House prices, private debt and the macroeconomics of comparative political economy

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Abstract: Prevailing Comparative Political Economy accounts conceptualise the macroeconomic role of the financial sector in advanced economies either through the Varieties of Capitalism's (VoC) emphasis on corporate finance or on the growth model perspective's focus on household debt to support consumption. As neither framework accounts for the important macroeconomic influence of house prices and mortgage credit, we suggest the prevailing Comparative Political Economy accounts of the financial sector remain underdeveloped. Through an econometric evaluation of 18 advanced economies from 1980 to 2017, we demonstrate that household debt has larger and more statistically significant effects on GDP growth than business debt, and household debt volumes are largely determined by house price inflation. These results are consistent across the varieties of capitalism and advanced banking systems, suggesting the VoC's focus on corporate finance is misplaced and the macroeconomic effects of household debt and house prices are underappreciated, especially in non-Anglo-American advanced economies.

Keywords: Comparative Political Economy; Macroeconomics; Household Debt; House Prices

JEL classifications: N10; G51

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Introduction

In this article, we challenge the predominant Comparative Political Economy (CPE) conceptions of the financial sector and how they contribute to the macroeconomic growth models of advanced democratic states. The prevailing accounts are the seminal Varieties of Capitalism (VoC) framework and the emerging growth model perspective in CPE, as conceptualised by Baccaro and Pontusson (2016). The VoC takes a functional firm-centric view of the financial sector focusing on the provision of investment capital to non-financial firms, which stimulates macroeconomic growth via gains in competitiveness (Hall and Soskice 2001). According to the VoC, firms access capital either through corporate debt markets in liberal market economies (LMEs) or via more traditional relationship-based banking in coordinated market economies (CMEs) (Hall and Soskice 2001; Culpepper 2005). Therefore, the VoC approach emphasises the importance of corporate debt to support economic growth in advanced economies via gains in competitiveness (Schwartz and Tranøy 2019). Alternatively, the recent 'macroeconomic turn' in the CPE literature, based on the growth model perspective, shifts the emphasis away from corporate finance to household debt, which is considered an important mechanism to stimulate growth in consumption-driven economies (Baccaro and Pontusson 2016).

We contest that the focus of these CPE analyses does not sufficiently account for the macroeconomic role of the financial sector. Mortgage provision is one of the principal drivers of growth in the financial sector, and the substantial returns on retail mortgage products has seen bank lending largely reoriented away from productive investment towards lending to households in the form of mortgage credit (Ertürk and Solari 2007; Kohl 2017). Additionally, house price inflation is largely responsible for

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the observed increase in household debt in advanced economies, which can give rise to financial instability and real boom-bust economic cycles (Ryoo 2016; Mian et al. 2017). Although Baccaro and Pontusson (2016) make an important contribution by partially accounting for the influence of household debt, neither of these prominent CPE conceptions of the macroeconomic role of the financial sector sufficiently account for the important influence of mortgage credit and house prices, which is where this paper makes an empirical contribution.

Hay (2009; 2011; 2013) provides a more complete conceptual account of the macroeconomic effects of both house prices and household debt, which are considered central to the 'Anglo-liberal' growth model adopted by countries such as Britain, the US and Ireland. In this 'Anglo-liberal' model, economic growth is supported by house price increases, which are spurred by demand for private homeownership and mortgage deregulation and, in turn, facilitate an increase in consumption through the adoption of equity release mortgages (Hay 2013). Therefore, upward feedback loops of rising house prices and household indebtedness are central to macroeconomic growth, as they facilitate increases in consumer demand. Whilst Hay (2009; 2011; 2013) provides a detailed account of the underlying mechanisms by which house prices and mortgage debt contribute to economic growth, these dynamics are, in his analysis, exclusively associated with the Anglosphere economies.

The empirical results from several econometric analyses suggest there are positive shorter term and negative longer term growth effects of private debt and house prices in a wide range of advanced economies, and that both variables may contribute to cycles of financial instability (Dieci and Westerhoff 2012; Drehmann et al. 2012; Arcand et al. 2015; Bezemer et al. 2016; Ryoo 2016; Stockhammer and

Wildauer 2016; Mian et al. 2017). Although large increases in household indebtedness and significant rises in house prices have been observed across a wide range of advanced democratic states since the 1980s (e.g. Barnes 2016; Fuller et al 2019; Anderson and Kurzer 2019), the macroeconomic effects of house prices and household debt have not been formally examined from a wider CPE perspective. Therefore, in order to address this important issue, and formally consider the firm-centric approach of the VoC, this paper will assess whether, and to what extent, business debt, private household debt and house prices affect macroeconomic growth in advanced economies.

These research questions are explored using a quantitative econometric analysis based on autoregressive distributed lag models, and seek to evaluate the influence of household debt, house prices and business debt on macroeconomic growth. We also investigate the feedback effects between house prices and household debt (e.g. Hoffman 2004; Goodhart and Hoffman 2008; Aizenman and Jinjarak 2014; Stockhammer and Wildauer 2018) by assessing to what extent growth in household debt is driven by house price increases and to what extent increases in household debt influence house price inflation. The study covers eighteen advanced economies with highly developed financial sectors from 1980 to 2017. 1980 was selected as the staring year of this analysis, as it broadly marks the global re-rise of the financial sector (Bengtsson and Ryner 2015). The eighteen economies were also evenly broken down into subsets of banking systems, which are either more or less market-based, to assess whether the different structures of financial systems may influence the underlying macroeconomic regime (Hardie et al. 2013). From a comparative perspective, the rationale for this case selection is that any potential common outcomes in such different typologies could allow for the identification of

possible key general mechanisms of advanced financialised economies (Przeworski and Teune 1970).

Our main findings are: First, in demonstrating that household debt has stronger and more statistically significant effects on GDP than business debt, our results challenge the seminal VoC framework by suggesting their emphasis on corporate finance as one of the main drivers of macroeconomic growth is misplaced. Second, by highlighting that changes in household debt volumes are largely a result of house price fluctuations, we challenge the VoC and the CPE growth models as conceptualised by Baccaro and Pontusson (2016), as neither approach accounts for the important macroeconomic role of housing. Third, our results show the macroeconomic effects of household debt and house prices are present across the cases in the sample and are not limited to the Anglosphere countries, as suggested by Hay (2009; 2013), or consumption-driven economies, as argued by Baccaro and Pontusson (2016). Subsequently, we argue that both household debt and house prices have important macroeconomic effects and should be taken into consideration in future CPE macro-level analyses of advanced economies.

The remainder of the paper is structured as follows: the first section examines the missing macroeconomic role of housing and private debt from a CPE perspective. The second section outlines the empirical design of the econometric models deployed in the analysis, whilst the third section provides a descriptive analysis of the data. The fourth section describes the results of the models and the concluding section situates the results in relation to the wider CPE and growth model literature.

