The 'Nest Egg' Effect? Housing, the Welfare State, and Political Incentives

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Abstract

Whereas the decades from 1960 to 1990 were marked by volatile price and wage fluctuations, since 1990, inflation in the goods and services markets appears to have been tamed. Yet contemporaneously, fluctuations in asset markets, particularly in equities and housing prices have grown substantially, and indeed, are largely thought responsible for the last two recessions. We know surprisingly little about how fluctuations in asset markets affect political behavior, though they have large income effects on consumption and savings. In this paper, I analyze two political effects of price fluctuations in the housing market: firstly the preferences of citizens over welfare spending, and secondly, opportunistic election holding by politicians. We see powerful effects of the housing market both on citizens' attitude towards policies and on policymakers' views of when they should subject themselves to the the voting preferences of citizens.

1 Introduction

From the 'dot com' bubble of the late 1990s through to the explosion in housing prices in the first decade of the twenty-first century, fluctuations in asset valuations have driven economic cycles in the OECD. Yet, despite the increased importance of asset ownership in defining the wealth of citizens, and the level of equality between them, we know very little about how political preferences over economic policies are affected by this shift. Does asset ownership have the same impact on preferences over taxation as wage income? How are social policies that hedge against risk, like unemployment insurance and pensions, affected by the balance between asset and wage income? Do the standard findings of the economic voting literature about the benefits of growth in securing incumbent re-election also cross-over to house price booms?

While wage inflation has fallen off the political radar in most states, if not yet out of academic debate, a potentially equally significant form of inflation has emerged over the past decade: asset price inflation. Shiller (2006) notes that real home prices have near tripled since 1983 in Boston, London, Paris, and Sydney. The housing boom has not been confined to 'global cities': while average real US rents have increased by only ten percent since 1997, average real house prices have increased 50 percent (Baker, 2006). The huge surge in the valuation of residential and commercial real estate in most OECD countries has created a new 'wealth gap' between property owners and renters that dwarfs any such inequality in the postwar period. The property boom followed sharply on the heels of the 'dot com' bubble in

Figure 1: US Real Rents and Home Prices since 1900. Taken from Shiller (2006, p.4)

stock prices, which massively increased the paper wealth, albeit briefly, of the owners of shares and pension plans during the late 1990s. Figure 1, from Shiller 2006 demonstrates how real house prices and real rents have diverged in the USA over the past century, in particular since 1995.

These twin asset booms - perhaps 'bubbles' - have had an enormous impact on the political economy of OECD states, both in the manner by which they have directly increased wealth inequality but also through their second order effects on the policy preferences of voters, especially in terms of insuring against job loss and old age. In this paper, focusing on housing, I develop and test a formal model (also employed in Ansell (2007)) that examines how individual preferences over taxation and social insurance vary across asset owners and asset non-owners, and individuals of varying labor

market status.

The paper begins in Section 2 by laying out a simple formal model of how house prices affect preferences over social spending. Section 3 provides a first empirical test of some of the assertions in the theoretical sections - that individuals who have experienced significant asset inflation will demand reduced public pension provision and reduced tax rates - using data from the 2004 National Election Survey and the Case-Shiller index of house price appreciation. Section 4 moves to the aggregate national level, examining cross-sectional time series data on house price changes and social spending. Section 5 moves to an empirical examination of electoral effects of house prices, focusing on whether house price booms affect the incentives of politicians to call early elections in countries with endogenous electoral timing, following Kayser (2006). Section 6 concludes with implications for the political economy literature more broadly and some potential lines of future research.

2 A Simple Model of House Prices and Welfare Preferences

In this section, I elaborate a formal model of preferences over taxation and social spending under varying conditions of price and asset inflation. Throughout, the reader should note that 'assets' and 'house prices' can be considered interchangeable. The model is built up from individual preferences, subject to the government's budget constraint and to changes in the parameters governing the level and sensitivity of asset inflation. The

model divides individuals by whether they face a risk of unemployment in the labor market and whether they own assets or not, thereby differentiating individuals into four groups.

Beginning with the goods market, individuals earn income $y_i = w$ if they are employed and $y_i = 0$ if unemployed in period zero. A proportion N of voters are labor market insiders, for whom the probability of unemployment is zero. The remaining fraction $(1 - N)$ of the population are labor market outsiders and face a risk of unemployment: there is a probability e that they will be employed and $1 - e$ that they will be unemployed. Consequently, the proportion of the overall population that is employed is $N + (1 - N)e$ and the proportion that is unemployed is $(1 - N)(1 - e)$.[1] If citizens are unemployed they receive the unemployment benefit b. The level of employment among labor market outsiders, e, is negatively related to interest rates r and positively related to the rate of price inflation π_p.

The relationship between interest rates, employment, and price inflation follows the synthesis of current macroeconomic orthodoxy developed by David Soskice and Wendy Carlin (Carlin and Soskice 2004, 2006, building off work by Taylor 1993; Ball 1999; Romer 2000). Policy changes in interest rates are presumed to affect the overall level of economic activity, which in this model is represented by the rate of employment. Increases in employment will then positively impact wage/price inflation as increased labor demand leads to a bidding up of labor costs. In this model, interest rates and employment occur in period zero with the effect on inflation occurring in period one. Thus we can reframe the employment of outsiders as

[1] This is a similar setup to that employed in Moene and Wallerstein (2002).

$e(r)$ and price inflation as $\pi_p(e(r)) = \pi_p(r)$. In this paper, I abstract away from changes in interest rate policy - elsewhere I develop the model further down these lines (Ansell, 2007).

We now turn to the asset market. Voters have assets a_i, where $a_i = \tilde{a}$ for a proportion $A \in 0, 1$ of the population and $a_i = 0$ for a proportion $(1 - A)$. We assume that the group of asset owners A and the group of labor market insiders N are not necessarily coterminous. Thus four sets of people emerge: (a) asset owning insiders (A, N); (b) asset non-owning insiders $(\sim A, N)$; (c) asset owning outsiders $(A, \sim N)$; and (d) asset non-owning outsiders $(\sim A, \sim N)$.

In period one all voters retire and receive (a) the government pension, adjusted for price inflation $g(1 - \pi_p)$; and (b) a return from their asset ownership (net of taxes t applied in period zero): $a_i[1 - t][\pi_a - \pi_p]$, where π_a is the rate of asset inflation and π_p is the rate of price inflation. Put simply, when asset inflation exceeds price inflation, asset owners receive an extra income supplement in retirement from the increased real valuation of their assets but where price inflation exceeds asset inflation, asset owners experience a real loss. Putting the government pension and asset income together, we find that asset owners - groups (a) and (c) - receive $g(1-\pi_p)+\tilde{a}[1-t][\pi_a-\pi_p]$ and asset non-owners - groups (b) and (d) -receive $g(1-\pi_p)$.

