). However, by focusing on individual country cases, existing research has resulted in inconclusive findings. While one study found that housing, as a low-risk asset, had no impact on voting behaviour in the United Kingdom (UK) (Lewis-Beck et al., 2013), other studies found that housing affected voters’ assessment of incumbent performance in Denmark (Larsen et al., 2019), vote choice in Sweden (Persson and Martinson, 2018) and party choice in the UK and France (Adler and Ansell, 2020). Thus, questions remain about whether housing plays a central role in voting behaviour across countries and over time.

Building on recent developments in the economic voting literature that explore the effect of homeownership on voting behaviour (Adler and Ansell, 2020; Larsen et al., 2019; Lewis-Beck et al., 2013; Persson and Martinson, 2018), we theorize and empirically investigate how a change in housing prices influences government popularity in advanced industrialized countries over time. Drawing upon existing research showing that housing has important political implications, we propose two related hypotheses about the effects of housing prices on government approval. First, a rise in housing prices leads to an increase in government popularity because it generates asset growth for homeowners, who make up a majority of the population in the 16 industrialized countries studied. Second, we assert that this effect is likely to be stronger when right-wing parties hold office. Homeowners are more likely to support right-wing parties and voters are more likely to give credit to right-wing parties for this asset growth because they believe they are good stewards of the economy. By contrast, left-wing supporters are more likely to be non-homeowners who do not get direct benefits from an increase in housing prices. This article evaluates these arguments using macro- and micro-level data. The

macro-level data, which comprises comparable measures of housing prices and government approval ratings in 16 industrialized countries between 1960 and 2017, allow us to explore whether the effect of housing price changes on incumbent support holds across countries over time. The micro-level analysis, using the British Household Panel Survey (BHPS), clarifies how individual political choices are affected by both the rise and fall of housing prices. We find support for both hypotheses.

The article is organized as follows: section 2 reviews relevant research on government popularity, section 3 presents our arguments, section 4 describes our data and methods, section 5 discusses the empirical results and robustness checks, and the final section discusses the implications of the findings.

2. Economic Voting, Housing Prices and Government Popularity

Studies have long noted that voters reward or punish incumbent governments in elections based on the government's economic performance (Ashworth, 2012; Duch and Stevenson, 2008; Healy and Malhotra, 2013; Hibbs, 1982; Lewis-Beck and Stegmaier, 2000). Voters assess the state of the national economy and their own financial situation both retrospectively and prospectively, relying on either objective performance indicators—such as inflation, unemployment, stock market price and per capita income—or subjective perceptions of personal and national conditions (Fauvelle-Aymar and Stegmaier, 2013; Lewis-Beck and Stegmaier, 2000; Stiers and Dassonneville, 2020).

However, a growing number of scholars in the economic voting literature have shifted their focus to the role of asset ownership (Foucault et al., 2013; Lewis-Beck and Nadeau, 2011). This strand of research on patrimonial economic voting has demonstrated that asset ownership—particularly the type of asset, whether high-risk or low-risk—influences voting behaviour (Lewis-Beck and Nadeau, 2011; Nadeau et al., 2010). These studies find that people who own high-risk assets (for example, shares of stock or an investment property) tend to support right-wing parties, while those who possess low-risk assets (for example, a house or a bank savings account) do not. Persson and Martinsson (2018) go further, asserting that while the type and number of assets people own still matter in vote choices, the value of assets is more important in determining voting behaviour. They find that in Sweden, the values of shares and real estate have an impact on vote choice, while the values of other assets, such as bonds and funds, have little or no impact on vote choice. Thus, these studies demonstrate that the type and value of assets matter in economic voting.

Additional recent research on patrimonial economic voting has placed more emphasis on the role of housing, in particular (Adler and Ansell, 2020; Larsen et al., 2019). These studies show that a change in housing prices is an essential key to assessing local economic conditions, given that it is highly visible: voters frequently see For Sale signs and gather information through conversations with neighbours about selling prices (Larsen et al., 2019). Housing prices make it possible for residents in a local area to experience changes in wealth and a growing ability to borrow and spend. Moreover, increased spending stemming from rising housing prices can also benefit non-homeowners if it leads to higher local employment, better business environments and more tax revenues (Larsen et al., 2019;

Miller et al., 2011).¹ Indeed, the existing research shows that voters can use changes in housing prices in their assessment of incumbent government (Larsen et al., 2019) and party choices (Adler and Ansell, 2020). Thus, housing price changes can affect voting behaviour more directly than other economic indicators: they can not only directly increase or decrease personal wealth but also signal the state of regional economic conditions.

Despite the growing research on the role of housing on voting behaviour, the impact of housing prices still remains inconclusive empirically, since existing studies have been conducted on individual country cases. We fill this gap by expanding the scope of research to 16 advanced industrial countries over five decades. Specifically, we explore how changing housing prices affects government popularity, as one dimension of economic voting, across countries over time and beyond individual country cases. Since housing price changes capture regional and personal economic well-being directly and objectively, we incorporate these new insights from the political economy literature on homeownership and housing price into the study of government popularity literature. Our study complements the current literature on voters' assessments of governments' economic performance by focusing on how voters, both homeowners and non-homeowners, respond to fluctuating housing prices. Compared to other economic indicators such as inflation, stock market price, unemployment and per capita income, changes in housing prices have been overlooked in the government popularity literature, even though they may affect personal finance more directly. Larsen et al.'s (2019) work is a notable exception. However, it has limited scope since it is focused only on housing price changes in Denmark. Our study expands on that work by exploring a dataset on housing prices in 16 advanced industrial countries. Furthermore, we distinguish our study from previous works by considering how changing housing prices shape voters' evaluations of government performance across different political contexts, whether the ideological orientation of the ruling party is left, centre or right. We incorporate the political economy literature, as Larsen et al.'s (2019) study did, but we go further to offer a more complete understanding of the voter/government popularity linkage by making cross-national comparisons and considering political alignment.

3. Argument

We argue that rising housing prices increase government popularity because they bring about growth in personal wealth and signal to voters that their personal finances are in good shape. We also maintain that this effect is stronger under right-wing incumbents. The logic is straightforward: rising home prices benefit homeowners, who are among the supporters of right-wing parties; by contrast, non-homeowners (who often vote for left-leaning parties) may find it more difficult to buy a home due to rising housing prices and are therefore less likely to reward their own party for a housing boom.

