Political Opposition to Foreign Home Ownership*

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Abstract

Real estate prices have increased in recent years across the OECD, and at least some of this increase is due to non-resident purchases of real estate from abroad. How do governments respond to this challenge? We show that governments can restrict non-resident entry into the real estate market, and we explore when citizens demand and governments impose these restrictions. We present a new global database documenting restrictions on the real estate transactions of non-residents across 190 countries from 1996 to 2017. We argue and present evidence that governments impose these restrictions in countries with democratic institutions and strong rule of law, where governments are responsive and price increases have been most dramatic. They are also more common where access to financing is more limited. To better understand the connection between citizens, democratic governments, and housing affordability, we ran a pre-registered survey experiment in Germany and in the United Kingdom. We assess how information about housing purchases from abroad and from outside the local area affect support for restrictions. We emphasize the role of mounting concerns about affordability, access to financing, and retirement planning in the context of global markets. Our results suggest that the real estate market is an area where even internationally oriented respondents are supportive of restrictions if restrictions help ameliorate the costs of globalization.

Keywords: Real estate, Housing affordability, Foreign investment, Investment restrictions, Inflow restrictions, Embedded liberalism, Real asset appreciation, Capital account restrictions, Home ownership, Retirement

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In recent years, local housing markets have become increasingly global with foreign, non-resident investors entering markets to purchase real estate. Analysts estimate that over half of new capital funding in real estate markets in Europe, the Middle East, and Africa originated abroad in 2015.[1] The real estate sector is a particularly attractive destination for foreign investors, as it provides stable, long-term returns, and it is often exempted from financial disclosure requirements (Bomare and Le Guern Herry, 2022). Foreign investment entry adds upward pressure to real estate prices, which have grown rapidly. This trend is especially pronounced in urban centers like London (Badarinza and Ramadorai, 2018). Recent requirements to reveal the identity of beneficial owners may counter this trend, but they have yet to reduce prices (Collin, Szakonyi and Hollenbach, 2023). Estimates suggest that a one percentage point increase in the share of residential transactions registered to overseas companies led to an increase of about 2.1 to 2.3 percent in house prices in England and Wales (Sá, 2016). Price increases prevent some local residents from purchasing real estate and increase pressure on politicians to provide affordable housing. How do governments respond to the increased globalization and affordability challenges in real estate?

In this paper, we document one specific response: Governments can impose restrictions on non-resident entry into real estate markets. For example, Canada recently introduced Bill C-19, a measure that would ban foreign nationals, without Canadian residency, from buying homes in certain jurisdictions. Canadian policymakers aim to slow the growth of housing prices. As the Canadian Minister of Finance Chrystia Freeland explained: "We will make the market fairer for Canadians. We will prevent foreign investors from parking their money in Canada by buying up homes."[2] We argue that this strategy is not confined to Canada,

[1]https://www.savills.us/insight-and-opinion/savills-news/198751/emea-real-estate-market-dominates-2015-cross-border-investment. Some of these flows are plausibly round-tripped: they emerged in the target market but were routed through other countries for tax or other purposes. In terms of real estate stock, about nine percent of commercial real estate in Germany is owned by foreign firms (Miethe and Trautvetter, 2022); residential rates are plausibly lower. About four percent of the full stock of real estate is held abroad in England and Wales (Bomare and Le Guern Herry, 2024).

[2]https://www.canada.ca/en/department-finance/news/2022/04/budget-2022-address-by-the-deputy-

and that governments systematically impose restrictions on non-resident purchases of real estate in order to limit price growth. Governments may also use these policies to appear responsive to citizen's demands (Jensen and Malesky, 2018), even if their effectiveness is limited.[3] These sorts of restrictions make up an important and under-explored component of capital account openness.

Governments shape the entry of non-residents, those who live outside the country, into the real estate market in various ways. They may tax these purchases, they may require that purchases be approved or authorized, or they may prohibit the purchases outright.[4] Governments may use these restrictions to make it less attractive for non-residents to purchase real estate, reducing demand and slowing price growth. While these restrictions are often discussed anecdotally, researchers lack systematic consideration and documentation of the restrictions on a global scale. We aim to fill this gap: we introduce a novel dataset of restrictions across 190 countries from 1996 through 2017. The dataset documents the extent and type of restrictions that governments impose on non-resident entry.

We propose several explanations for the use of restrictions. On an individual level, citizens are becoming increasingly frustrated with real estate prices, especially as some are barred from entering the real estate market. We anticipate that citizen responses to price increases depend on their individual characteristics. Renters, especially those who live in high-price areas, may be more supportive of restrictions on non-resident entry. Those who lack access to financing and to family support to purchase homes (through inheritance for example) and those with inadequate pension coverage, should be more supportive of re-

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[3]It remains unclear to what degree international capital drives local real estate prices. Interest rates for example probably have a larger effect on price increases. Also, because the policies are likely triggered by affordability concerns, it is difficult to definitively measure their consequences for affordability.

[4]They may also offer more nuanced qualitative restrictions. Some governments allow only citizens to purchase real estate. Others allow only the purchase of homes that will be the primary residence of the owner. Still others limit the repatriation of profits from home sales, or they limit the use of domestic financing for real estate sales to nonresidents.

strictions on non-resident entry into real estate markets. Finally, we expect that the global orientation of citizens will affect their support for closing non-residents out of the market: We generally expect those who are more internationally oriented to be less supportive of restrictions. However, if respondents believe that restrictions could limit the growth in real estate prices and thus the costs of open markets, they may be willing to support housing restrictions in order to prevent opposition to market integration more broadly.

At the national level, we argue that government sensitivity to citizen demands depends on political and economic institutions. Democratic governments, which are more responsive to citizen interests, are more likely to impose restrictions on non-resident entry into real estate markets. Governments are also more willing to impose restrictions in countries that have experienced rapid price growth; in countries with strong property rights, which make attractive markets for non-residents; and in countries with limited access to financing.

To evaluate our expectations, we rely on two analyses: First, we introduce cross-national data on real estate restrictions to assess how characteristics of governments and markets affect their likelihood of adopting restrictions on non-resident entry into the housing market. We show that governments become more likely to reach for restrictions as real estate prices increase, in more democratic countries with strong rule of law, and in countries with limited access to financing. By utilizing country and year fixed effects, we control for time-invariant factors and shared economic shocks and ensure that our results are driven by within-country changes in the variables of interest.

Second, we collect survey data in Germany and the UK to assess how individual characteristics affect respondents' support for restrictions on non-resident entry into the real estate market. We chose Germany and the UK, because both are large, open economies with strong property rights and democratic institutions, but otherwise different forms of legal institutions and market coordination and different levels of home ownership and foreign investment entry. We first report descriptive information documenting popular support for restrictions

across individuals and comparing their support for restrictions to other policies that governments could use to limit price growth. We then provide respondents with information about how the entry of non-residents (from abroad) and non-locals affects real estate prices. In pre-registered analyses,[5] we find that both treatments increase support for restrictions on non-resident entry into the real estate market – although the effects are larger for the non-local treatment in Germany and for the non-resident treatment in the UK. We further show that the effects depend on individual characteristics, like being a renter, concern about affordability, retirement planning, and preferences for globalization.

The paper contributes to several literatures. We introduce a new set of restrictions on international capital flows that has not been explored in the academic literature. Existent literature primarily emphasizes the extent to which international investors may enter capital markets overall (Brune et al., 2001; Quinn, Schindler and Toyoda, 2011; Steinberg, Nelson and Nguyen, 2018) with some additional emphasis on inflows and outflows specifically (Chwieroth, 2014; Pond, 2018; Gao, 2021, 2022; McDowell and Liao, 2022). The work thus shares similarities with the literature on FDI inflows and how policymakers use incentives and regulation to shape how foreign investors operate – after investment enters markets (Pinto and Pinto, 2008; Golub, 2009; Pepinsky, 2013; Pandya, 2014; Bauerle Danzman and Slaski, 2022). While factor and housing ownership both affect political preferences through considerations about returns and the need to self-insure (on investment, see Frieden, 1991; Pinto, 2013; on housing, see Ansell, 2014; Ansell, Broz and Flaherty, 2018), international housing purchases have received less scholarly attention.

Our emphasis on housing helps alleviate concerns that international policies are not salient for survey respondents and the public more generally. While the consequences of trade and capital account policies may not always be clear to survey respondents (Guisinger, 2009; Rho and Tomz, 2017), the public is intensely concerned about housing. In the study

[5]Our survey expectations were pre-registered with OSF.

presented below, we inform respondents about the connection between entry and housing prices, but this connection has already been made in many countries. For example, housing price increases have triggered huge protests against foreign entry into real estate markets, including in Portugal, a popular destination for 'digital nomads' who can work anywhere but have relatively short tenures,[6] and in Tenerife, a leading tourist destination.[7] In a 2021 referendum in Germany, residents of Berlin voted to expropriate the apartments of large private landholders and to incorporate them into the city's housing stock (Dancygier and Wiedemann, 2023).[8] The referendum took place in the wake of rapid price increases – with many blaming institutional investments that frequently have large foreign ownership shares.

We contribute to the emerging literature in political science on home ownership as a driving force in the formation of political preferences in the global economy. Ansell, Broz and Flaherty (2018) and Ansell (2014) show that home owners are less supportive of the welfare state when their assets gain value, plausibly because they prefer to self-insure rather than look to the government for assistance. Price developments have also been shown to translate into vote choice. In Poland, owners of Swiss-Franc-denominated mortgages were more likely to support the political opposition following the devaluation of the Euro (Ahlquist, Copelovitch and Walter, 2020). Price shocks in Scandinavia increased voting for populist parties (Ansell et al., 2022). Citizens who own homes are more concerned about adverse trade consequences to their broader community, as these effects might depress their housing value (Scheve and Slaughter, 2001). On a more local level, owners resist increasing the supply of new homes – again in order to protect value (Hankinson, 2018; Marble and Nall, 2021; Hall and Yoder, 2022). Home owners participate more politically, and they are more likely to support policies that protect the value of their own home (Jiang, 2018; Fischel,

[6]https://www.politico.eu/article/portugal-digital-nomads-bubble-gentrification/

[7]https://www.reuters.com/world/europe/thousands-protest-spains-canary-islands-over-mass-tourism-2024-04-20/

[8]https://www.euronews.com/my-europe/2022/09/26/berliners-voted-for-a-radical-solution-to-soaring-rents-a-year-on-they-are-still-waiting

2001). These papers evaluate the political consequences of home ownership. They do not consider how policymakers attempt to shape global real estate markets to the benefit of their constituents, which is precisely where our contribution lies.

The project also has implications for the recent literature on the backlash against globalization and the increase in nationalism (Margalit, 2011; Autor et al., 2016; Jensen, Quinn and Weymouth, 2018; Colantone and Stanig, 2018; Frieden, 2019). Foreign outgroups may make particularly attractive scapegoats when considering economic stagnation (Mansfield, Mutz and Brackbill, 2019; Mutz and Lee, 2020). We also know that home ownership affects preferences on globalization, although once again the evidence is frequently from trade policy (Scheve and Slaughter, 2001). This paper evaluates how policymakers respond to global investment flows in the context of home ownership, the largest purchase that most households will make. We show that globally oriented citizens may be willing to accept limits on foreign investment into housing markets, and we argue that this is to prevent widespread opposition to increased integration of markets.

Theory

As real estate prices increase and exclude some potential buyers from the market, we expect citizens to become increasingly frustrated and to demand policy remedies from their governments. However, exposure and responsiveness to these changes plausibly differs across individuals and countries. To match the theory more readily to the empirical analysis below, we focus first on national level determinants of restrictions on non-resident entry and, second, on individual level determinants of support for restrictions.

Of course some factors are consequential at both the national and individual level.[9] The magnitude of price increases vary dramatically across countries and localities and plausibly

[9]And in some sense, the national is just an aggregation of the individual level. That said, some factors are relevant across the full country: national political institutions for example.

affects support for and the adoption of restrictions on non-resident entry. Housing prices and total returns to homeownership increased at a considerable rate across the OECD and within large cities in particular (Knoll, Schularick and Steger, 2017; Jordà et al., 2019), at least in part due to these countries' attractiveness as secure destinations for foreign savings and illicit earnings. We expect citizen frustration with real estate prices to be concentrated in those countries and localities that saw the largest price increases.

National level

Governments differ in their responsiveness to pressure from citizens. Democratic governments, which are characterized by intense competition for citizen support, are more responsive to citizen demands (Lake and Baum, 2001; Bueno de Mesquita et al., 2003; Kono, 2006). We thus expect that democratic governments will be more likely to provide new restrictions in response to citizen demands. At the same time, democratic governments have an advantage in credibly committing to provide property rights (Acemoglu and Robinson, 2006; Biglaiser and Staats, 2012). For this reason, democratic countries likely make especially attractive (and secure) destinations for non-resident investment in real estate markets. Democratic countries are subsequently more likely to experience affordability crises, related to non-resident real estate purchases, and thus to come under pressure for restrictions.

We note here that these restrictions may not be the most effective policy tools. From the perspective of democratic governments though, the ability to claim credit for a policy, or to claim that policymakers are taking action, may be more important than the actual effects of the policy itself (Jensen and Malesky, 2018). In terms of housing market regulation, there are few if any easy options. Any policy that limits price growth will face opposition from home owners who form one of the most powerful voting blocks. Governments may try to increase supply or encourage the construction of denser housing, but this may also spur opposition from those concerned about the character of their neighborhoods or protection for

green space. This is often colloquially referred to as the NIMBY phenomenon, where citizens may support policy reforms but not want them to be carried out near their residence: 'not in my backyard'. Because restrictions on non-residents by definition do not affect residents, they may be especially attractive in democracy, where the government may happily pass the policy costs on to non-resident, non-voters.[10]

From the above discussion, we derive the following predictions.

Proposition 1. *Restrictions on non-resident entry in real estate markets should be more common in countries with rising prices, in democratic countries with strong property rights, and where citizens lack access to financing.*

Individual level

Individuals' responses to price increases likely depend on their tenure status: Home owners benefit from price increases and may be reluctant to reverse policies that led to increased prices in the past. For this reason, if home owners believe that the entry of foreign, non-residents into real estate markets helped elevate prices, they may oppose restrictions on non-resident entry into these markets. The expectations are reversed for potential buyers. Individuals seeking to buy a residence – or those who have been closed out of real estate markets due to price increases – may seek to reverse policies that led to the price increase. If potential buyers believe that the entry of foreign, non-resident buyers led to elevated prices, they may want to bar these buyers from entering markets. We thus expect that support for restrictions on non-resident entry into real estate markets hinges on the tenure status of individuals – with home owners, especially those with large mortgages, more opposed to non-resident restrictions and potential buyers more supportive of restrictions.

[10]In the coding of the restrictions, we distinguish between non-residents restrictions and non-citizen restrictions, but we think if is unlikely that most citizens distinguish between these two policies, as non-residents are rather likely to be non-citizens. In countries with large diaspora populations though, restrictions on non-citizens may be more common.