Both the unemployment benefit and pensions are paid for out of general taxation. We normalize population to equal one so that average tax take will equal total tax take. Total tax take, T, is defined as a flat tax t multiplied by average earned *and* asset income $\bar{Y} = E(y_i + a_i) = w(N + (1 - N)e) + A\tilde{a}$, which we refer to as the *tax base*. Thus total tax take $T = t\bar{Y}$ equals

spending $g + (1 - N)(1 - e)b$, producing the budget constraint.

$$T = t\bar{Y} = t[w[N + [1 - N]e] + A\tilde{a}] = g + [1 - N][1 - e]b \tag{1}$$

The Basic Utility Function of Voters: I now examine how individual utility is affected by the tax rate t used to pay for social insurance. In order to pay for unemployment benefits b and pensions g, individuals are taxed on both their asset income a_i and their period zero wage income y_i.[2] Thus the generic utility function for voters appears as follows:

$$i \in \{N, \sim N\}, j \in \{A, \sim A\} b_i = 0, y_i = w \text{ if } i = N \quad b_i = (1-e)b, y_i = we \text{ if } i = \sim N$$
$$U_{ij} = [1 - t][a_i + y_i] + [1 - e]b(y_i) + \delta\Big[g[1 - \pi_p] + a_i[1 - t][\pi_a - \pi_p]\Big] \tag{2}$$

The basic elements of this expression are period zero income net of taxes $[1-t][a_i+y_i]$; the unemployment benefit that labor market outsiders receive if unemployed, multiplied by the probability of being unemployed $[1 - e]b_i$; the period one pension, discounted and net of price inflation, received by everyone $\delta g(1 - \pi_p)$; and period one asset appreciation, discounted and net of taxed asset income in period zero and of price inflation $\delta a_i[1-t][\pi_a - \pi_p]$.

To more set out more clearly the distributive implications of taxation and social spending I examine the utility function of each of the four groups in society: (a) asset owning insiders; (b) asset non-owning insiders; (c) asset owning outsiders; and (d) asset non-owning outsiders.

[2] I assume that the revenues from asset and wage taxation are used interchangeably and thus both fund employment benefits and pensions. In fact, in many states asset taxation funds local goods and wage taxation funds national goods. This model does not make this distinction. However, it should be noted that other forms of asset taxation, like capital gains taxes and inheritance taxes are collected and distributed nationally.

Asset Owning Insiders

$$U_{AN} = [1-t][\tilde{a}+w] + \delta\Big[g[1-\pi_p] + \tilde{a}[1-t][\pi_a - \pi_p]\Big] \tag{3}$$

Asset owning insiders face no uncertainty about employment and hence income in period zero. They are taxed on both their asset income $\tilde{a}$ and wage income w. Their return from taxes is confined to the pension received in period one. In period one they also receive returns from asset inflation, net of price inflation and the portion of assets taxed in period zero.

Asset Non-Owning Insiders

$$U_{\sim AN} = [1-t]w + \delta\Big[g[1-\pi_p]\Big] \tag{4}$$

Asset non-owning insiders also face no uncertainty about employment but since they own no assets they are taxed less than asset owners in period zero. In period one, however, they receive only the pension transfer.

Asset Owning Outsiders

$$U_{A\sim N} = [1-t][\tilde{a}+we] + [1-e]b + \delta\Big[g[1-\pi_p] + \tilde{a}[1-t][\pi_a - \pi_p]\Big] \tag{5}$$

Asset owning outsiders face uncertainty about their labor market position and thus are taxed on earned income with probability e and receive the unemployment benefit with probability $1-e$. They receive both the pension and net asset earnings in period one.

Asset Non-Owning Outsiders

$$U_{\sim A\sim N} = [1-t][we] + [1-e]b + \delta\Big[g[1-\pi_p]\Big] \tag{6}$$

Finally, asset non-owning outsiders face uncertainty about their labor market position but pay less tax than asset owning outsiders since they do not own taxable assets. They receive only the pension in period one.

The Effect of Taxation on Utility: I now turn to examine the differential impact of taxation across these four groups. Doing so allows us to begin identifying the potential political cleavages and coalitions that can emerge when parties choose differing tax rates. In order to analyze these expressions we need to define the effects of taxation on pensions and the unemployment benefit. These effects can be derived from the budget constraint and I assume a fixed share of tax revenues go to unemployment and pensions.[3] The derivative of the unemployment benefit with respect to taxation is:

$$\frac{\partial b}{\partial t} = \frac{w[N + (1 - N)e] + A\tilde{a}}{[1 - N][1 - e]} = \frac{\bar{Y}}{[1 - N][1 - e]} \tag{7}$$

The derivative of pensions with respect to taxation is:

$$\frac{\partial g}{\partial t} = w[N + (1 - N)e] + A\tilde{a} = \bar{Y} \tag{8}$$

With these expressions in hand we can turn to the derivative of utility with respect to taxation for each group:

$$\frac{\partial U_{AN}}{\partial t} = -[\tilde{a} + w] + \delta\left[\bar{Y}[1 - \pi_p] - \tilde{a}[\pi_a - \pi_p]\right] \tag{9}$$

[3]Clearly, in empirical analysis we see a varied ratio of unemployment and old age insurance spending across time and countries. Adding this multidimensionality would of course complicate the model and political equilibria substantially, unless voters have intermediate preferences.

$$\frac{\partial U_{\sim AN}}{\partial t} = -w + \delta\left[\bar{Y}[1-\pi_p]\right] \tag{10}$$

$$\frac{\partial U_{A\sim N}}{\partial t} = -[\tilde{a}+we] + \frac{\bar{Y}}{1-N} + \delta\left[\bar{Y}[1-\pi_p] - \tilde{a}[\pi_a - \pi_p]\right] \tag{11}$$

$$\frac{\partial U_{\sim A\sim N}}{\partial t} = -we + \frac{\bar{Y}}{1-N} + \delta\left[\bar{Y}[1-\pi_p]\right] \tag{12}$$

Before comparing the groups, it is useful to outline the components of these equations. The first effect, $-[a_i + y_i]$ is the loss of period zero income due to taxation and is largest for asset owning insiders $(-\tilde{a}-w)$ and smallest for asset non-owning outsiders $(-we)$. This effect, while different in magnitude, is strictly negative for all groups. The second effect, $\bar{Y}/(1-N)$, which only occurs for labor market outsiders, is the positive impact of receiving the unemployment benefit. The third effect, $\delta[\bar{Y}[1-\pi_p]$, which applies equally to all citizens is the increase in the publicly provided pension g, suitably discounted and adjusted for price inflation and the size of the tax base. This effect is strictly positive. Finally, we have the fourth effect, $-a_i[\pi_a - \pi_p]$, which represents the asset inflation lost from increased asset taxation. This effect only applies to asset owners. The magnitude and direction of this effect depends on the difference between the rate of asset and price inflation; that is, asset inflation is only valuable when it exceeds inflation in the cost of goods and services. If price inflation outstrips asset inflation this effect reverses since assets would have been worth less in the future - thus public pensions become more important.

Comparing the effects of taxation on the different groups, Equations (9) through (12) demonstrate that taxation has a clear redistributive impact

from asset owners to non-owners and labor market insiders to outsiders. Asset-owning insiders are the chief losers from taxation since they benefit only from the provision of pensions and lose both asset and wage income to taxation. The chief-winners are asset non-owning outsiders who gain from both unemployment benefits and pensions and have no assets to tax.

