Global Capital Markets, Housing Prices, and Partisan Fiscal Policies

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ABSTRACT: In recent years, global imbalances have channeled the excess savings of surplus countries toward the real estate markets of deficit countries. By consequence, the deficit countries that attracted lots of foreign capital experienced large run-ups in house prices while most surplus countries that exported capital exhibited flat or slow house price growth. We first use new house data and a novel instrumental variable design to show the causal relationship between housing prices and capital inflows, particularly through debt bonanzas. We then argue that international capital flows affect the fiscal policy preferences of both voters and political parties by way of their impact on housing prices. Where capital inflows are large and housing prices are rising, we expect voters to respond by demanding both lower taxes and less publicly-provided social insurance because rising house prices allow homeowners to self-insure against income loss. By contrast, declining house prices produce greater demands for social insurance, particularly among those most exposed to housing market risk. We present evidence from two cross-national surveys that supports these claims, as well as a 'before and after' analysis of the housing crash in Eastern Europe. We also show that the connection between house prices and social policy also manifests itself in government spending outcomes, mediated by partisan control.

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1. Introduction

Recent experience has demonstrated the challenges that international capital flows can pose for financial stability. Indeed, the build-up of global financial imbalances in the early 2000s was one of the preconditions for the Global Financial Crisis of 2008. Deficit countries such as the United States, Spain, the United Kingdom, Ireland, Iceland, Portugal, Greece, Estonia, New Zealand, and Australia attracted substantial foreign capital and exhibited large run-ups in house prices while surplus countries such as Germany, Switzerland, China, and Austria exported capital and experienced flat or slow house price growth. In this paper, we consider the domestic political implications of a world in which global financial integration allows the channeling of one country's excess savings towards another country's real estate market. Our novel argument is that global capital flows influence voters' fiscal policy preferences – and ultimately, fiscal policy itself – by way of their impact on housing prices.

Most contemporary work on the effects of globalization on individual policy preferences and policy outcomes has ignored asset markets, such as housing (Mayda and Rodrik, 2005; Hellwig, 2014; for an exception, see Scheve and Slaughter, 2001). Yet housing is the largest asset owned by most citizens and the surge and collapse in house prices has marked the boom/bust cycle in the global economy of the past decade. House prices matter not simply because they affect the macroeconomic environment but also because they can shape what citizens demand from government. When individuals build up equity in their homes it can serve as a personal 'nest egg' for retirement or loss of income (Ansell 2014). In this sense, home equity is a form of *self-supplied private insurance* against job loss that can substitute for publically provided social insurance (see *inter alia* Kemeny 1984, Castles, 1998, Conley and Gifford, 2006, Schwartz and Seabrooke, 2008, 2009 and Schwartz 2009, 2012). Our argument is

that citizens, relying on housing as private insurance, will be less (more) supportive of social insurance where rising house prices push up (down) the value of this asset. And we argue that global capital flows have a direct impact on housing and other asset prices.

Where capital inflows are large and house prices are rising, we expect homeowners to respond by demanding lower taxes and less publicly-provided social insurance. Rising home prices, often fueled by foreign capital inflows, enhance the valuation of homeowners 'nest eggs,' thereby reducing homeowners' dependence on tax-funded government programs that insure against income loss due to unemployment, illness, and old age. By contrast, where capital is flowing out of countries, this produces flat and declining house prices, which makes ownership of residential real estate a poor substitute for publically-provided insurance against income shocks and hence increases demand for social insurance. Moreover, access to foreign capital enables high rates of leverage, amplifying the potential gains – and losses – associated with rising (or falling) property prices (Rajan, 2010, p.109).

The fiscal policy *preferences* of households are connected to fiscal *policy* outcomes by way of political parties. Since homeowners tend to belong to right-wing parties (Kingston et al, 1984, Verberg 2000), which are predisposed to cutting taxes and reducing social insurance expenditures, we expect taxes and social insurance spending to fall when the right is in power and capital inflows are driving up housing prices. In contrast, left-wing parties have fewer homeowners among their constituents and a baseline preference for increased social spending. Therefore, in countries experiencing capital inflow-driven housing booms, we expect left parties to increase social spending in order to target benefits to their constituents who lack the private insurance provided by home ownership. In nations experiencing capital outflows and stagnant housing prices, we expect an attenuation of these partisan fiscal policy predictions. Where home

prices are stagnant, right-parties will not receive increased pressure from home-owning constituents to cut taxes and social spending. Nor will left parties face increased pressures to increase social spending when housing prices are flat. Thus, the effect of partisanship on fiscal policy is *conditional* on capital inflows and house price appreciation.

We believe we are the first authors to analyze the impact of financial globalization on individual fiscal preferences and fiscal policy outcomes that operates through the house-price channel.[1] A branch of existing research examines the extent to which international capital mobility constrains the ability of partisan governments to pursue distinctive fiscal priorities (Garrett and Lange 1991, Garrett 1998, Rodrik 1997, Oatley 2002, Busemeyer 2009). The question here is whether financial globalization increases pressure on left governments to converge on the right's preference for low taxes and reduced social spending, in order to prevent the exodus of mobile capital. By contrast, we see global capital not as a constraint on left-wing parties but rather as an opportunity for right-wing parties to implement policies favoring asset ownership that substitute for the welfare state.

Figure 1 illustrates the causal links in our argument. In the next section, we substantiate the first link with a novel instrumental variable (IV) regression that demonstrates the causal relationship between home prices and international capital flows. In so doing, we show that financial globalization has important economic consequences for homeowners – a politically-relevant constituency that is usually ignored in analyses of fiscal policy and globalization. To evaluate the next link between house prices and fiscal policy preferences we use two approaches. In Section 3, we first assess the connection between globally-induced house price changes and fiscal policy preferences with cross-sectional survey data from a broad sample of 29 countries in

[1] We acknowledge here important recent work by Herman Schwartz (2009, 2012) that provides an analytical lens connecting domestic financial regulation, global financial imbalance, and housing markets, though in this case Schwartz's core empirical focus is at the national not individual level.

2009. Here we find correlational evidence that rising (falling) home values reduce (increase) support for taxes and social spending. In Section 4, we exploit repeated cross-section data from Central and Eastern Europe (CEE) to test an extension of our theory. Here, we extrapolate that the fiscal policy preferences of *leveraged* homeowners – those with a mortgage – are more sensitive to property price changes than homeowners that acquire their property by other means (privatization, cash purchase, inheritance etc). We expect this because financial leverage amplifies the self-insurance gains of homeownership when property prices rise, and magnifies the losses when property values decline. We find that in 2006, when property prices were rising in CEE countries, mortgage-holders were *less* averse to inequality (more anti-redistribution) than other types of homeowners. However, in late 2010, after CEE real estate markets had crashed, we find that leveraged mortgagers were *more* averse to inequality (more pro-redistribution) than other homeowners This supports our conjecture that mortgage finance – which is how most people in most countries acquire a home – is likely to be a key channel through which homeownership affects fiscal preferences.

Moving to the policy level in Section 5, we use a panel dataset of fiscal outcomes for 43 countries from 1960 to 2011 to show that rising house prices are associated with reduced government consumption and that this effect is strongest where capital inflows have been highest. We also demonstrate that citizens' fiscal preferences find expression in partisan fiscal policies. Where right (left) parties are in office and house prices are rising, we show that taxes and social spending fall (rise). The joint conclusion we draw from these analyses is that the global capital markets that channel savings from surplus countries into the real estate markets of deficit countries have significant political consequences for fiscal preferences and policy.

2. House Prices and International Capital Flows

The relationship between capital flows and house prices attained headline status after former Federal Reserve Chairman Ben Bernanke attributed the run-up in U.S. housing prices to a "global savings glut" (Bernanke 2005). The concern was that capital inflows from emerging market countries had opened up a host of financial problems for the U.S. and other deficit countries in the 2000s. As foreign savings were channeled through government or central bank hands into Treasury securities, driving down interest rates, private investors turned to risky subprime mortgages for higher yields.[2]

Despite differences in the details, the subprime crisis had much in common with earlier financial crises (Reinhart and Rogoff 2009). While the subprime cycle brought new features, such as collateralized-debt obligations and credit-default swaps, external imbalances were common to many previous crises, particularly in the post-Bretton Woods era of high capital mobility (Jordà, Schularick, and Taylor 2010, Obstfeld and Rogoff 2009). Since 1980, large current-account deficits have been financed by huge capital inflows, and the afflicted countries experienced housing speculation, asset bubbles, and cheap loans followed by a credit crunch and the seizing up of the financial system (Reinhart and Reinhart 2009, Aizenman and Jinjarak 2009). According to Chinn and Frieden (2011, xiv): "The American economic disaster is simply the most recent example of a "capital flow cycle," in which capital floods into a country, stimulates an economic boom, encourages high-flying financial and other activities, and eventually culminates in a crash." The cycle was evident in the developing-country debt crisis of the early 1980s, the Mexican crisis of 1994, the East Asian crisis of 1997-1998, and the Russian, Brazilian, Turkish and Argentine crises at the beginning of the millennium. Taking the experience of 181 countries between 1980 and 2007, Reinhart and Reinhart (2009) estimate that

[2] See Caballero, Farhi, Gourinchas (2008) for a model that is consistent with these facts.

middle- and low-income countries face about a 20% chance of suffering a banking crisis (and a 30% chance of a currency crisis, a sovereign-debt default, or an inflation spike) if they experienced a "capital-flow bonanza" in the three years beforehand.