Changes in housing prices and government popularity

We first argue that a surge in housing prices increases support for the incumbent government. Voters with rising home values amass dormant income, which leads

them to greater approval of the government. The extensive literature linking homeownership to the asset-based welfare state demonstrates that an increase in housing prices augments capital for households and economies (Ansell, 2014; Conley and Gifford, 2006; Doling and Ronald, 2010; Lowe et al., 2012; Schwartz and Seabrooke, 2008; Watson, 2009).² In many countries, particularly those with high homeownership rates, the greatest portion of individual assets resides in housing (Ansell, 2014). Housing can compensate for stagnating incomes in hard times and serve as a safety net because it allows households to borrow more (Trumbull, 2012). Thus, housing prices play a key economic role and can influence individuals' policy preference formation and thereby affect government support.

Previous studies have shown that homeownership can shape individuals' policy preference formation (Ansell, 2014; Ansell et al., 2018; Scheve and Slaughter, 2001). For example, Scheve and Slaughter (2001) find that homeownership predicts trade policy preferences; people who own homes in areas dominated by competitive industries support free trade policy because they expect it will increase the value of their homes. Ansell (2014) argues that homeowners are less likely to support increases in welfare spending because they see their homes as a potential source of future income and therefore as a better hedge against hard times. Similarly, the economic voting literature identifies pocketbook voting behaviour, according to which voters reward incumbents in elections if their personal economic condition improves.³ Thus, rising house prices can affect homeowners' financial well-being and are likely to increase support for the incumbent government.

Of course, this logic may not apply to non-homeowners, who are likely to be damaged economically when housing prices increase. However, in many developed countries, non-homeowners are a small minority. Kohl (2018) also points out that centre-left parties tend to embrace the growing number of homeowners as their constituency. For example, the social-democratic electorate accounted for 49 per cent of homeowners (mortgage-free plus mortgaged) in Germany, 43 per cent in Austria and 29 per cent in Switzerland, and the Democrats' electorate consisted of 65 per cent homeowners in the United States, according to the International Social Survey Programme (ISSP) 2009 survey (Kohl, 2018: 4–5). This suggests that a majority of the population generally benefits from rising housing prices, resulting in a higher government approval rating. Hence, our discussion leads to the following hypothesis:

Hypothesis 1: A rise in housing prices will lead to an increase in government approval ratings.

Housing prices, political parties and government popularity

We further assert that rising housing prices are more likely to benefit right-wing parties and have no (or even a negative) effect on left-wing parties. Governments with different political ideologies produce different economic policy outcomes (Alesina et al., 1997; Franzese, 2002). For example, left-wing parties focus more on unemployment issues than do right-wing parties because their core constituents would benefit more from full employment than from low inflation. Voters expect the Left to perform well in employment and redistribution, while they expect the Right to manage inflation well (Hibbs, 1982).

Voters evaluate governments' economic performance in part based on the logic of the partisan effects in the macro economy (Hibbs, 1982; Marsh and Tilley, 2010; Powell and Whitten, 1993; Rudolph, 2006; Tilley and Hobolt, 2011). Some left-wing voters in advanced industrialized countries are likely to be non-homeowners, and the majority of homeowners are likely to be right-wing voters (Ansell, 2014; Kingston et al., 1984; Verberg, 2000),⁴ although the relationship between homeownership and party affiliations is often not clear.⁵ Relatedly, right-wing parties are seen as representing the interests of homeowners (Ansell, 2014; Kingston et al., 1984; Verberg, 2000), who personally benefit from rising house prices. Voters are therefore more likely to attribute a housing boom to right-wing policies than to left-wing policies. They expect right-wing parties to implement policies to benefit homeowners, and they therefore reward right-wing governments for rising housing prices. By contrast, left-wing parties promote homeownership. Even though this can increase housing prices, it favours the expansion of affordable housing, which benefits from lower or stagnant home prices (see Ansell, 2014). Left-leaning parties recognize that their core supporters—non-homeowners—might tend to punish increases in housing prices. This explains, for example, Gay's (2017) finding that in US states where the governor controls the Low-Income Housing Tax Credit, Democrats are more likely to provide low-income housing tax credits promoting affordable housing. Increasing housing prices can generate outcomes that erode support for left-wing parties, and voters may consider a housing boom to be a signal of underperformance by a left-wing government.

Yet growing homeownership rates in advanced industrial countries complicate the reward and punishment mechanism for evaluating the performance of left-leaning parties in the context of a boom in housing prices. The increasing homeownership rate generates a broad constituency in favour of an increase in housing prices, which can prompt left-leaning parties to seek to appeal to the interests of homeowners. This may explain why a recent study (Kohl, 2018) shows that centre-left parties vacillate between pro-homeownership and pro-rental positions; the same study also shows that centre-left parties are more supportive of homeownership in countries with higher homeownership rates. Nonetheless, the conflict between policies that promote homeownership and the ability of an expansion of affordable housing to dampen rising housing prices makes voters less likely to reward left-wing governments for rising housing prices.⁶

In summary, housing prices tend to have the strongest effect on government approval when right-wing parties are in power. The majority of homeowners align with right-wing parties, who benefit from rising house prices, and therefore the public attributes housing price increases to right-wing policies. By contrast, the Left is more likely to represent non-homeowners, who are disadvantaged by increasing house prices, and to promote the expansion of affordable housing, which tends to lower house prices. Therefore, voters give left-wing governments less credit for housing price increases. We therefore develop a second hypothesis:

Hypothesis 2: A rise in housing prices is likely to have a stronger impact on government support under right-wing incumbents.

4. Research Design

Macro-level data

The macro-level data pertain to the quarterly data in 16 countries that were members of the Organisation for Economic Co-operation and Development (OECD) between 1960 and 2017.⁷ To test the relationship between housing prices, government partisanship and government popularity, we use three datasets: the first is quarterly data on housing prices from the OECD; the second is government partisanship data from the Comparative Political Data Set (CPDS) and its supplement (Armingeon et al., 2017); and the third is the Executive Approval Project, which provides the most comprehensive cross-national measures of government popularity.⁸ The unit of analysis is country-quarter.

