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Fiscal Policy as Credit Policy: Reassessing the Fiscal Spending vs. Private Debt Trade-Off

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Fiscal Policy as Credit Policy: Reassessing the Fiscal Spending vs. Private Debt Trade-Off

Etienne Lepers

CITYPERC Working Paper No. 2021-04

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FISCAL POLICY AS CREDIT POLICY: RE-ASSESSING THE FISCAL SPENDING VS. PRIVATE DEBT TRADE-OFF

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Abstract: *This paper revisits the dominant narrative that explains the substantial household credit boom as a substitute to fiscal redistribution, i.e. the “substitution” hypothesis, according to which fiscally-constrained governments substituted public safety nets by private credit. I argue instead that the credit and welfare state constituencies may not necessarily be the same and that far from fiscally constrained, governments have been actively using “fiscal policy as credit policy”. I provide two sets of empirical evidence for such account: First, I find a positive within-country relationship between household debt and fiscal spending. Second, compiling a unique dataset of 550 fiscal subsidies adjustments in 50 countries since 1980, I show that fiscal and tax subsidies have been instrumental in driving household credit. These dynamics have distributional and financial stability implications as such tax subsidies typically favour higher income households and household debt booms have proven more dangerous than corporate ones.*

Keywords: household, welfare state, subsidies, financial crises, financialization, public finance

JEL codes: E5, I3, H2

¹ Contact: Etienne.lepers@city.ac.uk. The views expressed in this paper are those of the author and do not reflect those of any institutional affiliation. I would like to thank Stefano Pagliari, Thorsten Beck, Stefano Sgambati, Sandy Hager, Matthias Thiemann and Konstantin Vössing for their valuable comments on the draft, as well as participants of the 2020 SASE Annual conference and seminar at City, University of London.

The past decades have seen a dramatic expansion of credit in both advanced and emerging economies, reaching now on average around 180 and 55% of GDP respectively, nearly a 5 time increase since 1950. A large part of such credit expansion and the main driver of financial vulnerability has been household-driven: households used credit to compensate for stagnating or falling wages (Kuhn et al., 2020; Montgomerie, 2009) and “keep up with the Joneses” (Carr and Jayadev, 2015) in a context of rising inequality (Rajan, 2010; Bazillier et al., 2021). Credit is most of the time required to accede to homeownership, one of latest additions to the list of “great societal expectations” (Sparkes and Wood, 2020; Mian and Sufi, 2014). What is important is that far from a purely market-driven phenomenon, governments notoriously embraced and promoted homeownership and credit subsidization in the US under both Bush and Clinton (Calomiris and Haber, 2014) but also much earlier under Franklin Delano Roosevelt (Prasad, 2012), and more generally in a majority of countries beyond the US (Kohl, 2018). As Rajan (2010) puts it, “Credit has large, positive, immediate, and widely distributed benefits, whereas all the costs lie in the future”. Overall, promoting a debt-based system by incentivizing credit has been one important way for politicians to achieve increased living standards in the short-run.

This increasing reliance of policymakers on policies encouraging credit expansion has been investigated by different studies on the origins of the contemporary age of financialization, which pointed to a nexus between credit and fiscal policies. In particular, the dominant narrative found in the existing literature is that policymakers have turned to credit policies to alleviate the decreasing capacity to implement expansionary fiscal policies (Krippner, 2012; Prasad, 2012; McCarty et al., 2013), and relates to an earlier literature conceptualizing a trade-off between homeownership and welfare provision (Kemeny, 1981; Castles, 1998). The argument goes that the dismantling of credit restrictions, particularly in the US, was seen as a *substitute* to more aggressive fiscal redistribution and deeper welfare state. For their part, US households were willing to forego social insurance, provided they can privately insure against risk through credit (Montgomerie, 2013; Ansell, 2014). Recent micro-level evidence confirms the higher household indebtedness in US states with lower unemployment benefits (Wiedemann, 2021).

However, as this paper shows, explaining the household debt boom as means of substituting for reduced social benefits in the context of declining fiscal capacity appears

actually problematic from the perspectives of aggregate patterns in household indebtedness and government spending. On the household side, in advanced economies the household credit boom has been driven by mortgage credit taking by middle to top income households, not consumer loans by lower income households. Household credit and welfare spending may thus not necessarily be directly related as welfare state beneficiaries and mortgage borrowers may not be the same political constituencies. On the government spending side, there is no evidence of material decline in either government, social expenditure or pension spending in most advanced economies, spending rather appearing sticky to cuts.

In order to reconcile these findings, I put forward an alternative perspective on the relationship between household credit and fiscal spending that emphasizes the possibility of a positive within-country relationship between the two variables by pointing to different motivations for governments' credit subsidisation embrace. I indeed emphasize that governments have been actively using *fiscal* policy as credit policy, something that appears at odds with an argument of credit expansion due to fiscal constraints. Indeed, a deeper look at the "credit policies" available to policymakers paradoxically highlights that many such policies actually entail immediate or future fiscal costs to countries: mortgage subsidies, first-home buyers grant, higher tax deductibility of mortgages, direct loan guarantees or through GSE (government sponsored entities) are all linked to a country's current or future fiscal space, with large impact on the latter (Fatica and Prammer, 2018; Lucas, 2016; Lucas, 2014). This points to a material role for fiscal policy as leverage rather than substitute to credit expansion.

This paper provides empirical tests for the above-mentioned arguments along two dimensions: First, I provide an aggregate analysis of the relationship between credit expansion and fiscal and welfare spending, using recently available datasets with enhanced coverage in time and space on household debt and fiscal and welfare spending, covering in contrast to most of the existing literature both advanced and emerging economies since 1980. I find no empirical evidence of a within-country negative relationship between credit and any measure of fiscal or welfare spending (the substitution hypothesis), consistent with more recent tests that put into question the negative relationship (Gerba and Schelkle, 2014; van Gunten and Kohl, 2020; Johnston et al., 2020). Actually, even under the most restrictive set of fixed effects, I find a strong and significant positive relationship between household credit or the share of household credit to total credit and fiscal spending. The association is found weaker in emerging

markets, in which housing finance is less developed and in which households borrow to consume rather than invest.

Second, the paper tests the role of specific fiscal policies as driver of household credit expansion. The lack of data on credit policies has been highlighted as a crucial gap by several recent studies on the topic (Kern and Amri, 2020; Ahlquist and Ansell, 2017). I fill this gap by compiling a unique dataset on “fiscal policy as credit policy” that codes all tightening and easing adjustments of credit subsidies for a set of 50 advanced and emerging economies from 1990 to 2017 ². My final dataset contains 550 policy actions related to fiscal policy, including mortgage subsidies and guarantees, mortgage and homeownership-related taxation policies. I show that such credit subsidies with important fiscal costs have been increasingly used since the 1990 and significantly contributed to the easy credit stance up to the Global Financial Crisis. Panel regressions confirm a strong role of these fiscal tools in driving household credit growth. Moreover, I find that tools linked to the “hidden welfare state”, in the meaning of Howard (1999), such as mortgage interest deductibility and guarantees are found more important than fiscal transfers in driving credit, typically benefiting wealthier households and consistent with the hypothesis of subsidization of middle to top income households betting on house price increases. Overall, I conclude that fiscal policy changes are a crucial and overlooked determinant of household credit dynamics.

The rest of the paper goes as follows: Section 1 reviews the broad literature that hypothesized a trade-off between welfare spending and credit expansion and raises a number of issues with such literature from household debt and government spending data. Section 2 brings forward an alternative theoretical account regarding the relationship between household debt and spending. Section 3 provides evidence of within-country relationship between household debt and government spending. Section 4 provides empirical evidence on the role of fiscal policy as an overlooked driver of household credit expansion. Section 5 concludes.

² The dataset used in this paper is part of a larger project coding credit policies beyond fiscal policy, and notably financial regulation, macroprudential policy, monetary policy, and capital controls.

1. Fiscal Spending or Credit Expansion: Substitutes?

1.1. The welfare/credit substitution hypothesis

The idea of a trade-off between household debt and welfare spending takes its roots in Kemeny (1981) and Castles (1998)'s work linking homeownership and the welfare state, what Castles called "the really big trade-off". The initial argument from Kemeny ran that societies that give great importance to homeownership will tend to have lower welfare state levels, as households will resist high levels of taxation to be able to pay towards house and car purchases. Households front-load housing costs at the early stage of the life cycle, inclining them against higher taxes for social services and transfers. Castles later reversed the implicit causality direction of Kemeny's argument by arguing that it was low pensions that forced households towards homeownership. Castles' version of the trade-off was thus also narrower – it was not welfare state as a whole which mattered but pension generosity: as rents constitute the prime expense of non-owner retirees, acceding to homeownership saves a large share of an individual's public pension income. Both scholars however agreed on the basic idea of a trade-off. In dynamic terms, they expected that welfare cutbacks in countries with still low level of homeownerships will push households towards homeownership (Kemeny, 2005). These claims seemed to fit the data of the time in basic bivariate correlations in a sample of a few OECD countries (Kemeny, 1981; Castles, 1998) and were confirmed in later studies (Conley and Gifford, 2006; Dewilde and Raeymaeckers, 2008), all finding a negative relationship between homeownership and pension or social spending.

A series of papers consolidated these initial arguments into a broader trade-off between fiscal spending and household debt. Most of this work described the trade-off hypothesis in a political context of retrenchment of the welfare state due to strained fiscal resources. Streeck (2014) argues that after having used and exhausted inflation in the 1970's, and public debt in the 1980's as mechanisms to avoid distributional conflicts, governments turned to private credit in the 1990's in a context of fiscal consolidation. Krippner (2012) demonstrates how the US moved "from fiscal crisis to financialization" under Reagan. Crouch (2009) further emphasizes a shift from government debt to private debt as new policy regime which he calls "privatized Keynesianism". Prasad (2012) explains that mortgage expansion has been used as a substitute to the welfare state in the US since the Great Depression, what she calls "American mortgage Keynesianism". She argues

that households see wealth in housing as a substitute to social protection, also finding that her substitution hypothesis between welfare state on household indebtedness extends beyond the US to several OECD countries. Schwartz (2012) also notes that the rise of mortgage debt in the US has been happening at the same time as the erosion of two major forms of social protection, namely the decline in health insurance coverage and the move from defined benefit pensions to defined contributions. Wood (2018) points to a link between homeownership promotion, through the mean of mortgage credit expansion, and deteriorating fiscal situation in the case of Denmark. More recently, Wiedemann (2021) provides individual-level evidence linking lower unemployment benefits across US states and higher household indebtedness, thus accrediting according to him the theory of credit as private alternative to public social policies in the US.

1.2. Confronting the substitution hypothesis to household indebtedness and government spending dynamics

This section points however to several key patterns in the data that appear at odds with the conventional theoretical argument from both the perspective of household indebtedness and government spending.

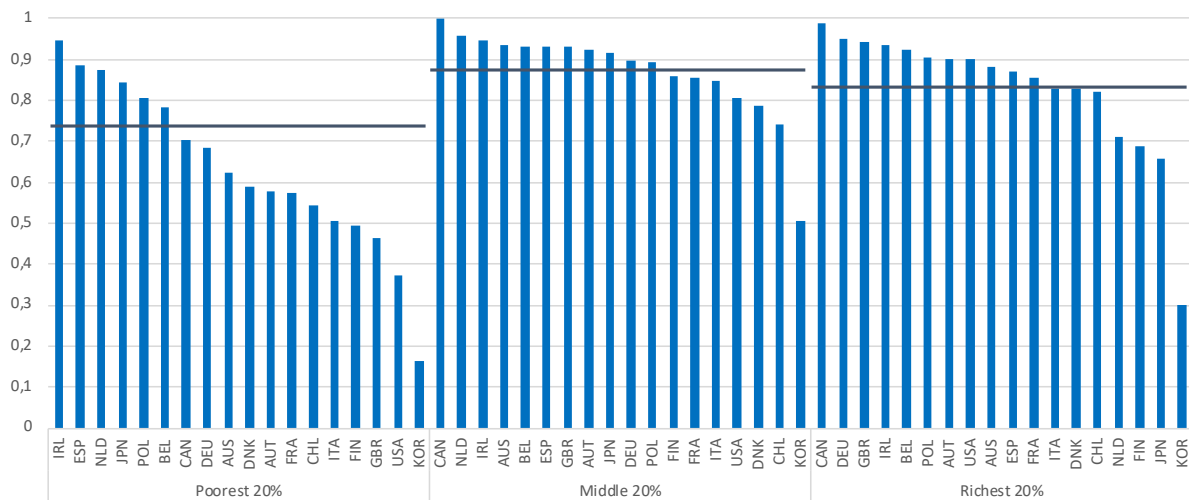
Mortgage debt, not consumer loans

The first key stylized fact is that households in advanced economies, the focus of virtually all studies of the substitution hypothesis, primarily borrowed to invest and not to consume. A large literature explains the greater reliance on credit as a means to compensate for stagnating or falling wages (Montgomerie, 2009), a behavior consistent with Modigliani life cycle theories (Kuhn et al., 2020), and/or in order to keep up with the Joneses” (Carr and Jayadev, 2015) in the context of rising in inequality, leading to popular pressures on politicians for promoting credit expansion (Rajan, 2010; Kumhof et al., 2015; Bazillier et al., 2021). However, consumer loans represent a minor share of household debt liabilities in advanced economies. Indeed, in OECD countries, mortgage credit reaches close to 70% of household liabilities (Causa et al., 2019).