The remaining groups - asset non-owning insiders and asset owning outsiders - experience a more moderate effect of taxation. The former group only gain pensions from taxation but have no assets to tax. The latter group may receive unemployment benefits as well as pensions but find their assets taxed. Whether asset non-owning insiders have a greater relative preference for taxation than asset owning outsiders depends on the following inequality:

$$\frac{\partial U_{A\sim N}}{\partial t} < \frac{\partial U_{\sim AN}}{\partial t} \quad \Longleftrightarrow \quad \frac{\bar{Y}}{1-N} + w(1-e) < \tilde{a}(1+\delta(\pi_a - \pi_p)) \quad (13)$$

This inequality is more likely to hold: (a) when employment is high, wages are low, or unemployment benefits are low; or (b) when asset ownership or the rate of asset inflation are high. Put more simply, asset owning outsiders will be harmed more greatly by taxation when asset price inflation is high, the risk of becoming unemployed is low, and the unemployment benefit they would receive if they did become unemployed is low. In this scenario, their tax loss from their assets is not made up by the benefits of being insured against losing their jobs. I refer to this state of affairs as an *Asset Dominance* state of the world. Where wages and employment are more important, the inequality flips and asset owning outsiders become more relatively favorable to taxes than asset non-owning insiders: I refer to this as an *Employment*

Dominance state.[4] Putting these conclusions together, we can array the preferences over taxation of different societal groups in a two-by-two table.

Table 1: Preferences over Taxation

	Insiders	**Outsiders**
Asset Owners	Dislike taxation most	Dislike taxation under *Asset Dominance*
Asset Non-Owners	Dislike taxation under *Employment Dominance*	Like taxation most

Since in this model, taxation preferences directly define preferences over both unemployment insurance and pensions, the patterns above carry over to preferences over social insurance spending. I note further that when asset inflation is high, asset-owners will become increasingly unsupportive of taxation and social insurance spending. Note, that these effects on preferences, while related to income and labor market status, are still directly related to house price changes. In the next section we test how well these predictions hold up at the individual level. In the following sections we then move to the aggregate level and ask how political parties respond to the 'income effect' of increased asset price inflation. While I do not develop a full political model here there are some simple implications of the model of individual preferences developed above. If political parties disproportionately represent asset-owners - as is typically true of right-wing parties - and if asset inflation is rising, then, assuming parties converge to the preferences of

[4]For further discussion of these 'states of the world', see Ansell (2007), which discusses the changing sensitivity of assert prices to interest rates since 1970.

their median constituent rather than the median voter - that is parties have partisan preferences - then we would expect lower levels of social insurance spending when such parties are in power and asset prices are rising.

3 Housing and Individual Preferences over Social Insurance and Taxation

In this section, I begin the empirical analysis at the microfoundational level, examining whether citizen preferences over social spending and taxation are related to changes in the value of their assets. In Section 2, I argued that citizens with ample asset appreciation will be those most sensitive to higher taxation to pay for public pensions and will also be least demanding of such public provision given their large private savings in the form of returns on their assets. More generally, I argue that asset owners should become increasingly tax-sensitive during periods of high asset inflation. Hence in this section I conduct a set of preliminary tests of whether asset price appreciation is empirically linked to preferences over public pension provision and taxation.

In developing these tests I use public opinion data from the 2004 American National Election Survey (henceforth NES) merged with house price appreciation data from the Case-Shiller Housing Index of twenty American Metropolitan Statistical Areas (MSAs). In order to operationalize the preferences of asset owners versus non-owners under conditions of rising house prices I construct a measure of the degree of house price appreciation that each survey respondent has experienced. I then use an ordered logit anal-

ysis (or binary logit depending on the dependent variable) to test whether this house price appreciation measure impacts preferences social security spending and taxation.

Constructing an indicator of individual asset appreciation requires combining data from aggregate house price data and individual survey information on asset ownership. To do so, I take advantage of the Case-Shiller index, which provides data on average house price inflation in twenty MSAs across the United States, dating back, in some cases, to 1987. The MSAs include New York / New Jersey / Connecticut; Boston; Philadelphia; Washington DC; Atlanta; Charlotte; Miami; Tampa; Dallas; Houston; Cleveland; Detroit; Chicago; Minneapolis-St Paul; Phoenix; Las Vegas; Portland; Seattle; San Francisco; and Los Angeles. While this range of cities includes some with extraordinary price appreciation since 1990, for example Phoenix and Los Angeles, it also includes cities like Detroit, Houston, and Cleveland, that experienced relatively little price growth and occasional declines across this period.

However, while house price growth in MSAs may have MSA-wide effects that impact both owners and non-owners, we cannot effectively address our question of the impact of asset price appreciation on Social Security preferences by simply using MSA dummies or the rate of MSA-wide appreciation as a variable. The problem lies in the fact that individuals are likely to have sharply differing preferences depending on whether they are home owners or renters and furthermore *how long* they have owned their property (and hence the appreciation that they have garnered).

Thus to create a more effective individualized measure of asset price

appreciation I use data from the 2004 NES to ascertain (a) if individuals own or rent, and (b) the length of time they have owned their property.[5] I then use the length of ownership to construct an estimate of the asset price appreciation individuals have experienced since they purchased their property by assigning to each individual the growth in property prices in their MSA since the date of purchase. For owners who purchased before 1987, I truncate their appreciation to that gained since 1987 due to lack of earlier data. Renters score zero on this index. The variable has a mean of .51, a standard deviation of .54, and ranges between zero and 1.98.

Clearly, the house price appreciation variable I create does not provide us with the *actual* level of appreciation of an individual's particular house; such data would in any case be unavailable for privacy reasons since the NES does not provide personal identification. However, on the assumption that on average the MSA aggregate reflects the balance of house price appreciation for individuals in the survey, this variable provides effectively as close a measure of house price appreciation as we are likely to get, short of supplying an actual survey question on appreciation.

As control variables, I employ three different measures of political preferences. Controlling for political preferences is particularly important given that the theoretical argument above argues that partisanship and asset ownership is likely to be correlated. Furthermore, the political debates over Social Security and taxation typically places Democrats on the side of increased funding and taxes and Republicans on the side of reduced public

[5] I use data from both the 'Pre' and 'Post' election surveys, which have different questions about tax and spending preferences - I alter the control variables to ensure they correspond to the period in which the questions are being asked.

funding and taxes. I use three measures: firstly, the feeling thermometer score for George W Bush, which ranges from zero to one hundred; secondly, a dummy variable for if the respondent is a registered Republican; and thirdly a Party ID measure from one (strong democrat) to seven (strong republican). For the other control variables I use gender, age, highest level of education achieved, and household income.

I begin by testing the proposition that asset owners will prefer lower public provision of pensions in times of high asset price appreciation.In order to tap preferences over public pensions spending I use a question from the pre-election survey section of the 2004 NES that asks whether individuals would like to see Federal spending on Social Security increased, remain the same, or decreased. I combine these answers into a three point scale.