We argue that capital flows are important to *politics* as well as to financial crises and other economic phenomenon by way of their impact on property prices. House prices typically sky-rocket during capital inflow bonanzas and, when the money leaves, the downturn is sudden and sharp. Housing crashes produced by global financial crises are on average associated with a thirty-six percent decline in real house prices and a period of negative price growth lasting six years (Reinhart and Rogoff 2009, 227). Our causal pathway begins with capital flows affecting property prices, which then affect citizens' fiscal policy preferences, which, in turn, affect partisan fiscal policies (**Figure 1**).

Why does a capital inflow raise property prices? When foreign money floods in, local residents use the borrowed money to consume more goods and services. The increase in domestic demand is directed toward both internationally-traded goods such as cars and TVs, and toward nontradable goods like housing, medical care, and education. With respect to traded goods, the foreign-financed consumption binge usually leads to a sharp increase in imports. Traded goods are elastic in supply because more imports are readily available to accommodate the increase in domestic demand. By contrast, the increase in demand for nontradable goods just drives up their price. The supply of nontradables is determined domestically and does not increase immediately with the increase in demand. It takes time for the supply of homes and other nontradables to increase. Therefore, when foreign borrowing increases the amount of money people have to spend on houses and other nontradables, home prices tend to rise. When

capital flows out of the country, by contrast, demand for nontradables diminishes, pushing down prices.[3]

Of course, house prices are affected by a broad variety of factors, both domestic and international, so it is important to show that capital flows are related to house prices net of these other forces. We do so by first examining the relationship between various measures of foreign capital inflows and annual changes in house prices, while controlling for other correlates and holding constant country and year unobservables with fixed effects specifications. To deal with the possibility that capital flows and house prices are endogenously determined, we then instrument for capital flows using a technique based on Autor, Dorn, and Hanson (2013). Our data on house prices comes from the Bank for International Settlements (BIS), which offers property price indices for 46 countries over the 1960-2011 period, which we normalized to provide consistent comparisons across countries. The data is structured such that the inflation-adjusted house price in a given country is indexed at 100 for the year 2010; thus, house prices can only be compared in a within-country sense.[4]

To measure capital inflow surges, we draw on work by Cabellero (2014) and Reinhart and Reinhart (2009), both of which measure "capital inflow bonanza" episodes. We can think of capital inflows in one of two ways. Traditionally, economists have viewed capital inflows through the lens of the balance of payments whereby current accounts deficits must be offset by capital account inflows. However, the presence of international reserves can loosen this relationship, so some economists have turned to directly examining the size of capital inflows themselves, as opposed to presuming they are simply the mirror image of flows on the current

[3] This account is consistent with the predictions of the standard, two-sector open-economy model, according to which capital inflows generate a shift of productive resources out of sectors producing tradable goods and into sectors producing nontradable goods. Benigno and Fornaro (2014) call this "The Financial Resource Curse."
[4] The panel dataset is unbalanced with missing observations for many countries in earlier years.

account (Caballero 2014). Accordingly, we examine the estimated relationship between annual house price changes and changes in both the current account *and* in capital inflows (while controlling for the current account). By examining direct capital inflows we are also able to separate out those forms of capital inflow that ought not affect house prices directly, such as equity-portfolio flows and foreign direct investment (FDI) from those that should have a direct impact; namely, debt flows issued through the banking system (Aoki et al 2007, Jara and Olaberría 2013).

We take the current account balance as a percent of GDP from the International Monetary Fund's Balance of Payments Statistics yearbook and examine annual changes in this measure (hence an increase in the current account produces a decrease in capital inflows, presuming constant foreign reserves). To measure capital inflows directly we follow Caballero (2014) and Reinhart and Reinhart (2009) by defining a bonanza as an 'unusual shift' in inflows. Reinhart and Reinhart (2009)'s bonanza indicator uses the current account balance and defines "unusual" as a current account deficit that exceeds the 80th percentile of a country's historical experience, which ensures that capital inflow surges are large relative to each country's unique situation. Caballero (2014) measures bonanzas as "cases in which inflows to a country grow by more than during a typical business cycle" (p.5). The threshold level used is one "country-specific standard deviation" from the long-run trend in per capita inflows (calculated using Hendrick-Prescott filters and deflated according to CPI). Caballero disaggregates capital flows into FDI, debt and equity-portfolio and differentiates between net and gross inflows. In the case of the bonanza indicators from both Reinhart and Reinhart (2009) and Caballero (2014), the measure is binary, coded one in the presence of a 'bonanza' and zero otherwise.

Table 1(a) presents a simple model of the effects on annual house price changes of the change in the current account and the presence of various forms of capital inflow bonanza. We estimate these by linear regression with country and year fixed effects with country-clustered standard errors that correct for heteroscedasticity and arbitrary forms of serial correlation. **Table 1(a)** demonstrates firstly that the annual change in the current account as a percentage of GDP has a consistently negative, and precisely estimated, relationship with house price changes. Since a decline in the current account implies an increase in the capital account through balance of payments book-keeping, the implication is that aggregate capital account inflows raise house prices – with a one percent of GDP capital inflow associated with an increase in house prices of around three-quarters of a percent.

Models 1 through 7 show the estimated effects of capital account bonanzas – controlling for changes in the current account – on annual house price changes. We begin by noting that *net* capital inflow bonanzas have no effect distinct from the current account (Model 1) but *gross* capital inflow bonanzas do appear to have a sizable positive effect (indeed a three percent increase in house prices). Gross inflow shocks appear to pick up effects of capital inflows beyond the current account (the point estimate on gross inflows is only 12 percent larger when the current account variable is omitted). This suggests that at least some capital inflows fail to be captured by examining solely the balance of payments (Broner et al 2013). When we disaggregate flows into types of capital, we see that debt-related inflows (Model 4) have the strongest relationship with house price booms (associated with around a four percent increase in house prices) whereas portfolio-equity flows, whether net or gross, have no estimated impact at all. This is consistent with theory since debt-related flows – bank loans and portfolio debt capital inflows – are more likely to exacerbate cycles in asset prices by encouraging risky lending

during booms (Forbes and Warnock 2013). Finally, Model 7 includes the Reinhart and Reinhart bonanza measure taken from the current account. Here we do not find any further effect of a current account bonanza on top of our existing measure of changes in the current account. Overall, net debt, gross capital inflows, and changes in the current account appear to drive sizable increases in house prices.

Of course, capital flows can only explain a limited amount of national variation in house prices, which are affected by many other factors. Financial innovation, monetary policy, regulation, housing policies, mortgage finance and tax policies, demographics, and a host of other idiosyncratic national factors all play on home prices (Cerutti, Dagher, and Dell'Ariccia 2015, Bordo and Landon-Lane 2013, Schularick and Taylor 2012, Agnello and Schuknecht 2011, Duca, Muellbauer, and Murphy 2010). Furthermore, there is reason to be concerned about reverse causation since credit booms may attract capital from abroad, as well as being caused by capital inflows (Caballero 2014).

To guard against reverse causality and omitted variables, we construct a novel IV estimation strategy that is modeled from that of Autor, Dorn, and Hanson (2013). While these authors instrument for U.S. imports from China with Chinese imports going to other high-income countries, we instrument for capital flows by using flows to other nations with similar capital flow histories, using the debt inflows variable from Model 4 of **Table 1(a)**. A similar IV approach by Büthe and Milner (2008) estimates the causal effect of the number of signed trade agreements on FDI by using the signing patterns of similar neighboring countries.

In contrast to these two studies, we use a more systematic approach to select countries for IV pairs. Specifically, we estimate an *n***n* dimensional matrix of *n*-country pairwise correlations that are statistically significant at the 0.10 level. Each country *i* then gets paired with the country

j that it is most correlated with on the endogenous variable.[5] When pairing, we additionally take into account the length of the time series between country pairs in order to increase the sample size at some cost to the correlation. Consider the representative case of Spain whose net debt flows correlate most highly with Russia ($\rho = 0.65$) with a shared time series length of 8 years. Rather than pair Spain with Russia, we instead assign the second most correlated country, South Korea ($\rho = 0.58$), which shares a much higher 14 years data with Spain.[6] In the IV regression, South Korean debt flows are then used to estimate the causal effect of debt flows on Spanish house prices. The method repeats the same process for all countries. This instrument satisfies the exclusion restriction on the assumption that, for example, inflows to South Korea only affect Spain's housing market through their pairwise correlation with capital flows to Spain.

Models 3-6 in **Table 1(b)** report the results of the IV regressions, where the net debt variable from Model 4 in **Table 1(a)** is instrumented as detailed above. All specifications include country fixed effects as well as error corrections for heteroscedasticity and all forms of temporal dependence within countries.[7] Model 1 shows the results from the first stage regression. To facilitate comparison, Model 2 provides the 'naïve' endogenous estimation from **Table 1(a).** Finally**,** Models 3 through 6 use the instrumental variables. Across specifications, the estimated effect of net debt flows on house prices remains substantively large and statistically significant.