At the same time, individuals may exhibit sociotropic preferences, valuing not just their own direct economic returns but also attuned to how the economy is functioning for their society as a whole (Kinder and Kiewiet, 1981; Schaffer and Spilker, 2019; Bechtel and Liesch, 2020). Homeowners in particular may be concerned about the character of their neighborhood and their community. They may view home ownership as a path to upward mobility and they may not want to foreclose this path to young families. For these reasons, home-owners and renters alike may want to limit price increases. In the following, we focus on renters: Because their sociotropic and egotropic incentives cut in the same direction, we expect renters to be more sensitive to house price increases and supportive of policies aimed at reducing increases than home-owners.

There are several aspects of real estate purchases that differ from other assets. First, real estate is often the largest purchase made by an individual in his or her lifetime (Chetty, Sándor and Szeidl, 2017). Because buyers typically make a mortgage payment every month, real estate purchases may also help buyers save their money over time. Ownership of real estate may also provide a degree of security in old age. Homeowners are likely more confident that they will have somewhere to live, and, as an asset, real estate could be used as collateral for a loan or sold to offset unforeseen expenses (Conley and Gifford, 2006). As one survey respondent in the US mentioned, "One of the best things about homeownership is the chance to build a future for my extended family, and to build equity in my home, which will mean more security" (McCabe, 2016, 9).

Pensions operate in a similar way. Individuals set money aside during their working years by paying into a public pension system or a private pension fund; they then use income from their pension to secure their quality of life after retirement. For this reason, pensions and real estate ownership are often considered alternative strategies for individuals to secure their retirement (Castles, 1998; Kemeny, 2005; Schwartz and Seabrooke, 2009). Purchasing real estate may be especially important for an individual with insufficient access to pension

saving tools. Consequently, individuals who perceive that their retirement income may be inadequate, due to the absence or inadequacy of their pension planning, may be especially supportive of restrictions on non-resident real estate purchases.

Second, real estate purchases often require access to financing and to a large, up-front 'down payment' to secure the loan. Individuals who come from families with more wealth often have an advantage in this regard. Family-members frequently help with purchases of a home directly by providing the down-payment or indirectly by co-signing for the loan (Öst, 2012; Lee et al., 2020). We expect individuals who lack access to family support to be more supportive of restrictions on non-resident entry into real estate markets. The accessibility of real estate loans also differ across markets (Wiedemann, 2021; Fuller, 2015). It is easier to purchase a home in countries with larger credit markets and access to banking services. Individuals should be more supportive of non-resident restrictions in countries with limited access to financing.

Other individual-level factors may also be important. The real estate market is no longer purely domestic, and individuals differ in their support for international integration. We anticipate that individual's orientation toward the global economy will affect their support for restrictions on non-resident entry into the real estate market. Some citizens view international market integration as a good thing; they believe that international cooperation is essential to achieving shared goals like poverty alleviation, climate change regulation, and human rights protection. For others, independence from international rules and instead flexibility to respond to domestic concerns are paramount (Brutger and Clark, 2023). For still others, their own nation or in-group is paramount, and they view other groups as inferior or less important (Mansfield, Mutz and Brackbill, 2019; Mutz and Lee, 2020).

We expect that those who value their own group over others will be more supportive of restrictions on non-resident entry into the real estate market. We further expect that those who value international integration will be less supportive of restrictions on non-resident

purchases. However, we also expect that this reduction in support should be attenuated for those who are told that limits on non-resident purchases would limit real estate price growth: They would like to have open markets but also maintain affordability and prevent backlash against globalization; restrictions on non-resident purchases of real estate may allow them to balance these policy preferences.

We have laid out several factors that we believe make individuals more concerned about increased housing prices. We believe that policymakers, who have the time and resources to research housing market trends, are plausibly aware that non-resident purchases have increased prices and that they can use restrictions to claim that they are taking action in an important issue area. However, it remains unclear whether individuals will make the connection between housing prices and non-resident entry into real estate markets. In the survey experiment that follows, we will thus prime respondents about the relationship between non-resident entry into real estate markets and price levels. This analysis will also help us better understand how effectively policymakers can tap into concerns about affordability and illustrate their responsiveness to citizen interests.

Proposition 2. *When told that entry into real estate markets has led to an increase in prices, individuals should be more supportive of restrictions. The effects should be larger for those who rent and do not have a mortgage, are located in areas where prices have increased and lack access to credit or family support, have limited retirement plans and view home ownership as important to retirement planning, and report high levels of national chauvinism. Those who are supportive of globalization should be less responsive to the treatment, although the effects should be attenuated and possibly reversed in locations with rapid price increases.*

Research Design

Mirroring the theoretical discussion, we implement two sets of analyses to assess the propositions. We collect cross-national data on restrictions on non-resident real estate purchases to document the patterns in regulation across countries. We then conduct a survey to assess whether citizens engage with the housing market in the way that our theory predicts.

Cross-National Data

We begin by documenting the prevalence and intensity of restrictions on non-resident home ownership. We code the restrictions from 1996 to 2017 for the 190 countries and jurisdictions identified in the IMF Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). We code five broad categories that capture the extent of restrictions on non-resident real estate purchases. The variable can take a value of zero, one, two, three, or four – with zero indicating no restrictions and four indicating that inflows into the real estate market are strictly prohibited.[11] Table 1 details which types of restrictions fit into each category.

The coding strategy tracks other projects on cross-national capital flows closely (Quinn and Inclán, 1997; Quinn and Toyoda, 2008). The strategy is based on the idea that approval is a more restrictive policy than taxation (Arrow, 1973). This is because taxation is predictable and can be factored into cost-benefit calculations. Approval alternatively introduces uncertainty into the investors' decisions. Politicians can manipulate approval on a case by case basis, increasing their political discretion and reducing the predictability of their decisions. Table 2 describes recent examples of restrictions and their value in our dataset.

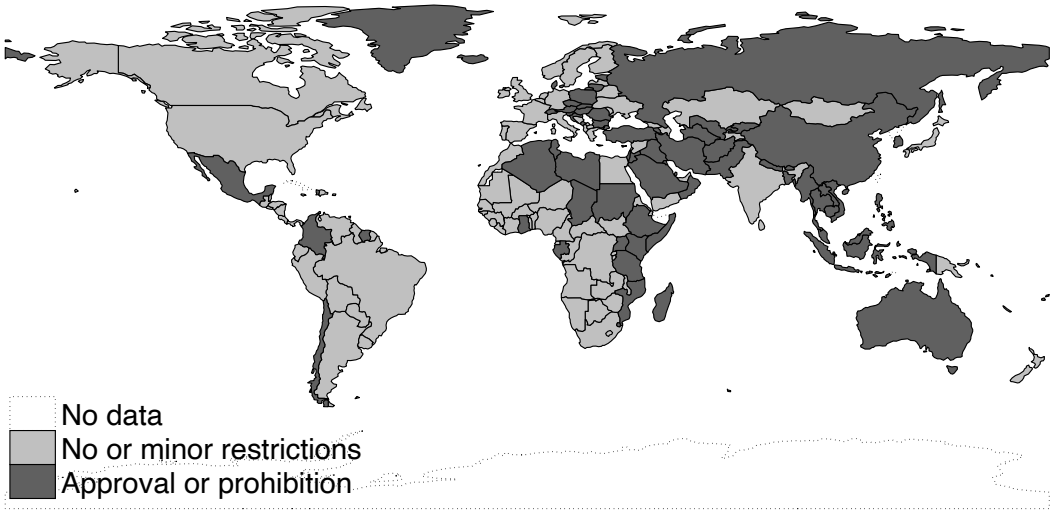
Figure 1 maps the sample across the globe. The jurisdictions included in the sample are

[11] Although the vast majority of the restrictions we analyse are on non-resident entry into the market, exit is also meaningful. The ability to repatriate profits for example is often a precondition for entry. For this reason, restrictions on *real estate* profit repatriation are coded as minor restrictions.

Table 1: Non-resident home ownership restrictions coding

Value	Description
0	No restrictions at all or very modest restrictions, like the need to report transactions for statistical purposes
1	Minor restrictions, for example if the government imposes a tax on non-resident real estate purchases; requires a permit, which is readily granted; limits the purchase of specific types of land for national security purposes; or requires approval by the central bank; or if domestic financing is unavailable or the repatriation of profits from real estate sales is restricted
2	Approval is required by a government entity, other than the central bank, to enter the market
3	Prohibition is in place against entry, but exceptions are made for long-term leases or when real estate purchases are associated with joint ventures where the majority owner is a resident
4	Prohibition with no exceptions

Figure 1: Sample



shaded. Darker shading indicates higher intensity of restrictions with approval or prohibition required at some point in the sample period. Lighter shading indicates the presence of no or minor restrictions.

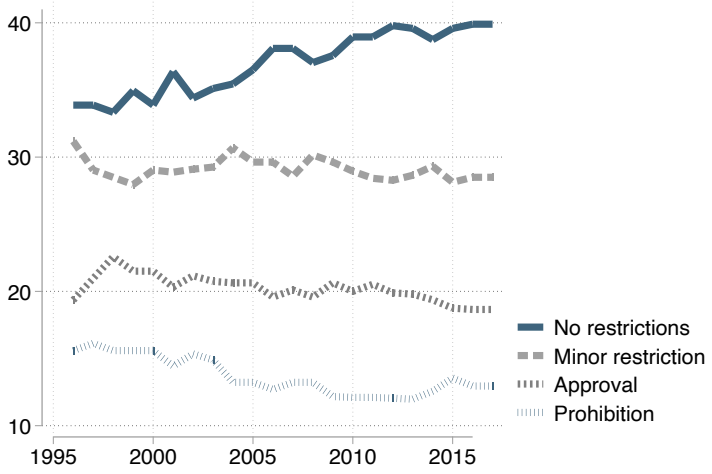
Figure 2 displays the share of countries with each type of restriction across the categories of restrictions, over time. In the figure, prohibitions with exceptions and prohibitions without exceptions are collapsed into one category, indicating severe restrictions on non-

Table 2: Coding examples

Value		Country	Restriction wording
0	None	South Korea	Non-residents are free to purchase local real estate and its associated rights. The acquisition of real estate with imported funds requires notification to a foreign exchange bank. Otherwise, Bank of Korea notification is required.
1	Minor	Ireland	Persons, individuals, and companies whose principal place of residence or registered office is outside the territory of the EU/EEA must apply to the Ministry of Agriculture, Food, and Rural Development through its Land Services Division for permission to purchase land. Such permission is rarely withheld.
1	Minor	Belize	Central Bank of Belize approval is required for the transfer of land between residents and non-residents. There is a land speculation tax of 5% of the unimproved value of landholdings exceeding 300 acres.
1	Minor	Norway	Controls apply to the acquisition of secondary residences by non-residents.
2	Approval	Denmark	Purchases of real estate require approval from the Ministry of Justice, except in the case of acquisition by former residents or by EU and EEA nationals with a residence permit or authorized stay or if acquisition occurred through inheritance or close family ties.
3	Prohibition	Ghana	Non-residents are allowed to hold leases for up to 50 years. Banks must report these transactions to the Bank of Ghana.
4	Prohibition	Armenia	Non-residents are prohibited by the constitution from acquiring land in Armenia.

resident entry into the real estate market, so only four of the five categories are depicted. No restrictions is the most common policy, converging to around 40 percent of the countries in our sample. The complete relaxation of restrictions has become more common in recent years, and the relaxing of restrictions has come primarily from outright prohibitions, which have become less common. Prohibitions currently account for less than 5 percent of the countries in the sample. Minor restrictions and approval processes experienced a small decline but have remained relatively stable over time. These sample averages mask substantial

Figure 2: Share of non-resident home ownership restrictions by intensity



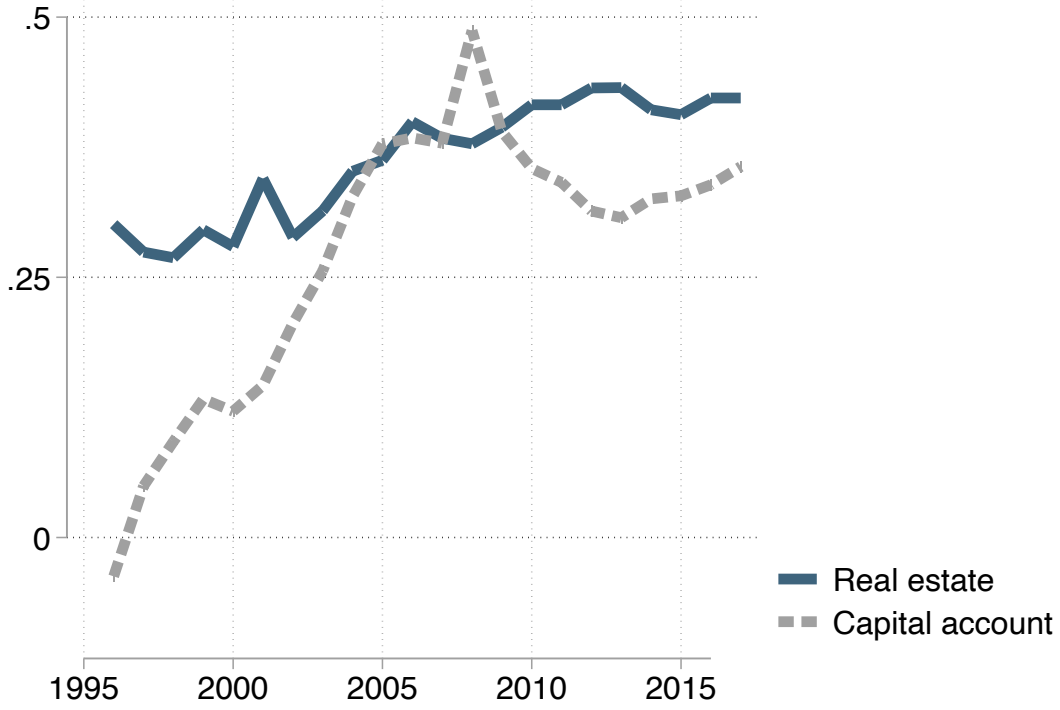
variation in restrictions at the country level, where some countries have imposed new or tightened existing restrictions and others have lifted them. For example, over the sample period, the restrictions were loosened 75 times and tightened 54 times.

Figure 3 compares openness to non-resident entry into the real estate market to openness to capital account flows overall – of which the real estate market would just be one destination for the flows (capital account data are described in Chinn and Ito, 2008). In order to facilitate comparison of the two data sources, the non-resident real estate restrictions variable has been inverted to capture openness (higher values indicate less intense restrictions) and transformed such that approval=0.5.[12] Although liberalization has increased to real estate flows, the openness in the capital account has happened much more quickly.