Using the OECD wealth distribution database (see Balestra and Tonkin (2018) for details), I confirm these findings in Figure 1 across the wealth distribution, with mortgage debt generally exceeding 80% of household liabilities. As discussed later on, this is not

the case in emerging markets where credit card debt, and consumer loans have a much higher share (Müller, 2018; Badarinza et al., 2019).

Figure 1. Share of property liabilities to total liabilities by wealth quintile



Source: OECD Wealth Distribution dataset, Balestra and Tonkin (2018), author’s calculations

Note: bars display the average OECD 28 share per wealth quintile.

This prevalence of mortgage credit in advanced economies does not fit the consumption story of some versions of the substitution hypothesis. A house is indeed a relatively illiquid asset in the sense that it is, unlike a stock portfolio, indivisible, and also hard to trade as a whole so the use of housing wealth to finance consumption is difficult (Mason, 2018). While there is some evidence that households did manage to extract substantial equity from their house - “using their homes as ATMs” - by taking on new debt collateralized on the (booming) value of the house, which in itself would explain 50% of the increase in household debt since the 1980’s (Kuhn et al., 2020), the extent to which such extraction did finance consumption is likely limited in time (Mason, 2018).

Thus, while the substitution hypothesis can be and has been demonstrated to happen at the individual level regarding unsecured debt (credit card debt, educational loans, outstanding health bills) (Wiedemann, 2021; Montgomerie, 2009), it may not hold in the aggregate. And as I showed, because this type of debt is a very minor share of household liabilities, it would be misleading to hold these micro-level conclusions regarding substitution as broader evidence that weaker welfare states underpinned substantial increase in household indebtedness since the 1980’s, the “financial hockey stick”. Rather, there is substantial evidence that the willingness to be part of the housing boom was a

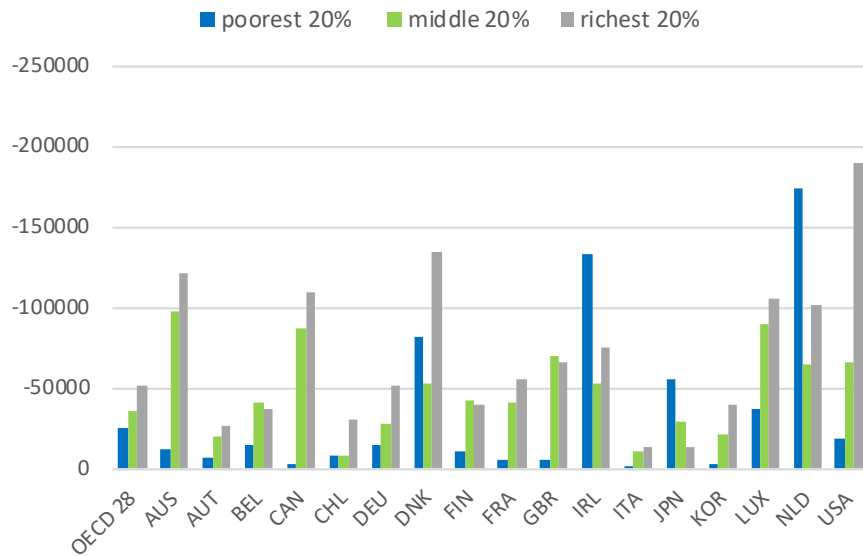
core, if not the most important, factor behind the decades-long increase in household indebtedness (Moore and Stockhammer, 2018; Kuhn et al., 2019; Kuhn et al., 2020). Households rushed not to miss the window of the house price boom.

Wealthier households as main mortgage borrowers

The second key issue linked to household behaviour in several versions of the substitution hypothesis relates to the assumptions that welfare state beneficiaries and credit takers are the same “constituencies”. However, and contrary to common wisdom (see further discussion on the US case in Sgambati (2021)), mortgage debt appears concentrated in wealthy households, and not the lower income class. In the OECD average, as in virtually all individual member country (France, Germany, the US, Italy, Canada), the share of households with mortgage debt is with striking regularity ever higher as we go up the income distribution. More than 40% of people in the wealthiest quintile hold a mortgage while as little as 5% do in the lowest quintile (Causa et al., 2019), with similar findings in the United States (Kuhn et al., 2020; Mason, 2018) and the UK (Montgomerie and Büdenbender, 2015).

Indeed, based again on the OECD Wealth Distribution database, Figure 2 shows that in the majority of countries, property liabilities are much higher for the middle and even more for the top wealth quintile than they are at the bottom quintile. The asset side of the balance sheets mirrors these patterns, with much higher property wealth in the richest quintile. Figure 1 provides a similar perspective looking at property liabilities as share of total liabilities.

Figure 2. Household property liabilities at bottom, middle and top of wealth distribution



Source: OECD Wealth Distribution dataset, Balestra and Tonkin (2018), author's elaboration

Note: Liability values are expressed in 2011 USD by, first, expressing values in 2011 prices through consumer price indices and, second, by converting national values into a common currency through the use of purchasing power parities for household consumption.

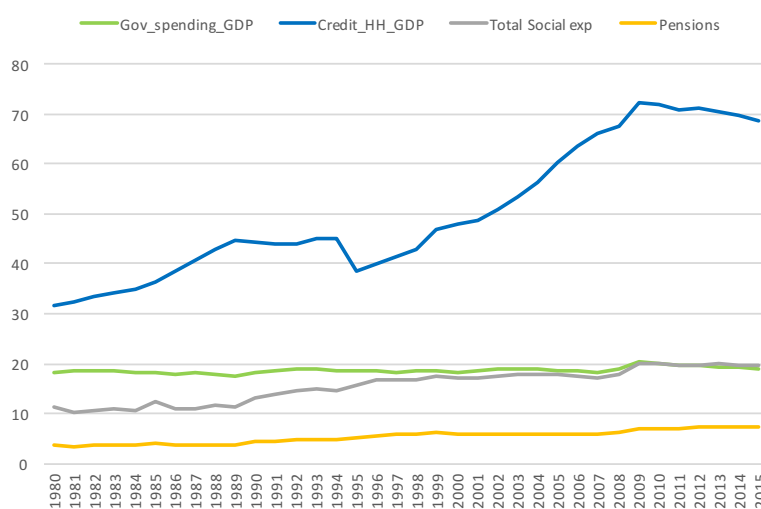
These stylized facts are problematic for versions of the substitution hypothesis based on lower income class behaviour. Castles' argument for instance explains credit taking by the inability to otherwise provide for retiring age. Again, while such dynamics and motivations may indeed be at stake for the lower income class, the above data shows that it cannot explain aggregate correlations between household credit and fiscal spending. Thus, a theoretical interpretation of an aggregate relationship between spending and household debt needs to be based on middle to top income households.

No evidence of a general government spending retrenchment

From the perspective of governments, the literature on the trade-off between debt and welfare sets at the core of its argument a context of important fiscal constraints, budget cuts and retrenchment of welfare spending. Again, this assumption may be misleading. If this may be the case in certain countries and even if the composition of spending may change (Lennartz and Ronald, 2017), there appears no evidence of material decline in either government spending, total social expenditure spending or pension spending in most countries as represented in Figure 3 and highlighted in many other studies since Pierson (1996; 2011). In fact, in advanced economies, social expenditures and pensions

spending seem to have increased since the 1990's, while household debt to GDP rose steadily until the 2008 crisis (Figure 3). Some thus noted the striking co-existence of very high and increasing levels of mortgage debt and generous social protection remaining stable in many countries, notably small coordinated market economies like the Netherlands, Sweden and Denmark (Anderson and Kurzer, 2019) or the Nordic countries more generally (Tranøy et al., 2019).

Figure 3. Government spending, Social expenditures & Household debt (%GDP) ³



Note: advanced economies. Source: OECD, IMF

This relative spending stability can be explained by the reluctance of governments to fiscal and welfare spending cuts, as “there is a profound difference between extending benefits to large numbers of people and taking benefits away” (Pierson, 1996).⁴ In the US for instance, “the welfare state has proven remarkably durable despite considerable fiscal pressure, the full blooming of the conservative movement, and an enormous decline in trust in government” (Campbell, 2015). Such stylized facts again render work on the substitution hypothesis based on a within-country shift to credit markets due to welfare retrenchment problematic.

³ Summary statistics and country classification are available in the Appendix.

⁴ The reasons for the lack of radical retrenchment in the welfare state according to Pierson are twofold: on the one hand, the generally conservative characteristics of democratic political institutions with the welfare state representing the status quo, and on the other, the high electoral costs associated with retrenchment initiatives and resistance from concentrated and well-organized groups of social benefits recipients. While much has changed since 1996, these mechanisms and conclusions on the durability of the welfare state remain broadly consistent today (Gingrich, 2015).

This section thus identified key patterns related to household indebtedness and government spending that appears at odds with the substitution hypothesis. In this context, it is not surprising that recent work is starting to put into question such relationship empirically, finding no or even at times a positive relationship between social spending and credit growth (Johnston et al., 2020)⁵.

In light of these identified stylized facts, how can we understand the relationship between fiscal policy and credit expansion? In contrast to the substitution hypothesis, the next section will push forward an alternative perspective on the relationship between household credit and fiscal spending that emphasizes the possibility of a positive within-country relationship between the two variables. First, it will argue that governments have been encouraging credit expansion not because of a lack of fiscal space, but because of a shift to household preferences for cheap credit in the context of the housing boom, and second that they have actually been actively using fiscal policy to boost credit expansion, something at odds with an argument of credit expansion due to fiscal constraints.

2. An Alternative Perspective: Governments' Embrace of Credit Expansion and the Use of Fiscal Policy as Credit Policy

While the substitution hypothesis assumes that credit expansion has been a largely defensive mechanism embraced by citizens to face the withdrawal in welfare expenditures and a mechanism for government to shift the burden on private markets in the context of fiscal constraints, this section points to different government motivations.

I contend that a core piece of evidence for the fact that the credit expansion embrace was not meant to replace more profligate fiscal spending is the recognition that fiscal policy itself has been a crucial instrument to subsidize household debt. Such perspective

⁵ Other have tested other combinations of the substitution hypothesis: Analysing the nexus between social spending and financial markets (proxied by life insurance premia), Gerba and Schelkle (2014) find instead a positive relationship for 4 advanced countries. Ansell (2014) finds no significant negative relationship between homeownership and social spending. Van Gunten and Kohl (2020) concludes that the negative cross-sectional correlation between homeownership and public welfare provision breaks down by the 1980s and positive afterwards, while within-country trajectories are more often positive than negative. The interpretation generally provided for a positive relationship is that the higher creditworthiness resulting from generous welfare state could enable credit expansion. As noted above, this explanation is not satisfactory in light of the much higher mortgage taking by wealthier households.

has been overlooked as there has been little discussion in the welfare spending/household debt literature about *how* governments concretely encourage credit expansion. As a starter, the role of the state as enabler and plumber of financialization or financial market structures need to be recognized, particularly in the case of the housing sector, where policy often has the explicit objective to expand mortgage markets. Governments may indeed incentivize credit expansion and promote “asset-based welfare” through a variety of ways: monetary policy, financial deregulation, capital account liberalisation, easier prudential policy, or state-owned banks expansions.

However, an often-overlooked policy domain within the credit policy toolkit is exactly fiscal policy and its role in subsidizing credit expansion. Seeing fiscal policy as credit policy speaks to “the market-creating role of social policy” (Schelkle, 2012) and provides a new lens to analyse the relationship between credit expansion and welfare spending. As far as housing is concerned, subsidies include house purchase subsidies such as direct fiscal transfers to certain categories of real estate buyers, e.g. first time buyers; mortgage subsidies such as interest rate subsidies, down-payment grants which are explicitly linked to taking on a mortgage; subsidies from savings accounts which incentivize long-term savings in special accounts, with the long-term objective of voluntary buy a house after some time, where the state ensures preferential interest rates or one-off premiums; and public mortgage insurance. Beyond, housing taxation subsidies were perhaps even more important. These include mortgage interest deductibility, whereby borrowers may fully or partly deduct a portion of the interest they pay on their mortgage loans from personal income tax; taxes on capital gains, which, in the case of lower taxation, increase the incentives to speculate with real estate, driving up prices, and increasing mortgage credit; and transaction taxes, which are charged at the moment of the transaction, frequently adjusted by countries, and which increase or decrease the likelihood of housing speculation and exempted under various circumstances. As Howard (1999) put it, “if one had to name a Holy Trinity of U.S. social programs in the late twentieth century, it would consist of Social Security, Medicare, and the home mortgage interest deduction”. The crucial importance of such tax exemptions for the welfare state has been overlooked for a long time, due to the scarcity of precise estimates and hence coined by the seminal work of Howard (1999) “the hidden welfare state”. Better data has been recently available to estimate these fiscal costs, notably by the OECD (Adema et al., 2014).