CPE and the Missing Macroeconomic Role of Housing and Private Debt

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There are two prominent frameworks that conceptualise the macroeconomic role of the financial sector in CPE; the Varieties of Capitalism (VoC) approach and Baccaro and Pontusson's (2016) CPE application of the growth model perspective. The highly influential VoC were a major intervention in the CPE literature, as they were among the first to develop a robust set of Weberian ideal-types conceptualising differences in advanced economies. The VoC is a firm-centred approach categorising advanced states into one of two ideal-types: liberal market economies (LME) and co-ordinated market economies (CME) (Hall and Soskice 2001). This categorisation is determined by a series of institutional complementarities supporting systems of either market (LME) or non-market (CME) coordination across five institutional spheres: industrial relations; vocational training and education; corporate governance: inter-firm relations; and labour markets (Hall and Soskice 2001). The typology set was expanded further to account for mixed-market economies (MME) that have a stronger emphasis on the coordinating role of the state (Molina and Rhodes 2007).

Although the VoC approach is a seminal work in CPE, the analysis has been widely critiqued along various strands (Hancké 2009 pp. 7-8). The most common critiques charge the VoC with being deterministic (e.g. Coates 2005); too focused on explaining institutional equilibria (e.g. Hancké 2009); path dependent (e.g. Crouch et al 2005); functionalist (e.g. Howell 2003); lacking within-typology diversity (e.g. Hay 2005); failing to account for emerging economies (Nölke and Vliegenthart 2009); having a manufacturing bias (e.g. Blyth 2003); neglecting the role of the state (Schmidt 2009); and the strength of the VoC's five institutional spheres has also been challenged (Goodin, 2003; Herrigel and Wittke 2005). Despite such wide-

ranging and valid critiques of the VoC approach, the framework remains one of the most prominent and widely cited means of comparing advanced economies.

Our main objection to the VoC approach does not pertain to these categories, but rather to the macroeconomic analysis that underpins it, which has been challenged for being under-conceptualised (Soskice 2007). The macroeconomic framework of the VoC is based on the ability of firms to access investment capital to improve their competitiveness in line with the wider set of institutional complementarities. According to the VoC, firms in LMEs access productive investment through taking on corporate debt either from competitive banking institutions or private capital markets, whilst in CMEs, firms access capital via more traditional systems of relationship-based banking (Hall and Soskice 2001). Therefore, the VoC approach reduces the role of the financial sector to providing firms with investment capital, thus emphasising the importance of corporate debt to support macroeconomic growth in advanced economies (Schwartz and Tranøy 2019).

Baccaro and Pontusson (2016) provide a compelling alternative CPE macroeconomic framework to the VoC based on the growth model perspective. The Kalecki-inspired growth model literature initially categorised different economies as being driven by either profit-led or wage-led growth, stimulated by corporate investment or consumption respectively (Kalecki 1971; Marglin and Bhaduri 1990; Palley 2017). Important structural changes in the international economy since the 1980s, such as globalisation and the re-rise of financial services, have seen two alternative growth models emerge, as modern advanced economies can be driven by either export-based industrial production or domestic-oriented systems of

household debt, which support consumption and 'in some cases, a residential investment boom' (Stockhammer 2016 p. 369).

Based on their CPE application of the growth model framework, Baccaro and Pontusson (2016) suggest advanced economies are organised around specific demand-side growth regimes based on consumption, exports or a combination of the two, which do not necessarily align with the VoC typologies. Therefore, rather than relying the VoC's focus on corporate finance, Bacarro and Pontusson (2016 p. 186) conceptualise the macroeconomic role of the financial sector as providing households with access to credit, which can directly stimulate growth in consumption-driven economies (Bacarro and Pontusson 2016 p. 186). Although Bacarro and Pontusson (2016) make a significant contribution by incorporating the growth model perspective into CPE, they only analyse household debt in the context of financing consumption, and, despite acknowledging the ability of rising house prices to drive household debt levels, house price dynamics play no role in their analysis.

An alternative application of the growth model approach to CPE is offered by Hope and Soskice (2016). Using a similar framework to that adopted by Soskice (2007), they suggest the New Keynesian three-equation model be used as instead of the demand-focused Kaleckian analysis of Baccaro and Pontusson's (2016). The New Keynesian three-equation model has three major components (Hope and Soskice 2016 pp. 219-220): it considers macroeconomic growth to be driven by effective demand; it accounts for the supply-side in terms of the unemployment/inflation trade off in the Phillips curve; and the monetary policy rule, where central banks set interest rate to achieve their inflation target.

After deploying the New Keynesian three-equation model to account for both the demand and supply-sides, Hope and Soskice (2016) argue the VoC's LME/CME distinction is applicable; with CMEs considered to be export-driven and LMEs consumption-driven. However, the New Keynesian three-equation model used by Hope and Soskice (2016) does not provide a clear conception of the financial sector, nor does it account for the ability of household debt and house prices to support economic growth in consumption driven economies, as identified by the growth model literature (e.g. Stockhammer 2016). Therefore, Hope and Soskice (2016) ultimately remain reliant on the VoC's conception of the financial sector, which does not sufficiently account for the macroeconomic role of finance that has become increasingly central to the growth models of advanced economies since the 1980s (Hay 2019).

We contest that CPE's conceptualisation of the macroeconomic role of the financial sector is underdeveloped, both in terms of the VoC's firm-centric approach and the CPE growth model perspective's emphasis on consumer credit. First, mortgage credit is one of the main drivers of growth in the financial sector, and the rise of the shareholder value model in increasingly financialised economies has reoriented banking activities away from productive investment towards lending to households, mainly in the form of mortgage credit (Ertürk and Solari 2007; BIS 2017; Kohl 2017). This observed rise of bank lending towards households in the form of mortgage credit has largely occurred as real estate serves as both collateral, mitigating bank lending risks, as well as a financial asset, which, in turn, encourages private investment through the expectation of capital gains (Bezemer et al 2016; Jorda et al 2016). Second, house price inflation has been identified as a key driver of rising household debt volumes, which can increase financial and macroeconomic

instability, as spectacularly demonstrated by the 2008 Global Financial Crisis (GFC) (Stockhammer and Wildauer 2018; Mian et al. 2017). Despite the centrality of housing to the political economy of advanced states (e.g. Ansell 2014; 2019) and the macroeconomic influence of mortgage credit and house prices, neither are accounted for by the VoC or the CPE growth model perspective.

Although the growth model perspective does identify systems of housing and mortgage credit as integral parts of the financial sector (e.g. Stockhammer 2016), the exact mechanisms by which they support macroeconomic growth in debt-driven economies are underspecified. Hay (2009; 2011; 2013) provides a more complete explanation of the mechanisms underlying the macroeconomic influence of both house prices and household debt in advanced democratic states. Here, Britain and the US are considered the two archetypes of advanced financialised economies oriented around a specific Anglo-liberal growth model (Hay 2013). The Anglo-liberal model is driven by systems of either 'privatised' or 'house-price' Keynesianism, where house price inflation enables consumption via equity release mortgages, making the economies dependent on persistent increases in private household debt and house prices (Crouch 2009; Watson 2010; Hay 2013). We consider Hay's (2013) Anglo-liberal growth model to be congruent with the debt-driven growth model described by Stockhammer (2016), but the mechanisms behind it are defined by Hay in greater detail.

