Housing, Credit and Brexit

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Abstract

Dozens of articles have been drafted attempting to explain the narrow victory for the Leave campaign in Britain's EU referendum in June 2016. Yet, hitherto, and despite a general interest in 'Left Behind' commentary, few writers have drawn attention to the connection between the Brexit vote and the distribution of British housing costs. This memo examines the connection between house prices and both aggregate voting during the EU referendum and individual vote intention beforehand. I find a very strong connection at the local authority, ward, and individual level between house prices and support for the Remain campaign, one that even holds up *within* regions and local authorities. Preliminary analysis suggests that housing values reflect long-run social differences that are just as manifest in attitudes to immigration as Brexit. Local 'ecologies of unease' (Reeves and Gimpel, 2012) appear a crucial force behind Brexit.

This is a short memo on housing, credit and Brexit to be presented at the University of Wisconsin, Madison, April 2017.

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1 Introduction

If there is one saving grace of Brexit for the British higher education system it is a boom of Brexit studies that began pouring forth as the dust settled on June 24th 2016. Most scholars have coalesced around an understanding of Brexit that to some extent mirrors that implicit in Theresa May's quasi hard Brexit strategy - Brexit was caused by both economic and cultural forces, with opposition to the European Union based on concerns about immigration and of declining cultural and social status rather than economic deprivation or actual migration levels per se (Kaufmann, 2016). Brexit was not a cri de coeur for higher redistribution from the poor but nor was it supported by the 'winners' of British growth. Brexit was popular in areas concerned about migration but not typically in those areas where migration was actually high by national measures. Brexit was popular in relatively affluent but culturally and geographically peripheral parts of England. What is in common among Brexit analyses is the role of *place* as crucial in determining support for the Leave campaign.

What is missing so far from analyses of the political geography of Brexit is that other great force in recent British political life - the housing market. Over the past few decades the UK has seen an unprecedented boom in housing prices that has nonetheless been geographically distributed in a highly unequal fashion, with London and the Southeast the chief, though not sole, beneficiaries. Concerns abound that housing prices are solidifying political geography in Britain by making internal migration difficult, locking in advantage and disadvantage across regions. Housing is so crucial to British life that for decades, sociologists and political scientists have argued that in some sense, the British housing market *substitutes* for the welfare state, with individuals relying on their houses for retirement and against labour market shocks (Ansell, 2014; Castles, 2005; Kemeny, 1981; Schwartz, 2009).

In this memo, I argue that housing markets played a crucial role in the political geography of Brexit and indeed with comfort with changes in the global economy, particularly immigration. Those areas and individuals that benefited from booming house prices were strongly supportive of remaining in the EU - Leave's success was

based among the relative losers of the British housing market. I show using all Brexit voting returns at the local authority level in England and Wales that higher housing values and increases over the past two decades are strongly associated with support for the Remain campaign, both across and within broader geographical regions. This pattern also holds up *within* local authorities at the ward level - a level of aggregation of around 5,000 people - for a sample of Brexit returns at that level. Finally, I conclude by turning to the round of the British Election Study (BES 2016) conducted directly before the referendum, which asked vote intention. In all cases, local authorities and wards with higher house prices, and homeowners living in those areas, were more supportive of staying in the EU.

2 Housing, Credit, and Brexit

How should we think theoretically about the connection between housing and Brexit? Here I draw on a broad literature that examines the role of housing in contemporary welfare states, including a couple of my own recent papers. Beginning with Kemeny (1981) and expanded in detail by Schwartz (2009) and Schwartz and Seabrooke (2008), scholars have argued for cross-national variation in the financing and behaviour of housing markets that mirrors, perhaps functionally, the structure of national welfare state and redistributive systems. Housing provides a form of 'private insurance' (Ansell, 2014), on which individuals can draw in old-age or during tough times. On the financing side, Schwartz (2014) argues that countries with funded pension schemes (as opposed to PAYG systems funded from general taxation) rely in part on securitization of mortgages to provide the pool of borrowing that sustains private pension systems. Finally in budgetary terms, taxes on housing transactions, have become ever more important - in the UK, stamp duty land tax, which was minimal in 2000 now accounts for over two percent of UK tax revenues. Thus, countries such as the UK with highly leveraged housing markets and high rates of homeownership are ones where risk in general is more privatised and where the structure of the welfare state in part depends on the health of the housing market.

We should expect housing to be important in aggregate in the UK but how

do regional and individual differences in housing affect British politics? In Ansell (2014), I argue - and demonstrate using British panel data - that individuals with more valuable housing, even controlling for the occupational and income differences associated with owning nicer homes, are much less supportive of government spending on social insurance and indeed lean to the right ideologically. This effect is distinct from simply being a homeowner - it is the value of one's home, not merely title to a house, that matters.

This connection between house prices and support for redistributive policies helps to explain why despite rising income inequality in the UK from the 1980s through the 2000s, there was no great surge in either public support for redistribution or in its actual level. John Ahlquist and I have recently argued that in countries with rising inequality but little tradition of redistribution, the demand for consumer credit rises dramatically, at least in part as a response to the desire to 'keep up with the Joneses' (Ahlquist and Ansell, 2017). This credit expansion then further fuelled the booming British housing market, thereby weakening demands for redistribution. In total the British housing market is part of an 'anti-redistribution cycle' - low redistribution creates demand for credit in response to inequality, but this then produces asset booms that themselves reduce the demand for redistribution.