And indeed, the fiscal cost of housing subsidies appears very large: For the US, Lucas (2016) estimated that government backed direct loans and loan guarantee programs

(Fannie and Freddie, the Federal Housing Association and other loan programs) provided in 2010 a fiscal stimulus of around 345 billion USD, roughly similar in size to the American Recovery and Reinvestment Act of 2009 – seen as the main stimulus program post crisis. In the EU, on average tax benefits to homeownership lead to an inefficiently high level of consumption of housing services of around 7.8% higher than under neutral taxation, hence leading to a welfare loss amounting to 0.33% of household income/ 7 billion EUR a year (Fatica and Prammer, 2018). The magnitude of the fiscal subsidization of credit thus appears at odds with arguments of shift to credit due to fiscal constraints according to which the shift to credit was “fiscally less costly”. From this perspective, if there is any correlation between fiscal spending and household credit dynamics, such correlation should be positive. Beyond, the direction of the mechanism should run from fiscal policy to household credit growth.

In addition and more broadly, the previous section provided hints that the welfare part of fiscal spending and household credit may not necessarily be related, as welfare state beneficiaries and mortgage borrowers may not be the same political constituencies - unlike traditionally assumed in the substitution argument. As showed, risk-prone middle to high income households (Fligstein and Goldstein, 2015) explain the lion share of the household credit boom, not lower-income households for which arguments based on the replacement of welfare benefits by consumer loans make more sense. Rather, households have been willing to benefit from the house price boom, and governments followed households’ preferences by making credit easier to access. This makes political sense from a median voter perspective, as homeowners in OECD countries represent more than 70% of households, most of them being mortgage borrowers. The potency of this “credit constituency” has been demonstrated in recent work: governments failing to meet this demand are facing electoral losses when mortgage credit contracts (Antoniades and Calomiris, 2020) or reversely fare better electorally when interest rate expenditures are low (Brännlund, 2020). Systematic patterns of lending boost in election years by government-owned banks (Bircan and Saka, 2018; Dinç, 2005) are a strong piece of evidence for such pre-election credit manipulation. But more general evidence of increase in credit in election years point to the existence of “political credit cycles” (Kern and Amri, 2020). As such, governments have often been embracing credit expansion and fueling credit cycles across the political spectrum. Indeed, it appears that both left and right parties have been competing to represent homeowners (Schelkle, 2012; Kohl, 2018). In the Netherlands, Sweden and Denmark, mortgage deregulation, if started under conservative governments, have largely been doubled down by following centre-left

governments. More generally, wealth protection has increasingly been shaping preferences and priorities of voters (Chwieroth and Walter, 2019).

Hence a positive relationship may also appear regarding welfare spending specifically, albeit indirectly, for the reasons outlined by Pierson's work, welfare cuts being deeply unpopular and as the status quo over welfare state reform being indeed a majoritarian outcome (Boeri et al., 2001). As Van Gunten and Kohl (2020) emphasizes, there may be "a dual ratchet effect" where both credit subsidies and welfare spending are sticky to cuts. The welfare-debt trade-off is indeed not a striking feature of political/partisan cleavages, where, for instance, right-wing parties would favour credit expansion and left-wing parties would favour a higher level of welfare spending.⁶ On the opposite, a new policy regime may have entailed subsidizing 'upper-to-middle class welfare' while rolling over 'lower income class welfare' as a path of least resistance.

In the remainder of this paper, I seek to test empirically the argument presented in this section, namely regarding 1) the absence of negative relationship and even the existence of a positive relationship between government or social spending and household debt, and 2) the role of fiscal subsidies as a significant driver of future household credit growth.

3. Empirical Analysis I: Revisiting the Evidence on the Credit and Government Spending Relationship

While the previous sections have highlighted the many empirical tests of the "really big trade-off", these studies in fact tested very different hypotheses. Van Gunten and Kohl (2020) for instance rightly pointed out the need to separate cross-country and within-country features of the substitution hypothesis which require very different theoretical mechanisms. There is also a need to distinguish between homeownership and household debt, which some authors have assumed interchangeable.⁷

⁶ Ansell (2014) finds that under right-wing governments house price increases (not mortgage debt) led to a reduction of social spending.

⁷ In OECD countries, the heterogeneity in the share of outright owners vs. owners with mortgages is striking, with the former being very large in post-Soviet countries as well as in Southern Europe for historical and cultural reasons, while in Northern countries and liberal countries owners typically are mortgage holders (Causa et al., 2019). This is also well noted in Schwartz and Seabrooke (2009).

Based on the above theoretical discussion, I contribute to the empirical literature on the trade-off by: 1) focusing on within-country relationships, 2) focusing on household credit specifically, not aggregate credit, nor homeownership unlike the recent detailed study by van Gunten and Kohl (2020), 3) testing government spending as whole, as well as social spending and different components, 4) providing to my knowledge the first tests of the trade-off beyond advanced economies.

3.1. Data considerations

This section starts by discussing the household debt and fiscal spending data I am using in the empirical analysis. The household debt data is taken from recent data compilation efforts by the IMF – the Global Debt Dataset, covering private debt for 190 countries dating back to the 1950s (Mbaye, Moreno Badia, et al., 2018). An additional important advantage of the dataset for the sake of the present study is the split between household (HH) and non-financial corporate (NFC) debt.

I match such data with two OECD datasets on fiscal spending – the Classification of the Functions of Government (COFOG) and the Social Expenditure Dataset to get granular data on: 1) the overall level of government debt, 2) the overall level of government spending, 3) social expenditures and their subcomponents⁸. Variables are scaled by GDP to allow straightforward comparison of variables.

3.2. Bivariate relationships

Starting from simple within-country trends, Figure 4, 6 and 7 show the case of the United States which have been the number one case study for proponents of the “substitute” analysis. There appears to be positive relationship over time between credit and spending (both total government spending, overall social protection and pension spending the

⁸ An important methodological discussion in the welfare state literature starting from Esping-Andersen (1990) relates to the limits of spending data in describing welfare states as both entitlement criteria and types of benefit are poorly captured by spending which focuses on the size of budget. This led scholars to turn to data on welfare state “generosity” on the basis of individuals benefits (Scruggs et al., 2017). I rely on spending data for three reasons: First and foremost, the present paper focuses, not on the outcome of different welfare arrangements, e.g. the actual economic redistribution, but the political decisions themselves. As the welfare/debt trade-off literature painted a turn to credit in the context of fiscal pressures, spending as a proxy of the actual budget effort appear appropriate. Second, as Jensen (2011) demonstrates, for welfare programs such as health care and education, entitlement criteria and benefit types matter little and spending is the most appropriate measure. Finally, generosity data is much less widely available country and timewise in comparison to OECD data on expenditures.

latter of which was the core of the original argument by Kemeny). In addition, it appears that over the last 20 years, both household credit and spending have moved upward, with the bottom left observations generally being earlier years than the top right. This is also the case for countries as different as the UK (Figure 5), France, Denmark but also emerging markets like Korea (Figure A1 to A6 in the Annex).

Figure 4 – US – Total government spending

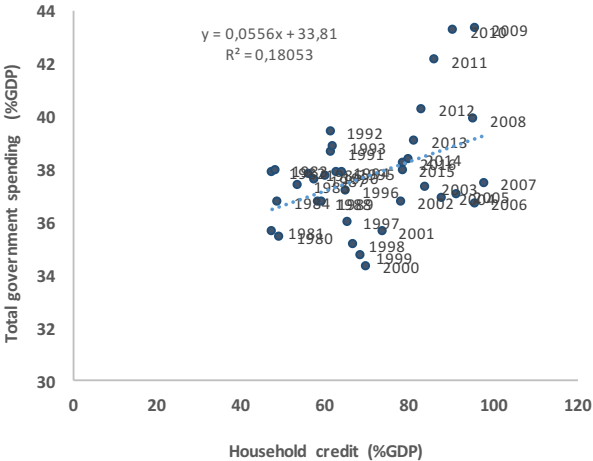


Figure 5 – UK – Total government spending

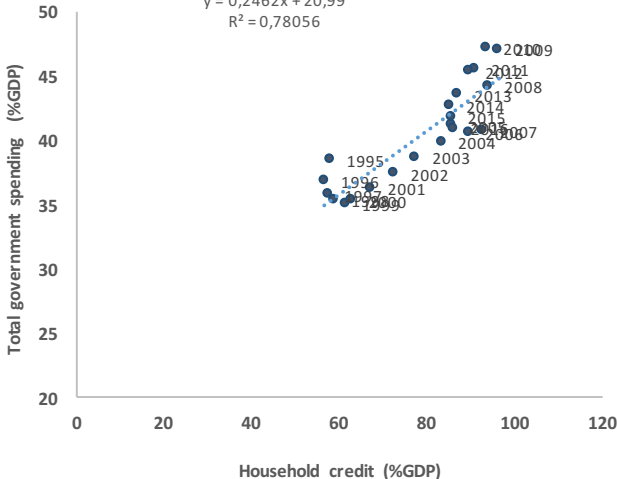


Figure 6 – US – Total Social Exp.

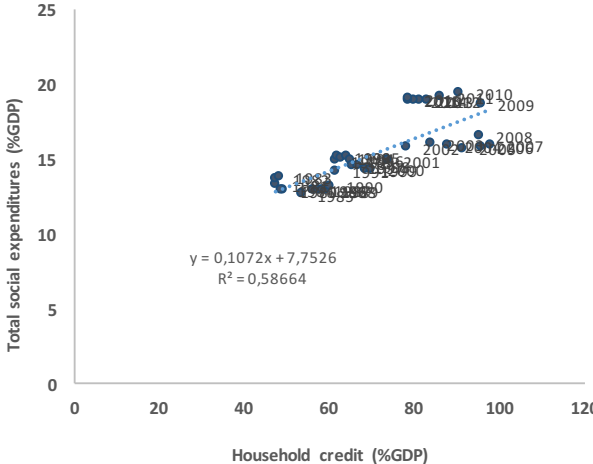
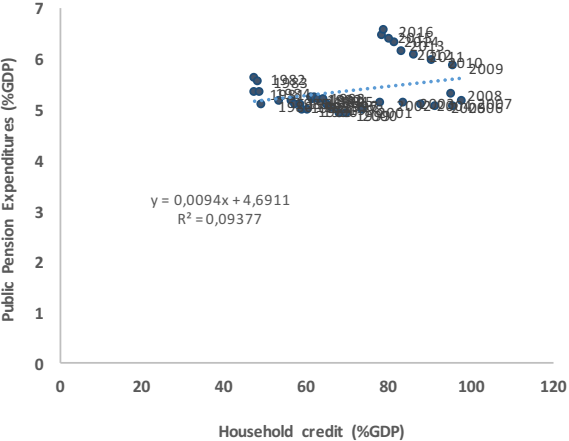


Figure 7 – US – Pension Spending



Source: OECD COFOG dataset and OECD Social expenditure dataset

3.3. Multivariate regressions

I now test the possibility of a positive relationship more formally in a panel framework of 48 countries from 1980 for the largest sample (See Table A1 for country list and classification).

$$HH_credit_GDP_{it} = \beta X_{it} + \beta pop_log_{it} + \beta GDPpc_log_{it} + \beta bkassets_GDP_{it} + [u_i + \mu_t +] e_{it}$$

Where $HH_credit_GDP_{it}$ is the ratio of credit to households to GDP; X_{it} is our variable of interest, representing public spending or one of its sub-components as a share of GDP. I control for three key variables having been found to matter for explaining the level of HH credit in an economy (Badev et al., 2014), namely a measure of an economy's wealth (GDP per capita, $GDPpc_log$), of the size of its population (pop_log_{it}) capturing demographic dynamics; and the ratio of bank assets to GDP ($bkassets_{GDP}$). Table A2 in the Annex displays summary statistics. I estimate the model alternatively with random effects, with country fixed effects controlling for unobservable time invariant factors such as institutions, and with time fixed effects controlling for common factors across countries over time such as common financial globalization trends. Robust SE are used to control for heteroskedasticity. Results are displayed in the first half of Table 1.