Dependent variable: Executive approval

We use executive approval as our measure of government support, which follows the majority of previous studies that have examined how voters evaluate governments (Bellucci and Lewis-Beck, 2011; Carlin et al., 2015; Clarke et al., 2000; Erikson et al., 2002; Hibbs, 1982; MacKuen et al., 1992). We consider executive approval to be a better measure than incumbent vote shares for the purpose of our study. Given that housing prices frequently change in a short period of time, voters would respond promptly to varying housing prices. Changes in vote shares are only measured at election time and therefore may be a poor reflection of the impact of fluctuations in the housing market on voters' evaluations. Figure 1, which displays government popularity in the 16 countries in the sample, shows that voters frequently update their evaluations of the government within a short period of time. Governments can also modify their policies in response to changes in public opinion, as US presidents do in response to their approval ratings (Canes-Wrone and De Marchi, 2002). The dynamic of government popularity measured in a short period of time thus provides a better measure than voting fluctuations for our purposes.

As Carlin et al. (2015) described in detail, the main challenge associated with measuring government popularity is how to combine different types of data with different question wording, sample size and varying time series across different countries. Erikson et al. (2002) overcome this difficulty by using dyadic ratios of different survey estimates to combine these estimates.⁹ Using their strategy, Carlin et al. (2019) create a quarterly time-series dataset of executive approval ratings in OECD countries. We use a similar approach to combine positive evaluations of government performance from multiple surveys.¹⁰ In our data, the popularity of chief executives ranges between 11.47 (Greece, third quarter of 2016) and 77.6 (Germany, third quarter of 2007) and fluctuates over time in all 16 OECD countries (see Figure 1).¹¹

Independent variables: Housing price and government partisanship

To measure changes in housing prices, we use quarterly time-series data from the OECD Economic Outlook's standardized real house price index, which reports

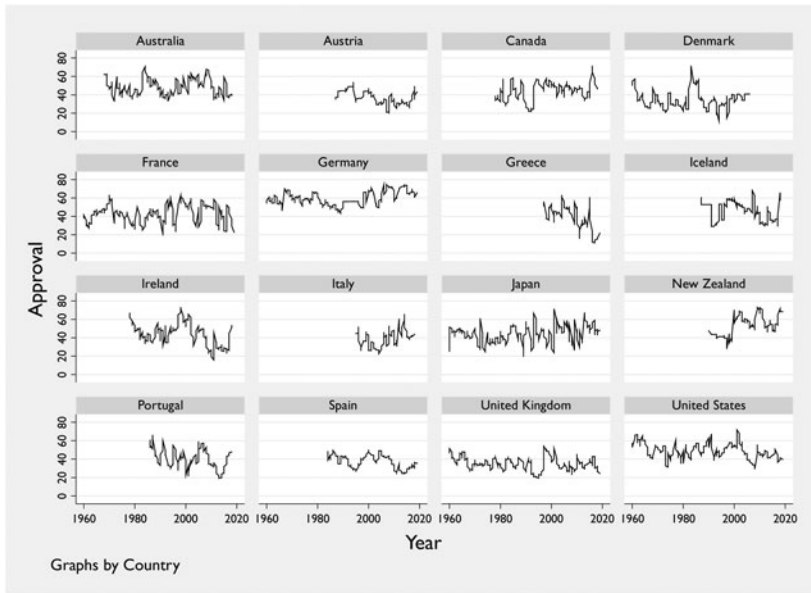


Figure 1 Time Trends in Executive Approval

nominal house prices seasonally adjusted to consumers' expenditure deflator in each country.¹² This index shows how housing prices changed relative to other prices in the economy of a given country. We use change in housing prices in the empirical analysis since we are interested in how updated information on housing price changes affects government popularity.¹³

For government partisanship, we use the percentage of cabinet portfolios of right-leaning parties from the CPDS data (Armingeon et al., 2017). This is a widely used measure of government partisanship in the literature. Since the CPDS data only provide an annual measure of cabinet posts, we manually coded the quarterly time series of those percentages using the supplement of the CPDS. If there was a change in government or a coalition reshuffle in a given quarter, we calculated the weighted proportion of cabinet portfolios based on the number of days in which right-wing parties controlled the government. This measure ranges from 0 (non-right-wing parties wholly controlled the cabinet) to 100 (right-wing parties had total control). To test the robustness, we reanalyze our estimation using different measures of government partisanship, and our results remain the same.

Control variables

We control for a number of variables that may affect government popularity. If changing housing prices are strongly linked to other economic factors, voters may not base their evaluation of government performance on housing prices, for which they may not hold the government responsible. Thus we include quarterly inflation, unemployment rate and gross domestic product (GDP) growth rate from the OECD data. We also check the correlation between these economic

indicators and housing prices. At the maximum, the correlation between housing prices and the unemployment rate is around -0.3 . This shows that housing price is not a mere proxy for these economic variables.¹⁴ Also, trends in housing price changes and consumer price index (online Appendix Figures A7 and A8) clarify that housing price change is distinctive from price changes in other consumer goods.¹⁵ We also include trade openness and net inflow of foreign direct investment (FDI) data from the World Bank, since greater inflows of foreign capital may cause a surge in housing prices in a globalized world (Sa and Wieladek, 2015). If voters know that such inflows play a significant role in increases or decreases in housing prices, they may not credit or hold their governments responsible for fluctuations in housing prices. Since trade openness and FDI inflows are measured annually, we calculate a one-year-lagged value and convert it to the quarterly data format. We also include two institutional variables related to clarity of responsibility: majority status (2: single-party majority; 1: coalition majority; 0: minority)¹⁶ of the government and average district magnitude (log) from Bormann and Golder (2013). These institutional structures may generate conditions in which incumbent parties are more likely to be punished for economic outcomes. Following Powell (2000), we include majority status for capturing clarity of responsibility. Average district magnitude (log) is included because it is closely related to the presence of coalition governments, which affects voters' ability to punish/reward incumbent governments. Finally, to control for elevations in government popularity at the beginning of an executive's term, we include the "honeymoon" effect by coding a dummy variable for a quarter following presidential and legislative elections.

Estimation strategy

Our study analyzes the impact of housing prices on executive approval. To check the basic relationship between housing price change and government approval, we create the correlation plot in all governments, left governments and right governments (Figure A4 in the online Appendix). Consistent with our hypotheses, we find the positive correlation between these two variables, and this correlation becomes stronger in right governments. Due to the omitted variable bias and other methodological issues, we use the following estimation strategy. Since a chief executive's current approval rating reflects previous ratings,¹⁷ we include a lagged dependent variable to control for time dependency.¹⁸ Here, we argue that citizens' evaluations of chief executives are likely to reflect both static information about government partisanship and dynamic information about housing prices. Thus we include an interaction term between housing prices and government partisanship ($\Delta Housing Price_{it} * Government Partisanship_{it-1}$) to test how government partisanship conditions the effect of housing price changes on government popularity. We could have interacted the change in partisanship with changing housing prices instead of lagged partisanship. However, our goal is to test how housing prices affect government popularity under different types of governments. Lagged partisanship therefore better captures the ideology of incumbent governments. By contrast, change in partisanship may imply changes in government and a reshuffle of the coalition government in a short period of time, which may not be related to an incumbent government's ideology.