[5] Given to the centrality of debt-related capital flows to the theory, we only report IV estimation results for model (4) of **Table 1(a)**. A replication of this IV procedure for changes in the current account is located in **Table A1(b)** in the Appendix, which concludes that the analysis for the current account is also robust to reverse causality and omitted factors.

[6] The additional sample size criterion increases the number of observations from 306 to 395 but reduces the average correlations between pairs from 0.64 to 0.57. Overall, the results are highly robust to the choice of country pairs.

[7] For robustness, we also use block bootstrap standard errors at the country level due to the poor finite sample properties of clustered standard errors (Angrist and Pischke, 2008). However, because the bootstrap consistently estimates smaller standard errors, we only show the more conservative clustered standard errors.

These results are robust to a battery of tests for instrument relevance and exogeneity. The chosen instruments are strong by three available measures.[8] To evaluate the exclusion restriction, Model 6 includes a second instrument (see footnote 7) that allows us to run a Hanson J statistic, which overwhelmingly supports the hypothesis that the instruments are valid (p = 0.99), i.e. uncorrelated with the error term.[9] Despite the strength of this test, threats to the exclusion restriction may still exist. Because the use of foreign capital flows cuts off the correlation between countries' housing markets and their own capital flows, we significantly reduce the pool of potential confounding factors to those that originate from purely international sources such as international trade and finance. In other words, the likely sources of violation to the exclusion restriction from this IV approach come from factors that may induce a correlation in *both* capital flows and housing prices across countries in the sample. To ensure that these international factors do not threaten causal inference, we introduce some of the most likely candidates. These include measures for trade and monetary conditions. For completeness, we also include measures for the rule of law, inflation, government size, and unemployment.[10] Model 5 then includes year dummies to account for likely confounding from international shocks like the 2008 financial crises.[11] The stability of the estimate across all of these controls suggests that these international factors do not threaten causal inference.[12] Even more evidence for the validity of this IV

[8] A standard Cragg-Donald Wald F-statistic of 41.02 is well above the 19.93 critical value for weak instruments as identified by Stock and Yogo (2005). Additionally, Sanderson and Windmeijer (2016) suggest an alternative F-test of IV relevance that is robust to heteroscedasticity and autocorrelation. An F-statistic of 25.35 from this test rejects the hypothesis that the instruments are weak. Finally, an Anderson-Rubin Wald test finds that the reported standard errors on net debt are robust to weak instruments. All of the tests reported here reflect specification (6) from **Table 1(b).** The results from other models provide even stronger evidence for IV relevance.

[9] We provide the second instrument needed to run a Hanson J test by creating an alternative set of instrumented country pairs based on lower level correlations on net debt. As shown in Model 6 in **Table 1(b)**, the addition of this alternative instrument does not change the results, but is less preferred because it shrinks the sample size (see footnote 6).

[10] Results from **Table 1(b)** are robust to the sequential inclusion of each control variable.

[11] Model 4 is our preferred model due to concerns about over-fitting from the addition of twenty-one year dummies.

[12] An F-test of the null hypothesis that the estimate on net debt with all the controls (Model 5 from **Table 1(b))** is different from a restricted model without controls is F(1, 249) = 0.12 with a p-value = 0.73.

approach comes from the insensitivity of the estimates to the choice of country-pairs. If certain pairs were more endogenous than others, then we would expect to observe some instability in the estimates across IV pairs (see footnote 6). In sum, threats from reverse causality and omitted variables do not appear to confound our analysis of the effect of international capital flows on domestic housing prices.

Finally, as Central and Eastern Europe exemplifies the connection between capital flows and house prices, we briefly give it special attention, before returning to this case in Section 4. **Figure 2** plots the annual change in house prices against the annual change in the current account for all countries in our CEE sample. The relationship is strongly negative, meaning that house prices decline when the current account is in surplus and capital is flowing out. Also, capital flows alone account for 37% of the variation in CEE housing prices, which suggests that the relationship is substantively important. The figure shows that housing markets in the CEE suffered the full brunt of the capital flow cycle. They experienced real estate bubbles when capital was flowing in, followed by property busts when capital flows reversed. Estonia, Lithuania, Latvia, the Slovak Republic, and Slovenia saw their property prices indices peak at 138 on average in 2008, when net capital inflows averaged an astounding 9.7% of GDP. However, in 2009, capital *outflows* that averaged 2.6% of GDP for these Eastern European countries produced a sharp average drop in the real estate prices of 24% in the region. When capital flows reversed suddenly, the real estate market went from boom to bust (Walter 2013, 2014; De Haas and Van Horen 2013).

In summary, housing prices and global capital flows appear to be closely, even causally, related. There are, of course, exceptions. For example, both China and Germany recently experienced rapid house price appreciation despite running current account surpluses and

exporting capital. The reasons appear to be idiosyncratic.[13] While there are exceptions that test the rule, the connection between increasing house prices and capital inflows is found across a wide array of countries.

3. From House Prices to Policy Preferences: Cross-Sectional Evidence

Given that capital flows appear to cause substantial variation in housing prices – booms in capital inflow countries, stagnation or decline in capital outflow counties – the question emerges as to whether this variation in house prices affects homeowners' policy preferences in any systematic way. Hence, we now turn to analyze the political impact of changing housing prices on voter *preferences*.

We begin by theorizing about how house-price changes can affect citizens' preferences over taxation and public spending. Housing can be thought of as comprising a major share of citizens' 'permanent income' (Ansell 2014), which will in part determine their preferences over government fiscal policies in a manner that is distinct from their labor market income or participation. Sudden changes in house prices effectively constitute – often unanticipated - shocks to that level of permanent income. For example, citizens may suddenly feel substantially richer during house price booms driven by capital inflows, even as their labor market income stagnates. Conversely, a collapse in house prices caused by a capital outflow may lead citizens to feel poorer, even if their salaries are rising.

[13] In Germany, the run-up in housing prices since 2011 may reflect the unusual combination of extraordinarily low interest rates (fueled by the European Central Bank's Quantitative Easing program), strong economic growth, 1.1 million refugees, high work-related immigration, and weak construction supply. In addition, Germany has been receiving large inflows of debt-related investment, which may be driving up home prices, even though its overall payments position is in surplus (Jara and Olaberría 2013). In China, the housing bubble that began in 2003 was likely fueled by low interest rates, increased bank lending, and – importantly – capital controls that prevented ordinary Chinese citizens from investing in foreign assets, thereby increasing demand for domestic assets like real estate. Underdeveloped domestic bond markets probably amplified this effect by channeling domestic savings into real estate.

We argue that citizens experiencing rising house prices will become more tax averse and less supportive of redistributive spending. With respect to tax aversion, rising home values expose homeowners to rising taxes wherever residential property is subject to taxation through property tax, capital gains tax, or the inheritance tax. This provides a direct "pocket-book" mechanism connecting house price rises to reduced support for taxation. However, there may also be a psychological mechanism at work as rising home values can lead citizens to 'adopt' the anti-tax preferences of wealthier citizens (e.g. capital owners, highly-skilled workers). As their homes appreciate, they begin to feel richer, leading citizens to reconsider their socioeconomic status and potentially shift their tax policy preferences toward those of higher status individuals.

Citizens with higher permanent income due to rising house prices will also likely become less supportive of redistributive spending. Partly this is a reflection of tax aversion – not wishing to be the funders of redistributive spending. However, we should also expect individuals with rising house prices to have a lower demand for spending itself. For one thing, presuming diminishing marginal returns to income, redistributive transfers are less valuable to wealthy citizens. Wealthier citizens may also lose eligibility for means-tested benefits, especially those with a property threshold (for example, long term care). Most importantly, we should also expect citizens with increasingly valuable houses to rely on their houses as a 'nest egg' – a form of 'self insurance' against labor market misfortunes or retirement. Accordingly, citizens experiencing house price appreciation should become less supportive of social insurance as their 'private insurance' – housing – rises in value.

To empirically examine these claims we use public opinion data for over 15,000 individuals from 29 countries taken from the International Social Survey Program (ISSP) in

2009. [14] These data have two advantages for our purposes. First, they provide a recent and globally comprehensive survey – they include not only standard OECD countries in Europe and North America but a broad range of Eastern European countries including Croatia, Latvia and Russia. Second, the survey contains a question asking 'How much money would be left if the home you and your family live in was sold?' and then provides an equity scale from 'just debts' to 'renter' to ten different categories of house price. This question not only allows us to identify homeowners in the sample, it also allows us to tap into how rising house prices affect citizens' fiscal preferences independently of the equity. More specifically, by interacting homeownership with the five-year percentage increase (2004-2009) in house prices in the country in which a respondent lives, we generate a variable that taps into the likely equity gain a homeowner experienced over that period.[15]

We begin by examining the effects of our house equity variable on preferences over taxation. **Table 2** examines four questions from the ISSP. Models 1 and 2 examine answers to the question 'Do you think people with high incomes should pay a larger share of their income in taxes than those with low incomes, the same share, or a smaller share?' In other words, this indicator measures citizens' preferences over progressive taxation. The question is increasing in support for high income people paying a larger share – that is, in preferences for tax progressivity – and has five responses ("much smaller", "smaller", "same", "larger", and "much larger"). The lion's share of responses is, perhaps unsurprisingly, in the last three categories – but within this group there is substantial variation in preferences. We label this question 'Tax 1.'