This political economy story tells part of the tale of Brexit. The areas of the country where housing boomed - and the homeowners in them - have both felt richer than other less-benighted areas and weakened the national political demand for redistribution. It is quite possible British citizens in 'Left Behind' parts of the country could have been 'bought off' and had their relative decline compensated fiscally. To some degree, this is what New Labour's system of tax credits achieved. However, the austerity policies brought in under the Conservative-Liberal Democrat coalition in 2010, and their acceleration under the Conservative majority post 2015 weakened this commitment to moderate redistribution, even as they produced a second housing boom. The widening of grievance between house-rich and house-poor areas grew further.

Along with this recent story, that is largely one of differing recent regional political economies, is a longer term story of *place*. While regional economic growth did in

part predict Brexit votes, there was a longer term gap across localities that does not appear completely determined by the last decade or so. Instead, certain regions of the UK have lagged behind the mean for decades, if not centuries. The postindustrial Northeast, Wales, and the West Midlands are all good examples, as are peripheral agricultural regions such as South Lincolnshire, (non-tourist) Cornwall, and North Yorkshire. Here house prices have been low by national standards for generations - not simply because they missed the past two decades boom but also reflecting longer term economic and cultural peripheral status. In these cases, house prices stand in for something else - a dislocation from the service-led growth of modern Britain and the cultural attitudes - particularly openness to immigration and multiculturalism - that come with that. As we will see, both levels and changes in house prices appear strongly related to Brexit vote choice. Areas with recent growth and long-run wealth were strong supporters of the status quo of remaining in the EU. Stagnant and poorer areas were the backbone of the Leave victory.

3 Analysis at the Local Authority Level

I begin demonstrating the powerful relationship between housing and the Brexit vote by analysing the aggregate vote choice at the level of England and Wales' Local Authority Districts (LADs) - sizeable administrative units that tend to match towns, country divisions, or London boroughs and average around 200,000 people in terms of their Brexit electorate. The advantage of using these units of analysis is that it is possible to collect a comprehensive voting record on Brexit across the UK (I omit Scotland and Northern Ireland due to a lack of housing data not Brexit vote).

I begin by examining the bivariate correlation between the percentage of LAD votes cast for Remain in 2016 and house price levels and changes in 2015. The data on house prices comes from the Land Registry and includes all sales of apartments and houses in each local authority (I thank Jane Gingrich for compiling and sharing this data). I take the median sales price for each LAD in 2015 and take its natural log in order to reduce dispersion (this has a particularly strong effect in London where some LADs have median sales prices over £1m). I also create a house price change

variable that measures the percentage change in the median (non-logged) house price in the LAD between 1996 and 2015.

Figure 1: Log Median House Prices and the Remain Vote

Figures 1 and 2 give a good sense of both the distribution of the these housing variables and their relationship to the the Remain vote. In both figures, each LAD is weighted by the size of its electorate and a linear fit line is shown. In both cases, the relationship between house prices and the Remain vote is strongly positive. In LADs where median house prices were under £160,000, very few LADs voted to remain int the EU, whereas there was only one LAD with a median house price above £440,000 that voted to Leave. A similar pattern holds for house price growth, which is measured in nominal terms. The average LAD median house price in 1996 was £60,000, whereas by 2015 that had increased to £220,000, an increase of around 266%. Figure 2 shows that in LADs where prices increased by less than 200% very few districts voted remain whereas above around 350% it is almost all Remain LADs.

These results are indicative of a close relationship between house prices and Brexit voting at the LAD level but how do they relate to one another and are they simply

Figure 2: House Price Changes 1995-2016 and the Remain Vote

functions of other regional factors or demographics differences across LADs? Tables 1 and 2 are linear regressions of the Remain vote, with standard errors clustered by region (England and Wales have ten such geographical regions). Table 1 begins in Model 1 by examining the bivariate effect of log median house prices (and thus mirrors Figure 1). Here we see a one point shift in the log price variable (an percentage increase in prices by around 270%) is associated with an increase in the Remain vote share of around fourteen percent points. Note only is this a very sizeable effect but house prices also appear to explain around forty-four percent of the cross-LAD variation in the Brexit vote.