The specific growth model that emerges in advanced economies can be linked to a series of political, institutional and ideational factors. The political balance between capital and labour, as well as producer-group politics, which strongly favours certain corporate interests, influences the specific growth regime a state may adopt (Alvarez et al. 1991; Swank 1992; Cusack et al. 2010; Hall 2019).

Furthermore, states that support export-oriented political coalitions with corporatist-style wage-bargaining systems will depress income growth, which limits mortgage demand placing downward pressure on house prices (Johnston and Regan 2017). Additionally, advanced economies may choose to encourage or limit household debt expansions in line with the relative institutional lending practices of financial firms, the macroeconomic significance of pension funds, the need for policymakers to generate political support from the finance sector and the public, as well as the social norms/ideas of political actors and the public regarding household debt (Fuller 2015).

As such, the Anglo-liberal growth model based on house prices and household debt is considered to be isolated to the Anglosphere countries, such as the UK, the US and Ireland, who tend to have uncoordinated labour markets, favour financial capital interests politically, and have embedded social norms around liberalised household access to credit (Hall and Soskice 2001; Gamble 2011; Hay 2013). Alternatively, most other advanced economies are associated with systems of export-driven growth, either through industrial production (e.g. Thelen 1993) or commodity exports (e.g. Garrett and Lange 1986), and are considered to limit both household debt and house price growth through political, social and institutional norms (Fuller 2015; Johnston and Regan 2017). However, large increases in household indebtedness coupled with significant rises in house prices have been observed across a wide range of both debt-driven and export-driven economies since the 1980s (e.g. Barnes 2016; Fuller et al 2019; Anderson and Kurzer 2019). This suggests household debt and house prices may have macroeconomic effects in a wider range of countries than accounted for by Hay (2013).

Here there is a link to the CPE literature on national-level systems of housing and mortgage credit, which has moved beyond the VoC approach. Using a

framework based on different owner-occupation rates and levels of mortgage debt in the economy, the Varieties of Residential Capitalism (VoRC) identify four distinct housing and mortgage typologies, which do not correspond to the VoC (Schwartz and Seabrooke 2008). The VoRC make a significant contribution in highlighting the political economy context in which different states are oriented towards norms of homeownership and financial liberalisation. Whilst there are other notable housing and mortgage typology sets, such as Fernandez and Aalbers' (2016) trajectories-based approach and Blackwell and Kohl's (2018; 2019) more historical accounts, they tend to group the economies closely to the VoRC. Each of these important typology sets provide a compelling means to compare national-level systems of housing and mortgage credit, however, much like the VoC, they do not provide a clear account of the macroeconomic effects of housing finance or house prices.

The macroeconomic influence of private household debt and house prices has been demonstrated empirically in econometric analyses of the British and US cases, supporting Hay's (2013) view, but both variables have also been identified as supporting macroeconomic growth in other advanced economies, notably those in southern Europe (Stockhammer and Wildauer 2016). Although Fuller (2015) considers household debt to have pro-cyclical growth effects, in general, the empirical econometric evidence regarding the macroeconomic role of private household debt in pooled analyses of advanced economies tends to show positive shorter-term effects, but negative effects in the longer term (Arcand et al. 2015; Bezemer et al. 2016; Mian et al. 2017).

Whilst house price inflation is the major determinant of private household debt volumes in advanced economies (e.g. Hoffman 2004; Goodhart and Hoffman 2008; Arestis and Gonzalez 2014; Stockhammer and Wildauer 2018), there is also

significant evidence to suggest housing asset price inflation and credit booms contribute to cycles of financial instability in advanced economies (Dieci and Westerhoff 2012; Drehmann et al. 2012; Ryoo 2016). Although the empirical econometric literature suggests house prices and household debt have significant macroeconomic effects, this has not been formally examined from a CPE perspective. This paper will examine this under-researched area, and formally evaluate the firm-centric VoC framework, by assessing whether, and to what extent, business debt, private household debt and house prices have effects on macroeconomic growth in advanced economies.

Empirical Design

We evaluate these research questions using an econometric analysis consisting of three sets of equations. The first equation examines the effects of business debt and household debt on gross domestic product (GDP). The second and third equations examine the relationship between house prices and household debt. The second equation explains household debt as a function of house prices and GDP, whilst the third equation explains house prices as a function of household debt and GDP. The sample consists of unbalanced pooled panel data from 1980 to 2017 for 18 advanced economies (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, the UK and the USA). 1980 is selected as starting year of this analysis as it is considered to mark the broad re-emergence of the financial sector in advanced economies.

As we face potential issues of mutual determination between variables, which leads to possible endogeneity problems, we have removed the contemporaneous effects in our baseline specifications, as we focus on the lagged effects that are not subject to endogeneity. The use of such lag effects constructs a unidirectional mechanism that operates in a similar manner to the Granger causality test, as each lag of the independent variables necessarily must have changed before the non-lagged dependent variable (Engle and Granger 1987). The lag structure for each variable is chosen following a testing down procedure starting from five lags of each coefficient and eliminating the final lag if statistically insignificant. The statistical significance of the lagged coefficients suggests two lags are appropriate.

Each equation is examined using four main specifications. In specification 1, we use an autoregressive distributed lag (ADL) model to provide an applicable means of examining the variables independent of their order of integration (Charemza and Deadman 1997). The use of the ADL is appropriate as the pre-testing analysis suggests the presence of unit roots for each of the dependent variables. The results tables report robust panel-corrected standard errors (PCSE) based on the Prais–Winsten transformation (Plümper et al, 2005; Beck and Katz, 1995). Each of the PCSE specifications for each equation use a first order autocorrelation structure to address potential problems of serial correlation and assume panel-level heteroskedastic errors to mitigate for heteroskedasticity. Each of the baseline specifications are also run with fixed effects using country-specific intercepts to account for time-invariant characteristics at the country level. To evaluate the consistency of the parameter estimates, specification 2 uses a mean group (MG) estimator. Rather than pooling the data, the MG estimates time series equations for each country and then calculates the mean coefficient across countries

(Pesaran and Smith 1995). This estimator is more robust in case of country heterogeneity.