In addition to coding the intensity of the restrictions, ranging from full openness to outright prohibition, we also coded restrictions in a number of specific substantive areas. We coded for example an indicator variable for whether the country exempts non-residents, who are nevertheless citizens of the country, from the restriction. We also coded whether the

[12]The interpretations of the variable values are not directly comparable, as the Chinn and Ito measure relies on factor analysis to draw all the underlying types of flows into one measure and does not capture the severity of the restrictions on each flow type, e.g., flows of direct investment and flows into the money market, bond market, stock market, etc.

Figure 3: Average openness to non-resident transactions over time



Note: the non-resident real estate restrictions variable has been inverted to capture openness (higher values indicate less intense restrictions) and transformed such that approval=0. These manipulations facilitate comparison to capital account openness.

national government explicitly delegates home ownership regulation to sub-national units, and whether exceptions were made for supernational organizations, like the European Union and the Gulf Cooperation Council. We further coded an indicator for land restrictions, which includes restrictions related to agriculture and religious sites. We also coded restrictions of border or islands, which were often justified as security measures. We also coded whether the restriction retains to primary residences. Finally, we coded whether central bank approval was necessary for the repatriation of funds from real estate transactions. These geographic, financing, and bank approval restrictions were coded as minor restrictions in the intensity coding discussed above.[13]

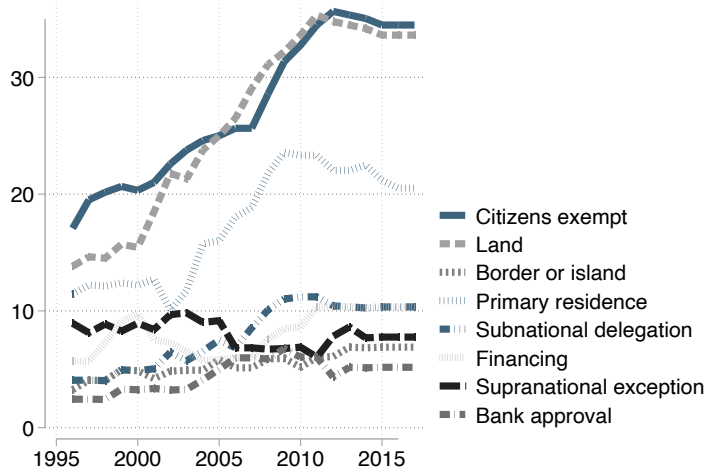
Figure 4 displays the share of all restrictions (within the set of non-zero restrictions) that contain each of the related provisions. It is becoming increasingly common that non-resident citizens are exempted from the real estate regulations and that restrictions include specific geographic considerations. Primary residence restrictions have also become more common, as has delegation to sub-national units.

Analysis

Following Proposition 1, we expect restrictions on non-resident real estate purchases to be more common in countries when housing prices increase; in countries with strong property rights, which receive the vast majority of non-resident, capital inflows into the real estate market; and in countries with more representative political institutions, which are more sensitive to public frustration with housing price increases. Restrictions should also be more common in countries where citizens lack access financing to pay for housing. We also examine the relationship between capital account openness and real estate restrictions: On the one hand, openness facilitates the entry of non-resident investors, plausibly increasing demand

[13]The bank approval restriction seems more closely related to balance of payments concerns than real approval regimes. The approvals discussed above are often made by political units, like government ministries in the case of Denmark.

Figure 4: Share of non-resident home ownership restrictions by substance



Note: these percentages are within those countries that have restrictions on non-resident purchases of real estate.

for restrictions. On the other hand, restrictions on non-resident entry into the real estate sector are a type of restriction on investment, which may contradict a fully open outlook on international finance.

Our dependent variable is the five-point measure of RESTRICTIONS ON NON-RESIDENT REAL ESTATE purchases, which is described above.

Our independent variables of interest are real estate prices, the quality of governance, the representativeness of political institutions, capital account openness, and the availability of credit. We measure housing price increases drawing on Bank of International Settlements data. Using 2010 as a baseline, the variable HOUSING PRICE measures the relative nominal price of the average residential property. A value of 1.1 for example would indicate that the average residence is 10 percent more expensive than in 2010. Unsurprisingly, property values have tended to increase over time. This sample includes 50 countries.

To measure the attractiveness of the real estate market, we use the ICRG quality of governance indicator, which captures the extent to which foreign investors believe their property rights will be protected, ICRG QUALITY OF GOVERNANCE. Higher values indicate

stronger governance quality and a better chance of investors property rights being protected or their receiving compensation for violations.

To measure the level of representation, we rely on the POLITY2 score, which ranges between -10 and +10 and captures the extent of representation across countries (Marshall, Jaggers and Gurr, 2017).[14]

To measure the degree of openness to foreign financial flows, we use the updated Chinn and Ito (2008) measure of CAPITAL ACCOUNT OPENNESS.[15] Higher values indicate more openness to the entry and exit of foreign investment.

To measure access to financing, we use the number of bank accounts per one million adults, called BANK ACCOUNTS SHARE. This variable is from the World Bank's Global Financial Development Database. A higher number of bank accounts represents better access to financing and thus less pressure on citizens from raising real estate prices.

To account for trends that may differ across political institutions and economic conditions, we also include controls for wealth (GDP PER CAPITA), market size (LOG GDP), and GROWTH in GDP. To account for country specific factors and to ensure that our results are driven by within country variation in the variables of interest, we also include country fixed effects. To capture shared shocks and trends over time, we include year dummies. We report robust standard errors.[16]

The results for OLS models are reported in Table 3. The results reported here are consistent with growing frustration among citizens with increasing residential real estate prices

[14]In the appendix, we report models including both Polity2 and the PolCon5 measure of POLITICAL CONSTRAINTS (Henisz, 2000) at the same time, because we expect democratic countries to both be more responsive to public interests and and more constrained in their ability to change policy. Polity2 remains positively and significantly associated with restrictions, while constraints are negatively associated.

[15]The measure has been updated by Karcher and Steinberg (2013) to code the specific year of policy changes. Their measure if more appropriate when one seeks to predict policy change. We are interested here in investors' perceptions of their ability to enter and exit markets; we thus believe that the moving average is more appropriate, as investors would be less certain about entry into a newly opened market. Our results are not sensitive to this measurement.

[16]We report results when standard errors are clustered by country in the Appendix – the results are less statistically significant, and often only remain significant at the 10 percent level.

and inadequate access to financing. In order to respond to this frustration, governments restrict access to residential real estate markets for non-residents, especially in countries with attractive real estate markets and where political institutions are more responsive to citizen interests.[17] The negative association between capital account openness and real estate restrictions is consistent with the government's general outlook as either liberalizing or closing markets to capital flows (to all types of capital including inflows into real estate). In order to assess whether individuals perceive housing investment to be different from investment in general, we turn now to a more fine-grained assessment of individual preferences for restrictions on non-resident entry into real estate markets.

Survey

To understand individual-level support for restrictions of non-resident homeownership we conducted two representative survey experiments in Germany in April of 2023 and in the UK in April of 2024. We selected these countries for several reasons. First, Germany and the UK share a set of characteristics, which we see as scope conditions for the theory's application. Both countries have open markets allowing us to capture how integration into global markets could affect public opinion. They have experienced rising housing prices, Germany since 2010 and the UK since the 1970s (Knoll, Schularick and Steger, 2017), and growing reliance on private saving for retirement income. They have representative political institutions, where citizens are comfortable expressing their opinions openly and they often expect the government to respond to their policy demands. Both markets are important destinations for foreign investment seeking stable returns. The UK real estate market has long

[17] One might expect an interactive effect: where price increases lead to restrictions, especially in democratic countries. We ran models as well with an interaction term, but the interaction never approached statistical significance.

Table 3: Non-resident restrictions and political and economic conditions

	(1)	(2)	(3)	(4)	(5)
Polity2	0.019***				
	(0.0057)				
ICRG quality of governance		0.56**			
		(0.23)			
Housing price			0.21**		
			(0.097)		
Capital account openness				-0.089***	
				(0.017)	
Bank accounts share					-0.18***
					(0.060)
Log GDP	0.091	0.20***	-0.40*	0.053	-0.12
	(0.062)	(0.071)	(0.21)	(0.060)	(0.12)
GDP per capita	-0.010***	-0.0070**	0.0075	-0.0094***	0.018**
	(0.0033)	(0.0032)	(0.0046)	(0.0031)	(0.0075)
Growth rate	0.00016	-0.0029	0.0068	0.00076	0.00019
	(0.0013)	(0.0023)	(0.0073)	(0.0012)	(0.00075)
Constant	1.11	-3.72**	13.0**	-0.19	5.76**
	(1.44)	(1.60)	(5.56)	(1.37)	(2.79)
Country FE	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes
Number Obs.	3321	2815	862	3749	1078
Number Countries	155	130	50	175	100

Coefficient estimates, robust standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

drawn investment from abroad (Sá, 2016; Badarinza and Ramadorai, 2018).[18] Germany has traditionally been a less important international investment hub, but it has served as a European currency anchor (Frieden, 2002) and continues to stabilize the Euro zone (Copelovitch, Frieden and Walter, 2016). Running the survey in Germany and the UK allows us to assess the salience of real estate affordability and support for restrictions on non-resident entry in

[18]The foreign held share of the total housing stock of England and Wales has been estimated to amount to 4% (Bomare and Le Guern Herry, 2024), triggering politicians in the country to introduce a stricter registration requirement in 2022 - the Register of Overseas Entities. This is aimed at forcing overseas entities to reveal their beneficial owner (Registry, 2022; Collin, Szakonyi and Hollenbach, 2023).

two high-income and democratic countries, which increasingly face concerns about housing affordability and retirement planning.

Second, while there are many similarities between the UK and Germany, they are also quite differently. For example, they are commonly used to represent the two 'varieties of capitalism' (Hall and Soskice, 2001) with the UK's liberal market economy and Germany's coordinated market economy. Consistent with this distinction, the UK is more financialized than Germany, and households are more willing to take on debt (Grittersová, 2014; Wiedemann, 2021). Home-ownership rates are about 20 percentage points higher in the UK than in Germany and plausibly provide a more important source of retirement stability and income. Finding consistent results across these two markets would thus make us more confident that the trends we discuss are generalizeable to a broader group of developed democracies.

Design

To analyze the effect of information about restrictions on non-residents, we randomly assigned respondents to four groups – two treatment groups and two control groups – in both Germany and the UK. The groups were designed in the following way.

- C1. Pure control. The first control group received no information.
- C2. Price increase control. The second control group read a statement that said: *Studies suggest that home prices have increased over the past 5 years.*
- T1. non-resident treatment. The first treatment group read a statement that said: *Studies suggest that property values have increased in the past 5 years. This is due to more real estate being bought by non-residents – those are people from abroad who are not resident in [Germany or the UK] .*[19]
- T2. Non-local treatment. The second treatment group read a statement that said: *Studies suggest that property values have increased in the past 5 years. This is due to more real estate being bought by non-residents – those are people that live in [Germany or the UK] but are non-local.*[20]

[19]In German: *Studien deuten darauf hin, dass Preise von Wohneigentum in den letzten 5 Jahren angestiegen sind. Das liegt daran, dass zunehmend Wohnungen von Personen aus dem Ausland gekauft werden, die in Deutschland keinen Wohnsitz haben.*

[20]In German: *Studien deuten darauf hin, dass Preise von Wohneigentum in den letzten 5 Jahren*

Collecting survey evidence allows us to meet two objectives. First, analyses within the control group help us uncover the contours of public opinion on non-resident restrictions and frustration with housing affordability in general.[21] Second, comparing the responses of the control group to the treatment groups allows us to evaluate the effect of information on preferences. This analysis begins to unpack how responsive citizens may be to politician rhetoric about non-resident restrictions and whether these could be an effective policy lever in responding to citizen demands for action on affordability.

We include the two treatment groups, because we were concerned that the non-resident treatment might bias results due to social-desirability, especially in Germany. In the non-resident treatment, we use the German word 'Ausland' to indicate that the people buying real estate are 'from abroad' or 'foreign'. We thought that this language might trigger respondents to report more favorable feelings toward foreigners and thus less support for restrictions if they are concerned about appearing biased or xenophobic, and that the treatment would thus have a more complicated effect among these respondents. For this reason, we also included the non-local treatment, which we thought would induce some of the same concerns about price increases due to market entry of people who reside elsewhere, but without raising concerns about anti-foreign bias. At the same time, the non-resident treatment is a more direct interpretation and translation of the policy under discussion. For this reason, we include both treatments. In Germany, we find that the effect of the on-local treatment is larger than the non-resident treatment. This may be due to a potentially heightened sensitivity to openly voicing xenophobic sentiments in Germany (Deutsches Zentrum für Integrations- und Migrationsforschung (DeZIM), 2023).[22] In the U.K., the non-resident

angestiegen sind. Das liegt daran, dass zunehmend Personen aus anderen Teilen Deutschlands Wohneigentum an ihrem Wohnort kaufen.

[21] Comparing the second control groups to the treatments also allows us to hold constant that respondents may or may not be aware of recent price trends and to ensure that the non-resident or non-local aspect of the treatment is driving the change in policy support.

[22] That is not to say that racism and discrimination do not exist in Germany - a recent report by the German Centre for Integration and Migration Research (DeZIM) (2023) shows quite the contrary, challenging

treatment effect is larger.

To measure support for non-resident restrictions and the effect of the treatment conditions, we ask respondents the following question:

Would you support government regulations that restrict home purchases by people from abroad, that don't live in the UK? [23] *(Strongly support to strongly oppose on a 5-pt scale)*

Respondents answer this question after being assigned into one of the treatment or control groups. Responses to this question will provide our dependent variable in the analyses below.

We also collect data on a battery of individual characteristics and views. We expect economic uncertainty and rising house prices to magnify our treatment effects. To eliminate concerns about post-treatment bias, the underlying questions that we used to code these characteristics were asked prior to the treatment. We collect information on whether respondents report being HOMEOWNERS, and if so, whether the respondent is a MORTGAGE HOLDER. We collect data on whether respondents are WORRIED about access to homeownership, as well as their geographic location by district. Their district allows us to identify trends in HOUSE PRICES in their market. We merge the survey data with the RWI-GEO-REDX data on pricing developments based on ImmoScout24 advertisement over the past three years in Germany (Klick and Schaffner, 2021) and the UK House Price Index that is provided by HM Land Registry **?**. We expect our treatments to have larger effects among respondents who do not own a home, who are concerned about housing affordability, and where prices have increased.

In addition, we collect data on access to financing and retirement planning. We code a dummy variable, ACCESS TO CREDIT, equal to one for respondents who report that they believe they could currently get a loan for a home. We also code a dummy variable for respondents who identify INHERITANCE as a funding source that they can tap into. We code

a 'self-perception' among the general population that racism is not an issue.