One obvious explanation for the magnitude of the effect and closeness of fit is that house prices are simply picking up broader regional variation in the Brexit vote. Model 2 removes house prices and looks only at region dummies with the East region as the omitted category. Here we see the R^2 drops to thirty-four percent but we do see the expected patterns - London with much the highest Remain support followed by the more affluent South East and South West with the Midlands region particularly

Table 1: LAD House Prices Levels / Changes and Remain Support

	(1)	(2)	(3)	(4)	(5)	(6)
Log Median House Price	14.86		19.60		10.64	14.58
	(2.904)		(1.295)		(2.405)	(1.403)
House Price Change				0.096	0.033	0.059
				(0.020)	(0.027)	(0.017)
East Midlands		-2.612	5.373			7.523
		(1.734)	(0.527)			(0.807)
London		17.87	6.114			4.186
		(1.830)	(0.777)			(0.877)
North East		-2.517	9.335			12.48
		(2.607)	(0.783)			(1.187)
North West		1.047	12.02			14.82
		(1.746)	(0.725)			(1.067)
South East		4.792	1.672			2.838
		(1.533)	(0.206)			(0.315)
South West		3.278	4.700			6.082
		(1.771)	(0.0940)			(0.422)
Wales		3.614	14.70			17.41
		(2.082)	(0.733)			(1.048)
West Midlands		-3.353	3.483			6.655
		(1.883)	(0.452)			(1.051)
Yorkshire & Humber		-1.688	7.602			10.64
		(2.115)	(0.614)			(1.080)
Constant	-135.7	43.04	-198.8	21.45	-92.45	-154.0
	(35.41)	(1.176)	(15.97)	(4.857)	(26.17)	(13.59)
N	348	348	348	348	348	348
R^2	.442	.340	.588	.398	.454	.616

Region clustered standard errors in parentheses (except Model 2)

pro-Brexit.

The effect of house prices nonetheless appears to go beyond regional differences. Indeed, *controlling for region* the coefficient on log median house prices actually increases by a third. Here a log point increase in house prices is associated with a twenty percent point higher support for Brexit. Note also that the R^2 of this model that combines region and house price effects is now almost sixty percent. The changes in the regional dummies are also interesting. Unsurprisingly the 'effect' of London compared to the East reduces from eighteen points to six points. But we also see that regions that appeared very inherently pro-Brexit - for example the North East and Yorkshire - actually had higher baseline support for Remain, controlling for house prices, than did the South East and South West.

Figure 3: Log House Price Levels by Region

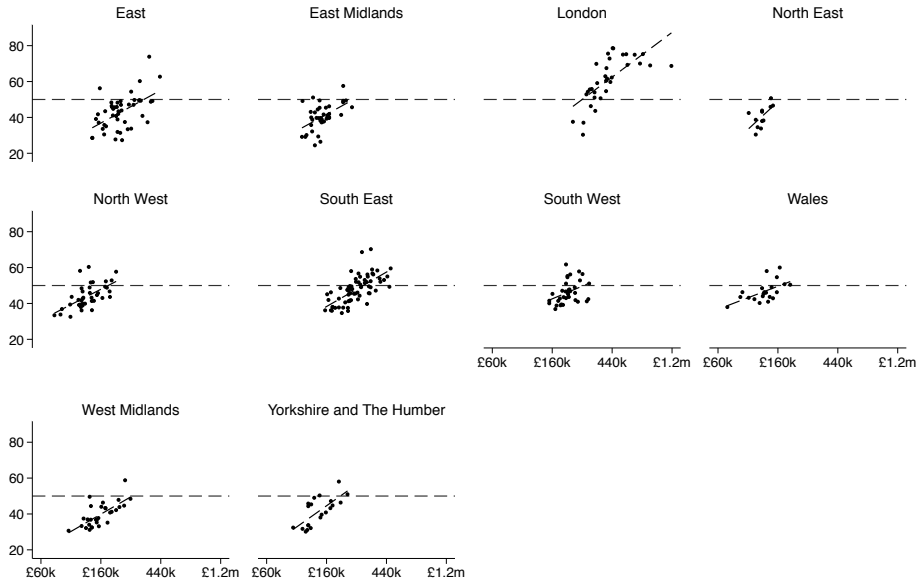


Figure 3 demonstrates this robust pattern of house prices on the Brexit vote even controlling for region by breaking out the relationshop between these two variables across the ten regions. In every region the relationship between house prices and Remain support is positive across LADs in that region, with particularly strong

relationships in not only London and the South East but also the North East and Yorkshire. This figure suggests that variation in house prices is not simply a national level phenomenon but systematically emerges at lower levels of aggregation.

Models 4 through 6 introduce the 1996-2015 house price change variable. On its own in Model 4 it is significantly positively correlated with the Remain vote such that a move from a 200% increase to a 300% increase is associated with around ten percent points higher Remain support. Once we control for the house price level in Model 5 this effect is however reduced fairly dramatically in size and significance, though in Model 6, putting in region dummies, we see a moderated effect that is statistically significant at the one percent level. The implication of Model 6 is that both changes and (especially) levels in house prices mattered for the Brexit vote, even taking regional differences into account.

Still, one might imagine that house prices are correlated with other demographic characteristics. Models 1 and 2 of Table 2 include LAD level measures for unemployment claimant (JSA) rate, weekly pay, the proportion of workers in manufacturing, the long-run change in the size of the traditional working-class (defined by occupation), the same variable for middle class occupations, the proportion of the population over sixty-five, the proportion under the age of fifteen, and finally the size of the electorate in the LAD. All these variables are measured for 2015 and once more we add regional dummies and cluster standard errors by region.