[14] No cross-national panel dataset exists allowing us to examine the effects on individuals of changes in house prices on their preferences, hence our study focuses on between-individual comparisons of housing equity. Using the American National Election Survey and the British Household Panel Survey, Ansell (2014) shows that citizens whose houses became more expensive, even controlling for average income across the panel, became less supportive of social insurance.

[15] For citizens with 'just debts,' we presume they have suffered from house price declines. The survey was taken in 2009, after the housing market had crashed, and homeowners with just debts probably lost all their equity in the crash.

Models 3 and 4 examines answers to the question 'Generally, how would you describe taxes in your country for those with high incomes?' with a five-point scale: 'much too high', 'too high', 'about right', 'too low', and 'much too low.' We label this question 'Tax 2.' This question combines both normative aspects and an empirical judgment about the level of taxation in the country and accordingly is more ambiguous conceptually. However, this question displays more variation over the range of possible responses than the 'Tax 1' question. Models 5 and 6 examine answers to the prompt 'It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.' We code this as a five point scale: 'strongly disagree', 'disagree', 'neither', 'agree', 'strongly agree' and label this variable 'Redistribution.' Finally, Models 7 and 8 examine answers to the prompt: 'The government should spend less on benefits for the poor' – here we code this 'strongly agree', 'agree', 'neither', 'disagree', 'strongly disagree', so that higher scores mean more support for redistribution, and label this variable 'Aid to Poor.'

As our core independent variables we include the house equity variable described above, along with a dummy variable for homeownership (thereby differentiating the effects of house prices / equity from homeownership itself). As controls we include a variable measuring log income (relative to the country mean), gender, age, partisanship (increasing in support for right-wing parties and dropping individuals with missing partisanship data), number of children, and a measure of religiosity increasing in religious attendance. Since partisanship is arguably a post-treatment variable, we present estimates for each dependent variable with and without its inclusion. Our model specification is an ordered logit model (given the five-point nature of our

dependent variables) with sample weights and country-clustered standard errors to correct for arbitrary forms of dependence between respondents within a country.[16]

Across the models there is a consistent negative relationship between house equity and support for the tax and redistribution questions – in other words, citizens with higher house equity are less supportive of progressive taxation and redistribution than are citizens with lower equity, renters, or citizens with negative equity. The direct effect of homeownership is only significant at the ten percent level in one model though it is positive, suggesting that renters may be slightly less supportive of progressive taxation than are homeowners. However, since the house equity scale is measured along eleven points, the magnitude of this effect is outweighed by house prices. It is easier to interpret these results by examining predicted probabilities. For the 'Tax 1' question (Model 2), homeowners with negative equity are 10 percent points more likely than homeowners at the top of the equity scale (controlling for income) to think that the rich should pay a 'much larger' share of taxes than poorer citizens. Similarly for the 'Tax 2' question (Model 4), homeowners with negative equity are 14 percent points more likely to think that that taxes for the rich are 'too low' or 'much too low' compared to those with the highest equity.

The effect is also consistent for the 'Redistribution' question. Examining the Redistribution question from Model 6, moving from being a homeowner with negative equity to one with the highest level of equity reduces the chances of strongly agreeing that the government should redistribute income from 34% to 21% - a fairly dramatic effect. However, house prices only have a statistically significant association in terms of responding to the 'Aid to Poor' question in the model excluding partisanship (Model 7).

[16] A linear model with random effects and random coefficients (for house equity) produces similar results (actually more statistically significant) but at the loss of sample weights.

Collectively, we have substantial evidence that house equity correlates with anti-redistributive preferences *independent of citizens' labor market income and status*. Accordingly, this is strong prima facie evidence that the housing boom reduced overall support for taxation and redistributive spending across these 29 countries. However, to this point we have not examined whether these preferences differed systematically *across countries* in ways connected to nationally aggregated changes in house prices. **Table 3** gets at this question with multi-level (or hierarchical) models that allow us to investigate the effects of cross-level interactions – particularly, how homeowners' preferences over taxation and spending at the individual level are moderated by national level house prices.[17] As noted above, we replace the house equity variable from **Table 2** with an interaction term between the indicator for homeownership and the five year percentage change in house prices. We estimate the effect of this interaction on each of the same dependent variables consider so far. **Table 3** shows mixed results: the interactive terms for homeownership and national house prices are always negative but only statistically significant in terms of taxation preferences. The effects for taxation found in Models 1 and 2 are strongly supportive of our conjectures. The probability of believing the rich should pay much more in taxes than the poor (Model 1) is 25% for homeowners in countries without price appreciation (Germany) but 19% for homeowners in countries where prices doubled (Estonia). To interpret this interaction differently, the preferences of homeowners and renters are indistinguishable in countries with stagnant house prices (both at 25%) but seven percent points apart in countries where house prices doubled. This pattern is driven by changing attitudes of homeowners rather than renters – the latter's preferences do not shift – except in terms of redistribution in Model 3 - whereas support among homeowners drops by seven percent points. This raises the question of why renters – who after all pay rents that are in part driven by house prices – do not respond

[17] The availability of national housing price data reduces our sample to 21 countries.

noticeably to the aggregate house price level. While we do not have data to distinguish the mechanism, it may be that rents are uncorrelated with house prices for many renters, or simply that renters, unlike homeowners, do not own assets that are at risk in the housing market. Our next section briefly discusses how the method of ownership – and the risks consequently attached to home ownership – contribute to social policy preferences in Eastern Europe.

4. Mortgage Finance and Self-Insurance: An Extension of the Argument

The cross-sectional results from the ISSP 2009 are largely consistent with our claim that homeowners are more likely to oppose government redistribution where home prices are increasing than where home prices are flat or declining. In this section, we assess whether the fiscal preferences of homeowners with mortgages are more responsive to house prices changes than the preferences of non-mortgaged homeowners. When a person buys a home with a mortgage, the use of leverage allows an initial investment to grow into a much larger self-insurance asset. If home prices subsequently rise, the mortgage holder experiences a larger return on investment – and hence a larger increase in self-insurance – than someone that purchases a home with cash from personal savings. By the same token, if home prices fall, the leveraged homeowner experiences a larger loss in her self-insurance fund than someone that acquired a home without credit. Therefore, an extension of our argument is that the fiscal preferences of mortgagors will be more sensitive to house price changes than homeowners that acquire property without leverage.

To illustrate the argument, suppose Homeowner A uses $100,000 of her savings to purchase a home worth $100,000 while Homeowner B uses $100,000 of her cash and borrows $200,000 to purchase a home worth $300,000. Homeowner A is not using financial leverage while Homeowner B is using leverage to control a $300,000 asset with only $100,000 of her own

savings. If the homes owned by Homeowner A and Homeowner B increase in value by 25% and are then sold, Homeowner A realizes a $25,000 gain on her $100,000 investment, a 25% return. As Homeowner B's house sells for $375,000, she realizes a gain of $75,000 on her initial $100,000 investment, a 75% return. This illustrates how leverage magnifies the self-insurance effect of homeownership when property prices are increasing.

When home prices decline, the use of leverage works against homeownership as self-insurance. Suppose the properties owned by Homeowner A and Homeowner B decrease in value by 25% from their cost and are then sold. Homeowner A will lose $25,000 of her $100,000 investment, a loss of 25%, while Homeowner B will have a loss of $75,000 on her $100,000 investment, a 75% loss. If home prices decline further to where the market value of the mortgaged home is less than the loan balance, the leveraged homeowner has negative equity and cannot sell the home unless she has the cash to pay the loss out-of-pocket. If faced with an income shock, such as a job loss, the mortgaged homeowner may fall into foreclosure, and repossession and sale of the property by the lender will not raise enough cash to repay the loan balance. So the leveraged borrower will still be in debt as well as having lost the property. Thus, leverage exposes the self-insured homeowner to substantially more downside risk than the non-leveraged homeowner.

This illustration suggests that the fiscal preferences of mortgagors should be more sensitive to house prices changes than the preferences of homeowners that obtain their property without leverage. When house prices rise, leverage magnifies the amount of self-insurance capital the homeowner's obtains from owning a home, so we expect mortgagors to be *less supportive* of government social insurance programs than other types of homeowners. When house prices fall, leveraged homeowners experience a larger decline in their self-insurance

capital than other types of homeowners, so we expect them to reverse their views and become *more supportive* of publically-provided redistribution.

In most countries, home buyers take out a mortgage to purchase a home, which suggests that financial leverage is the mechanism driving the relationship between home prices and fiscal preferences. However, in Central and Eastern Europe, state-owned housing was transformed into private property in a variety of ways after the fall of the Soviet bloc. We use data on home acquisitions and the repeated cross-section structure of the "Life in Transition" Surveys (LiTS) from the European Bank for Reconstruction and Development (EBRD) to test this argument. In late 2006, the EBRD carried out the first wave (LiTS I) of this general survey of individuals and households across the transition region. At that time, capital inflows were propelling the CEE housing sector with residential home prices rising 30 percent on average in 2006 alone. By contrast, LiTS II took place in late 2010 while most countries were still facing the aftershocks of the Global Financial Crisis and experiencing large capital outflows and steep house price declines. Since different subjects were evaluated in the pre-crisis and post-crisis samples, we don't have actual panel data. However, we can exploit the repeated waves of the LiTS to test our claim that mortgagors' fiscal policy preferences are more sensitive to home prices than homeowners that acquired property by other means. When home prices were rising rapidly at the time of the LiTS 2006 survey, we expect mortgagors to express *less* support for government social insurance and redistributive fiscal programs than other types of home purchasers. When home prices were falling sharply at the time the LiTS 2010 survey, we expect mortgaged homeowners to express *more* support for social insurance and redistributive spending than non-mortgaged homeowners.