[23] In German: *Würden Sie staatliche Regulierung unterstützen, die den Kauf von Wohneigentum durch Personen aus dem Ausland einschränkt, die in Deutschland keinen Wohnsitz haben?*

HOME AS RETIREMENT PLAN equal to one for those that consider homeownership a part of their pension planning and code the variable PENSION equal to one for respondents who report an additional source of retirement income, beyond the standard statutory pension (sources could be civil service pensions, professional pensions, company pension, private provision, life insurance, or other). We expect our treatments to have larger effects among respondents who lack financing options and who have few expected resources for retirement planning.

Because we expect individuals to incorporate their broader overall beliefs and the international context when they consider restrictions on non-resident purchases of real estate, we also collect information about their world view. We collect their views on GLOBALIZATION. Globalization measures the extent to which respondents agree that globalization, the increasing interdependence of the [Germany's or the UK's] economy with the world, is good for [Germany or the UK]. Under normal conditions, we expect respondents who have more global perspectives to be less supportive of restrictions on non-resident entry. At the same time, where housing prices have increased rapidly, we expect these respondents to be more supportive of restrictions, as they would like to maintain open markets but want to limit the negative impact of openness on real estate prices.[24]

To better understand the sensitivity of respondents to the treatments, we also consider their national identity. We asked questions about national chauvinism and migration at the end of the survey, post-treatment. Although this raises some concerns about post-treatment bias, we thought that these questions are sufficiently sensitive that we wanted to prevent them from corrupting our broader results, particularly in Germany where the questions

[24]We also coded views on cooperative internationalism. The results look substantively (and significantly) similar: Cooperative internationalism measures the extent to which respondents agree with the following four ideas: 1) that [Germany or the UK] should work more closely with the United Nations, 2) that it should work with other countries to solve problems like poverty and pollution, and 3) that the promotion and defense of human rights in other countries and 4) supporting living standards in other countries are of paramount importance.

about national superiority are politically sensitive and in the UK where concerns about migration loomed large in the Brexit debate. We coded a variable MIGRANTS CONTRIBUTE that captures the extent to which respondents report that migrants generally contribute more through work and taxes than they take out of government services (the five-point scale ranges between generally take out more to generally put in more). We also coded a variable, NATIONAL CHAUVINISM, that captures the extent to which individuals think their country is superior to other countries and the extent to which they are not ashamed of their country (Herrmann, Isernia and Segatti, 2009; the eight point scale sums up responses to questions about national shame and superiority).[25] We expect that respondents who view migrants more favorably and who score lower on the national chauvinism scale are less willing to impose restrictions on non-resident entry into the real estate market.

Our expectations were pre-registered with OSF and the plan is located in the Appendix below in Section A.8.

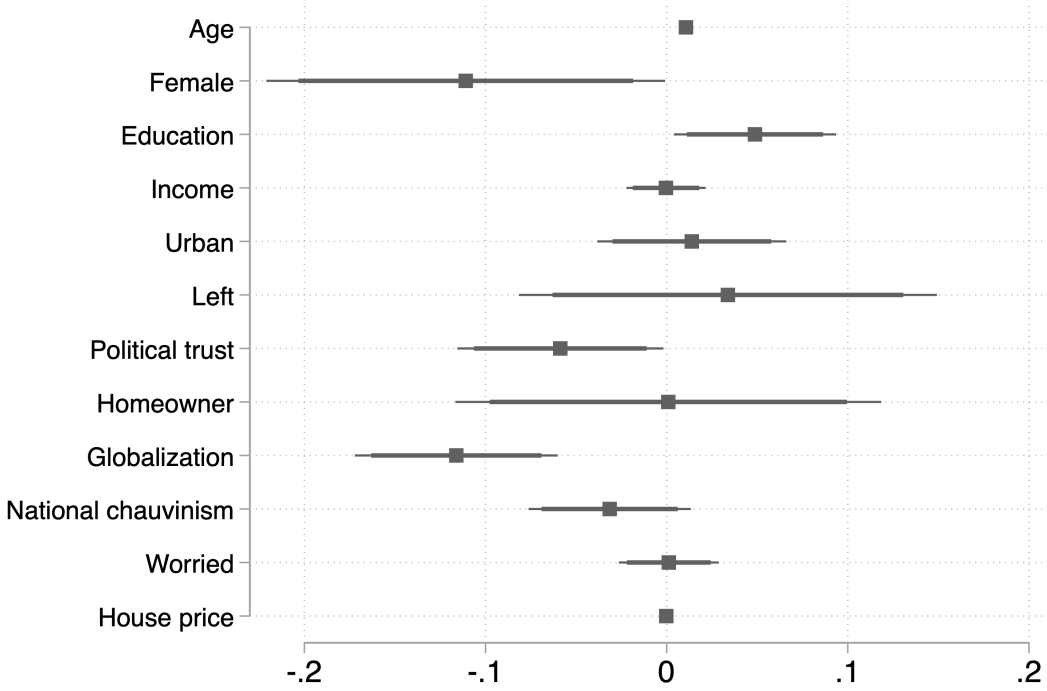
Results

Description. Before proceeding to our experimental treatment, we present a brief description of public opinion on non-resident, real estate restrictions. Within the pooled control groups, we assess which individual characteristics are associated with support for restrictions. Figure 5 reports the associations (with 90 and 95 percent confidence intervals) between support for restrictions on non-resident entry into real estate and several individual characteristics. The associations are the coefficients from a single OLS regression model, with each of the variables included, where support for restrictions is the dependent variable.

Older, more educated, and male respondents are more supportive of restrictions, on-average, as are those who report lower levels of political trust and less globalist views. Those

[25]National chauvinism sums up the answers to the following two questions, which are recorded on a four-point scale: *How superior is the UK compared to other nations?* and *How many things about the UK make you ashamed?* The latter response is inverted.

Figure 5: Baseline associations with support for non-resident restrictions



Note: Regression coefficients with 90 and 95 percent confidence intervals. Support ranges from 1=strongly oppose to 5=strongly support. Data are from the two control groups, N=974 in Germany and N=1,063 in the UK.

who are more concerned about real estate affordability (or who are renters or located in places with price increases) are not statistically significantly more supportive of restrictions on non-resident entry into real estate markets. These results suggest that respondents may be unlikely to make the connection between real estate prices and restrictions on non-resident entry themselves. In the survey design reported below, we prime respondents to make this connection, much as we currently observe politicians priming the public in Canada.

At the beginning of the survey, before assigning respondents to any treatment or control groups, we also asked whether they are 'for', 'against', or 'don't know' about several different policies that could be used to reduce real estate prices. From this question, we create dummy variables that capture respondent support for each policy (respondents who report don't know are missing). Table 4 reports the summary statistics for the variables measuring

respondent support for each of these policy responses. The most popular policies in both countries are fighting money laundering; Germans are also very supportive of increasing social housing, whereas UK respondents mainly support interest relief measures. Restrictions on non-resident entry are of middling popularity in both countries and the least popular are limiting Airbnb and second homes in Germany and reducing the regulatory burden for new buildings in the UK.[26]

Table 4: Summary statistics for policy options

	Mean	SD	Min	Max	Count
Limit second homes	0.59	0.49	0	1	3350
Limit Airbnb	0.66	0.48	0	1	3209
Reduce regulatory burden for new buildings	0.68	0.47	0	1	3049
Restrict non-resident entry	**0.73**	**0.44**	**0**	**1**	**3315**
Regulate inheritance	0.75	0.43	0	1	3382
Limit interest rates	0.80	0.40	0	1	3563
Tax relief for interest	0.85	0.36	0	1	3498
Increase social housing	0.86	0.35	0	1	3611
Fight money laundering	0.90	0.30	0	1	3788
Observations	4138				

Summary statistics for urban respondents only and separate by Germany and the UK can be found in the Appendix.

Treatment. We first discuss the effects of the treatment and control groups. We then consider heterogeneous treatment effects, and we conclude by discussing how the results differ in the UK and Germany.

In Figure 6, we report the regression coefficients from OLS regression models analyzing the effects of the control and treatment vignettes on support for restrictions on non-resident entry into the real estate market. The excluded category is the pure control group. The effect of the price increase group is slightly negative and statistically insignificantly different to the pure control. This is consistent with respondents being generally aware that housing prices

[26]In the Appendix, we report that the relative ranking of the policies remains largely unchanged when limiting the sample to urban respondents. Limiting Airbnbs and second homes remain the least popular options.

have increased in recent years. The similarity between the two control groups reassures us that any effect of the treatments would not be from informing respondents that prices have increased, but from attributing this increase to non-residents or non-locals.

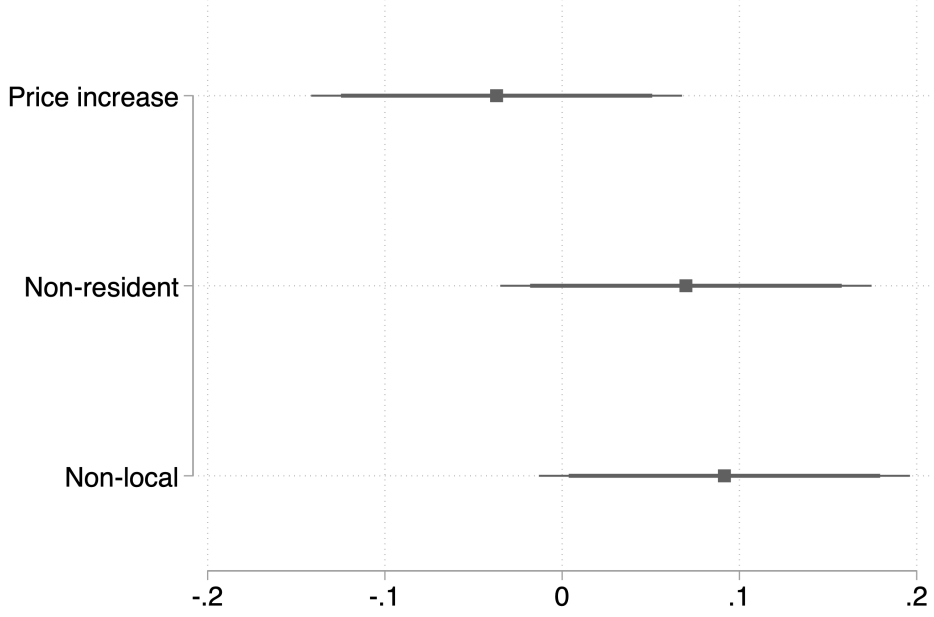
In the pooled sample, we also note similar effects of the two treatments: respondents do not respond differently when the increase in housing prices is driven by non-residents or when it is driven by people who are non-local. For these reasons, we use the two control groups as the baseline for comparison to the two treatment groups. In the following, the *treatment* group refers to respondents that received either the non-resident or non-local treatment and the *control* group refers to respondents that received either the pure control or the price increase control. This decision increases the number of respondents in the control (to 2,177) and treatment conditions (to 2,169), which allows us to better assess the predictions for heterogeneous treatment effects. In addition, we add a dummy variable for whether a respondent comes from the UK in the results reported below. We return to the question of whether the individual treatments have different effects in the discussion of the results in Germany and the UK following the pooled analysis below.

We next evaluate whether the treatment has heterogeneous effects depending on several individual characteristics. Figure 7 reports reports the marginal effect of the treatment (non-resident or non-local) interacted with several different dummy variables. In separate models we interact the treatment with dichotomous variables capturing whether respondents own a home (top-left), have a mortgage (top-center),[27] have access to credit to purchase a home (top-right),[28] have access to an inheritance to finance a home purchase (bottom-left), report a pension source beyond the state-supplied pension (bottom-center), and consider home-ownership a part of retirement planning (bottom-right).

[27]The variable capturing the mortgage was only asked to home-owners, reducing the sample size to 2,338 respondents.

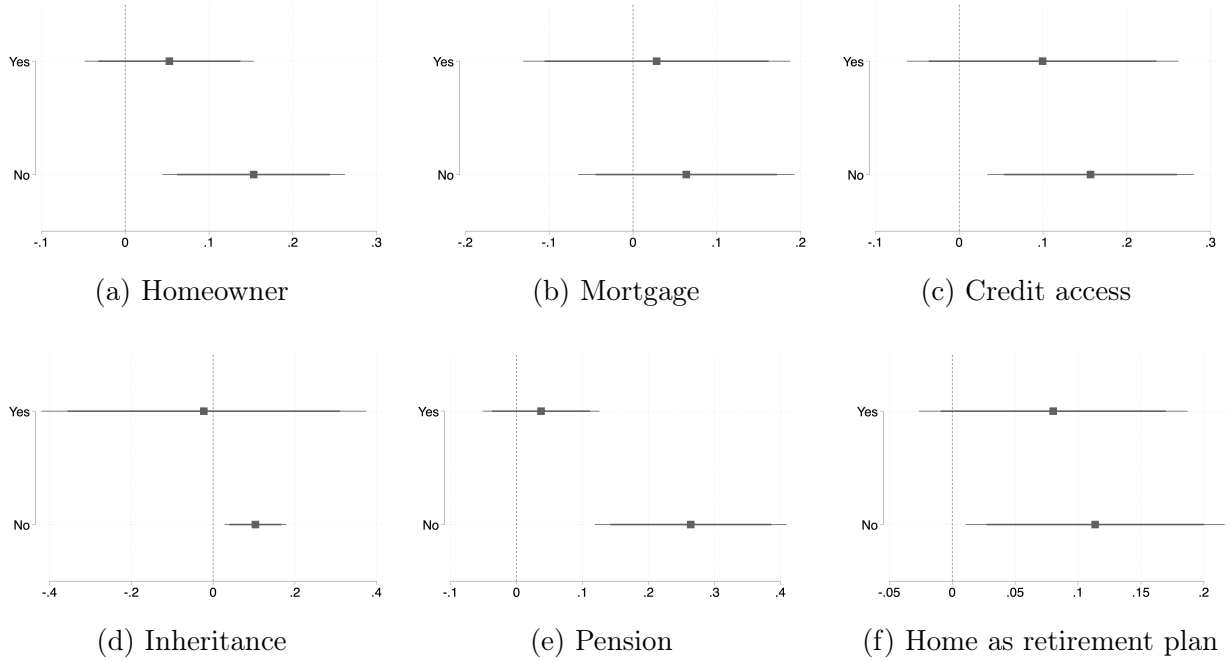
[28]The variables capturing access to credit and financing were only asked of respondents who do not currently own a home, which reduces this sample size to 2,479 respondents.

Figure 6: Marginal effect of group assignment on support for non-resident restrictions



Note: Regression coefficients with 90 and 95 percent confidence intervals. Sample includes 4,346 respondents in Germany and the UK. The omitted category is the pure control (no information). The estimates can be found in Table A.10 in the Appendix.