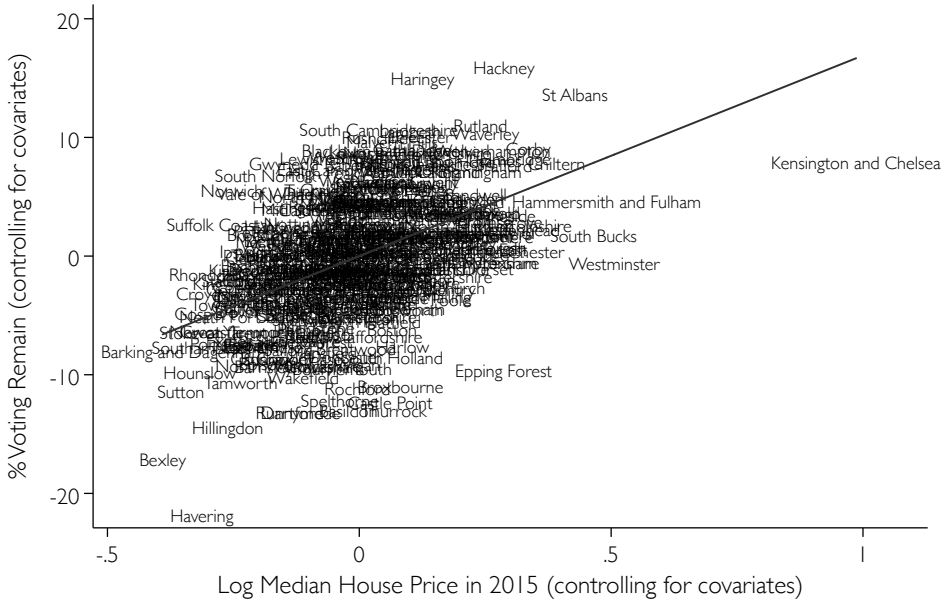
A number of striking results jump out. Firstly, the estimated impact of median house price levels is very similar in magnitude and statistical significance to the previous table - a log point increase being associated with around fifteen percent points higher Remain support. Figure 4 shows an 'added variable plot' for log median house price - that is, its estimated relationship with the Remain vote, controlling for these covariates. Plotting the LAD names, there are some interesting observations - Hackney has higher house prices than demographics would predict (it is the exemplar of London gentrification) and higher Remain support than predicted. Hyper-wealthy Kensington and Chelsea and Westminster by contrast had somewhat lower Remain support than predicted by house prices. At the other end a number of quite right-wing London boroughs - Barking, Bexley, and Havering, have lower house prices

Table 2: LAD House Prices Levels / Changes and Remain Support with Controls

	(1)	(2)
Log Median House Price	16.90	13.47
	(2.386)	(2.871)
House Price Change 1996-2015		0.0314
		(0.0131)
JSA Rate	-1.279	-1.713
	(0.997)	(1.030)
Weekly Pay	-0.000	0.002
	(0.005)	(0.004)
Manufacturing	-41.00	-41.96
	(7.500)	(7.728)
Change in Working Class	-16.20	-16.15
	(6.405)	(6.492)
Change in Middle Class	-4.341	-4.189
	(3.377)	(3.382)
Over 65 Population	-87.12	-76.29
	(12.07)	(13.25)
Under 15 Population	-143.1	-125.1
	(19.01)	(17.92)
Electorate Size	0.189	0.204
	(0.0437)	(0.0429)
Observations	344	344

Region clustered standard errors in parentheses. Region dummies not reported.

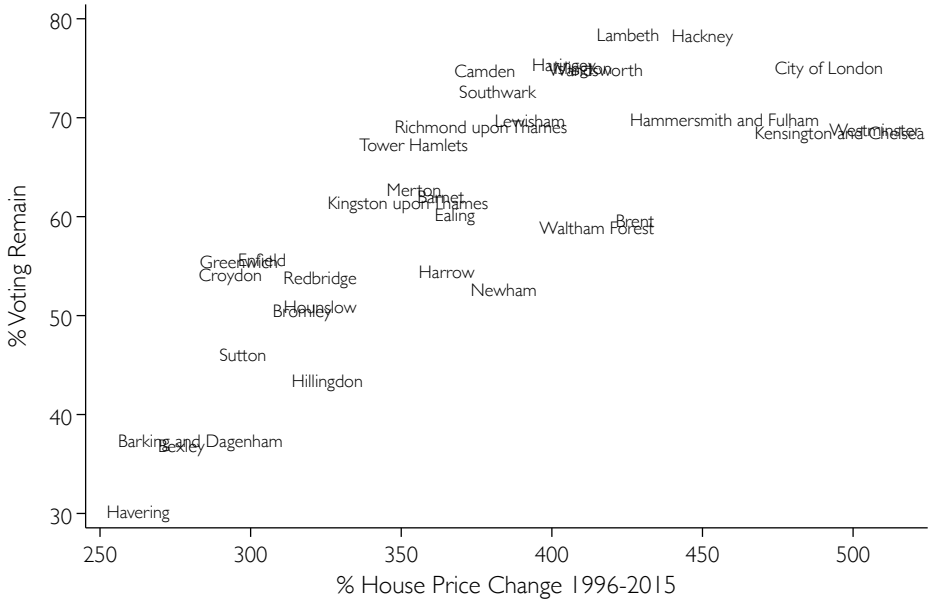
Figure 4: Added Variable Plot for Log Median House Prices



than demographics predict and also much lower Remain support than demographics suggest - not a surprise to anyone who has seen the very dark 'blue' pattern of Leave support in maps of East London. Figure 5 shows this striking London relationship.