Specifications 3 and 4 examine the results from a CPE perspective using the ADL model. As the processes of financialisation have not taken a singular path at a national, regional or global level (e.g. Hay 2004), this analysis examines sub-categories based on more or less market-based banking economies, which is one of the most prominently cited means of sub-categorising advanced financial systems (Hardie et al. 2013). To calculate the extent to which financial sectors could be classified as more or less market-based banking systems, this analysis uses the median value for each country of the stock market value traded to GDP ratio divided by the bank credit to GDP ratio between 1980 and 2017, as suggested by Beck et al. (2009). The countries with values above the median value are classed as more market-based banking economies (Switzerland, USA, Canada, Spain, Netherlands, Japan, UK, Sweden and Australia) and examined in specification 3. Whilst those with values below the median are classified as less market-based banking economies (Germany, France, Norway, Denmark, Finland, Italy, Belgium, Ireland and New Zealand) and examined in specification 4. As a further robustness check, the results are also analysed in terms of the LME/CME/MME VoC typologies (Hall and Soskice 2001; Molina and Rhodes 2007). In our sample, the LMEs are Australia, Canada, Ireland, New Zealand, the UK and the USA, the CMEs are Belgium, Denmark, Finland, Germany, Japan, the Netherlands, Norway, Sweden and Switzerland, whilst the MMEs are France, Italy and Spain.

The dependent variable in the first equation is aggregate demand, modelled using GDP, a standard measure of economic growth in econometric analyses of macroeconomic regimes. The main independent variable of interest in the first

equation is the aggregate volume of outstanding household debt, which includes all credit provided to households and is a central part of the financialised growth regime (e.g. Stockhammer 2008). From the literature (e.g. Hay 2009; 2013), we would expect to find a positive relationship between household debt and GDP growth. However, high levels of debt have been also identified as having a destabilising effect on the economy (e.g. Minsky 1992). Therefore, once temporal dynamics are taken into account, there may be a negative relationship between the variables over time. This is congruent with the results observed in previous analyses of household debt and economic growth, which demonstrate shorter term positive growth effects of private debt, but negative effects in the longer-term (Mian et al. 2017). Business debt is also included as a second variable of interest in the first equation, as it is central to the VoC's firm-centric conception of finance. Based on the VoC approach, we would expect to see a positive relationship between increases in business debt and GDP growth, particularly in less market-based banking economies.

As house prices have been found to have a significant macroeconomic impact (e.g. Goodhart and Hofmann 2008; Hay 2009; 2013), we also present specification 5 for the first equation only, to allow for the direct effect of house prices to assess whether their effect overpowers that of debt. The centrality of house prices to the macroeconomic growth models of Britain and the US suggests we could potentially expect a positive relationship between house price increases and GDP growth (Hay 2013). However, rising house prices can lead to increases in household debt, which has been associated with financial instability and negative effects on longer-term economic growth (Reinhart and Rogoff 2008; Mian et al. 2017). Therefore, there may also potentially be a negative relationship between house price increases and economic growth across the sample.

Recent research suggests there is a potential positive feedback loop between house prices and mortgage debt in advanced economies (Aizenman and Jinjarak, 2014). To account for this, the second equation uses house prices as the dependent variable, with household debt and GDP as independent variables; whilst the third equation uses household debt as the dependent variable with house prices and GDP as independent variables. The objective of including these equations in the analysis is to establish whether house price increases are predominantly a function of increases in mortgage debt, or whether the relationship operates the other way around. Except for specification 5 of the first equation, each model specification in this analysis is limited to a maximum of three independent variables to refine the efficiency and accuracy of the analysis, in-line with Achen's (2002) 'Rule of Three'. Although the models may be considered underspecified, the right-hand side of the equation includes time lags of the GDP dependent variable as part of the ADL, which mitigates for potential omitted variable bias issues (Wooldridge, 2013).

Nominal GDP data was obtained from the World Bank (2019a), whilst data for the nominal household debt, house prices and business debt variables were obtained from the Bank of International Settlements (BIS, 2019a; 2019b). As the data for GDP, household debt, house price and business debt are in nominal values, they were deflated using the GDP deflator (obtained from World Bank 2019b). See appendix A for a complete account of data sources and variable definitions. Each of the dependent and independent variables were transformed using the natural-logarithmic scale, as the coefficient generated from such log transformations may be interpreted as a close approximation for the percentage change to provide elasticities for each variable, which is more relevant to this analysis than a single unit change (Gelman and Hill, 2007). The use of such a transformation technique is

commonly used in econometric analyses. Descriptive statistics and the correlation matrix for all the variables used in this analysis can be found in Tables 1 and 2 below.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	684	6.5487	1.2874	3.7234	9.7588
Household Debt	609	6.1859	1.3092	2.9396	9.6031
Business Debt	600	6.6217	1.1533	3.9866	9.4515
House Prices	684	5.0850	.41609	4.0959	6.0644

Table 2: Correlation of Baseline Variables

Correlations	GDP	Household Debt	Business Debt	House Prices
GDP	1.0000	0.9314	-0.2636	0.9526
Household Debt	0.9314	1.0000	-0.0720	0.9406
Business Debt	-0.2636	-0.0720	1.0000	-0.1446
House Prices	0.9526	0.9406	-0.1446	1.0000

Descriptive Analysis

Table 3: Changes in Household Debt and Business Debt, 1980-2017

	OBS	HHD SHARE 1980	HHD SHARE 2017	BUSINESS DEBT SHARE 1980	BUSINESS DEBT SHARE 2017	HHD/ BUSINESS DEBT 1980	HHD/ BUSINESS DEBT 2017
AUS	39	42.86	129.14	45.22	79.60	0.9479	1.6223
BEL	39	29.46	64.39	49.50	170.57	0.5952	0.3775
CAN	39	45.52	103.69	73.33	117.56	0.6208	0.8821
DEN*	24	72.30	125.75	70.36	122.08	1.0275	1.0301
FIN	39	25.17	71.46	60.07	122.64	0.4190	0.5827
FRA	39	20.88	62.34	80.31	152.52	0.2600	0.4087
GER	39	43.54	56.36	46.28	57.74	0.9408	0.9762
IRE*	16	59.40	50.39	90.20	221.59	0.6585	0.2274
ITA	39	13.71	43.89	49.88	76.55	0.2748	0.5733
JAP	39	52.14	56.85	107.74	99.54	0.4840	0.5711
NETH*	28	54.93	112.90	127.63	186.05	0.4303	0.6069
NZ*	20	57.67	90.02	80.88	82.00	0.7085	1.0979
NOR**	38	40.95	98.60	81.64	149.59	0.5015	0.6591
SPA	39	21.93	65.18	56.01	102.99	0.3914	0.6329
SWE	39	45.72	91.41	51.63	155.77	0.8855	0.5868
SWI	19	100.11	129.07	83.66	118.45	1.1966	1.0897
UK	39	32.78	90.99	30.99	90.26	1.0576	1.0080
USA	39	49.61	78.15	51.52	73.54	0.9631	1.0626
MMMB	320	49.51	95.26	69.75	113.75	0.7752	0.8958
LMMB	293	40.34	73.69	67.68	128.36	0.5984	0.6592
LME	192	47.97	90.40	62.02	110.76	0.8261	0.9834
CME	304	51.59	89.64	75.39	131.38	0.7200	0.7200
MME	117	18.84	57.14	62.07	110.69	0.3087	0.5383