The European transition context is challenging for our analysis because homeownership rates are exceptionally high there due to the privatization process of the early 1990s. This limits our ability to compare the fiscal preferences of homeowners to non-owners (renters), as we had in the ISSP 2009 survey. Under socialism, most housing was provided to workers free of charge by employers or local authorities. During the transition, dwellings were either given to tenants for free or sold to tenants at low, non-market clearing prices, leading to homeownership rates well above other regions. As of 2010, 86.8 percent of CEE citizens own their dwellings while 66.9 percent of EU-15 citizen are homeowners (Eurostat 2010). After privatization and restitution of the housing stock in the 1990s, CEE homeownership were further spurred by the restructuring of the banking sector, acquisitions of local banks by foreign banks with strong property expertise, and the availability of mortgages denominated in foreign currencies (mostly euro and Swiss francs).

Although homeownership is nearly ubiquitous in the CEE, we exploit differences in how people acquired their dwellings to test the argument. Homeowners that acquire property via a mortgage gain leverage on their investment while those that acquire property by other means (cash purchase, privatization, inheritance, etc) do not. Since the impact of house price changes is magnified for leveraged mortgage-holders, we expect their fiscal preferences to be more sensitive to changes in home values than other types of homeowners.

The LiTS provide the best available data to test this argument, but there are some limitations. Since they are not true panel surveys, we are unable to examine the change in preferences of specific CEE citizens over time. Moreover, the questions vary somewhat across the surveys and do not provide a clear indicator for the value of the house, unlike other surveys in Western Europe (for example, the British Household Panel Survey). However, the surveys do

operate as a repeated cross-section, being asked in the same countries before and after the global credit crisis, using similar surveying techniques and question batteries (for the most part). Moreover, the LiTS have excellent cross-national breadth and also ask a set of questions about how citizens came to own their property: did they purchase it with a mortgage, purchase it outright, inherit it, or receive it during the privatization process? Thus, at least in the empirical diversity of questions, the LiTS provides good traction on our question.

For our dependent variable, both waves of the LiTS include a question asking respondents for their attitudes about economic inequality. The prompt reads 'The gap between rich and poor in this country today should be reduced' and respondents can select from a five-point Likert scale that is increasing in inequality reduction (or pro-redistribution) attitudes, from strongly disagree to strongly agree. Our core independent variables all related to housing ownership. We begin with a simple dummy for homeownership (including citizens who claim to own the house but lack title). As noted above, homeownership is incredibly prevalent in the CEE: in our 2006 sample, almost 89 percent of households are privately owned, a number that is similar (85%) in the LiTS II 2010 sample, which includes more countries. Given the overwhelming predominance of the status of ownership, homeownership alone cannot supply enough variation to examine how exposure to rising or falling house prices affects support for redistribution. Hence, we move to breaking homeownership into a group of sub-categories reflecting how the house in question was acquired. While the choices vary slightly between the LiTS I and LiTS II the vast majority of answers fall into the following categories: bought using a mortgage, bought outright, privatized, inherited, built by family (only in LiTS I), or through a housing cooperative (the remaining categories are solely in the LiTS II and are variants of the others such as 'bought from a friend').

To recap our theoretical expectations, we argue that while most CEE citizens became homeowners through privatization or other means during the transition, access to foreign capital via mortgage finance became a chief driver of the boom in housing prices experienced in these countries in the early 2000s. We therefore expect that citizens that had borrowed money to purchase houses and experienced large house price gains through 2006 to be less supportive of redistribution than other citizens (themselves homeowners). In this analysis, we are thus comparing homeowners with mortgages to homeowners that acquired their property in some other way (privatization, cash purchase, inheritance, etc). We expect mortgage-holding homeowners to be particularly sensitive to changes in home prices because mortgage finance creates *leverage* such that any house price increase results in a higher multiple of capital gain for a mortgage-holder than for an outright owner. Thus, we predict that the effect of house prices increases on redistributive preferences should be amplified for homeowners with mortgages during booms. When capital inflows were propelling housing prices higher in 2006, mortgage-holders should have become less supportive of redistributive government spending than other types of homeowners. However, by 2010, after capital flows reversed and house prices declined, mortgage-holders were in a much less enviable position than other homeowners, particularly if they experienced negative equity. The leverage of holding a mortgage exposes the homeowner to much greater downside risk when prices go down, including the risk of negative equity. Hence, we expect mortgage-holders to be more supportive of redistribution than other homeowners in the 2010 LiTS II.

Table 4 presents our analyses of the LiTS I and LiTS II repeated cross-sections. We run both a linear model for the five-point scale (Models 1 and 2), and a logit model for a binary version of that scale (Models 3 and 4). All models contain country fixed effects with clustered

standard errors and employment status indicator variables. We also include demographic controls for age and gender, a six-point education scale that runs from no secondary schooling to a postgraduate degree, a 10-point relative income scale that asks respondents to place themselves on a scale from one to ten in terms of household income relative to other households, and dummies for job status (employed, self-employed, pensioner, unemployed, etc.), which we do not report.

Each of our right-hand side variables is interacted with a dummy variable for the 2010 wave of the LiTS. We are particularly interested in how the attitudes of homeowners with mortgages differ from other types of homeowners, and whether those attitudes change over the course of the capital-flow/house-price cycle (i.e, between 2006 and 2010). Specifically, we expect homeowners with mortgages to express *less* aversion to inequality in 2006, when property prices were still rising in the CEE, and *more* aversion to inequality in 2010, after the housing market had collapsed.

In general, homeownership has a null effect on the question at hand, which can be attributed to the very high rates of homeownership in the region. However, once we look at how houses were acquired, we see a negative effect of having purchased a house through a mortgage as compared to through privatization, the reference category. In 2006, leveraged mortgage-holders expressed *less* aversion to inequality (were more opposed redistribution) than other types of homeowners, although the difference is not statistically significant. In 2010, mortgage-holders were *more* opposed to inequality (more favorable to redistribution) than people that got their homes without a mortgage, and this difference is statistically significant at the five percent level. Buying a house outright, inheriting a home, or obtaining a residence as a member of a housing cooperative all appear to be unrelated to attitudes about inequality in either wave of the LiTS.

We attribute this relative difference to the ability of mortgage finance to amplify the gains of homeownership when property prices are rising and to magnify the losses when home prices are declining. On a small down-payment, rising house prices can greatly enrich mortgage-holders relative to their capital investment, but increase their losses when property prices fall.

Overall, these results are consistent with the argument that housing prices are a conduit through which global economic forces shape citizens' fiscal policy preferences. In the challenging context of Central and Eastern Europe, we have shown that the preferences of homeowners with mortgages *reverse* between the boom and the bust phases of the capital flow cycle. In late 2006, near the peak of the housing bubble, we found that mortgage-holders were less likely to see inequality as a problem than homeowners that had acquired their property via privatization or through means other than finance. This is consistent with our argument that homeowners view increases in leveraged home equity as a substitute for government-provided social insurance; housing booms are therefore a source of right-wing fiscal preferences. But by late 2010, after capital exited the CEE and home prices collapsed, the attitudes of mortgage-holders had shifted to the left and become more averse to inequality (or supportive of redistribution) than other types of homeowners. We view this evidence as consistent with our claim that fiscal preferences are shaped by global capital flows transmitted locally via house price changes. Since we find no evidence that the fiscal preferences of non-mortgaged homeowners respond to house price changes in this way, a plausible inference is that mortgage leverage is driving the relationship between home prices and fiscal preferences.

5. From House Prices to Policy Outcomes

We conclude by examining how house prices motivate changes in government fiscal policy. In particular we argue that under conditions of rising house prices and, per Section 3, less aggregate

public support for taxation and redistribution, governments should be under pressure to cut taxes and spending. We expect this effect to be amplified when right-wing governments are in power since such cuts align with their ideological preferences – that is, left-wing governments are less likely to make such cuts even if public opinion turns towards them. Ansell (2014) shows that the combination of right-wing government and rising house prices is associated with cuts in a broad array of social spending programs, including pensions and unemployment. However, that paper only examines eighteen advanced industrial countries. In this section we are able to double the scope of that analysis, examining forty-three countries, including countries not only from Western Europe but also Eastern Europe (per our earlier analysis), North America, Africa, East Asia, and the Middle East from the 1960s to 2011.[18]

Given our broad dataset, finding data on specific forms of taxation and spending is challenging. Accordingly, we limit ourselves to aggregate government consumption data to maximize our sample coverage. We take this data from the Penn World Tables 8.0 (coded as the share of national income pertaining to government spending). Our interest is in examining how changes in house prices affect government consumption, controlling for changes in other key macroeconomic and political determinants of spending. In particular, we are interested in examining if the effect of changes in house prices on government consumption is conditional on government partisanship.