Not only is there no significant negative relationship between household credit to GDP and any of the aggregate or subcomponent of fiscal spending/social spending, but the relationship is actually positive and highly significant in a number of cases, consistent with our first hypothesis: government debt to GDP is associated positively with household credit in the random effect specification (Col 1); the coefficient of government spending to GDP is positive and highly significant across all specifications and under the most restrictive set of fixed effects (Col 4-6). The coefficients on total social expenditures and pension spending are all positive but not significant (Col 7-12). In the supplementary materials (Table A3), I extend the analysis to other types of social expenditures with again no single significant negative relationship.

In an alternative specification, I replace the ratio of HH credit to GDP by the share of HH credit to total credit, similarly to Beck et al (2012). This variable removes overall volume effect related to credit growth to focus on credit allocation, i.e. the specific share of credit which goes to households instead of corporates. This time I only display the most restrictive specification (Col 13-16) with both time and country fixed effects; supported by both the Hausman test and testparm. Again, the relationship is positive and significant for the level of government debt, total government spending, total social expenditure, and old age spending (the latter of which being at the core of the trade-off hypothesis with the retired population having less need for pensions if they do not have to pay rent). I also do not find more negative relationship in other social spending components (Table A3, second half).

Table 1. Determinants of the ratio and share of credit to households

Dep Var: VARIABLES	Ratio of Household debt to GDP												Share of household credit (% total credit)			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Central Gov Debt (%GDP)	0.041*	0.044	0.041										0.088***			
	0.02	0.03	0.04										0.03			
Gov spending (%GDP)				1.192***	1.119**	1.222**								0.610*		
				0.38	0.45	0.50								0.33		
Total social expenditures (%GDP)							0.390	0.363	0.546						0.595**	
							0.43	0.48	0.61						0.28	
Old age spending (%GDP)										0.694	0.773	0.776				1.334***
										0.84	0.93	1.34				0.47
Total population (log)	2.716	22.071	13.818	3.228	17.984	4.923	4.533	30.264	21.896	4.065	30.609	24.310	-0.433	-8.923	-5.289	-0.816
	2.28	13.89	16.18	2.52	14.46	17.17	3.26	18.82	26.95	3.27	20.14	30.43	8.60	9.22	10.78	10.63
GDP per cap (log)	10.721***	9.262***	7.135*	10.885***	9.910***	6.166**	12.319***	10.500***	7.484	12.588***	10.466***	7.907	17.904***	14.661***	17.742***	18.387***
	1.61	1.38	3.64	1.59	1.43	2.87	2.39	2.05	5.51	2.36	1.94	5.82	2.13	1.87	2.81	2.65
Deposit bank asset (%GDP)	0.335***	0.329***	0.319***	0.328***	0.323***	0.312***	0.318***	0.310***	0.298***	0.316***	0.307***	0.297***	0.013	0.001	-0.001	-0.003
	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.02	0.03	0.03	0.02
Constant	-135.732***	-447.405*	-290.253	-164.888***	-402.808	-152.348	-183.416***	-593.919*	-426.677	-175.453***	-597.790*	-466.630	-118.484	42.911	-46.837	-124.159
	47.51	232.39	283.40	52.06	240.53	295.25	65.14	312.99	481.58	66.28	334.55	543.65	145.14	151.30	175.78	171.51
Country FE		Y	Y		Y	Y		Y	Y		Y	Y	Y	Y	Y	Y
Year FE			Y			Y			Y			Y	Y	Y	Y	Y
Observations	1,133	1,133	1,133	1,204	1,204	1,204	936	936	936	910	910	910	1,132	1,203	935	910
R-squared		0.798	0.813		0.796	0.819		0.792	0.822		0.790	0.817	0.565	0.570	0.547	0.562
Number of ifs_code	46	46	46	48	48	48	35	35	35	35	35	35	46	48	35	35

Note: Dependent variable is the ratio of household debt to GDP for Col 1-12, and the share of household credit to total credit for Col 13-16. Random effects regressions are conducted in specifications without fixed effects, otherwise OLS regressions with fixed effects. Robust SE below coefficients. P value: ***<0.01, **<0.05, *<0.1.

While these results are robust to the level of economic development, proxied by GDP per capita, I rerun our initial specification splitting our sample between emerging and advanced economies. Results, displayed in Table A4, demonstrate that the relationship between government spending and household credit, while still positive and significant, appears weaker for emerging economies than advanced (column 6 vs. column 10-12). This is consistent with the relatively less important role of credit, especially mortgage credit, in emerging markets.

In this section, I have thus revisited the literature on the relationship between fiscal spending and credit and find no evidence of a trade-off, far from it, I find that fiscal spending is significantly associated with a higher ratio of household credit to GDP and a higher share of household credit relative to total credit, consistent with our argument of governments' embrace of credit expansion while resisting spending cuts.

What is more, as the next section will demonstrate, far from a shift to private credit due to fiscal constraints, governments have been actively using *fiscal* policy to boost credit expansion and that indeed fiscal subsidies to credit have been a significant driver of household credit growth.

4. Empirical Analysis II: The Role of Fiscal Policy as Driver of Credit Cycles

4.1. Fiscal policy as credit policy: stylized facts from a new holistic dataset on credit policies

I collect and code all policy actions, i.e. *adjustments* (tightening or easing) in fiscal policy subsidising credit expansion, part of a broader project coding all policy actions impacting positively or negatively domestic credit cycles (including prudential policy, financial regulation, capital account policy, monetary policy, as well as fiscal policy). For the purpose of the present analysis, I extract and focus only on the fiscal policy actions. Appendix B provides more information on my dataset and its construction.

Unlike most of the previous literature (IMF, 2013), which uses 0/1 dummies based on the presence or absence of specific policies⁹ and thus fail to capture gradual adjustments of such policies, the data is coded as +1 for each tightening action (or removal of a subsidy) and -1 for each easing action (or introduction of a subsidy). Negative values thus indicate a policy stance encouraging credit expansion, while positive values indicate a policy stance discouraging credit expansion.

Specifically, I code the following fiscal policy actions: to account for subsidies to homeownership, I collect data on 1) mortgage subsidies, 2) purchase subsidies, 3) saving account subsidies, and 4) mortgage guarantees. For tax-related subsidies, I get data on 1) capital gains tax exemptions on housing, 2) mortgage interest tax deductibility, 3) housing transaction taxes like stamp duties on the purchase or sale of homes. Data on policy actions have been collected in multiple sources, including OECD economic surveys and reports, IMF Article IV consultations, EU reports, country-specific studies on housing policies, horizontal reports on specific tools, and existing datasets like Kuttner and Shim (2016) and Hofinet.

My final dataset contains 543 adjustments in fiscal policy related to housing, covering 51 countries from 1990 to 2016. Table 2 provides an overview of the number of policy actions, easing or tightening for each of these policy types and split by Advanced Economies and Emerging Economies. It also provides the expected direct or indirect (through house prices) impact on credit growth for each of these tools. An increase in the subsidies and guarantees should be associated with higher expected future credit growth, and a decrease in the taxation of capital gains on housing and transaction taxes, the higher credit, while an increase in the tax deductibility of mortgage interest will lead to more credit. Higher purchase subsidies or lower transaction taxes will boost house prices and as such, households will need to borrow more.

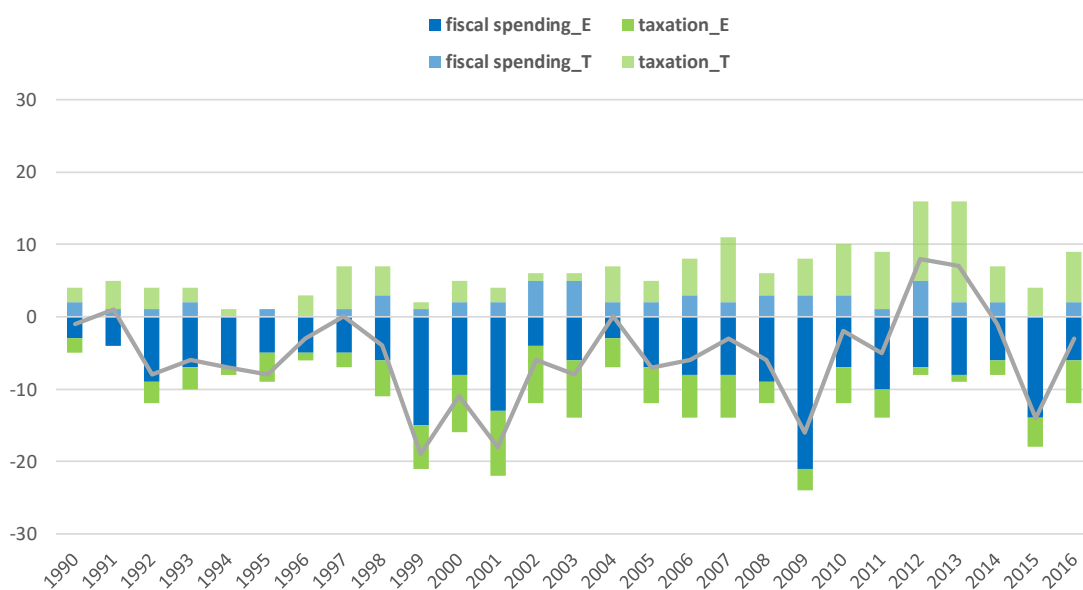
⁹ As an example, in IMF (2013), the presence of mortgage subsidies is simply coded as 1, 0 otherwise.

Table 2. Number of adjustments per policy type and expected impact on credit

	Policy type	# Adjustments	# Easing	# Tightening	# EME	# AE	Usual authority in control	Expected impact on credit growth
Fiscal policy	Mortgage_subsidy	128	93	35	68	60	Government	(+) More subsidies
	Purchase_subsidy	92	77	15	37	55	Government	(+) More subsidies
	Saving_accounts_subsidies	20	17	3	5	15	Government	(+) More subsidies
	Mortgage_guarantee	54	44	10	10	44	Government	(+) More guarantees
Taxation rules	Capital_gains	49	23	26	15	34	Government	(-) Lower taxation
	Mortgage_deductibility	89	41	48	19	70	Government	(+) More deductibility
	Transaction_tax	111	57	54	28	83	Government	(-) Lower taxation

Figure 8 plots the yearly adjustments in fiscal subsidies. The stance of credit subsidies has been consistently easy from 1990 to 2011, with important waves of easing in 1999 to 2003 and unsurprisingly after the 2008 crisis. In recent years, countries have reverted course and tightened more than eased in 2012 and 2013, likely associated with periods of fiscal consolidation. In 2015, the stance was back in easing mode.

Figure 8 – Number of adjustments in fiscal policy, 1990-2016



Note: The easing (E) or the removal of a fiscal policy is coded as -1; the tightening (T) or introduction of a fiscal policy is coded as +1. Summed across country sample of Table A1. Fiscal spending tools include mortgage subsidies, purchase subsidies, saving account subsidies, and mortgage guarantees. Taxation tools include capital gains on housing, mortgage deductibility, and transaction taxes.

4.2. Empirical specification

I now test whether such fiscal subsidies adjustments drove domestic credit expansion. Doing so requires a different approach than the previous model as I now focus on policy *changes* and credit *growth* through the following model:

$$\begin{aligned}\Delta HH \text{ Credit to GDP}_{it} & \\ &= \beta Fiscal_pol_{it-k} + \beta rGDP_yoy_{it-1} + \beta IR_{it-1} + \beta VIX_log_{it} \\ &+ [\beta Other_credit_pol] + u_i + e_{it}\end{aligned}$$

Where: $\Delta HH \text{ Credit to GDP}_{it}$ is the year on year difference in the household credit to GDP ratio.

Our variable of interest is $\Delta Fiscal_pol_{it-k}$ which is the sum of all actions (with easing actions entering with a negative sign and tightening with a positive sign) in each year for each country, and can respectively represent the various policy tools within our fiscal policy category or an aggregate category summing all adjustments across all policy tools. As specific policy actions are expected to impact credit with a lag, I try different specification with k going up to 3 years.

I control for standard determinants of credit growth: I add year on year growth of real GDP, to control for the state of the domestic business cycle, and domestic interest rate to control for domestic monetary policy. I also add the log of the VIX to control for global risk appetite. The control variables are lagged by one year to reduce endogeneity concerns. In the robustness checks, I control for the simultaneous adjustment in other policy areas beyond fiscal that may impact credit growth.

Country fixed effects are used in every specification, intending to capture unobserved time invariant country-specific characteristics. Finally, e_{it} is an error term. I use robust standard errors, clustered at the country level.