To continue out analysis of Table 2, the estimated impact of house price changes is reduced somewhat - albeit half its level from Model 6 in Table 1 but still indicating that a one hundred percent higher growth rate is associated with a three percent point increase in the Remain share. The other variables are also worth examining. Unemployment and weekly pay appear weak predictors of the Brexit vote - perhaps surprising for people following a 'Left Behind' line of argument - clearly medium-run employment and pay outcomes are less important than the stock of wealth. Changes in the occupational structure, presumably of longer duration, do appear to matter - areas with large manufacturing populations were much less likely to support Remain as were areas with a secular decline in working class populations. Age also matters - area with both high concentrations of seniors *and* of children were more likely to vote to leave the EU. Finally, LADs with larger populations tended to vote Remain.

Figure 5: Housing in London



In all we find that large LADs with high house prices and that experience high house price growth, limited populations in manufacturing and without a declining working class, and a high proportion of working-age population were the most likely to vote to Remain. The Leave victory was built on areas with limited housing wealth, stagnant house prices, a tradition of manufacturing that was nonetheless in decline and with high concentrations of retired people and children.

4 Analysis at the Ward Level

While full Brexit results are only available at the LAD level, two enterprising BBC researchers contacted a large number of wards after the referendum and have collected voting data at the ward level (around 5,000 people) for just over 1,000 of the nearly 8,000 wards in the UK. I conduct some preliminary analysis in this section on voting at the ward level, and again find the same positive relationship between house prices and Remain support, even netting out average LAD-level support.

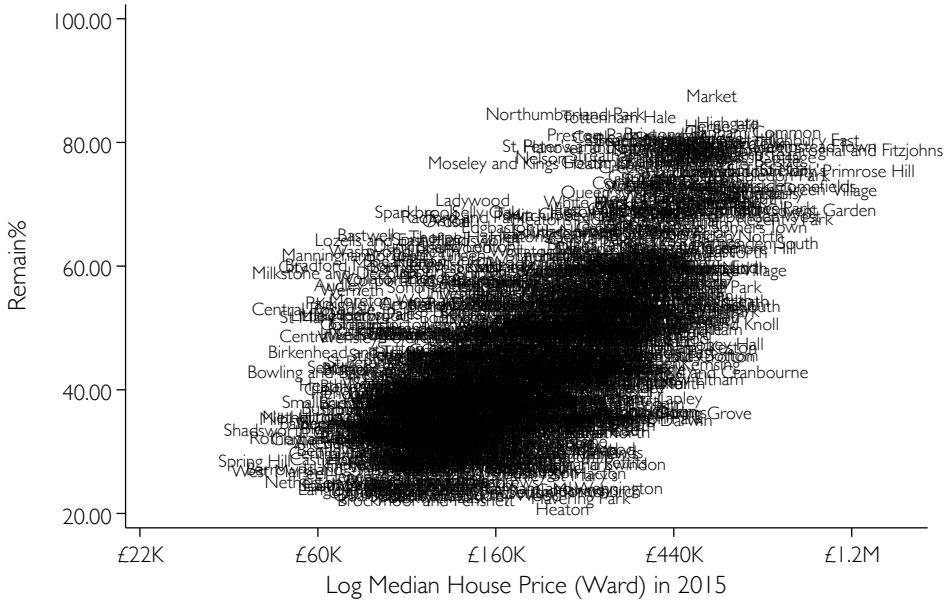
Table 3: Ward and LAD Price Levels: Remain Support

	(1)	(2)	(3)	(4)
Log Median Price (Ward)	15.72	15.72	9.698	10.80
	(0.577)	(1.726)	(1.734)	(1.551)
Log Median Price (LAD)			7.823	
			(2.762)	
Observations	1109	1109	1109	1109
LADs		Cluster SEs	Cluster SEs	Fixed Effects

Standard errors in parentheses

Figure 6 demonstrates the overall correlation between the log of median house prices at the ward level (note this data is not the LAD median) and the percentage voting Remain in that ward. Table 3 shows that the estimated effect of a log point increase in house prices is extraordinarily similar to that found at the LAD level - around fifteen percent points. The effect becomes smaller but not dramatically so, even when we control for the LAD log median price. Indeed, here we see that a log point shift in prices in both the ward and the LAD (i.e. all wards in the LAD increasing by the same amount) can be broken down into two effects - a 9.6 percent point increase in Remain support from the ward price increase and a 7.8 percent point shift from the LAD price increase. If anything then, variation within LADs is slightly more important than that across LADs, demonstrating that the local geography of Brexit is quite finely variegated.