Figure 7: Marginal effect of treatment on support for non-resident restrictions



(a) Homeowner (b) Mortgage (c) Credit access

(d) Inheritance (e) Pension (f) Home as retirement plan

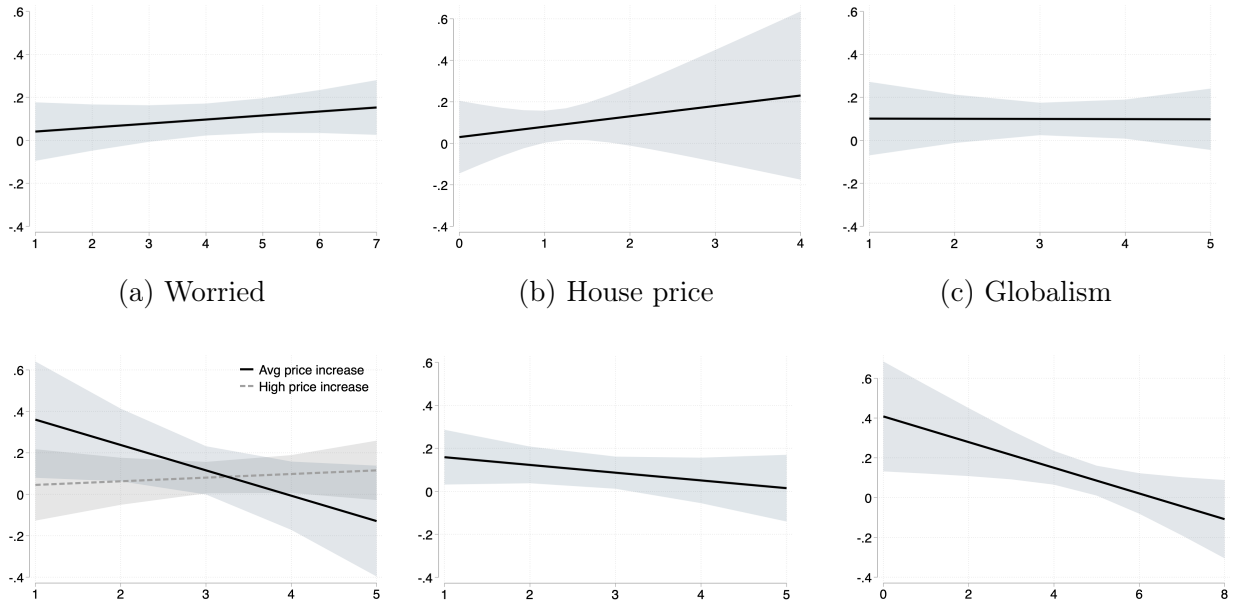
Note: Regression coefficients with 90 and 95 percent confidence intervals. Depending on the regression, the sample includes between 4,346 and 2,338 respondents in Germany and the UK. The treatment captures the non-local and non-resident conditions. The control is the pure control or the price increase control. The estimates can be found in Table A.11 in the Appendix.

Consistent with their concern for real estate price increases, we find that only non-home owners respond to the treatment by becoming more supportive of restrictions on non-resident entry. In fact, homeowners with and without a mortgage do not become more supportive of restrictions.[29] We also find that the increase in support is confined to respondents who do not have access to credit or to an inheritance to finance a home purchase, who have limited retirement planning, or who view home ownership as part of their retirement plan.

In Figure 8, we interact the treatment with several continuous variables. The top-left panel reports regression coefficients from the treatment interacted with the extent to which respondents report being worried about access to home ownership. The top-center panel displays the interaction with house prices. The top-right panel displays the interaction

[29]We found it plausible that people who didn't have to worry about being underwater could be more attentive to community concerns about affordability. This does not seem to be the case.

Figure 8: Marginal effect of treatment on support for non-resident restrictions



(a) Worried (b) House price (c) Globalism

(d) Globalism (e) Migrants contribute (f) National chauvinism

Note: Regression coefficients with 90 and 95 percent confidence intervals. Depending on the regression, the sample includes between 4,346 and 4,170 respondents in Germany and the UK. The treatment captures the non-local and non-resident conditions. The control is the pure control or the price increase control. The estimates can be found in Table A.12 in the Appendix.

with support for globalization. In the bottom-left panel, we report the coefficients from a triple interaction between the treatment, support for globalization, and housing prices. We present the marginal effect of the treatment at the average price increase over three years (three percent in our sample) and one standard deviation above average (sixty-six percent). In the bottom-right panel, we report the treatment effect at different values of national chauvinism.

The treatment triggers support for non-resident, real estate entry restrictions only among respondents who are indifferent to or worried about access to home ownership (it has no effect on those who are not worried). Although the predicted effect is increasing in house prices, it is not statistically significant. The effect of the treatment as a function of globalization seems to also depend on affordability, as predicted by the theory. When house prices are growing at the mean rate, we observe a declining association between the treatment and support for non-resident restrictions: it is only respondents who are not supportive of globalization that support using restrictions on non-resident entry into the real estate market. However, for respondents in high-price-growth areas, they become more supportive of using restrictions to keep non-residents out of real estate markets when they are also supportive of globalization. These findings suggests that in rapid-price-growth areas, respondents who want to maintain globalization want to temper its impact on housing affordability. They might be motivated by limiting price growth for themselves, but they may also want to prevent broader backlash against global markets.

Individuals' beliefs about the global economy also condition their response to the treatment. The positive treatment effect is confined to respondents who believe that migrants generally take out more than they contribute to health and welfare services. For respondents who believe that migrants contribute more, the treatment has no effect. Intuitively, those who believe that migrants take more out of the economy than they contribute are more willing to support restrictions on non-resident entry.

Interestingly and inconsistent with our expectations, the treatment seems only to increase support for restrictions among those respondents that are low in national chauvinism (they report few factors that they are ashamed of and high national superiority). This is a robust finding across both samples. Consistent with the literature on support for restrictions in trade politics in particular (for example, Mansfield and Mutz, 2009), we expected the opposite: that respondents who report higher levels of national chauvinism would be more supportive of restricting markets for non-residents. It could be that the questions are too sensitive, although they have been widely replicated in other studies. It could also be because these respondents believe that their co-nationals are so superior that they do not feel threatened by the entry of non-residents into the domestic real estate market. These conflicting effects of national chauvinism, that feelings of superiority might make respondents more willing to target foreigners but at the same time make targeting unnecessary, warrant more exploration in the literature.

Robustness. In the appendix, we report all results when including a standard set of control variables: age, gender, income, education and urban. We also report the results when limiting the sample to first the respondents in Germany and then the respondents in the UK. Results also look similar (and if anything stronger) when excluding non-citizens, who are only 125 in the UK sample and 68 in the German sample.

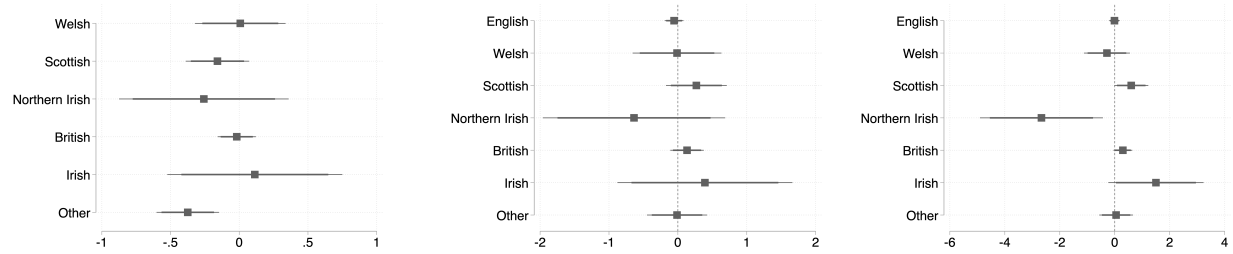
Results in Germany. While on-average across the two samples the effects of the non-local and non-resident treatment are similar, the non-local treatment has larger and more consistent effects in Germany. This could be because the treatment primed Germans to consider non-residents from outside Germany – for historical reasons, Germans may be especially concerned about reporting opinions that might be perceived as xenophobic, nationalist, or anti-foreign. Many respondents may also be sympathetic to the challenges faced by foreigners. The results of the non-local treatment in the German sample are similar to the results for the two treatments pooled in the sample that includes respondents from Germany and

from the UK.

Results in the UK. In the UK, the non-resident and non-local treatment have similar effects, although the non-resident treatment has slightly larger effects (the two treatments are not statistically different from each other in the UK). This may be due to the UK having historically experienced a large influx of foreign capital especially in the London housing market, triggering salient political action in the past. The UK further is a federation of several nations, and thus respondents in the UK may view the survey through a lens shaped by their nationality. We asked respondents in the UK what they consider their national identity to be, and we assess how nationality might affect support for restrictions on non-resident entry into the real estate sector.[30] Figure A.13 displays the results. The left panel displays the correlation between nationality and support for restrictions. While there are some small predicted differences between the groups, only the negative correlation with the 'other' category is statistically significant and negative, suggesting the respondents with national origins outside the UK are less supportive of restrictions on non-residents. The center panel displays the marginal effect of the treatment, conditional on nationality. The findings suggest that perhaps the British, Scottish, and Northern Irish respondents are more sensitive to concerns about price effects of non-resident entry. The right panel displays the marginal effect of the non-resident treatment alone (excluding the non-local treatment), conditional on nationality. When looking only at the non-resident treatment, the effect is statistically significant and positive at the five percent level for Scottish respondents and positive at the ten percent level for British and Irish respondents. The results are negative though at the five percent level for Northern Irish respondents, suggesting that they perhaps do not want the UK to prevent Irish citizens from buying real estate or that they are simply more sensitive to the concerns of non-residents.

[30]This question was part of the nationality battery of questions and was post-treatment, but we expect these responses to be stable.

Figure 9: National identity and support for restrictions



(a) Correlation with nationality (b) ME of treatment (c) ME of non-resident

Note: Regression coefficients with 90 and 95 percent confidence intervals. The sample includes 2,033 respondents in the UK. The left panel captures the correlations between nationality and support for non-resident restrictions. English is the omitted category. The center panel captures the effect of the treatment as a function of nationality. The treatment is the non-local and non-resident conditions. The control is the pure control or the price increase control. The right panel captures the marginal effect of the non-resident treatment condition. The estimates can be found in Table A.13 in the Appendix.

Conclusion

In this study, we present a policy that governments can use to reduce price pressure on domestic housing markets or to claim credit for attempting to reduce this pressure: They can restrict the entry of non-resident investors, who enter the market from abroad and purchase domestic real estate. We introduce a novel dataset documenting these restrictions in a cross-national, time-series setting. We hypothesize that democratic governments are more likely to impose these regulations in response to pressure from citizens in countries with rising prices, strong property rights, and limited access to financing. We present correlations in the cross-national data that are consistent with these expectations. We then assess the theoretical propositions at the individual level in Germany and the UK. We conducted a survey experiment where we randomly informed respondents that non-resident and non-local entry into housing markets has led to price increases. Respondents who received this information are more supportive of restrictions.

The treatment effects are larger for respondents who do not own homes and who lack financial security and pension access. This means that restrictions are supported by citizens

that form a minority in most OECD markets, where about two-thirds of households own their own housing on-average.[31] Recent increases in prices and interest rates make the path to ownership more costly. Our findings suggest that the trend away from accessible real estate, accompanied by a the privatization of pension assets more generally (Brooks, 2005), will increase citizen demand for government interventions in housing markets aimed at stabilizing prices.

At the same time, there is substantial variation in home ownership rates between countries, and yet the findings persist both in the cross-national analyses and the survey results. On-average citizens are supportive of non-resident restrictions and politicians will respond to price increases with the introduction of those policies – irrespective of tenure status. This may indicate that a booming housing market with rising prices is no longer necessarily seen as a sign of a healthy and growing economy that benefits owners, but a heuristic for general developments of unaffordability with rising living costs and a financially insecure future. While mainly non-owners will benefit from these policies, it seems to be a broader set of constituents that is supportive of restrictive policies.

The treatment effect is also conditioned by support for globalization in nuanced ways. In locations where housing prices have increased at the mean rate, support for globalization makes respondents less responsive to the treatment. This makes intuitive sense: they are less likely to support a type of restriction on investment entry (into housing) when they think that integration into the global economy is a good thing. However, in places where housing prices have increased at a rate one standard deviation above the mean, the effect is flipped. In high-price-growth areas, support for globalization makes people more receptive to the treatment and more likely to support restrictions on non-resident entry into the housing market. Their increased receptiveness is consistent with a desire to maintain open markets

[31] Ownership rates include those with and without a mortgage. Date from https://www.oecd.org/els/family/HM1-3-Housing-tenures.pdf

but to limit the costs to the local housing market. They may want to limit housing costs for themselves or for others in order to limit backlash against global markets. In sum, support for restrictions on non-resident entry may be most pronounced among those who are otherwise supportive of globalization and are low in national superiority. The findings thus suggest a degree of pragmatism and sophistication among survey respondents. They may be willing to accept limited market restrictions if those restrictions allow them to maintain liberal economic policy in general.

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A Appendix

A.1 Cross-national

Table A.1: Non-resident restrictions and political and economic conditions, quadratic time trend

	(1)	(2)	(3)	(4)	(5)
Polity2	0.019***				
	(0.0057)				
ICRG quality of governance		0.53**			
		(0.22)			
Housing price			0.17*		
			(0.093)		
Capital account openness				-0.088***	
				(0.017)	
Bank accounts share					-0.18***
					(0.060)
Log GDP	0.085	0.20***	-0.39*	0.045	-0.11
	(0.061)	(0.070)	(0.21)	(0.059)	(0.12)
GDP per capita	-0.010***	-0.0075**	0.0055	-0.0094***	0.017**
	(0.0033)	(0.0032)	(0.0043)	(0.0031)	(0.0078)
Growth rate	-0.00035	-0.0037*	0.0026	0.00031	0.000056
	(0.0013)	(0.0022)	(0.0053)	(0.0012)	(0.00081)
Constant	2786.2**	2862.9**	5708.5***	761.3	2599.6
	(1089.7)	(1254.1)	(1756.0)	(1006.0)	(2631.1)
Country FE	yes	yes	yes	yes	yes
Quadratic time trend	yes	yes	yes	yes	yes
Number Obs.	3321	2815	862	3749	1078
Number Countries	155	130	50	175	100

Coefficient estimates, robust standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

Table A.2: Non-resident restrictions and political and economic conditions, standard errors clustered at the country level

	(1)	(2)	(3)	(4)	(5)
Polity2	0.019				
	(0.012)				
ICRG quality of governance		0.56			
		(0.52)			
OECD member					
Housing price			0.21		
			(0.22)		
Capital account openness				-0.089**	
				(0.041)	
Bank accounts share					-0.18
					(0.14)
Log GDP	0.091	0.20	-0.40	0.053	-0.12
	(0.17)	(0.18)	(0.56)	(0.16)	(0.22)
GDP per capita	-0.010	-0.0070	0.0075	-0.0094	0.018
	(0.0093)	(0.0092)	(0.011)	(0.0088)	(0.012)
Growth rate	0.00016	-0.0029	0.0068	0.00076	0.00019
	(0.0023)	(0.0023)	(0.0064)	(0.0024)	(0.00064)
Constant	1.11	-3.72	13.0	-0.19	5.76
	(3.80)	(4.12)	(15.1)	(3.55)	(5.21)
Country FE	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes
Number Obs.	3321	2815	862	3749	1078
Number Countries	155	130	50	175	100

Coefficient estimates, standard errors in parentheses, clustered by country. * significant at 10%, ** significant at 5%, *** significant at 1%.