*Non-standard starting years: Denmark (1994); Ireland (2002); the Netherlands (1990); New Zealand (1998); Switzerland (1999)
**Non-standard ending years: Norway (2016)

Table 3 describes the changes in both private household debt and business debt as shares of GDP in the countries in this sample from 1980 to 2017. Private household debt has increased as a share of GDP in each country during this time period (except for Ireland, but the Irish data only starts in 2002), but at different rates and to various extents. As expected, more-market-based banking economies tend to show higher levels of household debt than less-market-based banking economies. Although the USA is considered the main archetype of a highly indebted

financialised economy, the following countries have a greater household debt share of GDP than the USA: Australia (LME), Canada (LME), Denmark (CME), Netherlands (CME), New Zealand (LME), Norway (CME), Sweden (CME), Switzerland (CME) and the UK (LME). Interestingly, both CMEs (89.64%) and LMEs (90.40%) currently have similar levels of household debt as a share of GDP, but these figures are much larger than those of the MMEs (57.14%). However, MMEs have shown a 38.3 percentage point increase in the level of household debt as a share of GDP between 1980 and 2017, which is much larger than observed in LMEs and CMEs. These descriptive statistics highlight the importance of analysing the macroeconomic effects of household debt in the advanced economies included in this sample.

Similarly, there has been a general observable increase in the levels of business debt as a share of GDP across the countries of this analysis between 1980 and 2017, except for Japan, which saw a small decrease. Less-market-based banking economies tend to have higher levels of business debt as a share of GDP than more-market-based banking economies. The countries with the highest levels of business debt tend to be CMEs, such as the Netherlands, Belgium Sweden and Norway. However, there are two non-CMEs with high levels of business debt; France (MME) and Ireland (LME). Both economies could be expected to have high levels of business debt due to the low-cost credit facilitated by the French state in their tradition of *dirigisme* (e.g. Clift 2012) and Ireland's focus on attracting FDI inflows as part of its growth model (e.g. Regan and Brazys 2017).

The final two columns of Table 3 demonstrate that each country has seen an increase in the ratio of private household debt relative to business debt as shares of GDP between 1980 and 2017, with the exception of Belgium, Ireland, Sweden,

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Switzerland and the UK where there has been a shift away from private debt towards business debt during this period. Of these countries, the rise in business debt relative to household debt in the staunch LME of the UK is surprising, but the post-crisis low interest rate environment has facilitated a large increase in the indebtedness of British firms (Giles 2019). The descriptive statistics also show there has been a larger increase in household debt relative to business debt in more-market-based banking economies than in less-market-based banking economies. A similar pattern is observed in LMEs and MMEs, however, the ratio of household debt to business debt has remained constant in CMEs.

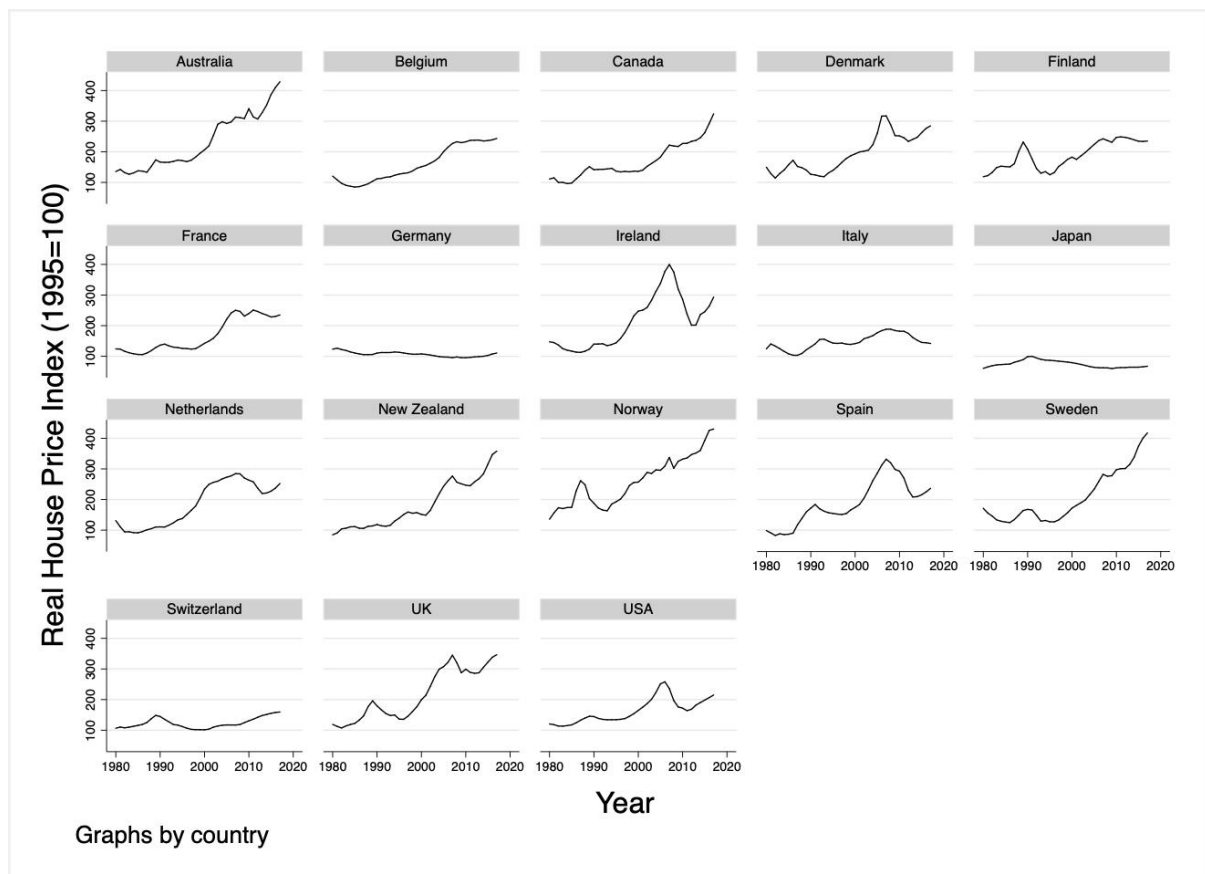Figure 1: House prices

Graphs by country

Figure 1 provides a visual account of the changes in house prices between 1980 and 2017 for each country in the analysis. The graph demonstrates that there has been a clear increase in house prices for most countries during this time period, which seems to be intensified before the onset of the GFC (Jorda et al. 2016). The only countries which do not show a large increase in house prices are Germany, Italy and Japan, whilst Switzerland shows a relatively moderate increase since 2000. Unsurprisingly many housing markets were negatively impacted by the GFC due to constraints on financial market liquidity, which limited mortgage lending. Whilst several economies do show significant post-GFC declines in house prices, particularly the USA, Spain, Ireland and the Netherlands, housing markets do generally show signs of recovery.