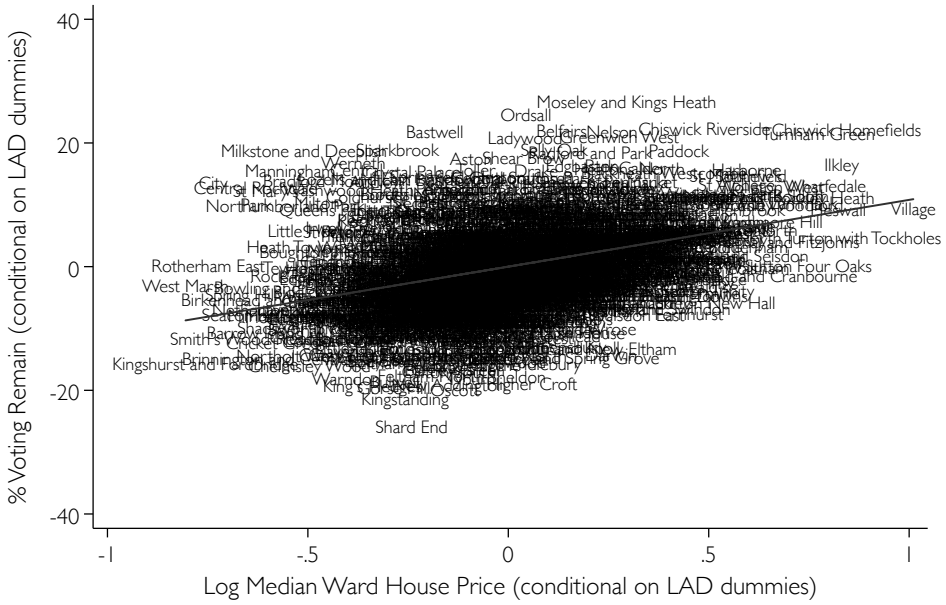
Figure 6: Prices at the Ward Level and Remain Support



Finally Model 4 puts in dummies for all 68 LADs for which we have information in the sample. We find that the effect of ward price variation within LAs (this is essentially a fixed effects model) is still important - with a log point increase in house prices associated with an eleven point increase in Remain support. Figure 7 demonstrates the impact of ward house prices controlling for LAD dummies - here we see areas such as Chiswick, relatively wealthy for its borough Hounslow, driving Remain support.

Finally, we turn to examining both levels and changes in house prices at the ward and LAD level in Table 4. Model 1 shows a positive effect of house price changes at the ward level on the Remain vote, again with very similar magnitude to that found in Table 1. As before, controlling for price levels as well as changes reduces the size of the effect of the latter but it remains statistically significant at the one percent level. Adding in LAD prices levels and changes demonstrates all the expected effects *except* that when LAD changes are controlled for, along with ward levels and changes, LAD levels become statistically insignificant. Finally, Model 4

Figure 7: Prices at the Ward Level and Remain Support: Conditional on LAD dummies



adds LAD dummies and here we see that ward levels remain important and ward changes becomes less substantively large but still statistically significant. Overall, there is ample reason to believe that both house price levels *and* changes at the ward level mattered substantially for the Brexit vote - even at this very disaggregated level of analysis.

Table 4: Ward and LAD House Price Levels and Changes

	(1)	(2)	(3)	(4)
Ward Price Change 1995-2016	0.091	0.049	0.022	0.012
	(0.007)	(0.009)	(0.007)	(0.006)
Log Median Price (Ward)		9.196	8.049	9.846
		(1.786)	(1.736)	(1.656)
Log Median Price (LAD)			-5.080	
			(4.649)	
LAD Price Change 1995-2016			0.082	
			(0.032)	
Observations	1109	1109	1109	1109
LADs	Cluster SEs	Cluster SEs	Cluster SEs	Fixed FX

Standard errors in parentheses

5 Brexit Preferences at the Individual Level

Although by examining wards we have drilled down to collectivities of five or so thousand people, there is still a risk of ecological fallacy. That is, we have strong circumstantial evidence that places that benefited from high and rising house prices voted Remain but that does not guarantee that the Remain voters in these wards and LADs were people who actually benefited from those house prices - i.e. homeowners. Using data drawn from the 2016 British Election Study, I am able to geocode people by their LAD and ascertain their housing status. In this section I show that homeowners in LADs with high house prices did appear more likely to vote for Remain.

Table 5 presents a series of analyses of vote intention regarding Brexit with zero coded as Leave and one coded as Remain. Respondents were asked this question before the referendum - however, the BES came very close to predicting the right ultimate result, with their sample around 51% Leave. I control for age, age squared, gender, household income, and in a number of models, add dummies for political party identification. My variables of interest a re a dummy for whether the respondent is a homeowner, the log median house price in their LAD, and a variable that interacts the homeowner dummy with house prices. Finally I use three different specifications: a logit model with LAD random effects, a linear probability model with LAD random effects, and a linear probability model with LAD fixed effects.

The striking result across all six models (each estimation with and without party dummies) is a positive coefficient on the interaction term, statistically significant in all of the models save the random effects models controlling for party ID, where it becomes weaker in significance).[1] For the first four models we can also examine the effect of local authorities having higher house prices on non-owners (largely renters or council tenants). Here we can see a significant effect - a log point increase in house prices is associated with a four to six percent point increase in the probability of intending to vote Remain. This effect is substantially increased for homeowners, when LAD prices are high. These coefficients are easiest to interpret graphically as

[1] One should be careful about interpreting the negative coefficient on the homeowner dummy since this reflects the effect of being a homeowner on Remain vote intention for a house worth £1!