4.3. Results

Fiscal subsidies to credit and future household credit growth

Table 3 presents the impact of fiscal policy on the change in the HH credit to GDP ratio. An increase in fiscal subsidies linked to the housing sector is associated with a significant

increase in household credit after three years, significant for both the growth and the gap variable. The signs for earlier lags are also negative if insignificant. This provides evidence for our argument that housing subsidies, even if targeted, have a significant aggregate effect on credit growth. The fact that the significance shows only at the 3rd year after the adjustment in the policy may be explained by the fact that our dataset often captures the announcement date of the policy and unlike prudential policies which may be applied immediately, the implementation of a subsidy program may take more time to materialize.

Table 3: Impact of fiscal subsidies on household credit growth

VARIABLE: Δ HH credit to GDP	Fiscal		Capital gains		Mortgage Deductibility		Mortgage guarantees		Purchase subsidy		Transaction_tax		Mortgage & Saving Subsidies	
Change in Policy (t-1)	-0.227	-0.228	0.514	0.510	-1.100	-1.109	-0.286	-0.214	-0.214	-0.219	-0.254	-0.226	-0.011	-0.013
	0.19	0.20	0.64	0.67	1.00	1.01	0.44	0.39	0.29	0.31	0.27	0.27	0.23	0.23
Change in Policy (t-2)		-0.230		-0.438		-1.321		0.214		0.117		-0.110		-0.161
		0.23		0.72		1.09		0.21		0.41		0.38		0.26
Change in Policy (t-3)		-0.201**		0.187		-1.210**		-0.468**		0.399		-0.180		-0.141
		0.10		0.63		0.56		0.19		0.32		0.29		0.27
Interest rates (t-1)	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Real GDP growth (yoy) (t-1)	16.814***	17.667***	16.761***	17.678***	16.304***	17.452***	16.759***	17.636***	16.973***	17.770***	16.648***	17.529***	16.736***	17.572***
	4.02	4.18	4.07	4.45	4.18	3.81	4.07	4.32	4.12	4.43	4.10	4.29	4.09	4.37
VIX (log)	0.827**	0.732**	0.857***	0.832**	0.810**	0.734**	0.848**	0.819**	0.852**	0.819**	0.853***	0.811**	0.860**	0.823**
	0.32	0.31	0.32	0.32	0.30	0.29	0.32	0.32	0.32	0.31	0.31	0.31	0.32	0.31
Constant	-1.722*	-1.494	-1.790*	-1.727*	-1.620*	-1.384	-1.772*	-1.704*	-1.788*	-1.679*	-1.770*	-1.653*	-1.796*	-1.709*
	0.92	0.89	0.90	0.90	0.88	0.86	0.91	0.90	0.92	0.90	0.90	0.89	0.91	0.90
Observations	835	802	835	802	835	802	835	802	835	802	835	802	835	802
R-squared	0.062	0.071	0.059	0.063	0.068	0.097	0.059	0.064	0.059	0.063	0.059	0.062	0.058	0.062
Number of ifs_code	41	41	41	41	41	41	41	41	41	41	41	41	41	41

Note: Dependent variable is the change in the ratio of household debt to GDP. Models are run with country fixed effects. Robust standard errors, clustered at the country level. P value: *** <0.01 , ** <0.05 , * <0.1 .

Breakdown by types of subsidies

As discussed in our theoretical section and in the stylized facts on the distribution of mortgage debt across the wealth distribution, taxation tools or “tax benefits for social purposes” often apply to a much broader category of people than traditional direct spending programs which are typically mean-tested, e.g. targeted at low income people. We should thus expect tax exemptions to boost credit relatively more than fiscal transfers as they apply to a larger part of the population.

Table 3 thus provides the breakdown by specific subsidies available in the dataset and is consistent with this reasoning. Starting with policies linked to taxation, changes in capital gains do not appear to have a significant impact on credit. Changes in mortgage deductibility displays negative and significant coefficients at the 3rd lag with coefficients of much larger magnitude than the rest of the policies. On the subsidies side, increase in mortgage guarantees also appear to be strongly associated with higher credit growth. Mortgage and saving subsidies do not display significant impact. The lack of impact may indeed be explained by the fact that mortgage subsidies are often targeted to specific populations, like low income families, with an impact on the economy-wide credit growth being more subdued.

As sensitivity test and making use of the rest of the comprehensive credit policy dataset collected, I control for simultaneous adjustments in other credit policies which may be driving our results on fiscal policy. Namely, I create a variable that sums all tightening and easing actions in prudential policy, monetary policy, financial regulation, and capital account policy. Results are displayed in Table A6 and confirm the results highlighted in our baseline for the household credit to GDP ratio.

Emerging vs. Advanced Economies Split

Our dataset has the benefits of including 14 emerging markets. As shown in Table 2, I have recorded much less taxation type of actions in EMEs than in AEs, while EMEs made important use of mortgage and purchase subsidies. Table 4 and 5 provide the results on the change in household credit to GDP for EMEs and AEs respectively.

Table 4: Impact of fiscal subsidies on household credit in EMEs

VARIABLE: Δ HH credit to GDP	Fiscal		Capital gains		Mortgage Deductibility		Mortgage guarantees		Purchase subsidy		Transaction Tax		Mortgage & Saving Subsidies	
Change in Policy (t-1)	0.064	0.056	2.448	2.482	0.923	0.963	-0.823	-0.848	0.108	0.117	0.338	0.324	-0.157	-0.189
	0.18	0.20	2.29	2.37	0.72	0.80	0.52	0.54	0.27	0.25	0.53	0.51	0.22	0.22
Change in Policy (t-2)		-0.047		-0.161		0.689		-0.236		-0.042		0.765		-0.452**
		0.18		0.38		0.46		0.22		0.37		1.13		0.16
Change in Policy (t-3)		-0.120		0.734		0.124		-0.048		-0.269*		-0.369		-0.205
		0.11		0.91		0.66		0.47		0.15		0.27		0.22
L.MM_IR	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L.rNGDP_yoy	16.401***	16.172***	16.432***	16.602***	16.098***	16.336***	16.837***	16.876***	16.311***	16.338***	16.762***	17.028***	16.354***	15.749***
	4.12	3.97	4.11	4.18	4.15	4.23	4.26	4.31	4.07	4.07	4.18	4.18	4.09	3.89
log_VIX	0.061	0.085	-0.065	-0.075	0.020	-0.032	0.056	0.057	0.064	0.095	0.039	0.003	0.036	-0.044
	0.36	0.36	0.32	0.32	0.34	0.33	0.35	0.35	0.35	0.35	0.34	0.33	0.35	0.34
Constant	0.111	0.007	0.469	0.495	0.242	0.402	0.073	0.060	0.096	-0.018	0.151	0.248	0.154	0.345
	1.06	1.04	0.96	0.96	1.02	0.98	1.07	1.06	1.07	1.06	1.05	1.02	1.06	1.03
Observations	224	224	224	224	224	224	224	224	224	224	224	224	224	224
R-squared	0.265	0.268	0.284	0.286	0.276	0.283	0.271	0.271	0.265	0.267	0.267	0.279	0.266	0.280
Number of ifs_code	14	14	14	14	14	14	14	14	14	14	14	14	14	14

Note: Dependent variable is the change in the ratio of household debt to GDP. Models are run with country fixed effects. Robust standard errors, clustered at the country level. P value: ***<0.01, **<0.05, *<0.1.

Table 5: Impact of fiscal subsidies on household credit in AEs

VARIABLE: Δ HH credit to GDP	Fiscal		Capital gains		Mortgage Deductibility		Mortgage guarantees		Purchase subsidy		Transaction Tax		Mortgage & Saving Subsidies	
Change in Policy (t-1)	-0.309	-0.281	0.470	0.483	-1.460	-1.370	-0.188	-0.049	-0.370	-0.405	-0.286	-0.216	-0.009	0.046
	0.23	0.24	0.69	0.72	1.21	1.13	0.51	0.48	0.36	0.37	0.30	0.29	0.40	0.39
Change in Policy (t-2)		-0.255		-0.358		-1.714		0.287		0.087		-0.184		-0.026
		0.28		0.78		1.28		0.24		0.50		0.41		0.47
Change in Policy (t-3)		-0.208*		0.171		-1.429**		-0.582**		0.579		-0.098		-0.110
		0.12		0.69		0.63		0.22		0.37		0.37		0.45
L.MM_IR	0.069	0.094	0.074	0.100	0.069	0.096	0.071	0.101	0.074	0.096	0.070	0.094	0.072	0.099
	0.07	0.08	0.07	0.08	0.07	0.09	0.07	0.09	0.07	0.08	0.07	0.09	0.07	0.09
L.rNGDP_yoy	17.517***	17.734***	17.417***	17.315**	16.274**	16.892***	17.388***	17.258***	17.803***	17.565***	17.407***	17.392***	17.401***	17.320***
	5.75	5.69	5.87	6.30	6.25	5.07	5.89	6.16	5.93	6.29	5.87	6.05	5.89	6.17
log_VIX	1.069**	0.874**	1.126**	1.036**	1.012**	0.771*	1.111**	1.021**	1.111**	1.037**	1.106**	1.003**	1.121**	1.031**
	0.42	0.41	0.41	0.41	0.39	0.41	0.41	0.42	0.42	0.41	0.41	0.41	0.42	0.41
Constant	-2.497*	-2.007	-2.667**	-2.463*	-2.247*	-1.545	-2.620**	-2.428*	-2.646**	-2.449*	-2.587**	-2.335*	-2.647**	-2.440*
	1.23	1.19	1.22	1.21	1.17	1.22	1.22	1.22	1.25	1.20	1.21	1.20	1.22	1.19
Observations	595	578	595	578	595	578	595	578	595	578	595	578	595	578
R-squared	0.054	0.061	0.049	0.052	0.064	0.102	0.048	0.054	0.049	0.055	0.049	0.051	0.048	0.050
Number of ifs_code	27	27	27	27	27	27	27	27	27	27	27	27	27	27

Note: Dependent variable is the change in the ratio of household debt to GDP. Models are run with country fixed effects. Robust standard errors, clustered at the country level. P value: ***<0.01, **<0.05, *<0.1.

Easing mortgage and purchase subsidies is significantly associated with higher household credit growth in EMEs at the 2nd and 3rd lag respectively, while taxation tools like capital gains, transaction tax, mortgage deductibility as well as mortgage guarantees do not show significant coefficients. In advanced economies, the aggregate fiscal policy

coefficient is significant at the 3rd lag, and mortgage deductibility and guarantees show strong negative and significant coefficients.

These results are overall consistent with our theoretical framework and with the stylized facts presented in Section 1.2. Households in the Global North would primarily borrow to invest, while households in the Global South have higher rates of consumer and credit card loans. It is only in countries that have developed mortgage markets and sufficiently wealthy middle classes that governments will use taxation subsidies to boost housing markets and target the investing median voter.

5. Conclusion

The relationship between the dramatic expansion of household credit in both advanced and emerging economies in the past three decades and dynamics of fiscal spending and allocation are still not well understood. While the dominant narrative holds that policymakers shifted to credit and private debt as a substitute to more aggressive fiscal redistribution in the context of fiscal pressures, this paper casts doubt on these conclusions.

First, it demonstrates that theoretical accounts on the aggregate relationship between spending and household cannot be based on declining fiscal and welfare spending, and on consumption-driven borrowing by lower income households as these assumptions are not generally supported by the data. More strikingly, the fact that fiscal policy (mortgage subsidies, first-home buyers grant, higher tax deductibility of mortgages) has been used over large amounts to subsidize credit expansion seems at odds with the hypothesis of a turn to credit because of fiscal constraints. I instead emphasize a middle to top income households demand explanation for governments' embrace of credit subsidization, while at the same time resisting unpopular welfare spending cuts.

I find empirical evidence for such perspective: I first demonstrate a strong and significant positive relationship between household credit or the share of household credit to total credit and fiscal spending. Second, using a unique dataset on fiscal subsidies to credit, I find that changes in such fiscal tools have been a major driver of credit dynamics. Third, I find that tools linked to the "hidden welfare state" such as mortgage interest deductibility and guarantees, typically benefiting wealthier households and consistent

with the hypothesis of subsidization of middle to top income households betting on house price increases, have larger impacts on credit growth. I also find that such demand side story through “hidden welfare state” appears less prevalent in emerging markets that have less developed mortgage markets.

These results have important political, distributional and financial stability consequences. Politically, households’ preferences for credit expansion by parties on both the right and the left side of the spectrum have led to governments’ embrace of credit subsidization for political gains (or rather the fear of political losses for taking away the punch bowl). From a distributional perspective, I have outlined that middle to top income households drove the household credit boom and that the fiscal policies coined as “hidden welfare state” have benefited mainly those income classes to the detriment of mean-tested tools. Finally, from a financial stability perspective, the role of fiscal policy in driving household credit dynamics has to be seriously considered knowing that household credit is a key driver of financial vulnerabilities (Bezemer and Zhang, 2019). This relates to recent calls to analyse fiscal policy through a macrofinancial lens and for a countercyclical conduct of fiscal policy.