Econometric Results

Tables 4-6 provide the estimates of the coefficients from the econometric models performed in this analysis. Following a testing-down process, we began with a generous lag structure, but found that for each of the explanatory variables in each equation only the first and second lag met standard criteria of was only statistical significance (at 90% or above). Thus, we report only specifications with two lags. The baseline specification for each of the three equations is:

(1) $GDP_t = \beta_1 GDP_{t-1} + \beta_2 GDP_{t-2} + \beta_3 HHD_{t-1} + \beta_4 HHD_{t-2} + \beta_5 BD_{t-1} + \beta_6 BD_{t-2} + \varepsilon_t$

(2) $HHD_t = \beta_1 HHD_{t-1} + \beta_2 HHD_{t-2} + \beta_3 HP_{t-1} + \beta_4 HP_{t-2} + \beta_5 GDP_{t-1} + \beta_6 GDP_{t-2} + \varepsilon_t$

(3) $HP_t = \beta_1 HP_{t-1} + \beta_2 HP_{t-2} + \beta_3 HHD_{t-1} + \beta_4 HHD_{t-2} + \beta_5 GDP_{t-1} + \beta_6 GDP_{t-2} + \varepsilon_t$

Here *GDP* is the logarithm of real GDP, *HHD* is the logarithm of the real volume of household debt, *BD* is the logarithm of the real volume of business debt, and *HP* is the logarithm of real house prices.

Table 4: Results of the GDP equation

Regressors	Dep. Var.: GDP					
		Specification 1	Specification 2	Specification 3	Specification 4	Specification 5
	Lag	Whole Sample	Mean Group Estimator	More Market-Based Banking	Less Market-Based Banking	Whole Sample
GDP	1	0.6762***	0.4654***	0.6583***	0.7057***	0.6171***
		(0.0397)	(0.0540)	(0.0523)	(0.0592)	(0.0420)
	2	0.1229***	0.0378	0.1470***	0.0720	0.1302***
		(0.0369)	(0.0373)	(0.0462)	(0.0584)	(0.0364)
Household Debt	1	0.5310***	0.5492***	0.5942***	0.4788***	0.5542***
		(0.0501)	(0.0861)	(0.0630)	(0.0692)	(0.0484)
	2	-0.4901***	-0.3707***	-0.5185***	-0.4835***	-0.4663***
		(0.0512)	(0.0881)	(0.0653)	(0.0788)	(0.0509)
Business Debt	1	0.0836	0.0438	0.0366	0.1253	0.0848
		(0.0547)	(0.0649)	(0.0688)	(0.0765)	(0.0526)
	2	-0.0189	0.0457	-0.0103	-0.0087	-0.0041
		(0.0548)	(0.0510)	(0.0682)	(0.0788)	(0.0531)
House Prices	1	-	-	-	-	0.0711
		-	-	-	-	(0.0822)
	2	-	-	-	-	-0.1436***
		-	-	-	-	(0.0517)
Constant		0.6612***	1.4760***	0.6475***	0.6526***	1.0035***
		(0.0976)	(0.2496)	(0.1295)	(0.1338)	(0.1330)
Observations		565	565	295	270	565
R-squared		0.9968	-	0.9969	0.9962	0.9969
Groups		18	18	9	9	18
Wooldridge Test		0.000***	0.000***	0.000***	0.000***	0.000***

Standard errors reported in parentheses.
***p < 0.01, **p < 0.05, *p < 0.10.

Table 4 summarises the results of the GDP equation. Specification 1 presents the baseline result with two lags of household debt and business debt for the full sample. The results of specification 1 demonstrate household debt has statistically significant effects (at the 1 per cent level), with a positive and a negative sign for the first and second lags respectively. As the coefficients can be interpreted as elasticities, a 1 per cent increase in real household debt has a 0.53 per cent increase in economic growth in the following year. In contrast, business debt does not show any statistically significant effects. Specification 2 shows the results of the MG estimations are very similar to the ADL results, suggesting the effects of household debt are consistent across the panel.

Specifications 3 and 4 divide the sample into two sub-categories based on more or less market-based banking systems respectively. In both specifications, household debt shows positive and statistically significant effects at the one percent level, whereas business debt does not. Although the coefficient estimates are slightly larger for the less market-based banking system sample, the orders of magnitude are similar. Overall, the results from the third and fourth specifications indicate the effects of household debt on economic growth are similar in both more and less market-based banking systems. As a robustness check, the country samples were reorganised in line with Levine's (2002) market and bank-based financial systems, and they report similar results to the more or less market-based banking systems. In our sample, the only differences between Levine's (2002) and Beck et al.'s (2009) categorisations are that Ireland and New Zealand are classified as market-based systems under Levine (2002), but less-market-based according to Beck et al. (2009). Spain is considered a bank-based financial system under Levine (2002), but is a more-market-based system according to Beck et al. (2009). For both market and

bank-based financial systems, the results show positive and statistically significant effects of household debt on growth at the one percent level, where the coefficient estimates for bank-based financial systems are larger than those of the market-based financial system. There were no significant effects from business debt on growth in either financial system (see Table 8 in appendix B for the full results).

As a further robustness check, the country samples were divided into the three LME/CME/MME VoC typologies. Although interpreting the results from such a small sample size requires care, these results are highly suggestive. For each subsample we find household debt consistently shows positive statistically significant effects (at the one per cent level) with coefficient estimates ranging between 0.43 (for LME) and 0.67 (for MME). In contrast, business debt showed no significant relationship to growth in any of the varieties of capitalism delineations, despite the framework's emphasis on corporate finance (see Table 9 in appendix B for the full results of the VoC analysis). This suggests that household debt effects operate in all country groups, and household debt effects are stronger than business debt effects across the groups.

Specification 5 includes real house prices as an additional control variable in the GDP equation. Whilst house prices do have a statistically significant negative effect on the second lag of economic growth, the results for household debt are unchanged from previous specifications.