A.2 Survey Data Variable Codings

Table A.3: Variable codings of survey items

Value	**Description**
Access to credit	Respondents were asked whether if they wanted to buy a home, they thought if they could get a loan, dummy variable.
Cosmopolitan internationalism	Questions were asked prior to the treatment block, index based on 4 questions regarding economic openness and cooperation, higher score reflects more cosmopolitan views.
Globalization	Respondents were asked whether they believe globalization is good for [Germany or the UK]. Ranges from 1=not good at all to 5=very good.
Homeowner	Homeownership dummy.
Home as retirement plan	Respondents were asked if they consider homeownership a part of their pension planning, dummy variable.
Inheritance	Dummy variable that is 1 if inheritance is a funding source that respondents can tap into if they were to buy a home.
Left	Respondents were asked which party they voted for in the last national election. Dummy variable that is 1 if respondent voted for *SPD*, *Gruene* or *die Linke* in Germany and for *Labour* or *Green Party* in the UK.
Migrants contribute	Captures the extent to which respondents report that migrants generally contribute more through work and taxes than they take out of government services. The five-point scale ranges between 1= generally take out more to 5= generally put in more.
Mortgage holder	If respondents said that they were homeowners they were asked whether the the still owe money on a loan or a mortgage for the dwelling/building they live in. Dummy variable.
National chauvinism	Questions were asked after the treatment block, index based on 2 questions regarding national superiority and national shame, higher score reflects higher index in national chauvinism.
Pension	Dummy variable that is 1 if respondents report an additional funding source of retirement income beyond the standard statutory pension.
Plans to become homeowner	dummy variable.
Political trust	Questions were asked prior to the treatment block, asks respondents how often they can trust politics to the the right thing, ranges from 1=never to 5=always.
Urban	1=Rural area to 4=Big city.
Worried	Respondents were asked whether they were worried about access to homeownership, ranges from 1=not worried at all to 5=very worried.

A.3 Survey Data - Preferences for Policies

Table A.4: Summary statistics for policy options, urban respondents only

	(1)				
	mean	sd	min	max	count
Restrict nonresident entry	0.71	0.45	0.00	1.00	1066.00
Regulate inheritance	0.73	0.45	0.00	1.00	1055.00
Fight money laundering	0.87	0.33	0.00	1.00	1181.00
Limit second homes	0.58	0.49	0.00	1.00	1052.00
Limit Airbnb	0.67	0.47	0.00	1.00	1024.00
Reduce regulatory burden for new buildings	0.73	0.45	0.00	1.00	992.00
Increase social housing	0.87	0.34	0.00	1.00	1139.00
Tax relief for interest	0.83	0.38	0.00	1.00	1091.00
Limit interest rates	0.78	0.42	0.00	1.00	1094.00
Observations	4138				

Table A.5: Summary statistics for policy options, by country

	(1) Germany					(2) UK				
	Mean	SD	Min	Max	Count	Mean	SD	Min	Max	Count
Restrict nonresident entry	0.73	0.44	0.00	1.00	1764	0.74	0.44	0.00	1.00	1551
Regulate inheritance	0.79	0.41	0.00	1.00	1794	0.70	0.46	0.00	1.00	1587
Fight money laundering	0.89	0.32	0.00	1.00	1879	0.92	0.28	0.00	1.00	1909
Limit second homes	0.49	0.50	0.00	1.00	1635	0.69	0.46	0.00	1.00	1715
Limit Airbnb	0.63	0.48	0.00	1.00	1593	0.68	0.47	0.00	1.00	1616
Reduce regulatory burden on new buildings	0.77	0.42	0.00	1.00	1598	0.58	0.49	0.00	1.00	1451
Increase social housing	0.88	0.33	0.00	1.00	1792	0.84	0.37	0.00	1.00	1819
Tax relief for interest	0.83	0.38	0.00	1.00	1784	0.86	0.34	0.00	1.00	1713
Limit interest rates	0.75	0.43	0.00	1.00	1746	0.85	0.35	0.00	1.00	1817
Observations	2074					2064				

Table A.6: Summary statistics for policy options for urban respondents, by country

	(1) GER					(2) UK				
	mean	sd	min	max	count	mean	sd	min	max	count
Restrict nonresident entry	0.73	0.45	0.00	1.00	630	0.68	0.47	0.00	1.00	435
Regulate inheritance	0.75	0.44	0.00	1.00	616	0.70	0.46	0.00	1.00	438
Fight money laundering	0.88	0.33	0.00	1.00	675	0.87	0.34	0.00	1.00	505
Limit second homes	0.54	0.50	0.00	1.00	580	0.62	0.48	0.00	1.00	471
Limit Airbnb	0.68	0.47	0.00	1.00	584	0.65	0.48	0.00	1.00	439
Reduce regulatory burden	0.76	0.43	0.00	1.00	569	0.68	0.47	0.00	1.00	422
Reduce regulatory burden Increase social housing	0.89	0.32	0.00	1.00	639	0.85	0.35	0.00	1.00	499
Tax relief for interest	0.81	0.39	0.00	1.00	617	0.85	0.36	0.00	1.00	473
Limit interest rates	0.74	0.44	0.00	1.00	605	0.83	0.38	0.00	1.00	488
Observations	728					541				

A.4 Survey Data Balance Table

Table A.7: Balance Table

		(1)		(2)		(3)		(4)
Treatment		Control		Price increase		Non-resident		Non-local
Variable	N	Mean/(SE)	N	Mean/(SE)	N	Mean/(SE)	N	Mean/(SE)
Age	1086	49.382	1086	49.560	1082	50.318	1082	49.417
		(0.526)		(0.531)		(0.541)		(0.532)
Female	1086	0.487	1084	0.487	1080	0.498	1083	0.499
		(0.015)		(0.015)		(0.015)		(0.015)
Education	1089	4.668	1088	4.629	1083	4.634	1086	4.675
		(0.039)		(0.039)		(0.039)		(0.039)
Income	1089	5.410	1088	5.344	1083	5.331	1086	5.520
		(0.084)		(0.083)		(0.085)		(0.086)
Homeowner	1089	0.542	1088	0.539	1083	0.529	1086	0.542
		(0.015)		(0.015)		(0.015)		(0.015)
Urban	1089	2.610	1088	2.582	1083	2.598	1086	2.678
		(0.033)		(0.033)		(0.034)		(0.034)
Left	1049	0.355	1051	0.329	1050	0.367	1048	0.339
		(0.015)		(0.015)		(0.015)		(0.015)
General political	1061	2.365	1058	2.409	1054	2.381	1057	2.375
trust		(0.034)		(0.034)		(0.033)		(0.032)
Globalization	1087	3.218	1086	3.236	1083	3.217	1085	3.253
		(0.033)		(0.031)		(0.033)		(0.033)
Pension	1043	0.732	1043	0.737	1039	0.707	1045	0.741
		(0.014)		(0.014)		(0.014)		(0.014)

Table A.8: Balance Table Germany

		(1)		(2)		(3)		(4)
Treatment		Control		Price increase		Non-resident		Non-local
Variable	N	Mean/(SE)	N	Mean/(SE)	N	Mean/(SE)	N	Mean/(SE)
Age	540	50.678	540	50.644	540	51.259	542	50.657
		(0.748)		(0.754)		(0.781)		(0.747)
Female	539	0.473	540	0.469	540	0.496	541	0.501
		(0.022)		(0.021)		(0.022)		(0.022)
Education	540	4.572	540	4.446	541	4.484	542	4.581
		(0.053)		(0.053)		(0.054)		(0.055)
Income	540	5.544	540	5.535	541	5.508	542	5.622
		(0.121)		(0.120)		(0.121)		(0.121)
Homeowner	540	0.504	540	0.494	541	0.481	542	0.476
		(0.022)		(0.022)		(0.022)		(0.021)
Urban	540	2.593	540	2.569	541	2.665	542	2.703
		(0.050)		(0.050)		(0.051)		(0.050)
Left	517	0.437	516	0.413	521	0.455	522	0.402
		(0.022)		(0.022)		(0.022)		(0.021)
General political	512	2.543	511	2.573	512	2.557	513	2.472
trust		(0.048)		(0.048)		(0.046)		(0.046)
Globalization	539	3.230	538	3.186	541	3.170	541	3.226
		(0.047)		(0.044)		(0.046)		(0.047)
Pension	538	0.613	538	0.628	534	0.588	540	0.635
		(0.021)		(0.021)		(0.021)		(0.021)

Table A.9: Balance Table UK

		(1)		(2)		(3)		(4)
Treatment		Control		Price increase		Non-resident		Non-local
Variable	N	Mean/(SE)	N	Mean/(SE)	N	Mean/(SE)	N	Mean/(SE)
Age	546	48.101	546	48.487	542	49.380	540	48.172
		(0.735)		(0.746)		(0.747)		(0.754)
Female	547	0.501	544	0.506	540	0.500	542	0.496
		(0.021)		(0.021)		(0.022)		(0.021)
Education	549	4.761	548	4.808	542	4.784	544	4.768
		(0.057)		(0.055)		(0.056)		(0.056)
Income	549	5.279	548	5.155	542	5.155	544	5.419
		(0.117)		(0.116)		(0.120)		(0.122)
Homeowner	549	0.579	548	0.582	542	0.577	544	0.608
		(0.021)		(0.021)		(0.021)		(0.021)
Urban	549	2.627	548	2.595	542	2.531	544	2.653
		(0.043)		(0.044)		(0.044)		(0.045)
Left	532	0.274	535	0.249	529	0.280	526	0.276
		(0.019)		(0.019)		(0.020)		(0.020)
General political	549	2.199	547	2.256	542	2.216	544	2.283
trust		(0.046)		(0.046)		(0.046)		(0.045)
Globalization	548	3.206	548	3.285	542	3.264	544	3.279
		(0.046)		(0.044)		(0.046)		(0.045)
Pension	505	0.857	505	0.853	505	0.834	505	0.853
		(0.016)		(0.016)		(0.017)		(0.016)

A.5 Estimation results from main text

Table A.10: Marginal effect of group assignment on support for nonresident restrictions

	(1)
Price increase	-.037
	(.053)
Non-resident	.070
	(.053)
Non-local	.092*
	(.053)
UK	.067*
	(.038)
Constant	3.69***
	(.042)
Number Obs.	4,346

Coefficient estimates, standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

Table A.11: Marginal effect of treatment on support for nonresident restrictions

	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	.16***	.064	.16**	.10***	.26***	.11**
	(.056)	(.066)	(.063)	(.038)	(.074)	(.052)
Homeowner	.051					
	(.054)					
Treatment × Homeowner	-.10					
	(.076)					
Mortgage holder		-.16**				
		(.074)				
Treatment × Mortgage holder		-.035				
		(.105)				
Access to credit			-.19**			
			(.074)			
Treatment × Access to credit			-.048			
			(.104)			
Inheritance				-.032		
				(.145)		
Treatment × Inheritance				-.090		
				(.207)		
Pension					.076	
					(.063)	
Treatment × Pension					-.22***	
					(.087)	
Ownership part of pension						-.078
						(.053)
Treatment × Ownership part of pension						-.029
						(.076)
UK	.070*	.15***	.013	.067*	.11***	.074*
	(.038)	(.051)	(.056)	(.038)	(.040)	(.038)
Constant	3.64***	3.71***	3.76***	3.67***	3.61***	3.71***
	(.043)	(.054)	(.050)	(.033)	(.054)	(.041)
Number Obs.	4,346	2,338	2,479	4,346	4,170	4,341

Coefficient estimates, standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

Table A.12: Marginal effect of treatment on support for nonresident restrictions

	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	.022	.030	.10	-.78**	.20**	.41***
	(.085)	(.089)	(.120)	(.324)	(.092)	(.141)
Worried	-.026**					
	(.013)					
Treatment × Worried	.019					
	(.018)					
House price		-.015		-.36*		
		(.034)		(.193)		
Treatment × House price		.050		.71***		
		(.071)		(.262)		
Globalization			-.14***	-.30***		
			(.025)	(.079)		
Treatment × Globalization			-.00078	.26***		
			(.035)	(.102)		
Globalization × House price				.12*		
				(.066)		
Treatment × Globalization				-.22***		
× House price				(.084)		
Migrants contribute					-.16***	
					(.022)	
Treatment × Migrants					-.036	
contribute					(.031)	
National chauvinism						-.049**
						(.021)
Treatment × National						-.065**
chauvinism						(.029)
UK	.063*	.034	.075**	.036	.12***	.055
	(.038)	(.038)	(.038)	(.038)	(.037)	(.038)
Constant	3.78***	3.73***	4.13***	4.64***	4.08***	3.91***
	(.064)	(.050)	(.087)	(.240)	(.067)	(.104)
Number Obs.	4,342	4,232	4,341	4,228	4,341	4,346

Coefficient estimates, standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

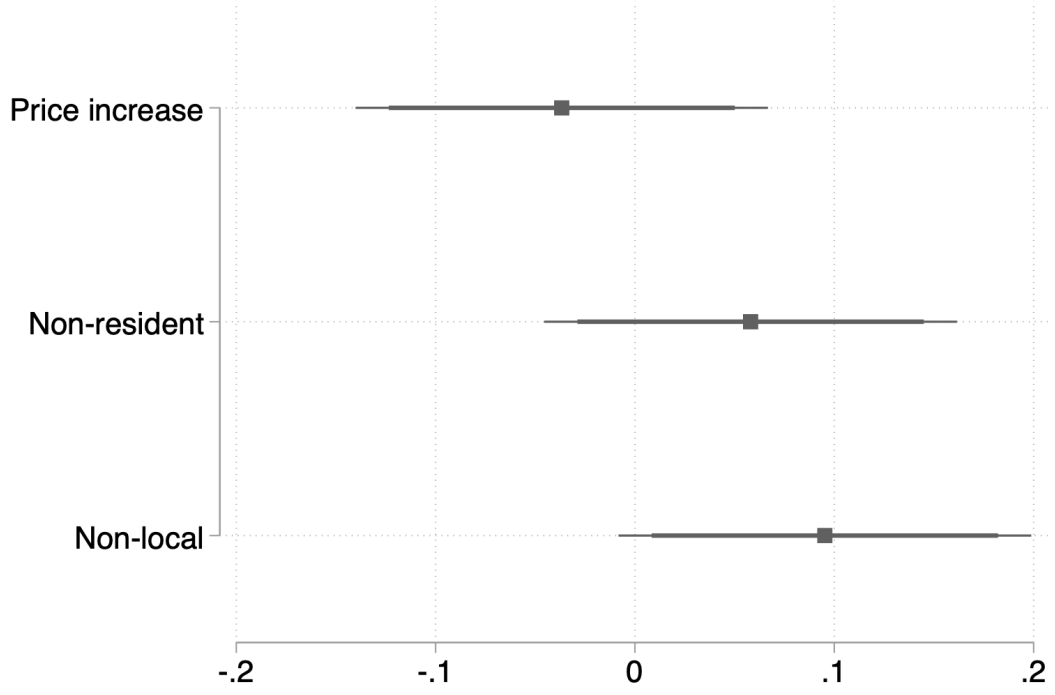
Table A.13: National identity and support for restrictions