We use country fixed effects to take uncontrolled heterogeneity across countries into account. To control for potential heteroscedasticity and contemporaneous correlation, we use the panel-corrected standard error (Beck and Katz, 1995). We also use the lagged variables in the right-hand-side equation to address endogeneity concerns, simultaneity bias and reverse causality, following the practice of previous empirical studies in political science (Baccini and Urpelainen, 2014; Steinberg and Malhotra, 2014).¹⁹ Finally, we use year fixed effects to control for time trends and time-specific shocks.

5. Empirical Results

Table 1 presents the coefficient estimates of the regression estimator. Models 1 and 2 show the coefficient estimates for the independent variables with and without the interaction term. The empirical results show that an increase in housing prices (Δ *Housing Price*) significantly increases government popularity (Model 1); this result is significant at the 5 per cent level. This confirms hypothesis 1: that housing price increases lead to growth in government popularity.²⁰ On average, a one-unit change in housing price generates about 0.17 percentage point increase in government approval in each quarter. The effect of housing price change is not small, considering that it is calculated while controlling for other confounders. Also, in many cases there is a large change in housing price over a short time (for example, about 20 per cent of our sample exhibited more than two unit changes in housing price), in which case the effect size of housing price would be substantial. This result indicates that citizens generally reward incumbent governments because rising housing prices imply that their personal asset values are likely to increase. Model 2 reports the estimates of the interaction between lagged government partisanship and change in housing prices. Importantly, the coefficient estimate for the interaction term is positive and significant. Given that the baseline estimate for the change in housing prices indicates the effect in non-right-leaning governments, this shows that government partisanship significantly moderates the relationship between change in housing prices and government popularity. To clarify the moderating effect of government partisanship, Figure 2 illustrates how varying types of government partisanship change the coefficient estimate for housing prices (Brambor et al., 2006). The figure shows the marginal effect of a change in housing prices at different levels of government partisanship. As expected, an increase in housing prices positively affects government popularity only under right-wing governments. If right-wing parties monopolize cabinet ministries, a one-unit increase in housing prices generates about 0.4 percentage point increase in government approval. This effect is more than twice the estimated effect of housing price in Model 1. Once again, this effect is not small, given that it is calculated controlling for other economic and country-specific factors. Under non-rightwing governments, in which right-leaning parties occupy less than 50 per cent of cabinet ministries, however, an increase in housing prices does not increase support for the government.

We argue that this mixed result is mainly driven by the fact that supporters of left-leaning parties include both homeowners and non-homeowners. Given that constituents of left-leaning parties also include homeowners, these parties need

Table 1 Housing Prices, Government Partisanship and Executive Approval

	Model 1	Model 2
Lagged approval	0.802*** (0.016)	0.799*** (0.016)
Change in housing prices	0.177** (0.082)	0.014 (0.101)
Lagged partisanship	0.004 (0.003)	0.003 (0.003)
Change in housing prices × Lagged partisanship		0.004** (0.002)
Majority status	0.231 (0.239)	0.234 (0.239)
District magnitude (log)	0.677*** (0.233)	0.719*** (0.235)
Lagged unemployment	-0.056 (0.056)	-0.066 (0.056)
Lagged inflation rate	0.165* (0.084)	0.157* (0.084)
Lagged GDP growth	0.287** (0.119)	0.295** (0.118)
Lagged FDI inflow	-0.076** (0.031)	-0.076** (0.031)
Lagged trade	0.006 (0.017)	0.009 (0.017)
Honeymoon	2.424*** (0.466)	2.395*** (0.465)
Constant	7.562*** (2.063)	7.867*** (2.064)
Observations	1,623	1,623
Number of countries	16	16
R-squared	0.835	0.835

Note: Panel-corrected standard errors in parentheses. The dependent variable is the change in executive approval. Coefficients for country and year dummies are not reported.

*** $p < .01$; ** $p < .05$; * $p < .1$

to mobilize support from homeowners by encouraging housing prices to rise. However, the presence of non-homeowners offsets the positive effects of rising housing prices on the support for left-leaning parties. Regarding other control variables, economic growth rate seems to have a positive effect on government popularity. Growing net FDI inflows have a negative effect on government popularity. This implies that, on average, citizens dislike government policy that leads to greater inflows of foreign capital. Countries with greater proportionality in their electoral systems tend to enjoy higher approval ratings. This may be because proportional systems are better at addressing electoral losers' discontent (Anderson and Guillory, 1997). The coefficient for the honeymoon effect is positive and significant, indicating that new governments tend to enjoy a honeymoon in the beginning of their term, which is consistent with findings from other studies (Carlin and Hellwig, 2019; Fauvelle-Aymar and Stegmaier, 2013).

The micro-mechanism of housing price and vote changes

Even though macro-level results show that housing prices have a greater impact on the popularity of right-leaning incumbents, they do not show a micro-mechanism

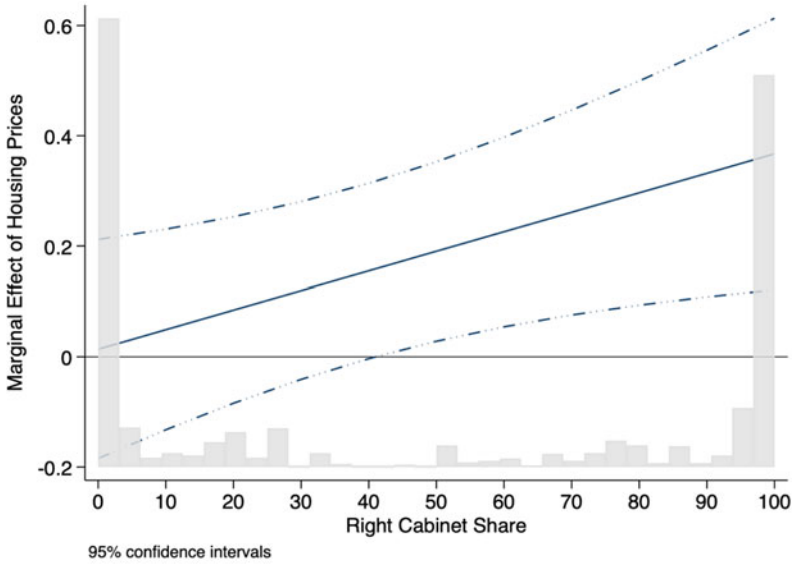


Figure 2 Housing Prices, Government Partisanship and Government Popularity

Note: The y-axis shows the marginal effect of the change in housing prices. The x-axis shows government partisanship. The solid line is the marginal effect line, and dashed lines denote 95 per cent confidence intervals. The figure is based on Model 2 estimates.

for why individuals respond to housing price increases. To explore this, we use the BHPS data to test the underlying micro-mechanism. This dataset is unique in that it provides both the trend and the change in individuals’ estimated housing prices, homeownership, income and voting intention over an 18-year period. Due to the data availability, we use 14 waves of the BHPS between 1993 and 2008, which surveyed more than 12,000 citizens.