The statistical technique I employ in Table 2 is an ordered logit, which is appropriate given the three point scale on the dependent variable, and the uncertainty about whether these three positions regarding Social Security are equidistant on an interval scale in terms of measuring underlying preferences towards public pensions. I present six models, which differ in the partisanship measure they employ and in whether they use post-stratification sample weights as supplied in the NES.[6] The advantage of sample weights is, of course, that they adjust observations for their sample versus population weight. However, we are not using the entire NES sample but a particular sub-sample that is not representative of the overall sample or indeed the US population as a whole: individuals who live in MSAs. Thus the appropriate-

[6]These sample weights differ between the 'Pre' and 'Post' election surveys, thus I use two different sets of sampling weights across the three estimations in Tables 2 and 3.

Table 2: House Appreciation and Preferences over Funding Social Security

	(1)	(2)	(3)	(4)	(5)	(6)
House Appreciation	-.654	-.555	-.645	-.546	-.624	-.538
	(.230)***	(.320)*	(.237)***	(.319)*	(.240)***	(.323)*
GWB Feeling	-.007	-.005				
	(.005)	(.007)				
Republican			-.654	-.655		
			(.273)**	(.319)**		
Party ID					-.161	-.165
					(.042)***	(.050)***
Gender	.433	.392	.421	.382	.369	.338
	(.237)*	(.309)	(.251)*	(.320)	(.249)	(.313)
Age	-.0007	-.002	-.002	-.003	-.004	-.004
	(.009)	(.011)	(.009)	(.011)	(.009)	(.012)
Education	-.267	-.234	-.221	-.198	-.253	-.235
	(.075)***	(.116)**	(.063)***	(.095)**	(.062)***	(.094)**
Income	.013	-.010	.009	-.014	.011	-.010
	(.021)	(.026)	(.022)	(.028)	(.022)	(.027)
First Difference	-.195	-.158	-.190	-.155	-.188	-.153
Weights	N	Y	N	Y	N	Y
Obs.	246	246	246	246	245	245

ness of sample weights under these conditions is questionable. This problem is further accentuated by the much smaller sample size when observations are restricted to MSAs: the observations drop from over 1,000 in the full NES sample to under 250. Under these small sample conditions, weighting an observation by 0.5 or by 2 has a much larger effect on estimates and standard errors than when using the full NES sample. Thus, given the uncertainty about the appropriateness of sample weighting in these conditions, I conduct each estimation twice, once with and once without weights. All standard errors are adjusted for clustering within MSAs.

Models 1 through 6 are presented in Table 2. Models 1 and 2 use the George W Bush feeling thermometer as their partisanship variable. In fact, that variable is not statistically significant in either model. However, the house price appreciation variable *is* statistically significant in both regressions, albeit only at the ten percent level in Model 2, which use sample weights. The *First Difference* row in Table 2 shows the effect of moving from the tenth to the ninetieth percentile in terms of the house price appreciation variable on the probability of wanting to increase federal spending on Social Security. Models 1 and 2 show that this change in house price appreciation is associated with a fifteen to twenty percent decrease in support for increased Social Security spending.

Models 3 through 6 show very similar results, albeit with the partisanship variable now significantly and negatively related to support for increased Social Security spending. The estimates on the impact of house price appreciation differ little from Models 1 and 2, demonstrating that this effect is robust to a number of different operationalizations of partisanship; im-

Table 3: House Appreciation and Preferences over Tax Cuts

	(1)	(2)	(3)	(4)
House Appreciation	.667	.807	.696	.796
	(.245)***	(.278)***	(.245)***	(.271)***
GWB Feeling	.018	.020		
	(.004)***	(.005)***		
Republican			.635	.639
			(.283)**	(.312)**
Gender	.094	.121	.046	.082
	(.248)	(.313)	(.240)	(.278)
Age	-.046	-.046	-.042	-.040
	(.008)***	(.011)***	(.008)***	(.012)***
Education	-.321	-.401	-.399	-.467
	(.101)***	(.115)***	(.105)***	(.123)***
Household Income	-.031	-.043	-.015	-.019
	(.027)	(.027)	(.027)	(.027)
Constant	2.310	2.799	3.030	3.322
	(.587)***	(.817)***	(.537)***	(.835)***
First Difference	.204	.238	.213	.239
Weights	N	Y	N	Y
Observations	216	216	217	217

portant given our concerns about the correlation between partisanship and both asset ownership and Social Security preferences.

Table 3 uses data from the 2004 Post-Election survey in order to ascertain the effect of asset price appreciation on tax preferences. Specifically the respondents are asked "Do you favor an increase in the federal budget deficit in order to cut the taxes paid by ordinary Americans"? This question then estimates the propensity of Americans to desire reduced taxes, no matter the consequences for overall budgetary stability. The question is coded as a

simple yes / no, hence I employ a simple binary logit estimation strategy. As before the difference between the models (1 through 4) is the partisanship variable used and whether sampling weights were employed. I omit the Party ID from Models 5 and 6 of Table 2 since including it leads to 'over-prediction' of the dependent variable (that is, Party ID perfectly predicts the response of the 216 respondents in this limited sample).

The results in Table 3 show strong support for the assertion that house price appreciation makes individuals more tax sensitive. In all four models there is a highly robust estimate of a positive impact of appreciation on the probability that individuals will answer the tax-cutting question in the affirmative. Moving from the 10th to 90th percentile on the house appreciation data - which means moving from a renter (or an owner with no appreciation) to an owner who has experienced a 130% increase in the price of their house - is associated with a twenty to twenty-four percent increase in the likelihood of supporting deficit-widening tax cuts. This table then provides strong empirical evidence for the claim that asset owners who experience high levels of appreciation will become more tax-sensitive, even controlling for their partisanship, earned income, education, and other demographic characteristics.

4 House Prices and Social Policy: Cross-National Data

The previous section established that changes in house prices appear to motivate the policy preferences of citizens. But are political parties responsive

to these preferences? More generally, do house prices alter politicians' behavior as they are channeled through the electoral stream? In this section I move to the aggregate national level, using data on house price changes form 1975 to 2000 for sixteen OECD countries. I begin by examining whether changes in house prices correlate with changes in social spending, as hypothesized above and, in particular, whether this effect is dependent on the political party in government. Above, I argued that asset-rich individuals should become less favorable to government-provided social insurance, and the taxes that pay for such policies, as the value of their assets rises. Translated to the electoral level, this would suggest that parties that represent such individuals disproportionately, would attempt to trim social spending when housing (and other asset) prices were high. In the following analysis I test this conditional partisan theory of the effect of housing prices.

I begin with an examination of an area of social spending that we would expect to be particularly closely related to housing prices: government spending on housing. Such spending aims to provide public housing for individuals otherwise unable to rent or purchase homes, housing benefits to supplement rent payments, and benefits to home-owners like government aid with downpayments. At a purely technical level one might expect demand for housing spending to rise as house prices increase, since rents and home purchase costs outpace incomes, thereby creating a need for supplementary public spending. This would essentially be procyclical spending. However, the theoretical analysis in Section Two above suggests a different logic - rising house prices have an income effect on voters, making them less favorable to government spending, and the concurrent rise in taxation. Our

expectation is further, that this motivation will be concentrated in those individuals who disproportionately experience rising house prices and the political parties that represent them. Housing spending thus presents a *prima facie* tough test of our theory: if rising house prices are associated with *lower* housing spending, particularly from right-wing governments, this would suggest that the 'income effect' laid out in Section Two dominates the procyclical effect.