	(1)	(2)	(3)
Welsh	.0076	-.014	.13
	(.168)	(.234)	(.288)
Scottish	-.16	-.32*	-.30
	(.118)	(.164)	(.242)
Northern Irish	-.26	.15	.85
	(.315)	(.562)	(.725)
British	-.018	-.12	-.070
	(.071)	(.103)	(.145)
Irish	.11	-.097	-.82
	(.325)	(.445)	(.629)
Other	-.37***	-.40**	-.44**
	(.116)	(.156)	(.217)
Treatment		-.055	
		(.070)	
Treatment × Welsh		.043	
		(.336)	
Treatment × Scottish		.32	
		(.236)	
Treatment × Northern Irish		-.58	
		(.679)	
Treatment × British		.19	
		(.142)	
Treatment × Irish		.45	
		(.652)	
Treatment × Other		.043	
		(.233)	
Non-resident			-.0097
			(.099)
Non-resident × Welsh			-.27
			(.438)
Non-resident × Scottish			.61*
			(.331)
Non-resident × Northern Irish			-2.66**
			(1.145)
Non-resident × British			.31
			(.201)
Non-resident × Irish			1.51*
			(.889)
Non-resident × Other			.060
			(.328)
Constant	3.82***	3.85***	3.82***
	(.035)	(.049)	(.070)
Number Obs.	2,033	2,033	2,033

Coefficient estimates, standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

A.6 Estimation results from main text with controls

Figure A.10: Marginal effect of group assignment on support for nonresident restrictions



Note: Regression coefficients with 90 and 95 percent confidence intervals. Sample includes 2,163 respondents from Germany and 2,183 respondents from the UK.The omitted category is the pure control (no information). The estimates can be found in Table A.14 in the Appendix.

Table A.14: Marginal effect of group assignment on support for nonresident restrictions, with controls

	(1)
Price increase	-.037
	(.053)
Non-resident	.058
	(.053)
Non-local	.095*
	(.053)
UK	.080**
	(.038)
Age	.011***
	(.001)
Female	-.024
	(.038)
Education	.047***
	(.016)
Income	.0022
	(.007)
Urban	-.040**
	(.018)
Constant	3.00***
	(.122)
Number Obs.	4,323

Coefficient estimates, standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

Figure A.11: Marginal effect of treatment on support for nonresident restrictions, with controls

(a) Homeowner (b) Mortgage (c) Credit access

(d) Inheritance (e) Pension (f) Home as retirement plan

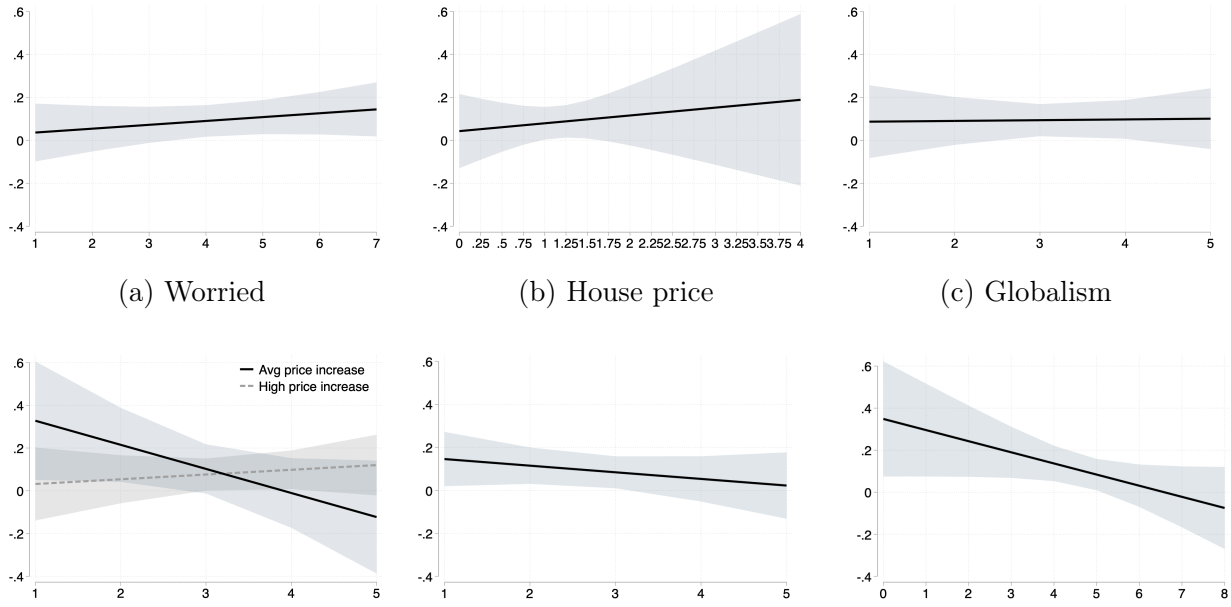
Note: Regression coefficients with 90 and 95 percent confidence intervals. Depending on the regression, the sample includes between 4,346 and 2,338 respondents in Germany and the UK. The treatment captures the non-local and nonresident conditions. The control is the pure control or the price increase control. The models also control for age, gender, educational attainment, income and urban. Estimates can be found in Table A.15 in the Appendix.

Table A.15: Marginal effect of treatment on support for nonresident restrictions, with controls

	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	.14***	.071	.14**	.10***	.26***	.11**
	(.055)	(.065)	(.062)	(.038)	(.073)	(.052)
Homeowner	-.073					
	(.056)					
Treatment × Homeowner	-.094					
	(.075)					
Mortgage holder		.0021				
		(.077)				
Treatment × Mortgage		-.049				
holder		(.104)				
Access to credit			-.22***			
			(.079)			
Treatment × Access			-.050			
to credit			(.103)			
Inheritance				.15		
				(.145)		
Treatment × Inheritance				-.16		
				(.205)		
Pension					.14**	
					(.065)	
Treatment × Pension					-.22***	
					(.086)	
Ownership part of pension						-.083
						(.054)
Treatment × Ownership						-.037
part of pension						(.075)
UK	.095**	.17***	.078	.082**	.10**	.085**
	(.038)	(.052)	(.057)	(.038)	(.040)	(.038)
Age	.012***	.010***	.0078***	.012***	.011***	.011***
	(.001)	(.002)	(.002)	(.001)	(.001)	(.001)
Female	-.034	-.018	-.035	-.025	-.013	-.026
	(.038)	(.053)	(.051)	(.038)	(.039)	(.038)
Education	.051***	.036	.048**	.047***	.037**	.052***
	(.016)	(.022)	(.021)	(.016)	(.016)	(.016)
Income	.0087	.0100	.021**	.0024	-.00099	.0065
	(.008)	(.010)	(.010)	(.007)	(.008)	(.007)
Urban	-.048***	-.075***	-.017	-.040**	-.037**	-.042**
	(.018)	(.024)	(.023)	(.018)	(.018)	(.018)
Constant	2.95***	3.05***	3.11***	2.97***	2.96***	2.98***
	(.120)	(.178)	(.155)	(.119)	(.127)	(.120)
Number Obs.	4,323	2,329	2,467	4,323	4,148	4,318

Coefficient estimates, standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

Figure A.12: Marginal effect of treatment on support for nonresident restrictions, with controls



(a) Worried (b) House price (c) Globalism

(d) Globalism (e) Migrants contribute (f) National chauvinism

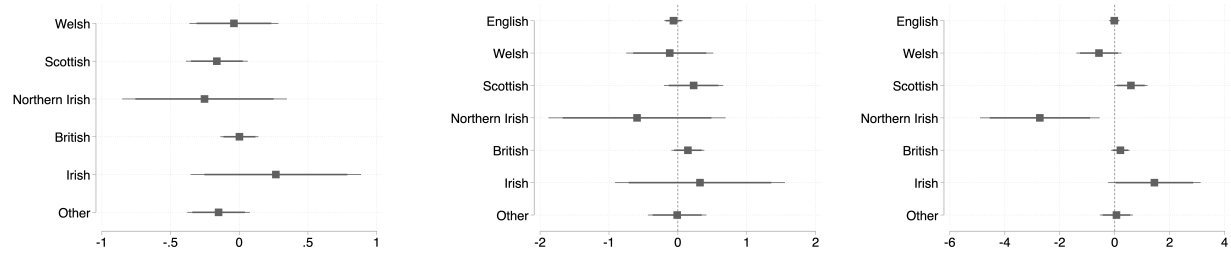
Note: Regression coefficients with 90 and 95 percent confidence intervals. Depending on the regression, the sample includes between 4,346 and 4,170 respondents in Germany and the UK. The treatment captures the non-local and nonresident conditions. The control is the pure control or the price increase control. The models also control for age, gender, educational attainment, income and urban. Estimates can be found in Table A.16 in the Appendix.

Table A.16: Marginal effect of treatment on support for nonresident restrictions, with controls

	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	.018	.043	.083	-.75**	.18*	.35**
	(.085)	(.088)	(.119)	(.320)	(.091)	(.140)
Worried	.0092					
	(.013)					
Treatment × Worried	.018					
	(.018)					
House price		-.011		-.36*		
		(.034)		(.191)		
Treatment × House price		.036		.67***		
		(.070)		(.259)		
Globalization			-.13***	-.28***		
			(.025)	(.078)		
Treatment × Globalization			.0035	.26***		
			(.035)	(.101)		
Globalization × House price				.12*		
				(.065)		
Treatment × Globalization × House price				-.21**		
				(.083)		
Migrants contribute					-.15***	
					(.022)	
Treatment × Migrants contribute					-.031	
					(.031)	
National chauvinism						-.042**
						(.021)
Treatment × National chauvinism						-.053*
						(.028)
UK	.085**	.048	.083**	.046	.12***	.070*
	(.038)	(.038)	(.038)	(.038)	(.038)	(.038)
Age	.012***	.012***	.011***	.011***	.0095***	.011***
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Female	-.028	-.030	-.041	-.048	-.038	-.042
	(.038)	(.038)	(.038)	(.038)	(.038)	(.038)
Education	.046***	.040**	.060***	.052***	.067***	.045***
	(.016)	(.016)	(.016)	(.016)	(.016)	(.016)
Income	.0027	.0015	.0086	.0077	.0055	.0049
	(.007)	(.007)	(.007)	(.007)	(.007)	(.007)
Urban	-.040**	-.039**	-.027	-.025	-.026	-.030*
	(.018)	(.018)	(.018)	(.018)	(.017)	(.018)
Constant	2.91***	3.04***	3.33***	3.83***	3.31***	3.19***
	(.137)	(.125)	(.139)	(.262)	(.129)	(.154)
Number Obs.	4,319	4,209	4,318	4,205	4,318	4,323

Coefficient estimates, standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

Figure A.13: National identity and support for restrictions

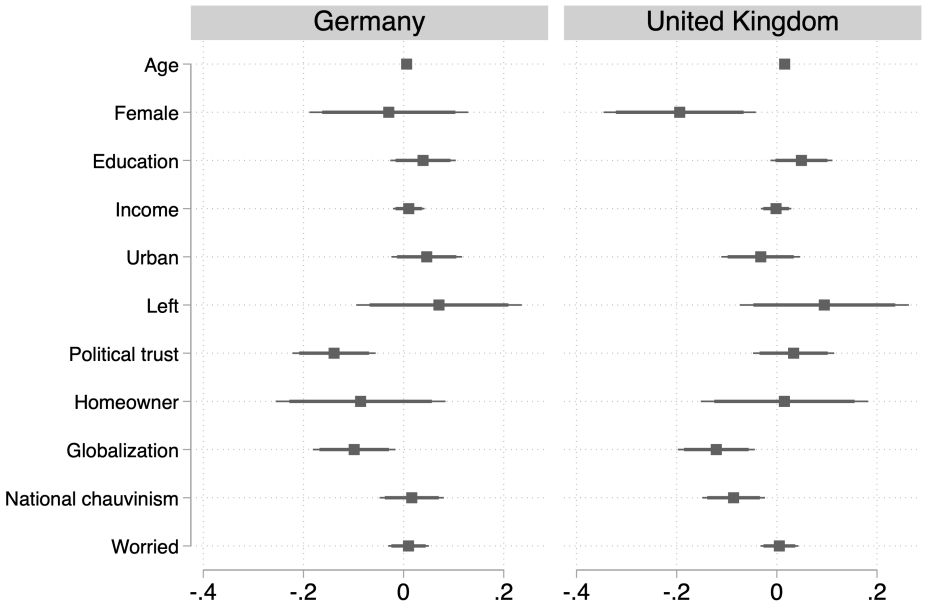


(a) Correlation with nationality (b) ME of treatment (c) ME of nonresident

Note: Regression coefficients with 90 and 95 percent confidence intervals. The sample includes 2,033 respondents in the UK. The left panel captures the correlations between nationality and support for nonresident restrictions. English is the omitted category. The center panel captures the effect of the treatment as a function of nationality. The treatment is the non-local and nonresident conditions. The control is the pure control or the price increase control. The right panel captures the marginal effect of the nonresident treatment condition. The models also control for age, gender, educational attainment, income and urban.