Table 5: Homeowners, House Prices and Intention to Vote Remain: BES

	(1)	(2)	(3)	(4)	(5)	(6)
Homeowner	-2.000	-1.156	-0.467	-0.257	-0.680	-0.374
	(1.025)	(1.112)	(0.230)	(0.208)	(0.236)	(0.215)
Log Median LAD House Price	0.165	0.301	0.037	0.056		
	(0.078)	(0.078)	(0.017)	(0.014)		
Homeowner X House Price	0.169	0.104	0.040	0.023	0.057	0.033
	(0.084)	(0.091)	(0.019)	(0.017)	(0.019)	(0.018)
Household Income	0.076	0.089	0.018	0.017	0.018	0.017
	(0.005)	(0.006)	(0.001)	(0.001)	(0.001)	(0.001)
Gender	0.110	0.065	0.025	0.012	0.027	0.013
	(0.035)	(0.038)	(0.008)	(0.007)	(0.008)	(0.007)
Age	-0.089	-0.103	-0.020	-0.020	-0.019	-0.019
	(0.007)	(0.008)	(0.002)	(0.001)	(0.002)	(0.001)
Age^2	0.001	0.001	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.129	2.200	0.523	0.933	0.0919	0.264
	(0.971)	(0.977)	(0.213)	(0.174)	(0.0410)	(0.0382)
Observations	14932	14932	14932	14932	14932	14932
Party ID Dummies	N	Y	N	Y	N	Y
LAD Effects	Random	Random	Random	Random	Fixed	Fixed
Estimation	Logit	Logit	OLS	OLS	OLS	OLS

Standard errors in parentheses. Dummies for party ID not shown

in Figure 8. The figure demonstrates that the slope for the impact of house prices on Remain vote intention is much steeper for homeowners - indeed homeowners in high house price areas are more likely to vote for Remain than are non-homeowners.

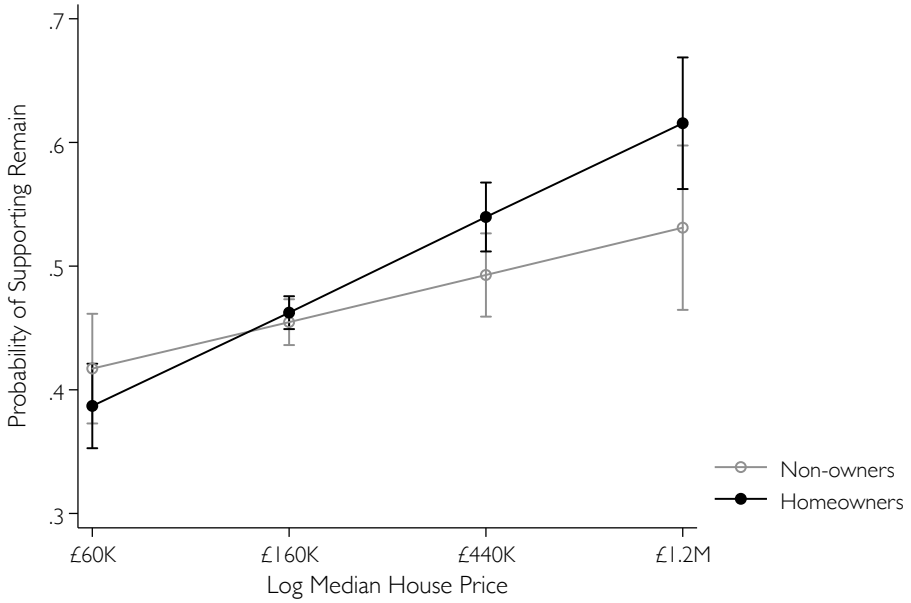
Do house prices really have an independent effect on voter behaviour? Table 6 suggests that the story may be rather more complex. We know from existing analyses of Brexit (Kaufmann, 2016) that cultural attitudes, particularly to immigration were crucial to the vote. Table 6 begins by including two immigration attitude measures as controls - views about whether immigration is good or bad for the economy (on a seven point scale) and views about whether immigration enriches or undermines

Table 6: Homeowners, House Prices and Broader Attitudes

	(1) Brexit	(2) Imm Econ	(3) Imm Econ	(4) Imm Cult	(5) Imm Cult
Homeowner	0.027	-1.511	-2.010	-1.922	-2.552
	(0.184)	(0.783)	(0.804)	(0.832)	(0.860)
Log Median House Price	0.009	0.395		0.323	
	(0.013)	(0.056)		(0.057)	
Homeowner X House Price	-0.001	0.131	0.172	0.164	0.217
	(0.015)	(0.064)	(0.066)	(0.068)	(0.071)
Household Income	0.009	0.066	0.067	0.061	0.062
	(0.001)	(0.004)	(0.004)	(0.005)	(0.005)
Gender	0.018	-0.212	-0.207	0.048	0.049
	(0.007)	(0.027)	(0.028)	(0.029)	(0.030)
Immigration (Econ)	0.068				
	(0.003)				
Immigration (Culture)	0.068				
	(0.003)				
Age	-0.008	-0.090	-0.087	-0.083	-0.081
	(0.001)	(0.005)	(0.006)	(0.006)	(0.006)
Age^2	0.000	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-0.071	0.773	5.523	0.879	4.751
	(0.157)	(0.704)	(0.143)	(0.713)	(0.153)
Observations	14281	15202	15202	15333	15333
LAD Effects	Random	Random	Fixed	Random	Fixed