Of course, it it likely that a variety of other political and economic factors also influence housing spending by the government. The partisan composition of government may well have a direct effect on such spending, as well as the indirect effect mediated through house prices. As for economic factors, clearly changes in national income and in monetary variables will also impact the demand for housing and its relative affordability. In the following analysis, consequently, I include controls for these other germane factors, as well as for country and year specific effects.

I use two particular measures of housing spending, the first taken from Easterly, Sewadeh and Bank (2001), itself taken from the IMF's Government Statistics, and the second from the OECD Social Spending index OECD (2007). The Easterly variable is defined as 'government expenditure on housing and community amenities as a percentage of GDP', has a mean of 0.88% and a standard deviation of 0.82%, and is used in Tables 4 and 5. The OECD index is defined as 'rent subsidies and other benefits to the individual to help with housing costs... [and]... direct public subsidies to tenants (in some countries, e.g. Norway, homeowners living in their house) earmarked for support with the cost of housing', again as a percentage of GDP. It does

not include mortgage relief or capital costs of housing construction, which are included in Easterly's index. The mean of this variable is 0.37% and its standard deviation is 0.36% and it is used in Tables 6 and 7. The correlation between the two housing variables is positive but not desperately strong at 0.33.

The key independent variable is the five year percentage change in real house prices (i.e. inflation-adjusted), taken from the Bank of International Settlements' house price data for sixteen countries from 1970 to 2000. This housing data provides a country-specific level of house prices relative to 1970 - note this implies that house prices cannot be usefully compared cross-sectionally. Consequently throughout the following analysis I incorporate country dummies and thus am examining emphwithin-country changes in house prices only. The mean of this variable is 12.8% (i.e. a compounded annual rate of around 2.5%), its standard deviation is 25.6% and its minimum and maximum values are, respectively, -45.8% and 118.3%.

The control variables also come from Easterly's IMF data and include Gross Domestic Product (measured in $100bn), the annual growth rate of GDP, the real interest rate, and consumer price inflation. I also include measures drawn from the Easterly and OECD databases that measure government spending *minus* that part devoted to housing, which I refer to as 'other government spending'. For government partisanship I use Cusack and Engelhardt's cabinet 'center of gravity' index which produces a measure of cabinet ideology which is the summation of the ideology of parties comprising the cabinet weighted by their relative size in the coalition (Cusack and Engelhardt, 2002). I use their 'composite ideology' index, which is based on

expert ratings in Castles and Mair (1997), Huber and Inglehart (1995), and Laver and Hunt (1992), and is also used in Iversen and Soskice (2006). I also employ an interactive variable that is the product of cabinet ideology and the five year percentage change in house prices. This has variable ranges (theoretically) between -100 and 100, with a mean of 3.65, and a standard deviation of 24.15. These variables along with the dependent variables were drawn from Samanni and Rothstein. (2008).

I begin the analysis in Table 4 which uses the Easterly variable. I employ a fixed effects regression with robust standard errors and year dummies. I do not include a lagged dependent variable because of the relatively short time series, which raises concerns about introducing significant bias (as noted in Nickell, 1985; see also Achen, 2004). Table 5 addresses the potential problem of autocorrelation introduced by omitting the lagged dependent variable by running the same regressions with an AR1 error term. Each table has five models. Model 1 simply contains the five year % change in house prices plus country and year dummies. Model 2 adds GDP and GDP growth. Model 3 adds the interest rate, inflation, and cabinet ideology. Model 4 adds 'other government spending'. Finally, Model 5 adds the product of cabinet ideology and house price change.

Table 4 shows a strong, robust, and negative effect of the change in house prices across all five models. In Models 1 through 3, a fifty percent increase in house prices over five years is associated with a reduction in housing spending of 0.25% of GDP, around one third of a standard deviation. This effect is slightly smaller once we control for other government spending, which is positively correlated with housing spending. The effect in Models

Table 4: House Price Changes and Housing Spending: Easterly Data

	(1)	(2)	(3)	(4)	(5)
5 Yr D in House Prices	-0.506***	-0.487***	-0.485***	-0.285***	-0.319***
	(0.0910)	(0.0933)	(0.0908)	(0.0742)	(0.0740)
GDP Growth		-0.0178	-0.0189	0.00302	0.00197
		(0.0133)	(0.0128)	(0.0114)	(0.0113)
GDP		0.000574	-0.00484**	-0.00204	-0.00196
		(0.00273)	(0.00225)	(0.00204)	(0.00201)
Real Interest Rate			0.0120	0.000133	0.00235
			(0.00862)	(0.00858)	(0.00866)
CPI Inflation			0.0417***	0.0436***	0.0447***
			(0.0120)	(0.0105)	(0.0105)
Cabinet Ideology			5.42e-05	0.000325	0.000537
			(0.000784)	(0.000764)	(0.000805)
Other Govt Spending				0.0457***	0.0431***
				(0.00769)	(0.00776)
Ideology*House Prices					-0.00414*
					(0.00220)
Constant	0.655***	0.695***	0.846***	-0.737***	-0.684**
	(0.182)	(0.186)	(0.0906)	(0.273)	(0.271)
Observations	321	321	290	290	290
R^2	0.129	0.134	0.223	0.322	0.330
Number of ccode	17	17	17	17	17

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4 and 5 of a fifty percent increase in house prices over five years is around 0.15% of GDP, or a fifth of a standard deviation. Model 5 shows, however, that this effect is not independent of partisanship. There is a weakly robust ($p < 0.10$) negative effect of house prices conditional on cabinet ideology that amplifies the direct effect.[7] A standard deviation shift to the right on cabinet ideology, combined with a fifty percent increase in house prices, reduces housing spending by .24% of GDP as opposed to .16% when the house price increase is unaccompanied by changes in partisanship. Thus there is some evidence that not only does a generic wealth effect from house price increases appear to effect housing policy but that this wealth effect is channeled through partisan control of government.

Table 5 produces similar results as Table 4, although the house price variable is not robust in the restrictive Models 1 and 2 which omit inflation, interest rates, and partisanship. Throughout, the coefficient estimates for the effect of house price increases are somewhat smaller, suggesting that Table 5 may have been overestimating the effect of house price changes by neglecting serial dependence of both policy and prices. Nonetheless, the effects remain fairly sizeable. A fifty percent increase in house prices being associated with between a 0.12% and 0.15% decrease in housing spending. In Model 5, however, though the coefficient on the interactive cabinet ideology / house prices variable remains negative it is not significant at conventional levels.

[7] This effect is significant at the $p<.05$ level when the USA is excluded. Since it is not clear that cabinet ideology, rather than legislative ideology, is the appropriate indicator for measuring the determinants of US housing policy, there may be some justification for omitting the USA.