Finally, the argument put forward in this paper has important resonance with the 2020 COVID-19 situation and the policy responses it triggered, with governments have been dramatically easing credit guarantees and subsidies across the board. Beyond, it points to the need to have deeper analysis of the backstopping of private credit by the State. As noted by recent empirical work there is a tendency for private debt to become public debt when recessions happen (Mbaye, Chae, et al., 2018). If credit policy was really used by governments as a mean to avoid further fiscal expansion, these governments are soon to realize that such debt may simply materialize in public balance sheets some years later. In the meantime, successive governments appear to simply continue to – in Streeck (2014)’s words - be “buying time”.

REFERENCES

- Adema, W., Fron, P. and Ladaique, M. (2014) *How Much Do OECD Countries Spend on Social Protection and How Redistributive Are Their Tax/Benefit Systems?*, 67.
- Ahlquist, J. S. and Ansell, B. W. (2017) "Taking Credit," *World Politics*, **69**, 640–675.
- Anderson, K. M. and Kurzer, P. (2019) "The Politics of Mortgage Credit Expansion in the Small Coordinated Market Economies," *West European Politics*.
- Ansell, B. (2014) "The Political Economy of Ownership: Housing Markets and the Welfare State," *American Political Science Review*, **108**, 383–402.
- Antoniades, A. and Calomiris, C. W. (2020) "Mortgage Market Credit Conditions and U.S. Presidential Elections," *European Journal of Political Economy*, 101909.
- Badarinza, C., Balasubramaniam, V. and Ramadorai, T. (2019) "The Household Finance Landscape in Emerging Economies," *Annual Review of Financial Economics*.
- Badev, A., Beck, T., Vado, L. and Walley, S. (2014) *Housing Finance Across Countries: New Data and Analysis*.
- Balestra, C. and Tonkin, R. (2018) *Inequalities in Household Wealth across OECD Countries: Evidence from the OECD Wealth Distribution Database*, 1.
- Bazillier, R., Héricourt, J. and Ligonnière, S. (2021) "Structure of Income Inequality and Household Leverage: Cross-Country Causal Evidence," *European Economic Review*, **132**.
- Beck, T., Buyukkarabacak, B., Rioja, F. K. and Valev, N. T. (2012) "Who Gets the Credit? And Does It Matter? Household vs. Firm Lending Across Countries," *The B.E. Journal of Macroeconomics*, **12**.
- Bezemer, D. and Zhang, L. (2019) "Credit Composition and the Severity of Post-Crisis Recessions," *Journal of Financial Stability*.
- Bircan, Ç. and Saka, O. (2018) *Lending Cycles and Real Outcomes: Costs of Political Misalignment*.
- Boeri, T., Börsch-Supan, A., Tabellini, G., Moene, K. O. and Lockwood, B. (2001) *Would You like to Shrink the Welfare State? A Survey of European Citizens*, 16.
- Brännlund, A. (2020) "Zero per Cent Accountability? How Low Interest Rates Save Governments from Electoral Defeats," *European Journal of Political Economy*, 101986.
- Calomiris, C. W. and Haber, S. H. (2014) *Fragile by Design : The Political Origins of Banking Crises and Scarce Credit*.
- Campbell, A. L. (2015) "The Durability of Pierson's Theory about the Durability of the Welfare State." In *PS - Political Science and Politics*, Cambridge University Press, pp. 284–288.

- Carr, M. D. and Jayadev, A. (2015) "Relative Income and Indebtedness: Evidence from Panel Data," *Review of Income and Wealth*, **61**, 759–772.
- Castles, F. (1998) "The Really Big Trade-off: Home Ownership and the Welfare State in the New World and the Old," *Acta Politica*, **33**, 5–19.
- Causa, O., Woloszko, N. and Leite, D. (2019) "Housing, Wealth Accumulation and Wealth Distribution: Evidence and Stylized Facts," *OECD Working Papers*.
- Chwioroth, J. M. and Walter, A. (2019) *The Wealth Effect*, Cambridge University Press.
- Conley, D. and Gifford, B. (2006) "Home Ownership, Social Insurance, and the Welfare State," *Sociological Forum*, **21**, 55–82.
- Crouch, C. (2009) "Privatised Keynesianism: An Unacknowledged Policy Regime," *The British Journal of Politics and International Relations*, **11**, 382–399.
- Dewilde, C. and Raeymaeckers, P. (2008) "The Trade-off between Home-Ownership and Pensions: Individual and Institutional Determinants of Old-Age Poverty," *Ageing and Society*, **28**, 805–830.
- Dinç, I. S. (2005) "Politicians and Banks: Political Influences on Government-Owned Banks in Emerging Markets," *Journal of Financial Economics*, **77**, 453–479.
- Esping-Andersen, G. (1990) *The Three Worlds of Welfare Capitalism*.
- Fatica, S. and Prammer, D. (2018) "Housing and the Tax System: How Large Are the Distortions in the Euro Area?*", *Fiscal Studies*, **39**, 299–342.
- Fligstein, N. and Goldstein, A. (2015) "The Emergence of a Finance Culture in American Households, 1989-2007," *Socio-Economic Review*, **13**, 575–601.
- Gerba, E. and Schelkle, W. (2014) *The Finance-Welfare State Nexus*.
- Gingrich, J. (2015) "Still Not Dismantling? The Legacy of Dismantling the Welfare State in Comparative Politics." In *PS - Political Science and Politics*, Cambridge University Press, pp. 279–283.
- van Gunten, T. and Kohl, S. (2020) "The Inversion of the 'Really Big Trade-off': Homeownership and Pensions in Long-Run Perspective," *West European Politics*.
- Howard, C. (1999) *The Hidden Welfare State: Tax Expenditures and Social Policy in the United States*, Princeton University Press.
- IMF (2013) "The Changing Housing Cycle and the Implications for Monetary Policy," *Global Financial Stability Report*.
- Jensen, C. (2011) "Less Bad than Its Reputation: Social Spending as a Proxy for Welfare Effort in Cross-National Studies," *Journal of Comparative Policy Analysis: Research and Practice*, **13**, 327–340.
- Johnston, A., Fuller, G. W. and Regan, A. (2020) "It Takes Two to Tango: Mortgage Markets, Labor Markets and Rising Household Debt in Europe," *Review of International Political Economy*, 1–31.
- Kemeny, J. (1981) "The Myth of Home Ownership - Private versus Public Choices in Housing Tenure.," *The myth of home ownership - private versus public choices in housing tenure*.

- Kemeny, J. (2005) “‘The Really Big Trade-off’ between Home Ownership and Welfare: Castles’ Evaluation of the 1980 Thesis, and a Reformulation 25 Years On,” *Housing, Theory and Society*, 59–75.
- Kern, A. and Amri, P. (2020) “Political Credit Cycles,” *Economics and Politics*.
- Kohl, S. (2018) “The Political Economy of Homeownership: A Comparative Analysis of Homeownership Ideology through Party Manifestos,” *Socio-Economic Review*.
- Krippner, G. R. (2012) *Capitalizing on Crisis: The Political Origins of the Rise of Finance*, Harvard University Press.
- Kuhn, M., Schularick, M. and Steins, U. (2019) “Income and Wealth Inequality in America: 1949-2016,” *Journal of Political Economy*.
- Kuhn, M., Schularick, M., Steins, U. and Bartscher, A. (2020) *Modigliani Meets Minsky: Inequality, Debt, And Financial Fragility In America, 1950-2016*.
- Kumhof, M., Rancière, R. and Winant, P. (2015) “Inequality, Leverage, and Crises,” *American Economic Review*, **105**, 1217–1245.
- Kuttner, K. N. and Shim, I. (2016) “Can Non-Interest Rate Policies Stabilize Housing Markets? Evidence from a Panel of 57 Economies,” *Journal of Financial Stability*, **26**, 31–44.
- Lennartz, C. and Ronald, R. (2017) “Asset-Based Welfare and Social Investment: Competing, Compatible, or Complementary Social Policy Strategies for the New Welfare State?,” *Housing, Theory and Society*, **34**, 201–220.
- Lucas, D. (2014) “Evaluating the Cost of Government Credit Support: The OECD Context,” *Economic Policy*.
- Lucas, D. (2016) *Credit Policy as Fiscal Policy*.
- Mason, J. W. (2018) *Income Distribution, Household Debt, and Aggregate Demand: A Critical Assessment*.
- Mbaye, S., Chae, K. and Moreno Badia, M. (2018) “Bailing Out the People? When Private Debt Becomes Public,” *IMF working paper*.
- Mbaye, S., Moreno Badia, M. and Chae, K. (2018) *Global Debt Database: Methodology and Sources*.
- McCarty, N. M., Poole, K. T. and Rosenthal, H. (2013) *Political Bubbles: Financial Crises and the Failure of American Democracy*.
- Mian, A. and Sufi, A. (2014) *House of Debt: How They (and You) Caused the Great Recession, and How We Can Prevent It from Happening Again*, Chicago University Press.
- Montgomerie, J. (2009) “The Pursuit of (Past) Happiness? Middle-Class Indebtedness and American Financialisation,” *New Political Economy*, **14**, 1–24.
- Montgomerie, J. (2013) “America’s Debt Safety-Net,” *Public Administration*, **91**, 871–888.
- Montgomerie, J. and Büdenbender, M. (2015) “Round the Houses: Homeownership and Failures of Asset-Based Welfare in the United Kingdom,” *New Political Economy*, **20**, 386–405.

- Moore, G. L. and Stockhammer, E. (2018) "The Drivers of Household Indebtedness Reconsidered: An Empirical Evaluation of Competing Arguments on the Macroeconomic Determinants of Household Indebtedness in OECD Countries," *Journal of Post Keynesian Economics*, 547–577.
- Müller, K. (2018) "Credit Markets Around the World, 1910-2014," *SSRN Electronic Journal*.
- Pierson, P. (1996) *The New Politics of the Welfare State*, 48.
- Pierson, P. (2011) *The Welfare State over the Very Long Run*.
- Prasad, Monica. (2012) *The Land of Too Much: American Abundance and the Paradox of Poverty*, Harvard University Press.
- Rajan, Raghuram. (2010) *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, Princeton University Press.
- Schelkle, W. (2012) "A Crisis of What? Mortgage Credit Markets and the Social Policy of Promoting Homeownership in the United States and in Europe," *Politics & Society*, **40**, 59–80.
- Schwartz, H. (2012) "Housing, the Welfare State, and the Global Financial Crisis: What Is the Connection?," *Politics and Society*.
- Schwartz, H. M. and Seabrooke, L. (2009) "Varieties of Residential Capitalism in the International Political Economy: Old Welfare States and the New Politics of Housing." In Schwartz, H. M. and Seabrooke, L. (eds) *The Politics of Housing Booms and Busts*, Palgrave Macmillan.
- Scruggs, L., Detlef, J. and Kuitto, K. (2017) "Comparative Welfare Entitlements Dataset 2. Version 2017-09."
- Sgambati, S. (2021) *Who Owes? Class Struggle, Inequality and the Political Economy of Leverage as Power in the 21 St Century*.
- Sparkes, M. and Wood, J. D. G. (2020) "The Political Economy of Household Debt & The Keynesian Policy Paradigm," *New Political Economy*, 1–18.
- Streeck, W. (2014) *Buying Time: The Delayed Crisis of Democratic Capitalism*, Verso Books.
- Tranøy, B. S., Stamsø, M. A. and Hjertaker, I. (2019) "Equality as a Driver of Inequality? Universalistic Welfare, Generalised Creditworthiness and Financialised Housing Markets," *West European Politics*.
- Wiedemann, A. (2021) "How Credit Markets Substitute for Welfare States and Influence Social Policy Preferences: Evidence from US States," *British Journal of Political Science*, 1–21.
- Wood, J. D. G. (2018) "Mortgage Credit: Denmark's Financial Capacity Building Regime," *New Political Economy*, 1–18.