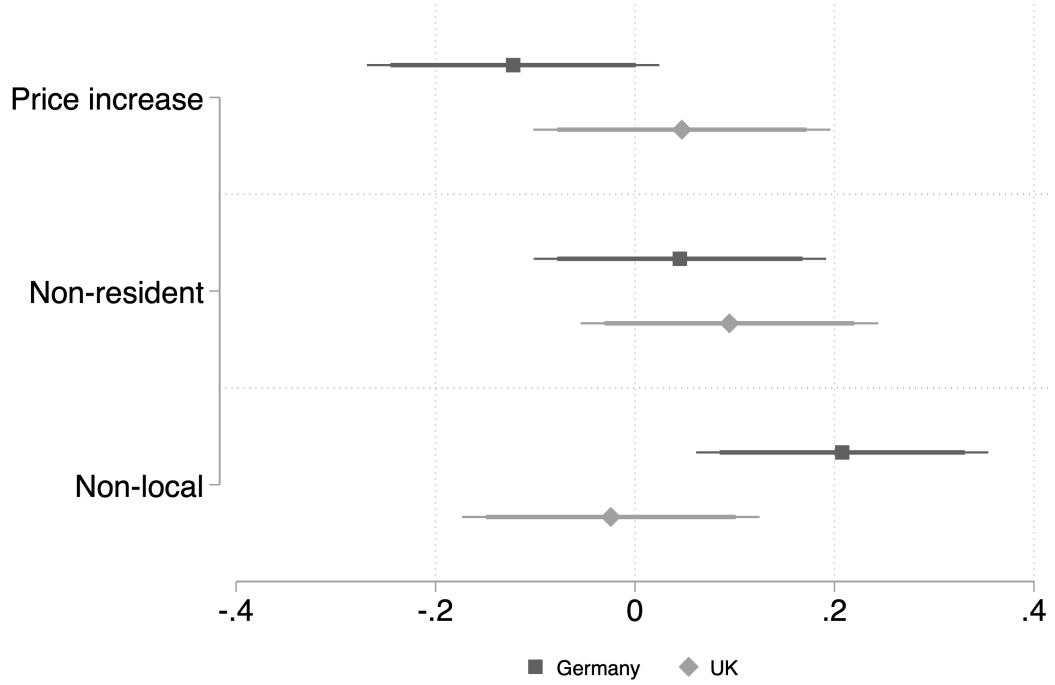
A.7 Estimates from main text, separate for Germany and the UK

Figure A.14: Baseline associations with support for nonresident restrictions



Note: Regression coefficients with 90 and 95 percent confidence intervals. Support ranges from 1=strongly oppose to 5=strongly support. Data are from the two control groups, N=974 in Germany and N=1,063 in the UK.

Figure A.15: Marginal effect of group assignment on support for nonresident restrictions



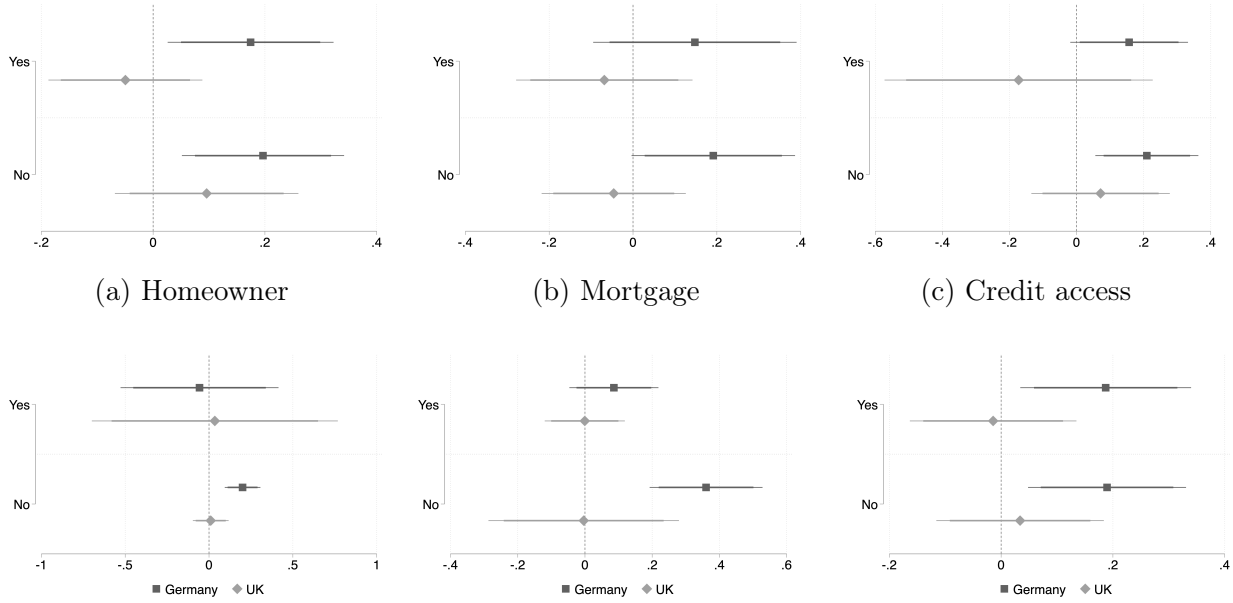
Note: Regression coefficients with 90 and 95 percent confidence intervals. Sample includes 2,163 respondents from Germany and 2,183 respondents from the UK.The omitted category is the pure control (no information). The estimates can be found in Table A.17 in the Appendix.

Table A.17: Marginal effect of group assignment on support for nonresident restrictions, by country

	(1)	(2)
	Germany	UK
Price increase	-.12	.047
	(.075)	(.076)
Non-resident	.050	.10
	(.075)	(.076)
Non-local	.20***	-.024
	(.075)	(.076)
Constant	3.69***	3.76***
	(.053)	(.054)
Number Obs.	2,163	2,183

Coefficient estimates, standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

Figure A.16: Marginal effect of treatment on support for nonresident restrictions, by country

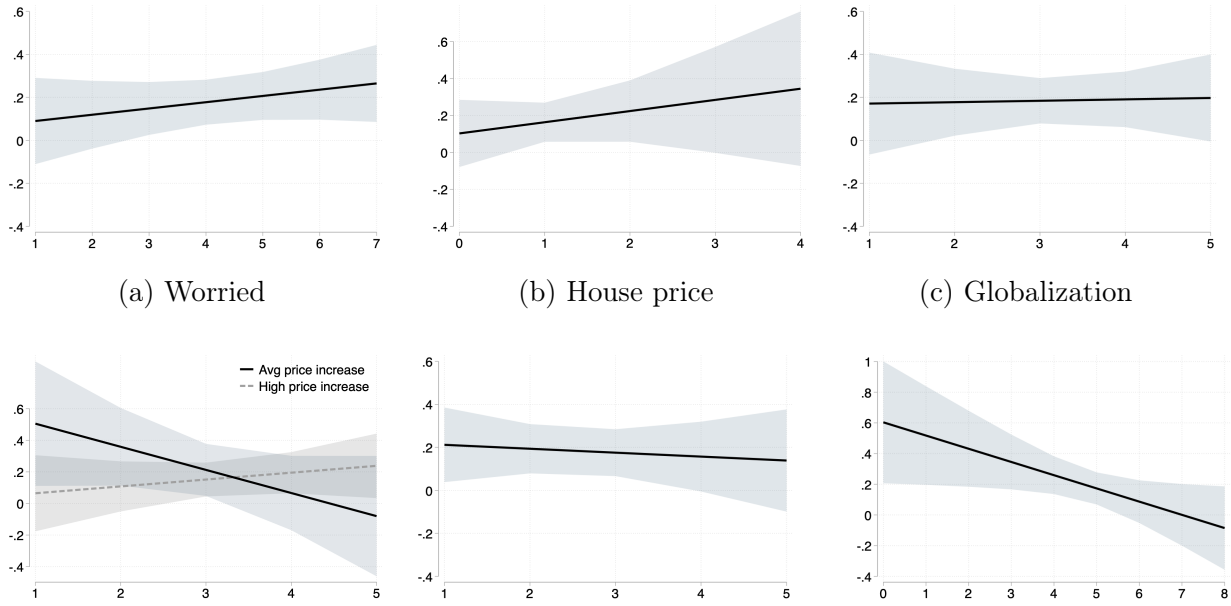


(a) Homeowner (b) Mortgage (c) Credit access

(d) Inheritance (e) Pension (f) Home as retirement plan

Note: Regression coefficients with 90 and 95 percent confidence intervals. Depending on the regression, the sample includes between 1,057 and 2,163 respondents in Germany and 746 and 2,183 in the UK. The treatment captures the non-local and nonresident conditions. The control is the pure control or the price increase control. Estimates are shown in Table A.11 in the Appendix.

Figure A.17: Germany only: Marginal effect of treatment on support for nonresident restrictions

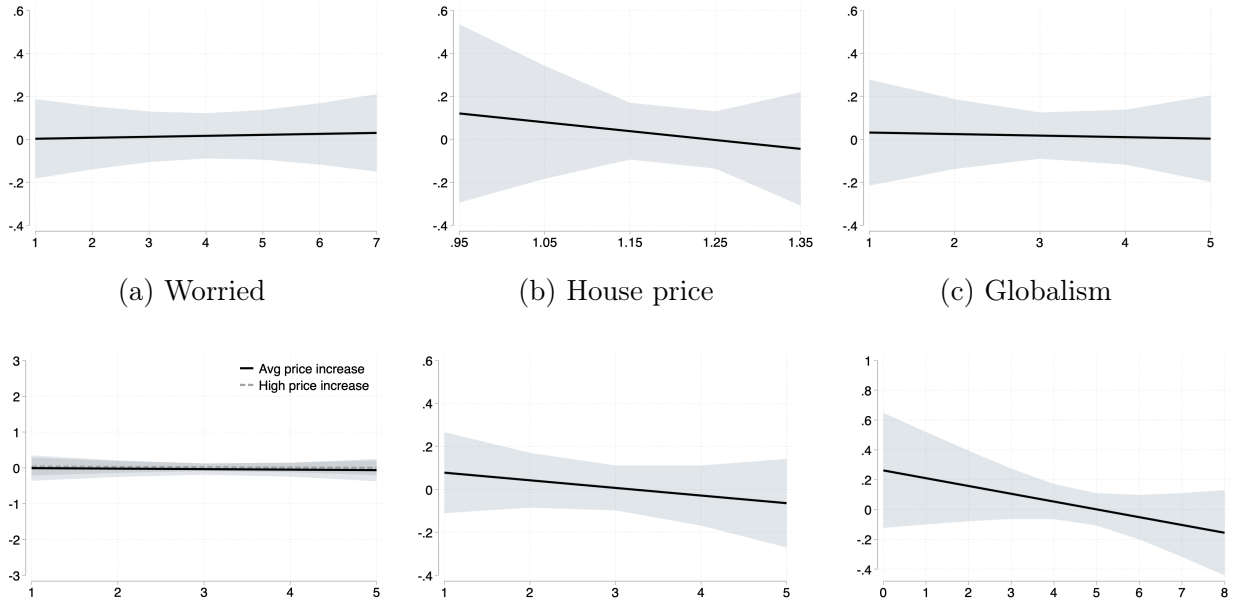


(a) Worried (b) House price (c) Globalization

(d) Globalization (e) Migrants contribute (f) National chauvinism

Note: Regression coefficients with 90 and 95 percent confidence intervals. Depending on the regression, the sample includes between 2,046 and 2,163 respondents in Germany. The treatment captures the non-local and nonresident conditions. The control is the pure control or the price increase control.

Figure A.18: UK only: Marginal effect of treatment on support for nonresident restrictions



(a) Worried (b) House price (c) Globalism

(d) Globalism (e) Migrants contribute (f) National chauvinism

Note: Regression coefficients with 90 and 95 percent confidence intervals. Depending on the regression, the sample includes between 2,046 and 2,163 respondents in UK. The treatment captures the non-local and nonresident conditions. The control is the pure control or the price increase control.

A.8 Pre-analysis plan

The Pre-analysis plan is available on the OSF website.

Political Opposition to Foreign Home Ownership
Pre-Analysis Plan

B Study Information

Description

Housing prices have increased in recent years, forcing some potential buyers out of the market place. We are interested in how these trends affect political behavior and whether respondents are likely to support policies to make home ownership more affordable.

Hypotheses

When respondents are informed that non-resident purchases of homes have led to an increase in housing prices, they will become more supportive of restrictions on non-resident entry into the real estate market.
We also anticipate heterogeneous treatment effects:

- The effects should be larger among respondents that
  - Want to buy a home
  - Express concerns about access to home ownership
  - Do not own a home
  - Do not have access to family support for financing a home purchase
  - Believe that home ownership is important for retirement planning
  - Express nationalistic sentiments or discomfort with foreigners
- The effects should depend on support for integration into global markets.
  - On the one hand, restrictions on non-resident entry into the real estate market are consistent with closure to international markets. Thus, respondents who are opposed to integration into global markets, through trade and immigration, should be more supportive of restrictions on real estate purchases.

– On the other hand, the restrictions on non-resident entry into the real estate market would be most meaningful when markets are open. Thus, respondents who support integration into global markets but who also face affordability concerns should be more supportive of restrictions on real estate purchases.

C Design Plan

Study type

This is an online survey experiment in Germany and the UK. We randomly assign four different treatments or control vignettes to the respondents.

Blinding

Respondents will not know the treatment group to which they have been assigned.

Study Design

Respondents will first answer a set of socio-demographic questions, about their tenure status, family support and their pension. Respondents are then randomly assigned to read one of four possible treatments vignettes.

- Control 1: No information
- Treatment 1: Information about rising property values.
- Treatment 2: Information about rising property values and information about nonresidents.
- Treatment 3: Information about rising property values and information about nonresidents being non-local.

Randomization

We will use block randomization, where each participant will be randomly assigned to one of the four (roughly) equally sized treatment arms.

D Sampling Plan

Existing data

Registration prior to creation of data: As of the date of submission of this research plan for preregistration, the data have not yet been collected, created, or realized.

Data collection procedures

Participants will be recruited online through the Bilendi company. We program the survey using the Qualtrics platform. No incentives other than the participation incentives provided by Bilendi will be given.

Sample size

Our target sample size is 2,000 respondents in Germany and 2,000 respondents in the United Kingdom.

E Variables

Manipulated variables

The control group 1 will not receive any information. The other groups will read information about rising property values in [country]. They will then be given different reasons for this price increase.

- Control 1: No information
- Treatment 1: Studies suggest, that property values have increased in recent years.
- Treatment 2: Studies suggest that recent purchases of real estate by non-residents, who live abroad, have led to an increase in property values.
- Treatment 3: Studies suggest that recent purchases of real estate by non-residents, who live in other parts of [country], have led to an increase in property values.

Measured variables

The main outcome variable measured after the treatment will be:

- Would you support government regulations that restrict home purchases by non-residents? Strongly support to strongly oppose
- Would you support government regulations to reduce housing prices?
- Here are some things the government might do to solve the housing crisis. Please show which actions you are in favor of and which you are against:
  - Restrictions on non-resident entry into markets
  - Higher allowances for the inheritance of residential property
  - Stronger fight against money laundering
  - Restrictions on the purchase of secondary residences or vacation homes
  - Restrictions on renting out apartments or houses on Airbnb in residential areas
  - Reduction of the regulatory burden on new buildings
  - Limiting interest rate increases for mortgages

  The main explanatory variable will be whether the respondent received the treatment or the control condition (see above).

  We are also interested in heterogeneous treatment effects (see above) and will thus also ask:

  - Standard demographics: age, gender, education
  - Tenure status (owner or renter)
  - Information on family and pension
  - Attitudes toward immigrants and trade

F Analysis Plan

We will use OLS regression analysis. The dependent variable is support for government actions to reduce real estate prices. The independent variable is the treatment assignment.

We are also interested in heterogeneous treatment effects, so other independent variables will capture these effects, e.g., home ownership, attitudes toward foreigners and trade, access to financing support from family, retirement planning.