Table 5: Easterly with AR1 errors

	(1)	(2)	(3)	(4)	(5)
5 Yr D in House Prices	-0.191	-0.186	-0.310***	-0.237**	-0.274**
	(0.129)	(0.130)	(0.109)	(0.116)	(0.118)
GDP Growth		-0.00497	-0.00244	-6.93e-05	-0.000918
		(0.00797)	(0.00700)	(0.00715)	(0.00714)
GDP		0.0142	0.00316	0.00358	0.00392
		(0.0156)	(0.00982)	(0.00895)	(0.00901)
Real Interest Rate			0.0148**	0.0123*	0.0129*
			(0.00683)	(0.00699)	(0.00697)
CPI Inflation			0.00930	0.00948	0.00894
			(0.00857)	(0.00861)	(0.00857)
Cabinet Ideology			0.000224	0.000191	0.000113
			(0.000603)	(0.000602)	(0.000602)
Other Govt Spending				0.0209*	0.0182*
				(0.0107)	(0.0108)
Ideology*House Prices					-0.00367
					(0.00228)
Constant	3.060***	3.004***	0.411***	0.188	0.271*
	(0.135)	(0.136)	(0.144)	(0.150)	(0.149)
Observations	304	304	273	273	273
Number of ccode	17	17	17	17	17

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

We now turn in tables 6 and 7 to the OECD housing spending variable, finding similarly robust results. Table 6 runs a fixed effects regression without AR1 errors, and finds that a fifty precent increase in house prices is associated with a decrease in housing spending of between 0.06% and 0.08% of GDP. These are smaller results than in the previous two tables but it should be recalled that the OECD variable excludes many categories of spending in the Easterly / IMF measure. Consequently, this change amounts to a decrease of around twenty percent of a standard deviation in the OECD measure, not that dissimilar a substantive effect to that found in Table 4. Table 7, which incorporates AR1 error terms, as before, produces smaller coefficient estimates, which remain robust but around two-thirds of the size of those in 6. In both Tables there is a highly robust ($p < .01$) interactive effect of house prices and cabinet ideology. In Table 6, when the cabinet shifts fifty points to the right *and* house prices increase by fifty percent, the estimated effect on housing spending is a decrease of 0.152% of GDP - around half a standard deviation - as opposed to a much smaller estimated effect of 0.07% when there is no change in government partisanship. A similarly robust, though substantively smaller, effect occurs in Table 7 when AR1 errors are introduced.

We now turn away from the analysis of housing policy to social policy more generally. In Section Two I argued that when house prices rise, there will be less aggregate demand for forms of social spending that insure against unemployment or old age, as asset-owning individuals rely on their appreciated assets for income. Further, asset-owning individuals are also

Table 6: House Price Changes and Housing Spending: OECD Data

	(1)	(2)	(3)	(4)	(5)
5 Yr D in House Prices	-0.149***	-0.110***	-0.100**	-0.109**	-0.137***
	(0.0345)	(0.0349)	(0.0440)	(0.0483)	(0.0456)
GDP Growth		-0.00705	-0.00844	-0.00974	-0.0120
		(0.00667)	(0.00748)	(0.00774)	(0.00768)
GDP		0.0350*	0.0440**	0.0436**	0.0386**
		(0.0186)	(0.0200)	(0.0197)	(0.0195)
Real Interest Rate			0.00383	0.00434	0.00612
			(0.00583)	(0.00604)	(0.00580)
CPI Inflation			-0.00150	-0.00204	-0.000398
			(0.00676)	(0.00692)	(0.00734)
Cabinet Ideology			-0.000593	-0.000586	-0.000483
			(0.000411)	(0.000410)	(0.000426)
Other Govt Spending				-0.00401	-0.00930
				(0.00818)	(0.00831)
Ideology*House Prices					-0.00424***
					(0.00118)
Constant	0.527***	0.255**	0.402***	0.491**	0.608***
	(0.0196)	(0.0998)	(0.139)	(0.204)	(0.207)
Observations	329	269	251	251	251
R^2	0.211	0.260	0.289	0.289	0.322
Number of countries	15	15	15	15	15

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: OECD AR1 Errors

	(1)	(2)	(3)	(4)	(5)
5 Yr D in House Prices	-0.0759**	-0.0756**	-0.0845**	-0.0650*	-0.0836**
	(0.0305)	(0.0348)	(0.0372)	(0.0384)	(0.0382)
GDP Growth		0.00255	0.00264	0.00426	0.00299
		(0.00234)	(0.00250)	(0.00262)	(0.00261)
GDP		-0.0756**	-0.0877**	-0.0852**	-0.0872**
		(0.0334)	(0.0358)	(0.0359)	(0.0351)
Real Interest Rate			-0.00186	-0.00250	-0.00145
			(0.00252)	(0.00253)	(0.00251)
CPI Inflation			-0.00288	-0.00188	-0.00153
			(0.00312)	(0.00315)	(0.00309)
Cabinet Ideology			0.000199	0.000200	-3.46e-06
			(0.000252)	(0.000251)	(0.000255)
Other Govt Spending				0.0107*	0.00793
				(0.00573)	(0.00570)
Ideology*House Prices					-0.00242***
					(0.000816)
Constant	0.537***	0.372***	0.710***	0.789***	1.330***
	(0.00901)	(0.0971)	(0.0792)	(0.0788)	(0.0793)
Observations	314	254	236	236	236
Number of countries	15	15	15	15	15

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

less likely to support the increased taxes that pay for such social insurance.[8] We would expect this pattern to be heightened when asset-owning individuals are disproportionately represented by the political party in power - more simply, when right-wing parties are in power.

Tables 8 and 9 provide similar analyses to the earlier empirical analysis of the determinants of housing spending, but this time with general social spending as the dependent variable. Each table uses firstly the Easterly variable, 'government spending on social security and welfare' and secondly the OECD variable 'total social spending minus housing'. The first variable has a mean of 11.55% of GDP and a within-country standard deviation of 1.95%. The second variable has a mean of 20.02% of GDP and a within-country standard deviation of 1.96%. The variables have a correlation of 0.840 - thus, though the second variable is more inclusive, they both pick up general government spending on social insurance and other categories of social spending (the latter variable includes health and education).

Table 8 begins with a fixed effects analysis with year dummies. Models 1 through 4, using the Easterly social security and welfare variable show a robust, substantive, and negative effect of the five year percent change in house prices on social spending. A fifty percent increase in house prices is associated with a decrease in social spending of between 1.2% and 1.4% of GDP, or around a two-thirds of a standard deviation. Models 2 through

[8] In the model there is no real distinction between preferences over social spending and those over taxation given the direct relationship between spending and taxation. In empirical analysis, or a more developed model, such a direct trade-off might be weakened somewhat - individuals could be both less reliant on social insurance and less favorable to increased taxes, without a strong relationship between the two, depending on the manner in which tax revenues are spent.

4 show robust for most of the control variables - social spending is countercyclical - hence it declines during economic booms and increases during busts. It is worth noting that the effect of house prices is independent from the economic cycle more broadly, though clear there is some positive correlation between house prices and GDP growth. More surprisingly higher interest rates and right-wing cabinet ideology also appear to be associated with growth in social insurance spending. Finally, the interactive variable of house prices and cabinet ideology, while negatively signed as in the earlier tables, is not statistically significant.