Based on respondents’ evaluations, we first coded the estimated value of housing prices (in 100,000 units), adjusted by the consumer price index (set to 100 for 2005). Additionally, we include a variable for changes in housing prices. We estimate the dynamic random-effect probit model to estimate how citizens alternate their vote choices by varying degrees and according to changes in housing prices. We also analyze the dynamic support model for the Labour and the Conservative parties using the following formula:

$$\begin{aligned}
 \text{Support (Labour/Conservative)}_{it}^* &= \gamma \text{Support(Labour/Conservative)}_{it-1} \\
 &+ x_{it}\beta + \alpha_i + u_{it}
 \end{aligned}
 \tag{1}$$

where $\text{Support(Labour/Conservative)}_{it-1}$ is the lagged dependent variable, x_{it} is the vector of independent variables, and α_i is the time-persistent unobserved heterogeneity of each individual.

$Support(Labour/Conservative)_{it}^*$ is expressed in the following form:

$$Support(Labour/Conservative)_{it} = \begin{cases} 1 & \text{if } Support(Labour/Conservative)_{it}^* > 0 \\ 0 & \text{if otherwise} \end{cases} \quad (2)$$

Then, the error term $\sigma_{it} = \alpha_i + u_{it}$ is not independent and identically distributed (i.i.d.), even if u_{it} is i.i.d. due to the presence of term α_i . This is because individual support for the Labour and Conservative parties at time t ($Support(Labour/Conservative)_{it}$) is likely to be correlated with support for Labour/Conservative at the time when the sample period begins ($Support(Labour/Conservative)_{i0}$). Here, the $Support(Labour/Conservative)_{it-1}$ term in the right-hand-side equation (1) could be replaced with $Support(Labour/Conservative)_{it-2}$; if the $Support(Labour/Conservative)_{ij}$ term is replaced, we will end up with the $Support(Labour/Conservative)_{i0}$ term, which denotes support for Labour or the Conservatives at time 0. This indicates that the $Vote(Labour/Conservative)_{i0}$ term should be included if the coefficient estimates for housing prices and housing price changes are consistently estimated.²¹

However, it is hard to assume that $Vote(Labour/Conservative)_{i0}$ at year 1993 (the first year for which we have BHPS data) is exogenous. It seems unlikely that most citizens who supported Labour or the Conservative party in 1993 intended to support them only in 1993, independently from their political orientations before 1993, which we cannot measure. Therefore, it is hard to consistently estimate the coefficient estimates at time t even after including $Vote(Labour/Conservative)_{i0}$. Heckman (1981) called this the “initial condition” problem. To address this, we use Wooldridge’s (2005) solution. He defines α_i as the function of y_{i0} and z_i and uses z_i as the vector of mean values of all non-redundant independent variables. This allows us to estimate the dynamic probit model by including y_{i0} ($Vote(Labour/Conservative)_{i0}$), support for the Labour/Conservative party in the initial wave of the panel, and the average values of our time-varying variables. We also include the initial panel value of time-varying variables (z_{i0}) following Rabe-Hesketh and Skrondal’s (2013) suggestion to account for possible bias in Wooldridge’s (2005) estimator. We also include regional fixed effects to control for unobserved heterogeneity of regional factors.

Table 2 shows the estimated coefficients of the dynamic probit estimates.²² Importantly, we include both individual and regional housing price change.²³ This addresses the concern that individuals may not be able to track down their own housing price changes but be more aware of price changes at the local level (Larsen et al., 2019). We include two interaction terms: 1) interaction between incumbent status ($Incumbent = 1$) and lagged housing prices and 2) interaction between incumbent status and regional housing price changes. The coefficient estimates for these interaction terms show whether individual housing price changes or local housing price changes have a greater impact on support for Labour and the Conservative incumbents. We control for evaluated housing prices (adjusted by consumer price index, correcting for inflation), homeownership, presence of

Table 2 Housing Price and Support for Labour and the Conservatives

	Model 3 Labour	Model 4 Labour	Model 5 Conservatives	Model 6 Conservatives
Labour support (1)	2.478*** (0.042)	2.492*** (0.042)		
Conservative support (1)			2.818*** (0.060)	2.815*** (0.060)
Lagged dependent variable (DV)	1.345*** (0.022)	1.339*** (0.022)	1.532*** (0.029)	1.536*** (0.029)
Lagged individual housing price	-0.063*** (0.014)	-0.063*** (0.014)	0.070*** (0.013)	0.070*** (0.013)
Δ Regional housing price	0.020*** (0.006)	0.150*** (0.022)	-0.046*** (0.007)	-0.054*** (0.008)
Δ Individual housing price	-0.026* (0.014)	0.043 (0.039)	0.022* (0.012)	0.021* (0.012)
Incumbent	-0.208*** (0.022)	-0.225*** (0.022)	0.062** (0.026)	0.085*** (0.027)
Incumbent*		-0.143*** (0.023)		0.112*** (0.029)
Δ Regional housing prices		-0.076* (0.040)		0.036 (0.049)
Δ Individual housing prices				
Lagged homeownership	-0.035 (0.057)	-0.027 (0.057)	0.088 (0.071)	0.092 (0.071)
Lagged mortgage presence	0.063 (0.040)	0.069* (0.040)	-0.080* (0.047)	-0.072 (0.047)
Lagged income	0.007 (0.010)	0.006 (0.010)	-0.004 (0.011)	-0.005 (0.011)
Lagged education	0.045 (0.028)	0.039 (0.029)	-0.004 (0.034)	-0.009 (0.035)
Lagged unemployment	-0.034 (0.058)	-0.030 (0.058)	-0.078 (0.076)	-0.077 (0.076)
Lagged self-employment	-0.066 (0.054)	-0.062 (0.054)	-0.006 (0.063)	-0.002 (0.063)
Gender	0.003 (0.026)	0.003 (0.026)	-0.012 (0.032)	-0.011 (0.032)
Age	-0.003*** (0.001)	-0.003*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
Constant	-1.395*** (0.104)	-1.359*** (0.105)	-3.046*** (0.138)	-3.034*** (0.138)
Regional fixed effect	Yes	Yes	Yes	Yes
Observations	81,119	81,119	81,119	81,119
Number of individuals	11,892	11,892	11,892	11,892
AIC	37379.6	37337.46	24818.89	24806.56
Log likelihood	-18640.8	-18617.73	-12360.45	-12352.28