APPENDIX A

Table A1 Country sample and Classification

AE	EME
Australia	Argentina
Austria	Brazil
Belgium	Bulgaria
Canada	Chile
Czech Republic	China
Denmark	Colombia
Estonia	Croatia
Finland	Hungary
France	India
Germany	Indonesia
Greece	Mexico
Hong Kong	Poland
Ireland	Romania
Israel	Russian Federation
Italy	South Africa
Japan	Thailand
Korea	Turkey
Latvia	
Lithuania	
Luxembourg	
Netherlands	
New Zealand	
Norway	
Portugal	
Singapore	
Slovak Republic	
Slovenia	
Spain	
Sweden	
Switzerland	
United Kingdom	
United States	

Table A2 Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Total credit to households (%GDP)	1102	44.63327	30.47493	.1058311	139.4265
Total population (log)	1323	16.81737	1.640822	12.85278	21.04438
GDP per cap (log)	1324	9.466882	1.182315	5.697824	11.68877
Deposit bank asset (%GDP)	1298	84.3838	45.99007	10.0533	257.224
Central Gov Debt (%GDP)	1248	47.07122	33.47612	.8278085	302.1871
Gov spending (%GDP)	1324	17.45954	4.558869	2.975538	27.93502
Total social expenditures (%GDP)	901	18.9506	6.292064	0	34.178
Health spending (%GDP)	885	5.095047	1.595918	0	8.869
Family spending (%GDP)	873	1.89122	1.02115	0	4.454
Old age spending (%GDP)	873	6.57803	2.801153	0	14.499
Unemployment spending (%GDP)	845	.915342	.8321168	0	4.643

Table A3 Determinants of the ratio and share of credit to households – Additional social spending subcomponents

VARIABLES	Ratio of Household debt to GDP									Share of household credit (% total credit)			
	1	2	3	4	5	6	7	8	9	1	2	3	
Health spending (%GDP)	1.019	0.767	0.847								0.543		
	1.13	1.16	1.17								0.57		
Family spending (%GDP)				5.520***	5.332**	5.679**						1.546	
				2.09	2.18	2.26						1.54	
Unemployment spending (%GDP)							-1.918	-1.515	0.354				-0.127
							2.05	2.04	2.18				1.49
Total population (log)	3.783	28.577	21.045	6.605*	30.710*	24.343	5.279	34.143*	28.711		-4.959	-4.455	-6.513
	3.21	20.19	26.82	3.42	16.72	23.49	3.61	19.80	28.37		12.02	12.03	12.37
GDP per cap (log)	12.127***	10.601***	7.243	12.159***	10.449***	7.716	13.329***	11.363***	7.603		17.493***	3.025***	3.398***
	2.22	1.93	4.99	1.90	1.78	4.63	2.07	1.84	5.68		3.02	3.06	3.27
Deposit bank asset (%GDP)	0.316***	0.309***	0.297***	0.298***	0.290***	0.279***	0.316***	0.307***	0.294***		-0.003	-0.008	0.002
	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05		0.03	0.03	0.03
Constant	66.829***	-563.725	-406.190	-217.325***	-602.574**	-469.339	-196.058***	-656.697*	-531.377		-44.009	-56.817	-24.690
	63.49	335.92	469.16	65.33	276.23	409.10	68.95	326.79	499.55		200.90	202.07	208.95
Country FE		Y	Y		Y	Y		Y	Y		Y	Y	Y
Year FE			Y			Y			Y		Y	Y	Y
Observations	926	926	926	910	910	910	884	884	884		926	910	884
R-squared		0.790	0.817		0.799	0.827		0.788	0.817		0.526	0.532	0.525
Number of ifs_code	35	35	35	35	35	35	34	34	34		35	35	34

Note: Dependent variable is the ratio of household debt to GDP for Col 1-9, and the share of household credit to total credit for the last three columns. Random effects regressions are conducted in specifications without fixed effects, otherwise OLS regressions with fixed effects. Robust SE below coefficients. P value: ***<0.01, **<0.05, *<0.1.

Table A4 Determinants of the ratio – EME/AE Split

VARIABLES	EME						AE																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
Central Gov Debt (%GDP)	-0.025 0.02	0.039 0.04	0.012 0.04				0.035 0.03	0.045 0.04	0.040 0.06																				
Gov spending (%GDP)				0.359 0.37	0.596 0.37	0.708* 0.40				2.099*** 0.42	2.030*** 0.49	2.237*** 0.55																	
Total social expenditures (%GDP)													0.573 0.49	0.642 0.50	0.740 0.70														
Health spending (%GDP)																1.768 2.16	1.298 2.21	0.630 2.55											
Family spending (%GDP)																		4.838*** 1.87	5.105** 1.93	5.021** 2.23									
Old age spending (%GDP)																					1.198* 0.71	1.331* 0.72	1.846 1.19						
Unemployment spending (%GDP)																										-1.362 2.51	-0.220 2.35	1.451 2.52	
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Country FE		Y	Y		Y	Y		Y	Y		Y	Y		Y	Y		Y	Y		Y	Y		Y	Y		Y	Y	Y	
Year FE			Y			Y			Y			Y			Y			Y			Y			Y				Y	
Observations	302	302	302	322	322	322	687	687	687	728	728	728	693	693	693	672	672	672	670	670	670	670	670	670	663	663	663		
R-squared		0.792	0.807		0.801	0.820		0.812	0.830		0.831	0.850		0.817	0.834		0.812	0.828		0.820	0.836		0.818	0.836		0.807	0.827		
Number of ifs_code	16	16	16	17	17	17	30	30	30	31	31	31	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	

Note: Dependent variable is the ratio of household debt to GDP. Random effects regressions are conducted in specifications without fixed effects, otherwise OLS regressions with fixed effects. Robust SE below coefficients. P value: ***<0.01, **<0.05, *<0.1.

Table A5. Controlling for other credit policies

VARIABLE: Δ HH credit to GDP	Fiscal		Capital gains		Mortgage Deductibility		Mortgage guarantees		Purchase subsidy		Transaction Tax		Mortgage & Saving Subsidies	
Change in Policy (t-1)	-0.052	-0.039	0.779	0.778	-0.904	-0.911	-0.059	0.040	-0.061	-0.089	-0.030	0.035	0.185	0.183
	0.18	0.20	0.63	0.66	1.03	1.01	0.47	0.43	0.33	0.35	0.26	0.25	0.25	0.24
Change in Policy (t-2)		-0.165		-0.315		-1.221		0.348		0.145		0.028		-0.128
		0.19		0.63		1.04		0.24		0.46		0.35		0.28
Change in Policy (t-3)		-0.211*		0.335		-1.205**		-0.446*		0.389		-0.138		-0.152
		0.11		0.60		0.53		0.23		0.33		0.33		0.29
Change in Other Credit Policy (t-1)	-0.051***	-0.051***	-0.058***	-0.057***	-0.045***	-0.042***	-0.054**	-0.051**	-0.054**	-0.051***	-0.054***	-0.053***	-0.057**	-0.056***
	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Change in Other Credit Policy (t-2)		-0.019		-0.025		-0.015		-0.032		-0.028		-0.028		-0.027
		0.02		0.03		0.02		0.03		0.03		0.03		0.03
Change in Other Credit Policy (t-3)		0.004		-0.013		0.003		-0.006		-0.014		-0.009		-0.008
		0.02		0.02		0.01		0.02		0.02		0.02		0.02
L.MM_IR	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L.rNGDP_yoy	18.283***	18.464***	18.413***	18.447***	17.799***	18.260***	18.311***	18.350***	18.378***	18.215***	18.300***	18.345***	18.368***	18.363***
	4.22	4.25	4.14	4.34	4.41	3.95	4.17	4.31	4.20	4.35	4.18	4.29	4.16	4.28
log_VIX	0.738**	0.630*	0.725**	0.654**	0.718**	0.631**	0.737**	0.676**	0.737**	0.663**	0.738**	0.663**	0.732**	0.655**
	0.32	0.31	0.32	0.31	0.31	0.31	0.32	0.32	0.32	0.31	0.32	0.32	0.32	0.31
Constant	-1.484	-1.197	-1.447	-1.238	-1.393	-1.111	-1.479	-1.298	-1.481	-1.237	-1.479	-1.258	-1.456	-1.238
	0.93	0.91	0.91	0.87	0.91	0.89	0.93	0.92	0.93	0.90	0.93	0.90	0.92	0.90
Observations	819	802	819	802	819	802	819	802	819	802	819	802	819	802
R-squared	0.073	0.079	0.075	0.079	0.079	0.105	0.073	0.078	0.073	0.078	0.073	0.076	0.073	0.077
Number of ifs_code	41	41	41	41	41	41	41	41	41	41	41	41	41	41

Note: Dependent variable is the change in the ratio of household debt to GDP. Models are run with country fixed effects. Robust standard errors, clustered at the country level. P value: ***<0.01, **<0.05, *<0.1.

Figure A1 – Korea – Total government spending

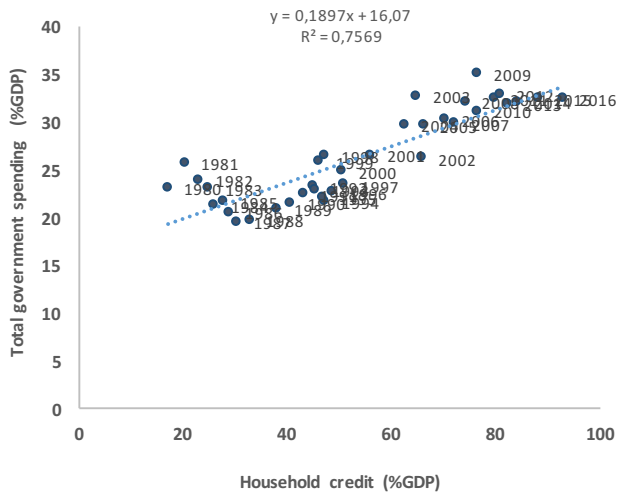


Figure A2 – Korea – Total Social Exp.

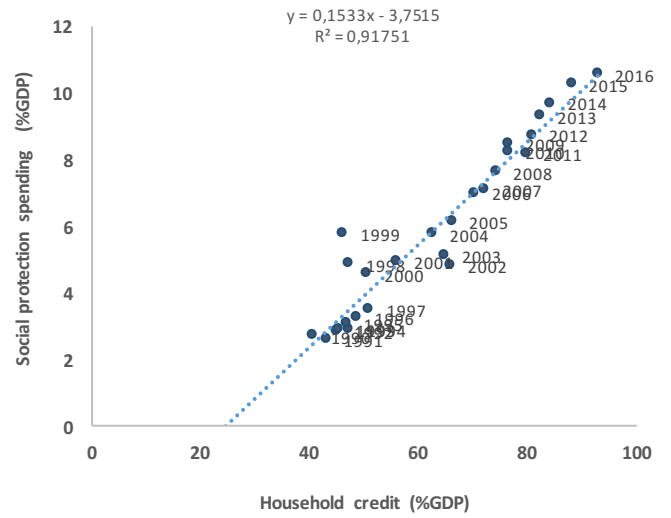


Figure A3 – France – Total government spending

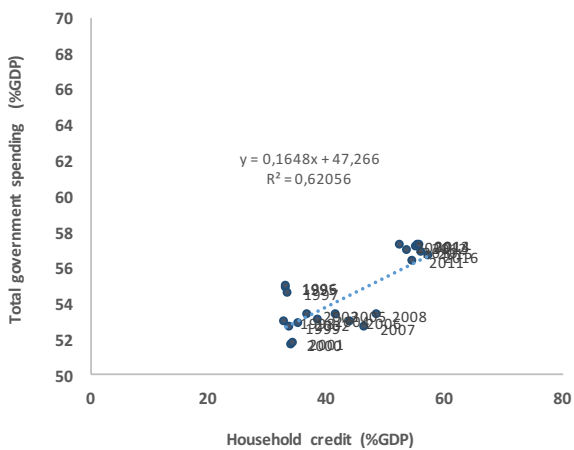


Figure A4 – France – Total Social Exp.

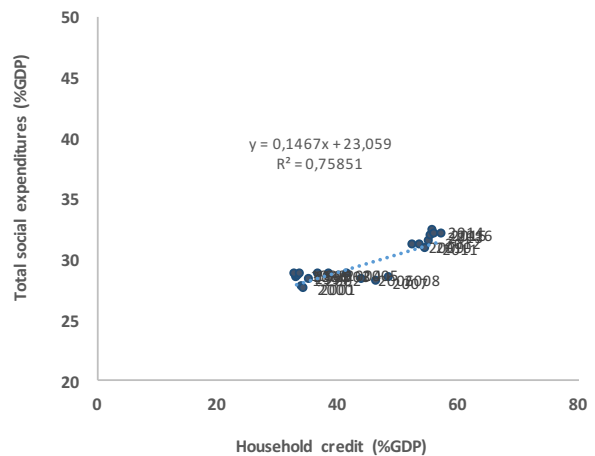


Figure A5 – Denmark – Total government spending

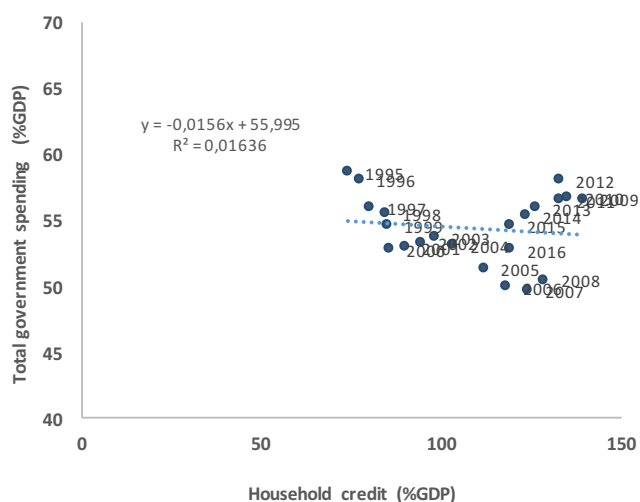
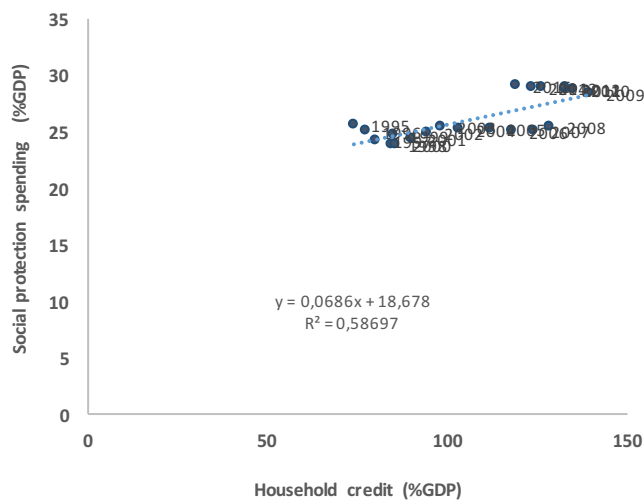


Figure A6 – Denmark – Total Social Exp.