Table 5 begins by examining the direct effect of changes in house prices on government consumption. We use the house price index from Section 1 and log it so that a one period difference reflects the annual percentage change in house prices in a particular country. Models 1

[18] The countries are Australia, Austria, Belgium, Bulgaria, Canada, the Czech Republic, Denmark, Estonia, Finland, France, Great Britain, Greece, Hungary, Germany, Iceland, Indonesia, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Malaysia, Mexico, Morocco, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, and the USA

and 2 examine the effects on government consumption of house price changes, controlling for changes in GDP per capita, the exchange rate, population, the export and import shares of national income, the price level of government consumption, and total factor productivity (all from the Penn World Tables) and including a lagged dependent variable.[19] Model 1 includes country dummies (fixed effects), Model 2 includes country random effects, and both include a full set of year dummies. We see sizable negative effects of changes in house prices on government consumption. Moving from a country with zero house price appreciation to one with a sixteen percent appreciation rate (a move from the 25th to the 90th percentile) is associated with an immediate reduction in government consumption of 0.25% of GDP and a long-run (that is, taking the lagged dependent variable into account) reduction of 1.07% of GDP.

Given the discussion in Section 2 about the relationship between current account deficits and house price booms, one might be concerned that the result in Models 1 and 2 is an artifact of a relationship between the current account and government spending. Models 3 and 4 show that these results are robust to the inclusion of the five-year change in the current account surplus.

The political effects of house price changes should matter most, we hypothesize, where homeownership rates are highest and hence more people benefit from rising wealth. Models 5 and 6 examine this conditional effect by interacting the change in house prices with the level of homeownership across 26 European countries for which we have time series data on homeownership rates from Eurostat. We find a strongly negative interactive coefficient on prices and ownership rates. To explore the substantive impact of this interaction in **Figure 4a** we plot the predicted marginal effect of increasing house prices on the government share of spending at various levels of homeownership. For rates below 60% this effect is in fact positive (the bottom

[19] Results are very similar if we use the annual change in government consumption as the dependent variable, with or without a lagged dependent variable.

decile of observations), whereas for rates above 65% the effect is strongly negative. Since over two-thirds of our observations have homeownership rates above 65%, for the preponderance of the sample we see the negative effect observed in the sample as a whole. However, for countries with low homeownership rates we conclude that house prices are much less likely to impact spending.

Finally, Models 7 and 8 interact the change in house prices with cabinet partisanship, using the left-center-right coding used in the Database of Political Institutions (Keefer, 2009). Here we use dummies for being a center party and for being a left party, with the omitted category being right parties and we enter these terms on their own and in interaction with house price changes. We find that the direct effect of changes in house prices remains negative – implying that when right-wing parties are in power, house price increases lead to reductions in government consumption. Examining the interaction terms we see that when left or center parties are in power the negative direct effect of house price increases is countervailed. That is, the positive terms on these interactions match or exceed the direct negative coefficient on house prices. In the case of left-wing governments, at least in the fixed effects models, this countervailing effect is large enough that left-wing governments are actually associated with increased government consumption when house prices rise – some support for our conjecture that left-wing governments are likely to be responsive to the equity poor and renters. Finally, for center parties, the effects of house price increases are essentially nil. This table provides evidence that parties respond to house price increases in systematically different ways. **Figure 4b** presents the predicted levels of government consumption, with ninety-five percent confidence intervals, of various levels of house price appreciation under left and right cabinet control, demonstrating this differential effect quite dramatically.

Tables A2 and **A3** in the Appendix deal with two potential critiques of the results in **Table 3**. In order to demonstrate that the results do not appear to be driven by short-term fluctuations in the business cycle, **Table A2** uses five-year change variables and lags instead of the one-year differences used in **Table 5**. Results are consistent using this approach. **Table A3** replaces government consumption with the level of government revenues from taxation as a percent of GDP, drawn from the World Development Indicators, as a different dependent variable. While this variable may appear closer in substance to that used in the survey prompts in **Tables 2** and **3** it does have weaker time series and country coverage. Nonetheless, house price changes also appear to have a negative effect on the revenue side of the government ledger.[20]

6. Conclusions

Global imbalances during the 2000s reached historic levels, producing a massive wave of international capital flows that fueled housing bubbles in many borrowing countries. In this paper, we have considered the domestic political implications of a world in which the savings of surpluses countries are channeled into the real estate markets of deficit countries by way of global capital markets. Our argument is that international capital flows influence the fiscal policy preferences of homeowners – and, hence, the fiscal policy choices of partisan governments – by way of their impact on housing prices.

We began by showing that capital flows have important economic consequences for homeowners – a politically-salient constituency that is usually neglected in analyses of fiscal politics.[21] For example, we found that a one percent of GDP capital inflow is associated with an

[20] A further extension of the theory in the paper would be to look at social insurance spending itself, as in Ansell (2014). However, social spending broken down by category has substantially weaker coverage across the whole sample than overall spending and revenues. Limiting the sample to OECD countries produces similar results to that already found in Ansell (2014). The contribution of the analysis in this section is to show that this logic extends to a much broader array of countries, albeit with taxes and spending measured at a more aggregate level.

[21] Schwartz and Seabrooke (2009) is a notable exception.

increase in house prices of around two-thirds of a percent. We also showed that the composition of capital inflows also matters. While bonanzas that are driven by portfolio-equity and FDI inflows are not likely to raise housing prices, bonanzas of debt-related investment put strong upward pressure on house prices. Even when controlling for the current account, debt-related bonanzas have the strongest positive impact on home prices (a bonanza being associated with an annual four percent increase in house prices). A novel IV regression analysis established that this analysis is robust to endogeneity from reverse causality and omitted variables. Finally, we established that the effect of capital flows on house prices was amplified in Eastern Europe, which experienced wild swings in home prices as the capital flow cycle ran its course during the 2000s.

These findings are consistent with economic theory. When large capital inflows enter an economy, the demand for assets that are in fixed supply increases, and asset prices rise. However, this theory applies mainly to debt-related inflows, which are channeled through the banking system and therefore associated with increases in risky lending (Aoki, et al 2007). FDI and portfolio-equity related inflows, by contrast, do not invoke the same effects on asset prices. Furthermore, large inflows of debt-related investment can put upward pressure on house prices *even when the current account is in surplus*. For example, Denmark and Germany both have current account surpluses and house prices have been rising, particularly in urban areas. Germany's surplus is due mainly to FDI and portfolio-equity investment abroad, but Germany is also receiving large inflows of debt-related investment, which may be driving up home prices (Jara and Olaberría 2013).

Our *political economy* argument is that homeowners view the equity they build up in their houses as a private substitute for publically-provided social insurance. Therefore,

homeowners will demand both lower taxes and less publicly-provided social insurance where capital inflows are large and housing prices are rising. Using ISSP survey data from a broad sample of high- and medium-income countries, including many in the European periphery, we found that preferences over taxation are consistent with this argument. Where rising home prices have increased equity, citizens are less supportive of progressive taxation than are citizens with lower equity, renters, or citizens with negative equity. The same holds for preferences over redistributive spending: controlling for income, citizens with higher priced homes express less support for redistributive government spending. Moreover, the effects of homeownership, at least on preferences over taxation, appear to be larger in countries that had larger house price booms.

In the extension of our argument that we test with data from Central and Eastern Europe, we found that the preferences of homeowners with *mortgages* reverse across the boom and the bust phases of the capital flow cycle. Analyses of LiTS I – the survey administered in late 2006 when house prices were being fueled by massive capital inflows – indicate that mortgage-holders were less likely to support government redistribution than homeowners that had acquired their property through other means. This finding is consistent with our claim that leveraged home equity gains during a capital inflow bonanza can shift fiscal preferences to the right. By contrast, analyses of LiTS II – the survey taken in late 2010 after capital flows and house price gains had reversed – reveals that attitudes of mortgage-holders had reversed as well, shifting to the left and becoming more supportive of redistribution than other homeowners.

Finally, we connected house prices and capital inflows to fiscal policy outcomes. Using a sample of 39 countries from 1960 to 2011 we found that increases in house prices appear negatively related to government consumption; that this effect is magnified in countries that have been experiencing sizable medium-term capital inflows; and that the effect is also driven largely

by right-wing parties. We argue that this partisan dynamic is a function of right-wing parties being more likely to represent homeowners, whose preferences over social spending tilt negatively as house prices rise.

Political economists have long considered global trade and capital flows to be important determinants of social policy preferences and outcomes (e.g., Garret and Lange 1991, Garrett 1998). However, these longstanding arguments have traditionally focused on the impact of globalization on the labor market; in particular, on risk and insecurity created by import competition and footloose investment capital. In this paper, we show that the global flows that may have been most important in affecting fiscal policy preferences and outcomes are those that drove asset prices. In other words, instead of increasing labor market insecurities, globalization may have created a (possibly false) sense of income security through the asset price channel. Where current account deficits produced capital inflows that drove up housing prices, the public came to view homeownership as a substitute for government social insurance, creating a ripe opportunity for the Right to cut public spending. Globalization may indeed undermine the welfare state, but it has done so through an unexpected channel.