Note: Clustered standard errors in parentheses. The dependent variable is support for the Labour/Conservative party. Coefficients for average of time-varying independent variables and initial level of independent variables are not reported.

*** $p < .01$; ** $p < .05$; * $p < .1$

mortgage debt,²⁴ labour income (in 10,000 units), education, unemployment, self-employed, gender and age.

We find that housing prices and individual housing price changes generally decrease support for the Labour party, whereas they increase support for the Conservative party in Models 3 and 5 (without interaction terms). This indicates that the level and change in housing prices are important dimensions in explaining

why citizens withdraw or maintain their support for Labour or the Conservatives. Citizens with more valuable homes and those experiencing recent housing price increases tend to support the Conservative party, while labour income, homeownership, education level, unemployment and self-employment status do not seem to relate to votes for the Labour party. Here, it is worth discussing why the coefficient estimate for regional housing price changes shows opposite direction (particularly in Models 3 and 5) compared to the estimate for individual housing price changes. It is partly because regional housing price changes reflect the urban and rural divide in UK politics: urban areas such as London were political strongholds for the Labour party and were major beneficiaries of the housing boom in the sample period. Also, in most of the period, the Labour party was the incumbent party (between 1997 and 2007), while the Conservative party was unpopular when it was the incumbent party (between 1993 and 1996). Thus care must be taken in interpreting the effect of regional housing price changes on the support for the Conservatives.

Furthermore, we analyze how incumbent status moderates the impact of housing price changes on support for Labour and the Conservatives (Models 4 and 6). If our theory is correct, housing price changes should have a positive effect when the Conservative party came to power. In Models 4 and 6, coefficient estimates for the interactions between regional housing price changes and support for Labour and the Conservatives are indeed significant and in the expected direction: negative for Labour support and positive for Conservative support. This indicates that regional housing price increases benefit the Conservative party but lead to vote losses for the Labour party. To clarify the moderating effect of incumbent status, we create a predicted probability graph of how support for Labour and the Conservatives varies by housing price changes, depending on incumbent status (Figure 3).

Figure 3 shows that, as expected, local housing price changes have a greater impact on the Conservative incumbent than the Labour incumbent.²⁵ This implies that the incumbent Conservatives (right-leaning) are rewarded for regional housing price increases, which is consistent with our theoretical expectation. Specifically, predicted support for the Conservative party is about 24.9 percentage points when the regional house price change is one standard deviation above the mean but decreases to 20.9 percentage points when this change is one standard deviation below the mean. The difference in the predicted level of Conservative support is about 4 percentage points, with a 95 per cent confidence interval of [0.01, 7.17], which is a substantial increase considering that the Conservative party was not popular between 1993 and 2008. However, housing price changes do not substantively affect support for the Labour incumbents. It is notable that housing price changes would positively affect support for the Labour party if it was not the incumbent party during this period. This would be mainly triggered by discontent from non-homeowners, who may need to pay higher rents as regional housing prices increase, implying that they may support the opposition Labour party as an alternative when the Conservative party was incumbent. In contrast, the coefficient estimate for the interaction between incumbent status and individual housing price changes is not significant, though it is in the expected direction. This means that incumbent status does not moderate the impact of individual housing price changes on support for

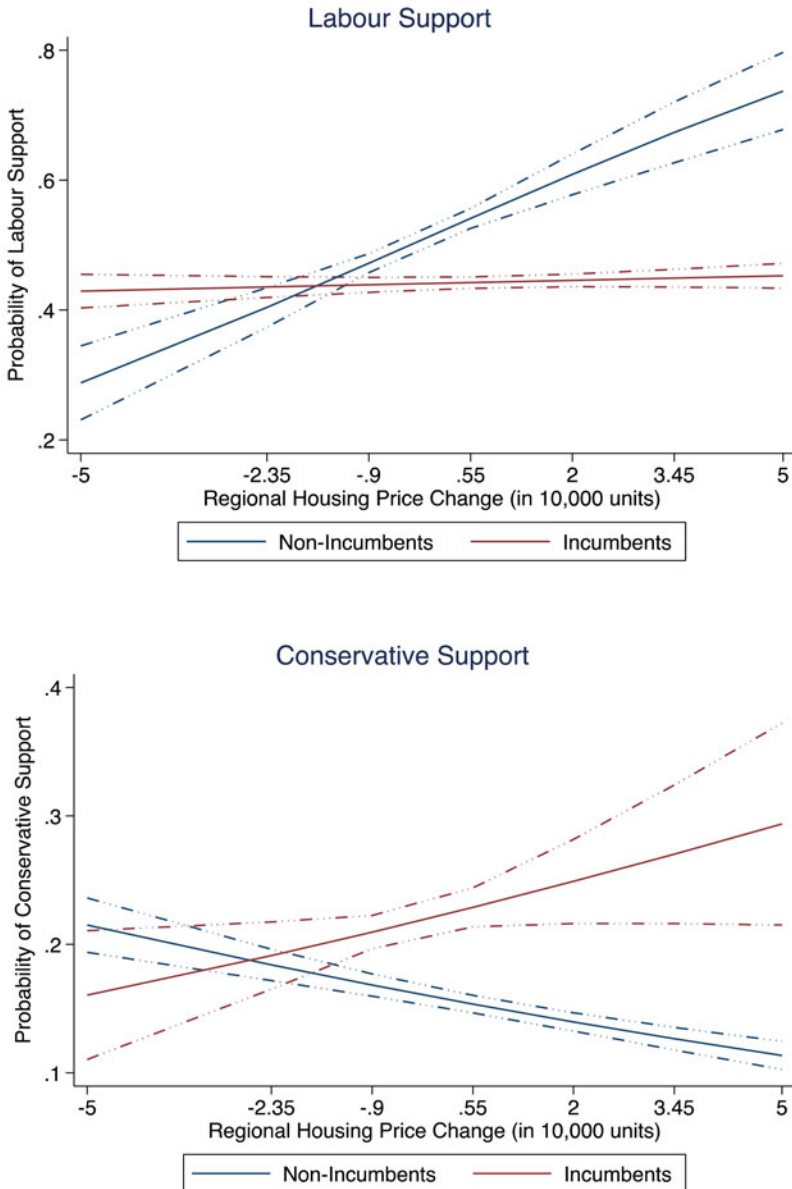


Figure 3 Changing Housing Price, Incumbent and Support for Labour and the Conservatives
Note: The predicted probability of Labour and the Conservative support is generated using Models 4 and 6, respectively.