APPENDIX B – A new “credit policy” dataset

As part of a broader project on credit policies, I compile a comprehensive credit policy dataset capturing the introduction, tightening, easing or removal of all policy actions which have an impact on domestic credit cycles.

The absence of a comprehensive mapping of the various policies which impact credit cycles and the absence of comprehensive data on adjustments of credit policies have been highlighted in several prominent work on credit expansion: Ahlquist and Ansell (2017) notes that “renewed comparative investigation of specific policy levers [driving credit] is an important channel for future research”. Kern and Amri (2020) similarly admit that “to show direct evidence of credit manipulation, we would need to conduct a test using the government’s credit policy as well as financial regulatory instruments.” Herrera et al (2019) concludes as well that “a related question for future work is how politically-motivated government can “manufacture” credit booms and how political incentives may influence the evolution of those credit booms in the first place.”

Our final dataset covers around 3800 instances of policy actions in 50 countries from 1980 to 2017 and codes 16 policies, covering 6 key policy areas (fiscal spending, taxation policy, monetary policy, financial regulation, capital account policy, and prudential policy). Among which 550 are actions of fiscal nature used in Section IV of the present

paper. Table B1 provides an overview of the different credit policies which we decide to include in the dataset, together with the direction of their expected impact on credit growth as well as studies that have sought to test the impact of these policies on credit and financial stability. The table also includes the usual authority in charge for each of these policy types. Governments may indeed have different degrees of control on different type of policies depending on the institutions which are in charge. Central banks are supposed to be in most advanced economies independent from the government. Some policies have also been delegated at the sub-national level, like property and property transfer tax.

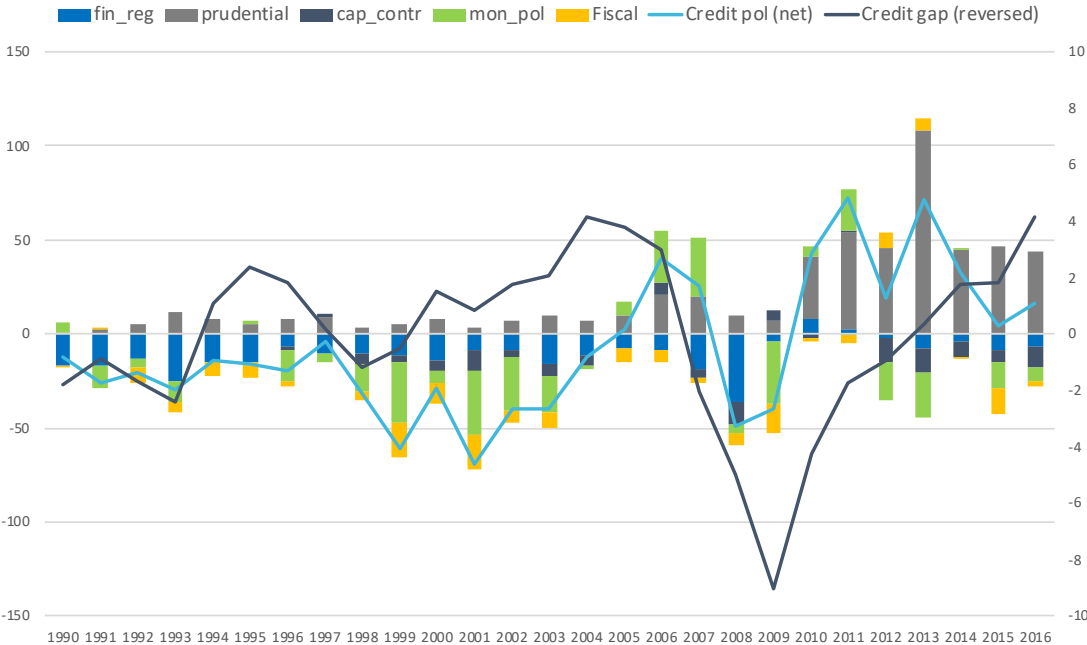
Table B1 - Selected policy tools for the credit policy dataset

	Policy type	Usual authority in control	Expected impact on credit growth	Selected empirical evidence on financial stability and credit growth
Fiscal policy	Mortgage subsidy	Government	(+) More subsidies	Agarwal et al (2012), IMF 2011, Anderson et al (2019)
	Purchase subsidy	Government	(+) More subsidies	
	Saving accounts subsidies	Government	(+) More subsidies	
	Mortgage guarantee	Government	(+) More guarantees	
Taxation rules	Mortgage deductibility	Government	(+) More deductibility	Catte et al (2004), Van den Noord (2005), Sommer and Sullivan (2018), Kuttner and Shim (2016), Arreger et al (2013), Bai et al (2014), Davidoff et al (2013)
	Capital gains	Government	(-) Lower taxation	
	Transaction tax	Government	(-) Lower taxation	
Financial regulation	Deposit Insurance	Government	(+) More insurance	Barth et al.(2013, 2012, 2008), Ji et al 2018, Karas et al 2019, Demirgüç-Kunt and Huizinga, 2004
	Directed credit	Government	(-) Less directed credit	
	Mortgage securitization	Government	(-) Deregulation	
	Interest controls	Government	(-) Deregulation	
	Activities restrictions	Government	(-) Deregulation	
	Bank sector entry	Government	(-) Deregulation	
Prudential policy	Capital surcharges	Prudential authority	(-) Lower requirements	Barth et al., 2013, 2012, 2008
	Min Capital Requirements	Government	(-) Lower requirements	
	Leverage ratio	Prudential authority	(-) Lower ratios	
	Credit regulations & Limits	overnment/ Prudential authority	(-) Lower limits	
	Lending Standards and Caps	Prudential authority	(-) Lower limits or easier standards	
	Risk Weights	Prudential authority	(-) Lower risk weights	
	Liquidity	Prudential authority	(-) Lower ratios	
	Provisioning	Prudential authority	(-) Lower requirements	
Monetary policy	Monetary_policy	Central Bank	(-) Lower rates	Schularick and Taylor (2012) Fendoglu 2017, Brei and Moreno 2019; Schularick and Shim (2017)
	Reserve_requirements	Central Bank	(-) Lower requirements	
Capital account	CFM on bond inflows	Government	(-) Deregulation	Reinhart and Rogoff, 2009; Gallagher, Griffith-Jones, and Ocampo, 2012; Davis, 2015; Igan and Tan 2017; Lane and Mc Quade 2014
	CFM on loan inflows	Government	(-) Deregulation	

Policy changes are coded in the form of a tightening/ easing of the policies overtime. This method, while not fully capturing the intensity of measures, allows to get closer to it in settings where very different policies are included, notably by capturing changes on

both the intensive and the extensive margin, e.g. not only the introduction of a real estate transfer tax but also changes in the tax rate over time. The advantages of this method have been recognized in the literature on macroprudential policy and capital controls notably (Alam et al., 2019; Cerutti et al., 2017a; Lepers & Mehigan, 2019; Pasricha et al., 2018). I code as +1 (tightening) each policy action which is expected to have a contractionary impact on credit and as -1 each policy action which is expected to have an expansionary impact on credit. I allow for the possibility to have several policy actions per year. Figure B1 plots the yearly count of credit policy actions across our key policy categories in net terms (nb of tightening actions – nb of easing actions). The global stance in the 1990’s until 2005 was a net easing one, with an important loosening of credit policies at the end of the 1990’s and in the beginning of the 2000’s. Credit policies were tightened between 2005 and 2007 before being unsurprisingly eased dramatically during the global financial crisis. The stance has moved since 2010 to tightening, notably driven by the significant expansion of the macroprudential toolkit. I plot for illustrative purposes a crude “global” credit to GDP gap, averaging the gap in all countries, reversing the values so that they match with the coding of credit policies (negative policy values being easing and negative credit value being positive credit gap).

Figure B1. Yearly adjustments in credit policies (net)



Note: number of policy actions is netted in each policy category (number of tightening actions – number of easing actions). “Credit pol” is the sum of all credit policies. Negative values indicate a net easing stance.

Table B2 presents the correlation across policies, i.e. which policies are tightened or eased simultaneously in a given year. There are some unsurprising positive correlations between policy adjustments within the same policy type, notably among our fiscal policy actions. There is on the other hand limited simultaneous adjustment cross-policy types.

Table B2. Cross-credit policy correlations

	Activities restrictions	Deposit insurance	Mortgage securitization	Credit reg.	Risk weights	Provisioning	Lending standards	Capital req.	CFM inf bond	CFM inf credit	Monetary pol.	Reserve req.	Mortgage deductibility	Mortgage guarantees	Mortgage subsidies	Purchase subsidy	Saving acc. subsidies	Transaction taxes
Activities restrictions	1.0000																	
Deposit insurance	0.0072	1.0000																
Mortgage securitization	0.0091	0.0443	1.0000															
Credit reg.	0.0044	0.0289	0.0344	1.0000														
Risk weights	0.0243	0.0219	0.0395	0.0016	1.0000													
Provisioning	0.0180	-0.0253	0.0190	0.0823***	0.1124***	1.0000												
Lending standards	-0.0088	0.0482*	0.0307	-0.0039	0.1293***	0.1258***	1.0000											
Capital req.	0.0419	0.0389	-0.0051	-0.0252	-0.0520*	0.0182	-0.0125	1.0000										
CFM inf bond	-0.0729***	0.0302	0.0292	-0.1763***	-0.0232	-0.0466*	-0.0605**	-0.0264	1.0000									
CFM inf credit	-0.0709***	0.0221	0.0251	-0.1771***	-0.0674**	-0.0260	-0.0429	-0.0360	0.8534***	1.0000								
Monetary pol.	0.0298	0.0035	0.0184	0.0322	-0.0344	-0.0238	0.0275	-0.0035	0.0690**	0.0794***	1.0000							
Reserve req.	-0.0050	0.0420	0.0387	-0.0412	0.0190	0.0077	0.0884***	-0.0203	-0.0058	0.0322	0.1249***	1.0000						
Mortgage deductibility	0.0170	0.0427	0.0067	0.0157	-0.0172	0.0166	-0.0056	0.0391	0.0058	0.0188	0.0030	0.0108	1.0000					
Mortgage guarantees	0.0037	0.0025	0.0421	-0.0137	0.0304	-0.0146	0.0448*	0.0202	-0.0238	-0.0097	0.0164	0.0416	0.0360	1.0000				
Mortgage subsidies	-0.0062	-0.0062	-0.0032	0.0164	0.0021	0.0103	0.0055	-0.0069	0.0235	0.0373	0.0440	-0.0035	0.0036	0.0707***	1.0000			
Purchase subsidy	-0.0017	-0.0305	0.0437	-0.0199	0.0190	0.0141	-0.0462*	0.0010	-0.0189	0.0097	-0.0245	-0.0063	0.0179	0.0145	0.0696***	1.0000		
Saving acc. subsidies	0.0286	0.0050	0.0107	-0.0094	0.0089	0.0066	-0.0254	0.0107	-0.0329	-0.0340	0.0105	-0.0068	0.0023	-0.0086	0.0140	0.1492***	1.0000	
Transaction taxes	-0.0038	0.0125	-0.0267	-0.0126	-0.0096	0.0182	0.0197	0.0719***	0.0133	0.0075	-0.0092	-0.0226	0.1001***	0.0541**	0.0263	-0.0698***	0.0217	1.0000