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Table 1(a): House Prices and Global Capital Flows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DV: D.House Prices							
D.Current Acct	-0.639***	-0.640***	-0.656**	-0.550**	-0.701**	-0.697**	-0.485***
	(0.234)	(0.228)	(0.244)	(0.208)	(0.279)	(0.280)	(0.153)
Net K. Inflows	-0.003						
	(1.377)						
Gross K. Inflows		3.133***					
		(0.901)					
Net FDI			2.560				
			(1.734)				
Net Debt				3.929**			
				(1.501)			
Net Portfolio					-1.680		
					(1.239)		
Gross Portfolio						-0.323	
						(1.246)	
RR Bonanza							0.916
							(1.062)
Constant	1.434*	2.211***	2.368***	1.957**	2.211**	2.376***	1.649**
	(0.739)	(0.758)	(0.796)	(0.756)	(0.906)	(0.859)	(0.767)
N	482	479	468	479	444	444	445
Countries	35	35	35	35	34	34	34
Adj.R-sqr	0.141	0.157	0.158	0.174	0.143	0.137	0.138

Notes: Country Clustered standard errors in parentheses: * p<0.10, ** p<0.05, *** p<0.01

Table 1(b): House Prices and Global Capital Flows: Instrumental Variable Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
DV:	Net Debt	D.House Prices	D.House Prices	D.House Prices	D.House Prices	D.House Prices
Net Debt	0.399***	3.929**	4.924***	5.463***	4.360*	4.752**
	(0.04)	(1.5)	(1.88)	(1.99)	(2.56)	(2.38)
D.Current Acct	0.018	-0.550**	-0.404***	-0.352	-0.346	-0.408
	(0.01)	(0.21)	(0.15)	(0.27)	(0.27)	(0.34)
D.Democracy	0.026			2.537	2.161	4.776
	(0.08)			(1.96)	(2.14)	(5.27)
D.Exchange Rate	0.000**			-0.001	-0.002	-0.004
	(0.00)			(0.00)	(0.00)	(0.00)
D. Interest Rate	0.004*			-0.051	-0.104***	-0.091
	(0.00)			(0.05)	(0.04)	(0.06)
D.Inflation	0.000			0.01	0.001	0.003
	(0.00)			(0.01)	(0.00)	(0.01)
D.Trade/GDP	0.001			-0.026	-0.063*	-0.073**
	(0.00)			(0.05)	(0.04)	(0.04)
D.Govt /GDP	0.063			1.182	-0.058	0.464
	(0.05)			(1.09)	(0.86)	(1.17)
D.Unemployment	-0.015			-0.636*	-0.308	-0.444
	(0.01)			(0.36)	(0.35)	(0.38)
D.GDP per capita	0.000			0.002*	0.001	0.000
	(0.00)			(0.00)	(0.00)	(0.00)
Constant	0.142***	1.957**	2.583***	1.214*	1.621	0.53
	(0.04)	(0.76)	(0.33)	(0.64)	(1.3)	(0.55)
IV for Net Debt	(first stage)	N	Y	Y	Y	Y
Country FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	N	N	Y	Y
CD F-statistic	--	--	141.20	89.45	50.70	41.02
Hansen J p-value	--	--	--	--	--	0.000
N	305	479	395	305	305	229
Countries	26	35	28	26	26	25
Adj.R-sqr	0.231	0.174	0.252	0.350	0.452	0.388

Notes: Country Clustered standard errors in parentheses: * p<0.10, ** p<0.05, *** p<0.01

Table 2: House Prices and Preferences over Tax Policy and Redistribution (ISSP 2009)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DV:	Tax 1	Tax 1	Tax 2	Tax 2	Redis.	Redis.	Aid	Aid
House Equity	-0.062***	-0.046**	-0.071***	-0.054***	-0.080***	-0.065***	-0.041**	-0.028
	(0.021)	(0.019)	(0.019)	(0.018)	(0.027)	(0.025)	(0.020)	(0.019)
Homeowner	0.144*	0.105	0.153**	0.116*	0.198**	0.169**	0.037	0.006
	(0.083)	(0.084)	(0.072)	(0.069)	(0.084)	(0.078)	(0.080)	(0.079)
Log Income	-0.136	-0.122	-0.141	-0.132	-0.161*	-0.152*	-0.146***	-0.135***
	(0.095)	(0.099)	(0.098)	(0.100)	(0.084)	(0.084)	(0.044)	(0.045)
Sex	-0.019	-0.074*	-0.023	-0.081*	0.248***	0.203***	0.079	0.037
	(0.049)	(0.044)	(0.048)	(0.044)	(0.053)	(0.049)	(0.071)	(0.063)
Age	0.012***	0.011***	0.012***	0.011***	-0.004	-0.005	0.006*	0.005*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)
Children	0.057***	0.057**	0.028	0.024	0.065***	0.063***	0.014	0.011
	(0.021)	(0.022)	(0.022)	(0.024)	(0.021)	(0.022)	(0.015)	(0.015)
Religiosity	0.022	0.000	0.037	0.015	0.038	0.015	0.005	-0.011
	(0.029)	(0.026)	(0.025)	(0.020)	(0.043)	(0.042)	(0.021)	(0.022)
Partisanship		-0.358***		-0.384***		-0.398***		-0.295***
		(0.057)		(0.067)		(0.058)		(0.036)
N	15809	15809	15212	15212	15839	15839	15821	15821

Notes: Country Clustered standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Multilevel Analysis of Home Ownership and Policy Preferences (ISSP 2009)

DV:	(1) Tax Opinion	(2) Tax Country	(3) Redistribution	(4) Aid to Poor
House Price Change (5 Year)	0.097	0.182	1.302***	0.251
	(0.562)	(0.414)	(0.487)	(0.236)
Homeowner	-0.009	-0.049	-0.113	-0.018
	(0.112)	(0.072)	(0.103)	(0.068)
Homeowner X House Price Change	-0.428**	-0.447**	-0.123	-0.198
	(0.173)	(0.200)	(0.157)	(0.183)
Log Income	-0.178	-0.205*	-0.212**	-0.194***
	(0.111)	(0.114)	(0.084)	(0.044)
Sex	-0.076	-0.074	0.221***	0.054
	(0.049)	(0.052)	(0.062)	(0.080)
Age	0.010**	0.011***	-0.004	0.006*
	(0.005)	(0.004)	(0.004)	(0.003)
Partisanship	-0.321***	-0.348***	-0.369***	-0.312***
	(0.048)	(0.051)	(0.051)	(0.044)
Children	0.056*	0.029	0.055**	0.016
	(0.030)	(0.030)	(0.026)	(0.019)
Religiosity	-0.009	-0.001	0.014	0.017
	(0.030)	(0.020)	(0.038)	(0.023)
N	12378	11909	12336	12130
Countries	21	21	21	21

Notes: Country Clustered Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Inequality Attitudes in LiTS I (2006) and LiTS II (2010)

	(1)	(2)	(3)	(4)
DV: Aversion to inequality	Linear	Linear	Logit	Logit
Homeowner	-0.017		-0.026	
	(0.031)		(0.084)	
Homeowner X 2010	-0.005		-0.006	
	(0.040)		(0.110)	
Mortgage		-0.068		-0.174
		(0.055)		(0.135)
Mortgage X 2010		0.153**		0.353**
		(0.061)		(0.144)
Bought Outright		0.000		0.052
		(0.025)		(0.087)
Outright X 2010		0.027		0.009
		(0.050)		(0.143)
Inherited		0.027		-0.015
		(0.022)		(0.079)
Inherited X 2010		-0.022		0.034
		(0.035)		(0.106)
House Co-op		-0.044		-0.184
		(0.051)		(0.144)
House Co-op X 2010		0.033		0.121
		(0.084)		(0.192)
Relative Income	-0.034***	-0.032***	-0.086***	-0.076***
	(0.008)	(0.008)	(0.023)	(0.022)
Relative Income X 2010	0.005	0.006	-0.002	-0.004
	(0.014)	(0.015)	(0.033)	(0.034)
Gender	0.045***	0.040**	0.143***	0.138***
	(0.016)	(0.017)	(0.048)	(0.051)
Gender X 2010	-0.011	-0.005	-0.059	-0.054
	(0.021)	(0.022)	(0.058)	(0.060)
Age	0.001*	0.001	0.002	0.001
	(0.001)	(0.001)	(0.002)	(0.002)
Age X 2010	0.020***	0.021***	0.039***	0.041***
	(0.004)	(0.005)	(0.012)	(0.013)
Education	0.004	0.003	0.002	-0.002
	(0.013)	(0.012)	(0.034)	(0.033)
Education X 2010	-0.016	-0.014	-0.041	-0.033
	(0.012)	(0.013)	(0.032)	(0.032)
LiTS 2010	-0.295	-0.315*	-0.419	-0.470
	(0.188)	(0.188)	(0.406)	(0.402)
Constant	4.450***	4.445***	2.625***	2.654***
	(0.073)	(0.067)	(0.191)	(0.186)
Observations	62944	54463	62944	54463

Notes: Country Clustered Standard errors in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All surveys include country fixed effects and employment status dummies.