Labour and the Conservatives. It is partly because individual housing price changes only have an impact on homeowners, given that housing price changes have a zero value for non-homeowners in the estimation, which may lead to underestimation of the effect of individual housing price changes. In summary, our micro-level analysis

shows that right-leaning governments mainly benefit from regional housing price increases. However, this result does not identify whether sociological or egocentric evaluations are dominant in determining incumbent support. On the one hand, positive effect of regional housing price implies that homeowners support right-leaning governments due to their housing price increases, considering that regional housing price increases imply increasing housing prices for homeowners. On the other hand, it may imply that sociological evaluation affects the political calculation of both homeowners and non-homeowners. As Larsen et al. (2019) suggested, positive changes in regional housing prices indicate economic boom in the given region, which potentially leads to support for incumbent governments by generating increases in regional employment and tax revenues.

Robustness checks for macro-level analysis

To ensure the robustness of our macro-level results, we first re-estimate Model 2 reported in Table 1 using different measures of government partisanship in two steps. First, we use two simple indexes of government partisanship: a dummy variable for right partisanship (1: right-leaning parties occupy more than 50 per cent of cabinet posts) and a three-point scale of government partisanship (2: right-leaning parties occupy 100 per cent of cabinet posts; 1: right-leaning parties occupy 50–99 per cent of cabinet posts; 0: right-leaning parties occupy less than 50 per cent of cabinet posts). Second, we use the relative power position of right-leaning parties, measured as right-leaning parties' seat shares as a percentage of the total seat shares of all governing parties, and the seat share of right-leaning governing parties in parliament from the CPDS. Online Appendix Tables A4 and A5 report the empirical results using alternative measures of government partisanship, which do not affect the main empirical findings. Importantly, the coefficient estimates for the interaction term between changing housing prices and government partisanship are still positive and significant, meaning that the moderating effect of government partisanship is robust to different measures of government partisanship. Online Appendix Figures A5 and A6 illustrate the marginal effect of changing house prices and how it varies at different levels of right-leaning powers. These figures indicate that changing housing prices positively affect government popularity only in right-leaning governments. Changing housing prices do not relate to government popularity if left-leaning parties occupy all government cabinet positions. This additional analysis supports our argument that changing housing prices do not affect the popularity of left-wing governments.

The impact of housing price change may also differ across countries with higher or lower homeownership rates. Varying homeownership rates across European countries may make the issue of housing price change more or less salient; thus the impact of housing price may be affected by the differing level of homeownership rates. To test this possibility, we conduct additional analysis in the online Appendix (Table A1, Figures A1 and A2).²⁶ We find that housing price changes affect popularity of right-wing governments only in countries with higher homeownership rates. These results are consistent with our argument that homeowners reward incumbent governments for rising housing prices because this materially benefits homeowners. Thus, the impact of housing price changes would be less

pronounced in countries with lower homeownership rates. Also, we include an additional control for household debt as a percentage of net disposable income (from the International Monetary Fund) as a proxy for mortgage debt-to-GDP ratio.²⁷ Our result is robust to this additional control (online Appendix Table A6). Finally, we check the robustness of our findings by excluding one country at a time, and our results are generally robust to the consideration of outliers (online Appendix Table A7).

6. Conclusion

We have shown that changes in housing prices affect incumbent support in advanced industrialized countries. Importantly, we find that government partisanship significantly moderates the effect of housing price changes on government popularity. Citizens reward right-leaning (but not left-leaning) governments for housing price increases. We attribute this conditional effect to the fact that left-wing constituents typically comprise fewer homeowners. Because some leftist voters own their homes,²⁸ a boom in housing prices does not necessarily contradict their self-interests. So these voters reward left-wing governments because housing price increases raise the value of their total wealth. However, for non-homeowning leftist voters, whose housing costs mainly depend on rental prices, rising housing prices increase their financial burden. Due to the conflicting nature of left-wing voters, housing price booms do not enhance government popularity overall for left-wing governments.

Our study contributes to the small but growing political economy literature on housing. It goes beyond exploring the impacts of housing prices on the welfare state by investigating how changes in housing prices affect voters' evaluations of incumbent governments and how government partisanship conditions this linkage between housing prices and government popularity. Consistent with Ansell (2014), this study finds that housing price booms benefit right-wing parties but not left-wing parties. Ansell concludes that homeowners may accept right-leaning parties' seemingly unpopular welfare retrenchment policy if housing prices boom, because of the complementary material benefits they receive. Building on this, we provide an additional reason why rising housing prices increase the chances of winning for right-wing parties. As housing prices increase, voters are more likely to evaluate the performance of the incumbent government positively because voters tend to judge economic conditions based on their personal well-being, and increasing housing prices lead to more favourable economic conditions for homeowners, who mostly vote for right-leaning parties. Put differently, right-leaning governments increase government popularity by satisfying the economic demands of their own constituents: homeowners.

Our study also speaks to the patrimonial economic voting literature by showing that a change in housing prices affects government approval across advanced industrialized countries over time. Existing research has heavily focused on individual country case, exploring the impact of asset ownership on economic voting behaviour (Lewis-Beck and Nadeau, 2011; Lewis-Beck et al., 2013; Nadeau et al., 2010; Persson and Martinsson, 2018). Our findings contribute to the existing research by providing strong evidence that housing plays a central role in government

approval, which is one dimension of economic voting, in 16 advanced industrialized countries between 1960 and 2017. Yet our study also has a limitation in that we do not test directly which two competing mechanisms—egocentric or socio-tropic voting behaviour—are more prevalent in relation to housing. Future work should test these competing mechanisms for the linkage between housing and economic voting by leveraging additional cross-country and within-country data and experiments.