Table 5: Results of the household debt equation

Regressors	Dep. Var.: Real Household Debt (ln)				
		Specification 1	Specification 2	Specification 3	Specification 4
	Lag	Whole Sample	Mean Group Estimator	More Market-Based Banking	Less Market-Based Banking
Household Debt	1	1.1602***	0.9948***	1.1718***	1.1444***
		(0.0536)	(0.0786)	(0.0756)	(0.0767
	2	-0.1959***	-0.1182	-0.1763**	-0.1881**
		(0.0572)	(0.0754)	(0.0846)	(0.0799)
House Prices	1	0.3187***	0.3662***	0.3554***	0.3269***
		(0.0859)	(0.1390)	(0.1173)	(0.1267)
	2	-0.1687*	-0.1703	-0.2474*	-0.1377
		(0.0914)	(0.2160)	(0.1282)	(0.1303)
GDP	1	-0.0677	-0.2120**	-0.1516	-0.0077
		(0.0736)	(0.0864)	(0.1073)	(0.1032)
	2	-0.0829	-0.1191	-0.0109	-0.1700*
		(0.0666)	(0.0827)	(0.0919)	(0.0988)
Constant		0.4503**	0.9891*	0.5588	0.3248
		(0.2220)	(0.5758)	(0.3546)	(0.2829)
Observations		573	573	295	278
R-squared		0.9923	-	0.9918	0.9885
Groups		18	18	9	9
Wooldridge Test		0.000***	0.000***	0.000***	0.000***

Standard errors reported in parentheses.
***p < 0.01, **p < 0.05, *p < 0.10.

Table 5 summarises the results for the household debt equation. The first specification finds statistically significant effects of house prices on household debt. The coefficient estimates are 0.32 (significant at the 1 per cent level) for the first lag and -0.17 for the second lag (significant at the 10 per cent level). GDP does not seem to have any statistically significant effects and the coefficient estimates are small. The second specification shows the results of the mean group estimator are similar to the ADL results, suggesting the effects of house prices on household debt are consistent across the panel. Splitting the sample into more and less market-

based banking economies, we see similar results for the first lag of house prices. For the second lag, the negative effect is statistically significant at the 10 per cent level in more-market-based banking economies, but insignificant for the less-market-based banking sample. Again, this suggests there are no substantial differences between the two sub-categorisations. Overall, we find substantial effects of house prices on household debt, which in line with the econometric findings of Bezemer (2014) and Stockhammer and Wildauer (2016), as well as the assertions of Hay (2009; 2013), who consider house prices a major determinant of household debt.

Table 6: Results of the house price equation

Regressors	Dep. Var.: Real House Prices (ln)				
		Specification 1	Specification 2	Specification 3	Specification 4
	Lag	Whole Sample	Mean Group Estimator	More Market-Based Banking	Less Market-Based Banking
Real House Prices	1	1.4414***	1.4809***	1.4990***	1.3435***
		(0.0431)	(0.0477)	(0.0539)	(0.0680)
	2	-0.5096***	-0.6459***	-0.5565***	-0.4402***
		(0.0452)	(0.0500)	(0.0589)	(0.0689)
Household Debt	1	0.0747***	0.1065***	0.1061***	0.0470
		(0.0222)	(0.0336)	(0.0313)	(0.0309)
	2	-0.0605**	-0.0591	-0.0807**	-0.0485
		(0.0243)	(0.0409)	(0.0361)	(0.0332)
GDP	1	-0.0315	-0.0886	-0.0866*	0.0177
		(0.0302)	(0.0577)	(0.0450)	(0.0412)
	2	0.0419	0.0725	0.0711*	0.0371
		(0.0265)	(0.0561)	(0.0373)	(0.0375)
Constant		0.2206**	0.6482***	0.2627	0.1861
		(0.1020)	(0.2097)	(0.1609)	(0.1398)
Observations		573	573	295	278
R-squared		0.9833	-	0.9879	0.979
Groups		18	18	9	9
Wooldridge Test		0.000***	0.000***	0.000***	0.000***

Table 6 summarises the results for the house price equation. The first specification examines the full sample including lagged effects only. Here we note a substantial overshooting of the lagged dependent variable in the results. A 1 per cent increase in house prices is amplified in the following period to 1.44 per cent, which is then subject to a downward correction of -0.51 per cent in the following period. This suggests the presence of cyclical dynamics in house prices. Household debt, in the first lag, does have a statistically significant effect (at the 1 per cent level), but the effect is small with a coefficient value of 0.07. The second lag does not have statistically significant effects, though the coefficient estimate is negative and, at -0.06, a similar order of magnitude. The GDP variable does not show any statistically significant effects.

The results of the second specification show the coefficients and statistical significance of the mean group estimator are similar to the ADL results. The sub-categorisations of the sample indicate statistically significant effects for both the first and the second lag of household debt in the more market-based banking group, but no statistical significance in the less-market-based banking group. The effect remains modest in the former (0.11 for the first lag and -0.08 for the second). Thus, there seem to be differences in the house price dynamics and feedback from household debt to house prices between the two country groups.

In sum, our results show three important findings: First, household debt has larger and more statistically significant effects on GDP than business debt. Second, whilst there is a positive feedback loop between house prices and household debt, the effect of private debt on house prices is much smaller than the other way around.

Therefore, we consider household debt to be a function of house prices. Third, the macroeconomic effects of household debt, driven by house price increases, are observable across the sample and are not limited to a specific set of countries.

Household Debt, House Prices and Comparative Political Economy

The findings of this analysis have significant consequences for how the macroeconomic role of the financial sector is conceptualised from a CPE perspective. First, our results pose a meaningful challenge to the firm-centric macroeconomic framework underpinning the VoC. We show household debt has a positive and statistically significant effect on economic growth across the sample and that household debt growth is largely a function of house price inflation, yet neither private debt nor house prices are accounted for by the VoC. Despite the large rise in business debt observed in advanced economies since the 1980s, the results also show that business debt has no significant effects on economic growth across the sample or within the CPE typology sub-samples. These findings suggest the VoC's focus on corporate finance to conceptualise the macroeconomic role of the financial sector is misplaced.

Related to this, our findings also challenge Hope and Soskice's (2016) conception of the macroeconomic growth model perspective, which fuses the New Keynesian three equation model with the VoC framework. In that model, output growth and consumer price inflation take centre stage and the central bank-controlled interest rate is the key financial variable. As such, the New Keynesian three equation model does not account for the macroeconomic role of household debt or house prices. One could argue the monetary rule may determine mortgage

credit creation, but financial institutions are not constrained by the money supply as they endogenously create money through the act of lending (e.g. Jakab and Kumhof 2019) and for a given interest rate, higher real estate prices will induce higher credit supply. Ultimately, we argue Hope and Soskice's (2016) reliance on the limited firm-centric view of the VoC framework does not sufficiently account for the important macroeconomic role the financial sector.

Second, by demonstrating that household debt contributes to economic growth we provide support for the CPE growth model perspective, which considers household debt a key mechanism supporting growth in consumption-driven economies. In demonstrating that the growth of household debt is largely a function of house prices and that household debt has positive effects on macroeconomic growth, our analysis provides robust econometric evidence to support Hay's (2013) identification of a macroeconomic growth model based on rising house price inflation and private household debt. However, in contrast to Hay (2013) the results of this analysis suggest that the effects of house prices and household debt on growth are similar across the advanced economies and are not restricted to 'Anglo-liberal' states, such Britain, the US and Ireland. Our results also suggest the macroeconomic effects of household debt and house prices go beyond the Anglosphere and southern European states, such as Greece, Spain and Portugal, as identified by Stockhammer and Wildauer (2016).