Table 5: House Prices and Change in Government Consumption

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DV: Gov't Consumption								
Lagged DV	0.819***	0.965***	0.802***	0.958***	0.779***	0.968***	0.868***	0.977***
	(0.0327)	(0.0125)	(0.0268)	(0.0129)	(0.0448)	(0.0128)	(0.0338)	(0.00853)
Ch. House Prices	-0.542**	-0.704***	-0.461*	-0.697***	5.355**	7.101***	-0.973**	-1.097**
	(0.227)	(0.188)	(0.258)	(0.187)	(2.548)	(2.354)	(0.433)	(0.502)
Ch. GDP per cap	-0.226**	-0.152***	-0.238**	-0.141**	-0.163**	-0.111*	-0.251***	-0.255***
	(0.0907)	(0.0574)	(0.100)	(0.0661)	(0.0743)	(0.0606)	(0.0824)	(0.0762)
Ch. Ex Rate	0.139*	0.111	0.116	0.105	-4.532	-0.108	0.485	0.824**
	(0.0721)	(0.0867)	(0.0930)	(0.0895)	(12.86)	(10.84)	(0.370)	(0.387)
Ch. Population	-0.133	-0.0653	-0.403***	-0.0883**	0.0662	0.187	-0.174	-0.0820***
	(0.0842)	(0.0418)	(0.132)	(0.0369)	(0.406)	(0.242)	(0.133)	(0.0281)
Ch. Exports	-6.061***	-6.214***	-6.889***	-6.821***	-5.805**	-6.269**	-7.837***	-8.490***
	(1.644)	(1.622)	(1.921)	(1.820)	(2.152)	(2.550)	(1.690)	(1.840)
Ch. Imports	-3.873***	-4.100***	-4.644***	-4.183***	-4.715***	-5.290***	-6.015***	-6.523***
	(1.197)	(1.367)	(1.299)	(1.414)	(1.461)	(1.920)	(1.131)	(1.307)
Ch. Gov Prices	-0.632	-0.477	-0.541	-0.458	-0.411	-0.413	-1.114***	-1.005***
	(0.463)	(0.444)	(0.461)	(0.467)	(0.682)	(0.644)	(0.380)	(0.375)
Ch. TFP	-4.302*	-4.550**	-3.655	-3.752	-2.339	-3.364	-4.042**	-3.688**
	(2.208)	(2.182)	(2.308)	(2.421)	(1.572)	(2.194)	(1.549)	(1.850)
Current Ac.			-0.0246	-0.00984				
			(0.0159)	(0.00603)				
Homeownership					0.0226	0.00215		
					(0.0149)	(0.00412)		
Ch. HP X Home					-0.0849**	-0.109***		
					(0.0385)	(0.0361)		
Left Cabinet							0.208	-0.0622
							(0.194)	(0.111)
Center Cabinet							0.0977	0.0652
							(0.0705)	(0.0626)
Ch. HP X Left							1.584*	2.814***
							(0.809)	(0.781)
Ch. HP X Center							0.613	0.863
							(0.591)	(0.683)
Constant	3.214***	0.303	2.635***	0.489*	1.713	-0.0500	2.662***	0.192
	(0.642)	(0.273)	(0.512)	(0.296)	(1.326)	(0.355)	(0.708)	(0.242)
N	720	720	644	644	263	263	575	575
Countries	43	43	43	43	26	26	35	35
Effects	F	R	F	R	F	R	F	R

Notes: Country Clustered Standard errors in parentheses. All models include year fixed effects. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Causal Pathway from International Capital Flows to Fiscal Policy

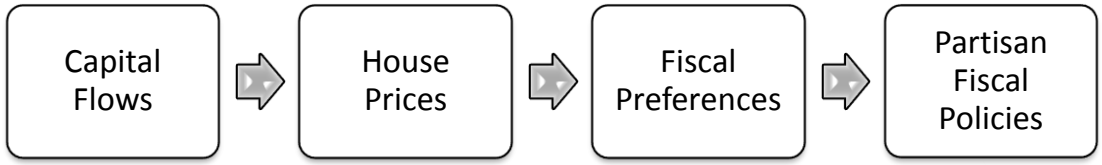
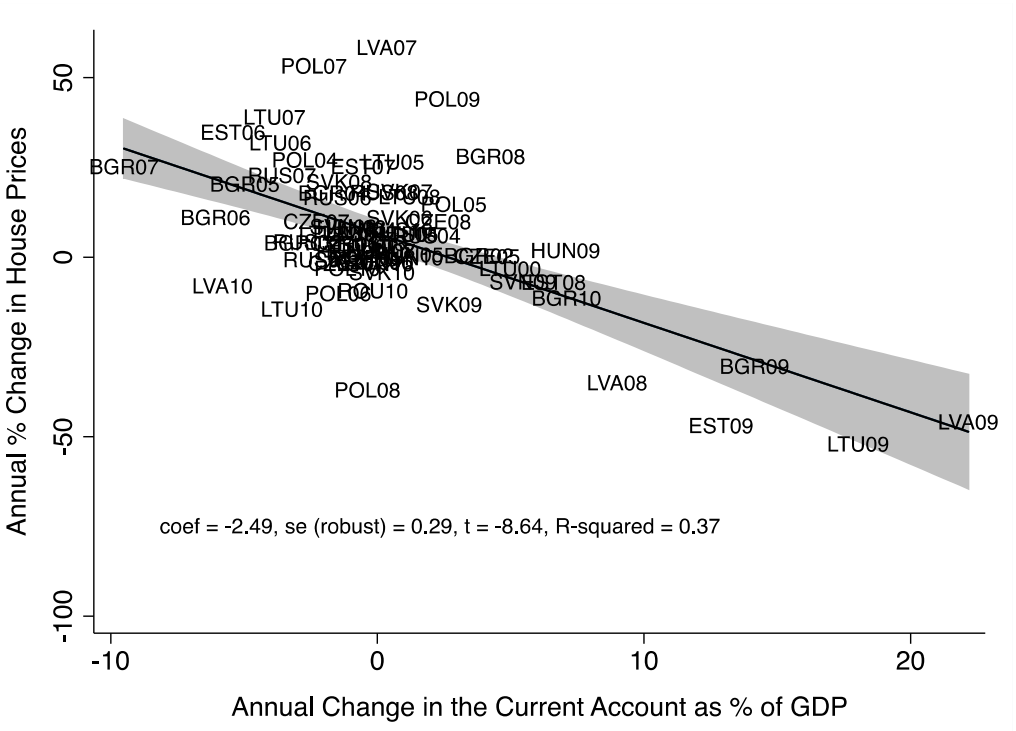


Figure 2: Changes in House Prices and the Current Account in CEE Countries 2001-11



Notes: Fitted regression line and 95% confidence bands for 12 countries from 2000 to 2011.

Figure 4a: Homeownership and the Marginal Effects of House Prices on Spending

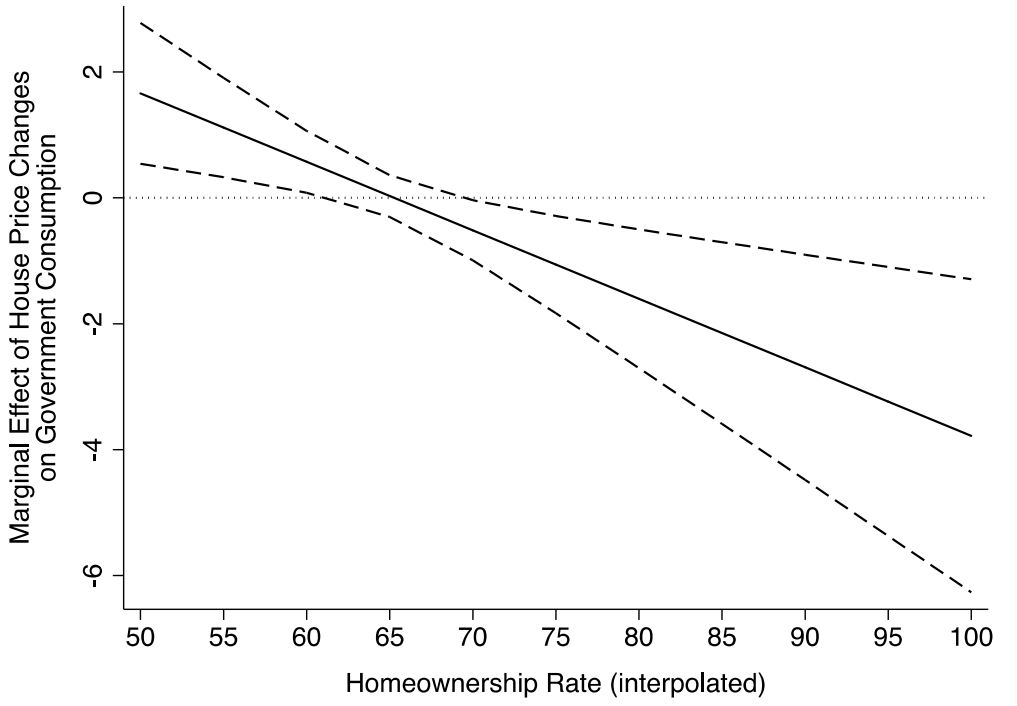


Figure 4b: Differential Effects of Partisanship on the Level of Spending