Models 5 through 8, using the OECD social spending variable, show similar results. A fifty percent increase in house prices is associated with a decrease in social spending of between 1.1% and 1.5% of GDP or between half and three quarters of a within-country standard deviation. Here the interactive variable is robust and negatively signed (though the cabinet ideology variable itself is insignificant). The predicted conditional effect of a fifty percent increase in house prices *combined* with a fifty point shift rightwards in cabinet partisanship is 1.88% of GDP, almost a full standard deviation shift, and around sixty-four percent larger than the same house price change without a shift in cabinet ideology.

Table 8: Housing Prices and Changes in Social Spending

	(1) Easterly	(2) Easterly	(3) Easterly	(4) Easterly	(5) OECD	(6) OECD	(7) OECD	(8) OECD
5 Yr D in House Prices	-2.347***	-2.651***	-2.742***	-2.782***	-3.074***	-2.260***	-2.186***	-2.312***
	(0.456)	(0.488)	(0.484)	(0.492)	(0.486)	(0.465)	(0.493)	(0.438)
GDP Growth		-0.218***	-0.187***	-0.186***		-0.348***	-0.323***	-0.327***
		(0.0569)	(0.0582)	(0.0584)		(0.0593)	(0.0614)	(0.0611)
GDP		-0.0818***	-0.0836***	-0.0832***		-0.0436	-0.0947	-0.131
		(0.0109)	(0.0106)	(0.0106)		(0.112)	(0.111)	(0.113)
Real Interest Rate		0.184***	0.194***	0.196***		0.140**	0.128**	0.137**
		(0.0410)	(0.0407)	(0.0416)		(0.0561)	(0.0570)	(0.0574)
CPI Inflation		0.00357	0.0316	0.0339		-0.150***	-0.135**	-0.116**
		(0.0476)	(0.0495)	(0.0500)		(0.0564)	(0.0574)	(0.0559)
Cabinet Ideology			0.00848***	0.00888***			0.00187	0.00262
			(0.00307)	(0.00324)			(0.00412)	(0.00427)
Ideology*House Prices				-0.00740				-0.0340***
				(0.0106)				(0.0111)
Constant	13.40***	12.01***	15.21***	15.14***	22.15***	22.49***	22.13***	22.13***
	(0.533)	(0.970)	(0.566)	(0.567)	(0.273)	(0.871)	(0.970)	(0.966)
Observations	321	293	290	290	329	266	251	251
R^2	0.455	0.572	0.591	0.592	0.365	0.568	0.567	0.585
Number of ccode	17	17	17	17	15	15	15	15

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9 repeats the analysis of the previous table but with the addition of AR1 error terms. Results are broadly similar, albeit substantively slightly weaker, with a fifty percent increase in house prices associated with a decrease of between 0.75% and 0.95% of GDP for the Easterly variable and between 0.85% and 1.0% of GDP for the OECD variable. The interactive variable is at least weakly robust in both Models 4 and 8, suggesting that right-wing parties respond more strongly in cutting social spending when house prices are elevated than do left-wing parties. Notably, in this estimation with AR1 errors, most of the control variables lose significance, though throughout house prices are always robust at the one percent level of significance.

Summing up the analysis in the previous six tables we can draw two conclusions. Firstly, in almost every model, the five year change in house prices is strongly and robustly negatively related to the spending variables, even when controlling for a variety of important economic and political factors, and when employing country and year dummies. This suggests that changes in asset prices are key determinants of social spending within the OECD. Secondly, there is some, rather more piecemeal, evidence that this effect is dependent on the partisan composition of government, with right-wing parties cutting spending following house price booms more than do their left-wing counterparts. This finding is much more robust when using the OECD data, potentially a function of country and year coverage.

Table 9: Total Social Spending with AR1 Errors

	(1) Easterly	(2) Easterly	(3) Easterly	(4) Easterly	(5) OECD	(6) OECD	(7) OECD	(8) OECD
5 Yr D in House Prices	-1.501***	-1.786***	-1.768***	-1.881***	-1.703***	-1.857***	-1.926***	-2.058***
	(0.403)	(0.449)	(0.449)	(0.452)	(0.419)	(0.438)	(0.454)	(0.452)
GDP Growth		-0.0335	-0.0313	-0.0337		-0.158***	-0.154***	-0.162***
		(0.0281)	(0.0282)	(0.0280)		(0.0306)	(0.0313)	(0.0312)
GDP		-0.0120	-0.00374	-0.000105		-0.0802	-0.107	-0.139
		(0.0484)	(0.0492)	(0.0494)		(0.332)	(0.334)	(0.329)
Real Interest Rate		0.0506*	0.0422	0.0436		0.0726**	0.0636**	0.0726**
		(0.0271)	(0.0275)	(0.0274)		(0.0304)	(0.0319)	(0.0318)
CPI Inflation		-0.0223	-0.0222	-0.0248		-0.0994**	-0.0973**	-0.0902**
		(0.0343)	(0.0343)	(0.0342)		(0.0384)	(0.0396)	(0.0393)
Cabinet Ideology			0.00113	0.000723			0.000284	-0.00162
			(0.00244)	(0.00244)			(0.00314)	(0.00321)
Ideology*House Prices				-0.0164*				-0.0237**
				(0.00916)				(0.0101)
Constant	8.571***	8.544***	8.523***	8.879***	24.75***	-2.919***	-3.475***	-0.0702
	(0.417)	(0.561)	(0.559)	(0.556)	(0.124)	(0.955)	(0.982)	(1.001)
Observations	304	276	273	273	314	251	236	236
Number of ccode	17	17	17	17	15	15	15	15

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5 House Prices and Electoral Timing

I conclude by moving from spending policies to the electoral incentives of politicians to time elections to coincide with boom times in housing. An obvious extension of the income effect interpretation of how individual respond to changes in house prices is to the economic voting literature, which argues that politicians benefit electorally from economic growth. Kayser (2006) argues that in electoral systems where politicians can choose the timing of elections, they will tend to do so during export booms. More precisely, export booms early in the politician's term will delay elections, since early elections signify weakness early in the term, whereas late in the electoral period, export booms hasten calling an election. Late in the politician's term they know they must soon call an election, hence they have an incentive to choose the maximally beneficial point in terms of economic conditions. An obvious extension of Kayser's argument would be to examine whether changes in house prices have similar effects to export booms.

I replicate Kayser's hazard model of election timing for ten countries where election timing is endogenous.[9] Kayser uses quarterly data in order to more accurately separate out the timing of early elections. Unfortunately, the BIS data is annual, and those countries that do have reliable long-run quarterly data, for example the United States, are often those with exogenous election timing. Thus in this section I interpolate the annual data to estimate the quarterly change in house prices.[10] While house price trends

[9]This is Table Two of Kayser (2006). Kayser examines thirteen countries; however, the BIS does not provide house price data for Austria, Iceland, or Luxembourg.

[10]I use linear interpolation in the following analysis. Cubic interpolation provides similar results but makes a host of extra assumptions about the precise curvature of changes in

are usually fairly consistent over the course of a year, and thus the linear interpolation of yearly to quarterly intervals is fairly reliable, this is not an ideal measure and results should be approached appropriately cautiously.