Finally, this study provides new insights regarding the decline of leftist constituencies. Many studies have reported the decline in support for left parties in advanced industrialized countries. Most of these studies attribute this loss of support to the collapse of communism, the decline of class cleavages and the weakening of the working class (Gingrich and Häusermann, 2015; March and Rommerskirchen, 2015). Our findings suggest another possible cause of leftist decline—housing price increases. Compared to right-wing governments, left governments tend to focus more on non-homeowners. Left-leaning parties' strategies to attract support from non-homeowners is to promote homeownership by providing housing subsidies and supplying more affordable housing. Thus left-leaning parties' policies may lead to more homeownership, which may increase support for right-wing parties, as homeowners believe these parties are more likely to boost housing prices and therefore to benefit them. Future research might build on this research by exploring the voting behaviour of new homeowners and how these voters respond to changing house prices under different partisan governments.

Supplementary material. To view supplementary material for this article, please <https://doi.org/10.1017/S0008423920001262>

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Notes

1 Some might argue that increases in housing prices can be seen as a form of inflation and can signal increased living costs (Whitten and Palmer, 1999). Yet a counter-argument is that the cost of living does not necessarily track upward with increases in housing prices, since voters are not routinely buying housing (Larsen et al., 2019: 501).

2 See Ronald et al. (2017) for asset-based welfare approaches related to housing prices.

3 Some might argue that housing value is significantly affected by national and local factors; some might also question the reliability of subjective perceptions of housing value. These claims can undermine our assumption that housing solely affects pocketbook behaviour. While we acknowledge these points are valid, we emphasize that our study focuses more on the effect of an objective economic indicator (housing prices) on voters' assessments of incumbent performance at the macro level. We test the validity of our causal mechanism using UK survey data; however, testing all the assumptions at the micro level is beyond the scope of the study. Moreover, voters' subjective evaluations of housing prices are significantly affected by the real housing price changes that our study focuses on, and these two are substantially correlated. We leave the challenge of distinguishing between these two to future research.

4 Other data also show that homeowners are more likely to support right-wing parties than left-wing parties (see Tables A8 and A9 in the online Appendix).

5 We acknowledge that the relationship between homeownership and right-wing parties may not be straightforward. For example, in Scandinavian countries, both left- and right-wing parties tend to promote homeownership. Yet a recent study also shows that the alignment between parties and homeownership still exists (Kohl, 2018), although it is not always stable over time. And it has been shown that asset owners are more likely to support centre-right parties (Hellwig and McAllister, 2019).

6 Some might claim that left-leaning supporters who bought homes under the homeownership promotion programs implemented by the Left would keep supporting left governments, at least in the short run. We acknowledge that this could be possible but would also point out that a growing number of homeowners promoted by the Left's program could erode the base of the Left in the long run. Our micro-level analysis supports our mechanisms in the UK. Yet an investigation of the underlying mechanisms in greater detail is needed at the cross-national level beyond a single country.

7 Because of the availability of the approval data for older OECD countries, we used these in our analysis: Australia, Austria, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Japan, New Zealand, Portugal, Spain, UK and United States.

8 See <http://www.executiveapproval.org/>.

9 This approach first creates temporal dyadic ratios of support measures among different surveys and various data and then calculates the average quarterly measure of executive approval.

10 For example, we combine very positive / strongly agree and somewhat positive / somewhat agree responses to questions on government support / government approval / government evaluation.

11 We use approval of the prime minister for semipresidential countries (that is, France and Portugal), given that the prime minister is mainly responsible for domestic policy in these countries. However, using presidential approval in these countries does not significantly affect our results (not reported here to conserve space).

12 The index is set to 100 for 2015, so it shows how housing prices deviate from this baseline adjusted to other prices in each country.

13 Including lagged housing prices does not affect our main results (results available upon request).

14 Housing prices may not be correlated with other economic indicators because we use real housing prices, adjusted by another price deflator. However, our results remain robust to using nominal housing prices (results available upon request).

15 Figures A7 and A8 in the online Appendix show that housing price change is distinctive from other price changes, given that housing price increase over time in many countries whereas consumer prices do not change much over time (for example, Canada, New Zealand and United States).

16 It is coded using the ParlGov dataset (Döring and Manow, 2016).

17 Panel autocorrelation test using the Wooldridge method (Drukker, 2003; Wooldridge, 2002) also suggests for controlling serial correlation. Unit-root tests for heterogeneous panels show that the dependent variable is stationary (Im et al., 2003), which supports our use of an autoregressive model (results available upon request).

18 Since our panel has a sufficiently large T over N , Nickell's bias is not a concern for this estimation (Beck et al., 2014). Our empirical results are also robust to estimating without lagging the dependent variable (results available upon request).

19 We believe time lag exists regarding the impact of economic variables on the government approval. Also, using lagged independent variables partly guarantees that the direction of the causality is mainly coming from economic variables to government approval, not in the reversed way, even though it is not the perfect solution for this problem.

20 The results are robust to the exclusion of control variables (results available upon request).

21 The significant coefficient estimate for $Vote(Labour/Conservative)_{it}$ across all models also provides an empirical justification for including this term in the equation.

22 We exclude Northern Ireland because its party system is quite different from those of other regions in the UK (see Stegmüller, 2013). We also exclude individuals who are not eligible to vote.

23 We calculate average regional housing prices by using respondents' estimated housing values. We do not use the official UK House Price Index because some regional prices are missing in the data. The correlation between calculated regional housing prices and the official UK regional housing price index is quite high at 0.95, indicating that our estimated regional housing price is a reasonable proxy.

24 We did not include the size of mortgage since only about one-tenth of the observation has the estimated value of mortgage amount borrowed at purchase.

- 25 It is notable that general support is low for the Conservatives in our study period, which is attributable to two main reasons: (1) we only have limited cases of the Conservative incumbent (between 1993 and 1996), and (2) the Conservative incumbent in this period was quite unpopular. Figure 3 shows that positive correlation still exists between local housing price changes and Conservative support, even if voters are generally unsupportive of the Conservatives.
- 26 Appendix A1 in the online Appendix provides the detailed discussion regarding relationship among housing price, government popularity and homeownership.
- 27 This measure is not included in our main analysis because it includes other types of household debt.
- 28 About 38 to 40 per cent of homeowners support the left-wing party in the UK, based on the BHPS.

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