Standard errors in parentheses

Figure 8: British Election Study: House Prices, Ownership and Supporting Remain

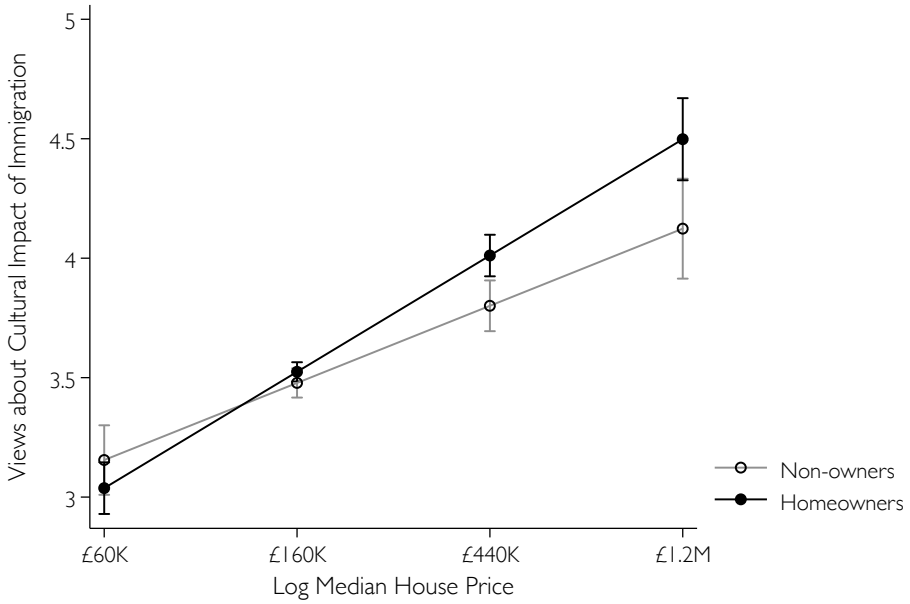


cultural life. It is very apparent from Model 1 - a linear random effects model - that these variables have an extremely strong effect on Brexit vote intention. Moreover, the apparent effect of homeownership, conditional on house prices, vanishes.

What is going on? Models 2 through 5 help to answer this question. In each case, the immigration attitudes measure - economic or cultural - is the dependent variable. Models 2 and 4 use LAD random effects and Models 3 and 5 use LAD fixed effects. In all four cases we see the result from Table 5 - a positive effect of LAD house prize for both non-homeowners and homeowners that is particularly strong for the latter group. Figure 9 demonstrates this effect graphically using the estimates from Model 4, examining views about immigration's cultural impact.

How should we interpret these findings? The high correlation between immigration attitudes and Brexit vote intention may reflect the fact that both essentially represent the same underlying set of values. Are these values prior to homeownership and choice of residential area? This is quite possible, although evidence of sorting by values in the UK suggests this is rather rare (Kaufmann and Harris, 2015). More

Figure 9: British Election Study: House Prices, Ownership and Attitudes to Immigration



likely is that a whole source of attitudes about Britain's place in the world, and the place of the world's citizens in Britain, reflect local conditions. Individuals living in an area that has had low and stagnating house prices for decades might quite reasonably believe that the past few decades of greater integration with Europe and beyond has not served them, or their country, well. Individuals in booming areas, by contrast, have made their peace with immigration and the EU.

References

Ahlquist, John S and Ben Ansell. 2017. "Taking Credit: Redistribution and Borrowing in an Age of Economic Polarization." *World Politics* .

Ansell, Ben. 2014. "The political economy of ownership: Housing markets and the welfare state." *American Political Science Review* 108(02):383–402.

Castles, Francis G. 2005. "The Kemeny thesis revisited." *Housing, Theory and Society* 22(2):84–86.

Kaufmann, Eric. 2016. "It's NOT the economy, stupid: Brexit as a story of personal values." *LSE European Politics and Policy (EUROPP) Blog* .

Kaufmann, Eric and Gareth Harris. 2015. ""White Flight" or positive contact? Local diversity and attitudes to immigration in Britain." *Comparative Political Studies* 48(12):1563–1590.

Kemeny, Jim. 1981. *The myth of home-ownership: Private versus public choices in housing tenure*. Routledge.

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

Schwartz, Herman. 2014. "Is there a really big trade–off? Housing, welfare and pensions reconsidered from a balance sheet perspective.".

Schwartz, Herman and Leonard Seabrooke. 2008. "Varieties of residential capitalism in the international political economy: Old welfare states and the new politics of housing." *Comparative European Politics* 6(3):237–261.

Schwartz, Herman M. 2009. *Subprime nation: American power, global capital, and the housing bubble*. Cornell Univ Pr.