Kayser begins with a simple hazard model of early elections taken over quarters from 1967 to 1998. Since the BIS house price data does not begin until 1970, I truncate this dataset to 1970 to 1998 and instead of the actual quarterly house price data I use the linearly interpolated quarterly house price data taken from the annual series. Like Kayser, I run a Cox proportionate hazards model, examining the number of quarters until an early election is called. To examine the dynamic effect of export booms, Kayser includes both the quarterly change in exports and this variable interacted with the number of quarters since the beginning of the electoral period (referred to as a 'time'). Consequently, the coefficient on the change in exports variable represents the effect of exports changing in the very first period of government. As in Kayser (2006) I find a robust negative coefficient for the change in exports variable and a robust positive coefficient for the interactive variable. This implies that an export boom first delays calling an early election but then as the electoral period wears on, beyond a threshold, export increases hasten the calling of an early election. Dividing the export change variable by the interactive variable we find the threshold occurs at around ten quarters - or two and a half years into an electoral cycle.

house prices that run rather far ahead of the data.

Table 10: Election Timing and House Price Changes

	(1)	(2)	(3)	(4)	(5)
Δ House Prices	-0.184*	-0.207*	-0.251**	-0.239**	-0.378**
	(0.100)	(0.109)	(0.118)	(0.119)	(0.175)
Time*Δ H. Prices	0.0125*	0.0153*	0.0200**	0.0191*	0.0280*
	(0.00760)	(0.00839)	(0.00966)	(0.00997)	(0.0151)
Δ Exports	-0.0800**	-0.0666*	-0.0723*	-0.0731*	-0.104***
	(0.0389)	(0.0398)	(0.0405)	(0.0419)	(0.0276)
Time*Δ Exports	0.00823***	0.00646**	0.00720**	0.00739**	0.0100***
	(0.00318)	(0.00316)	(0.00310)	(0.00330)	(0.00300)
Exports / GDP		-0.00932	-0.0101	-0.00977	-0.00225
		(0.0127)	(0.0141)	(0.0136)	(0.0166)
Δ GDP_{t-1}		-0.191	-0.183	-0.184*	-0.380**
		(0.121)	(0.117)	(0.108)	(0.183)
Time*Δ GDP_{t-1}		0.0219**	0.0221**	0.0222**	0.0340**
		(0.00908)	(0.00888)	(0.00928)	(0.0135)
New Leader			-2.649***	-3.097***	-1.362
			(0.921)	(0.866)	(0.854)
Time*New Leader			0.249***	0.296***	0.152**
			(0.0640)	(0.0625)	(0.0703)
Scandal			-0.0912	-0.0999	-0.0586
			(0.200)	(0.207)	(0.196)
Quarter 2				-0.701	
				(0.445)	
Quarter 3				0.276	
				(0.367)	
Quarter 4				-0.0681	
				(0.421)	
Observations	1010	998	998	998	581

Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

In all the models in Table 10, I include a variable for the (estimated) quarterly change in house prices and the interaction of this variable with quarters elapsed since the start of the electoral period. Model 1 just includes exports and house prices plus their interactions. Model 2 includes further economic variables: export dependence and economic growth. Model 3 adds variables measuring if there is a new leader and if a scandal ocured. Model 4 adds dummies for each quarter. Finally Model 5 runs Model 4 for just the European subsample.

Table 10 shows a remarkably similar pattern for house prices as obtains with exports. Across all the models the house price variable has a negative coefficient and the interactive variable has a positive coefficient. The level of robustness is, however, not as strong as in Kayser, though both variables are always significant at the $p < .10$ level, they are only both individually significant at the $p < .05$ level in Model 3. Dividing the interactive variable into the house price variable we find a somewhat different dynamic pattern than that obtained with exports. The threshold point occurs at around thirteen quarters, or after three and a quarter years, several months later than the Kayser threshold,

What are the implications of this finding? Firstly, house prices do have a strong negative effect on the early collapse of governments, as Kayser found for exports - good economic conditions lead to cabinet stability. However, house prices do not appear to force very early elections as do exports - rather their positive impact is significantly closer to the deadline for holding an election. Furthermore, the results for the interactive variable are only weakly significant - it appears that the negative effect (cabinet stability) at the start

of terms, is more robust and substantive than the positive one (opportunistic election-calling). Nonetheless, there is at least plausible evidence that house prices matter in determining endogenous elections and do so in a very similar manner to general economic growth and export booms. This suggests further investigation of the links between house prices and economic voting are likely to be revealing.

6 Conclusion

This paper has developed a theoretical framework for thinking about preferences, political coalitions, and policy outcomes in a world where asset price fluctuations are becoming increasingly important. The implications of asset inflation are likely to be profound for political economy, though this paper represents only a tentative step in the direction of a broader research program.

I argue that when asset prices are rising, asset owners will experience an income effect that leads to lower demand for public insurance and an aversion to taxation. As asset prices rise generally we should expect an aggregate shift towards preferences for lower social spending and taxation that will be reflected in policy changes. More specifically, when political parties that disproportionately represent asset-owners (typically those of the right) are in power, rising asset prices should have particularly strong negative effects on social spending.

I tested the income effect argument across three datasets that picked up different aspects of the relationship between house prices and political

preferences. Firstly, using US survey data, I showed that house price appreciation does appear to have an empirically robust relationship to individual preferences over government policies, specifically Social Security and tax rates. While combining the NES survey and the Case Shiller house index leads to a somewhat truncated dataset - making survey analysis with population weights less effective - I nonetheless find a sustained and robust impact across specifications of asset price appreciation on Social Security and tax preferences, with individuals who have experience house price doubling 15 percent less likely to support expansion and with sizable impacts on preferred tax rates and opinions about the personal tax burden.

Secondly, I moved to the aggregate, cross-national level, examining how house price changes between 1975 and 2000 were related to changes in public spending on housing and on social services more generally. I showed that increases in house prices were robustly related to declines in both public housing and social spending and that there is some further evidence that this pattern is amplified under right-wing government.

Finally, I concluded with an extension to the economic voting literature. Using data provided in Kayser (2006), I found similar effects to that Kayser found for export booms and economic growth more generally: where electoral timing is endogenous, house price increases make calling an early election less likely at the beginning of the electoral period but more likely as the deadline to call an election closes. Further extensions of the house price 'income effect' to other familiar topics in the economic voting literature would be useful in ascertaining whether the effect carries over to voters' assessments of the competence of politicians.

Clearly, this paper only provides a first stab at relating asset price fluctuations to issues of political economy. Elsewhere, (Ansell, 2007), I have noted that asset volatility is likely to alter the classic partisan cleavages over interest rates and the macroeconomy, identified by Hibbs Jr (1977). There I argue that right-wing parties, in contrast to their behavior in the 1970s, are likely to support lower interest rates than left-wing parties, as interest rate changes have greater effects on house and equity valuations than on employment levels. Furthermore, the analysis of tax and spending preferences and policy outcomes could clearly be extended fruitfully to the subnational level - for example voting on school bond issuing.

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