Third, our results also qualify the analyses of the political, ideational and institutional factors underpinning the emergence of specific national-level growth models. The CPE growth model literature assumes that export-driven and debt-driven economies have fundamentally different structures, which would limit an export-driven economy's ability to achieve growth through systems of house prices

and household debt. However, from a macroeconomic perspective this makes little intuitive sense, as the underlying mechanism that allows household debt and house prices to support economic growth should be the same across each state. Additionally, there are examples of export-oriented states that have used systems of house prices and household debt to stimulate economic growth, such as Denmark (e.g. Wood 2019). The results of our analysis suggest that the underlying growth mechanism of house prices and household debt is present across the sample, but that it may not been activated to the same extent in each economy. This may be due to other political economy factors specific to each state, including the influence of specific economic sectors over political actors, systems of wage bargaining, as well as institutional, political and cultural norms around indebtedness (Hall 2019; Johnson and Regan 2017; Fuller 2015).

Finally, our analysis provides econometric evidence as to the relationship between private debt, house prices and macroeconomic instability, which have not been robustly accounted for by the CPE growth model perspective. Our results support the empirical literature demonstrating house price inflation increases private household debt volumes in advanced economies (e.g. Hoffman 2004; Goodhart and Hoffman 2008; Arestis and Gonzalez 2014; Stockhammer and Wildauer 2018), and both variables have been associated with macroeconomic instability (e.g. Dieci and Westerhoff 2012; Drehmann et al. 2012; Ryoo 2016). Whilst our results identify that there are positive shorter term effects of both private debt and house prices on growth in advanced economies, due to the focus of our testing models we do not report longer term effects, which tend to be negative (e.g. Arcand et al. 2015; Bezemer et al. 2016; Stockhammer and Wildauer 2016; Mian et al. 2017). That said, as we show overshooting and corrections in house price and private credit market

dynamics, our results suggest that housing asset price inflation and credit booms contribute to cycles of financial instability. These results highlight a further contribution by this paper to the macroeconomic CPE literature, as the potential destabilizing effects of house prices and household debt are not robustly accounted for either by Bacarro and Pontusson's (2016) application of the growth model perspective or Hope and Soskice's (2016) use of the New Keynesian three equation model.

To conclude, the key contributions of our analysis are that we identify house prices as being largely responsible for driving increases in household debt, and that household debt is central to the macroeconomic growth models of advanced economies. Although we have demonstrated that housing and private debt are integral to the macroeconomic regimes of advanced democratic states, they are not sufficiently accounted for by the most prevalent CPE typologies, such as the VoC or Baccaro and Pontusson's (2016) growth model analysis. Housing is also largely ignored in many other important CPE analyses of advanced financialised economies, which often focus on non-financial institutions or supply-side issues such as skill formation and technological change (e.g. Iversen and Soskice 2010). More interestingly, although we identify the central importance of house prices to the debt-led macroeconomic regimes underpinning advanced economies, the most prominent housing and mortgage finance CPE typology sets developed by Schwartz and Seabrooke (2008), Fernandez and Aalbers (2016) and Blackwell and Kohl (2018; 2019) do not offer an analysis of the dynamics of house prices and how they impact macroeconomic growth. Despite the salience of the 2008 GFC, as well as the links between housing, debt and instability, debt-driven booms or financial cycles are strangely absent in their analysis. Therefore, our results highlight the importance of

accounting for systems of house prices and mortgage credit to future CPE analyses of the macroeconomic regimes of advanced economies.

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Appendix A: Data Sources

Table 7: Data sources

Data Collected	Regression Variables	Time Period	Country Sample	Obs	Source
Nominal GDP	Real GDP	1980 – 2017	All	684	World Bank (2019a)
Nominal total credit to households	Real Household Debt	1980* – 2017	All	609	Bank of International Settlements (2019a)
Nominal total credit to non-financial corporations	Real Business Debt	1980** – 2017***	All	600	Bank of International Settlements (2019a)
Nominal house prices	Real House Prices	1980 – 2017	All	684	Bank of International Settlements (2019b)
GDP deflator	Real GDP; Real Household Debt; Real Business Debt; Real House Prices	1980 – 2017	All	684	World Bank (2019b)

* Household debt non-standard starting years: Denmark (1994); Ireland (2002); the Netherlands (1990); New Zealand (1990); Switzerland (1999)
** Business debt non-standard starting years: Denmark (1994); Ireland (2002); the Netherlands (1990); New Zealand (1998); Switzerland (1999)
*** Business debt non-standard ending years: Norway (2016)

Appendix B – Robustness Check Results

Table 8: Results segregated in terms of market-based and bank-based banking

Regressors	Dep. Var.: GDP (ln)		
		Specification 1	Specification 2
	Lag	Market-Based Banking	Bank-Based Banking
GDP (ln)	1	0.6578***	0.6742***
		(0.0574)	(0.0562)
	2	0.1266**	0.1100**
		(0.0496)	(0.0422)
Household Debt	1	0.4738***	0.5846***
		(0.0654)	(0.0761)
	2	-0.4159***	-0.5639***
		(0.0691)	(0.0755)
Business Debt	1	0.1207*	0.0614
		(0.0717)	(0.0825)
	2	-0.0514	0.0203
		(0.0716)	(0.0823)
Constant		0.6333***	0.6880***
		(0.1401)	(0.1274)
Observations		291	274
R-squared		0.9974	0.9960
Groups		10	8
Wooldridge Test		0.000***	0.000***

Standard errors reported in parentheses.
***p < 0.01, **p < 0.05, *p < 0.10.

Table 9: Results segregated in terms of the VoC typologies

Regressors	Dep. Var.: GDP (ln)			
		Specification 1	Specification 2	Specification 3
	Lag	LME	CME	MME
GDP (ln)	1	0.6976***	0.6615***	0.5880***
		(0.0819)	(0.0555)	(0.0865)
	2	0.0269	0.1688***	0.1776**
		(0.0660)	(0.0528)	(0.0878)
Household Debt	1	0.4290***	0.5893***	0.6748***
		(0.0729)	(0.0737)	(0.1473)
	2	-0.3557***	-0.5420***	-0.6495***
		(0.0838)	(0.0726)	(0.1489)
Business Debt	1	0.0773	0.0767	0.0290
		(0.0833)	(0.0764)	(0.1630)
	2	0.0122	-0.0389	0.0539
		(0.0847)	(0.0751)	(0.1637)
Constant		0.8114	0.5387***	0.9662***
		(0.2464)	(0.1112)	(0.2950)
Observations		176	281	108
R-squared		0.9979	0.9963	0.9777
Groups		6	9	3
Wooldridge Test		0.000***	0.000***	0.000***

Standard errors reported in parentheses.
***p < 0.01, **p < 0.05, *p < 0.10.