

FISCAL POLICY AS CREDIT POLICY: HOMEOWNERSHIP SUBSIDIZATION & THE HOUSEHOLD DEBT BOOM

Published in: *Economy & Society*

SUPPLEMENTARY MATERIAL

Etienne Lepers

City, University of London

List of country or region specific studies on housing subsidies

Atterhog and Song (2009) for a survey of policies that may increase access to homeownership in selected OECD countries; Auguste et al (2011) for Argentina, Randolph et al (2013) for Australia, Schneider and Wagner (2015) for Austria, Germany and Switzerland, Hoebeeck et al (2017) for Belgium, Elsinga et al (2009) study on government mortgage guarantees, Marais and Cloete for South Africa (2017), Stephens et al (2015) for Eastern Europe, Walks and Clifford (2015) for Canada, Cheung for New Zealand (2011), Micco et al (2012) for Chile, Helbe and Yoshino (2016) for emerging Asia, Gilbert (2004) for Chile, South Africa and Colombia, Hegedus et al (2004) horizontal studies on housing subsidies, Jahoda and Godarova (2014) on Czech Republic, Garnier et al (2014) horizontal study on EU tax reforms, Bohle (2014) on Hungary and Estonia, the comprehensive horizontal study of Whitehead and Scanlon (Whitehead and Scanlon, 2002), André (2011) for the UK, Gobillon and le Blanc (2008) and Rolland (2011) for France, Boelhouwer (2007) for the Netherlands, Matsaganis et al study on mortgage interest tax relief (Matsaganis and Flevotomou, 2007), Figari et al

horizontal study on European housing policies (Figari et al., 2016), Campbell et al (2015) for India, Hoek Smit (2005) for Indonesia, Sekine et al (2008) study on securitization in Asia, Chang Chen, Butler, Calhoun, Kritayanavaj (2002) for Thailand, Chang and Chen for Taiwan (2011).

Table A1 Country sample and Classification

AE	EME
Australia*	Argentina
Austria*	Brazil*
Belgium	Bulgaria*
Canada*	Chile*
Chinese Taipei	China
Czech Republic*	Colombia*
Denmark*	Croatia*
Estonia*	Hungary
Finland*	India*
France*	Indonesia*
Germany*	Malaysia
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*	

* Countries used in regressions with data for all controls and dependent variables

Table A2 - Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Credit to households growth	1053	.199949	1.401231	-.3455599	40.75811
Credit to households (%GDP)	1102	44.63327	30.47493	.1058311	139.4265
Mortgage credit growth	951	.1737554	.5115334	-.8442275	13.42106
Mortgage credit (%GDP)	999	28.22289	25.71063	.0195852	145.9038
Share of household credit (% Total credit)	1101	.3424087	.1319761	.0035149	.6187278
Share of mortgage credit (% Total credit)	986	.6554191	.2113167	.0199675	.9943609
Money market interest rate	1044	7.189141	12.30436	-2	190.4333
Real house price growth	912	.0204902	.084101	-.3797903	.595821
Real GDP growth	1302	.0310804	.0382237	-.1481308	.2512201
VIX (log)	1377	2.937767	.2874284	2.51679	3.487149

Table A3 - Pairwise correlation table of baseline controls

	Real Household Credit to GDP	Real house price growth	Real GDP growth	Change in fiscal subsidy	Interest rates	VIX
Real Household Credit to GDP	1.0000					
Real house price growth	-0.0217	1.0000				
Real GDP growth	-0.1849*	0.4742*	1.0000			
Change in fiscal subsidy	0.0918*	0.0097	-0.0128	1.0000		
Interest rates	0.0264	-0.1148*	-0.0004	-0.0387	1.0000	
VIX	-0.0416	-0.1910*	-0.1873*	-0.0567	0.0211	1.0000

Note: * correlation significant at the 0.01%

Table A4 – Robustness checks on the baseline results

Dep var:	rHH Credit growth									Δ mortgage credit to GDP								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Real HH credit to GDP (t-1)	-0.056 0.04		-0.126** 0.06	-0.220*** 0.06	-0.113** 0.05	-0.186*** 0.06	-0.169*** 0.06	-0.170*** 0.06	-0.190*** 0.07	-0.032 0.02		-0.032* 0.02	-0.038** 0.02	-0.026 0.02	-0.030* 0.02	-0.041** 0.02	-0.041** 0.02	-0.032* 0.02
Change in Fiscal subsidies (t-1)	-0.007* 0.00	-0.005 0.00	-0.004 0.00	-0.007 0.00	-0.007 0.00	-0.005 0.00	-0.006 0.00	-0.006 0.00	-0.006 0.00	-0.002** 0.00	-0.002** 0.00	-0.002** 0.00	-0.003** 0.00	-0.003** 0.00	-0.003** 0.00	-0.003** 0.00	-0.003** 0.00	-0.003** 0.00
Change in Fiscal subsidies (t-2)	-0.003 0.00	-0.005 0.00	-0.009* 0.01	-0.005 0.00	-0.005 0.00	-0.005 0.00		-0.005 0.00	-0.005 0.00	-0.001 0.00	-0.002 0.00	-0.002* 0.00	-0.002** 0.00	-0.002** 0.00	-0.002* 0.00		-0.002* 0.00	-0.002 0.00
Change in Fiscal subsidies (t-3)	-0.007* 0.00	-0.010* 0.01	-0.013*** 0.00	-0.010* 0.01	-0.013** 0.01	-0.011* 0.01			-0.011* 0.01	-0.002** 0.00	-0.002* 0.00	-0.003*** 0.00	-0.003** 0.00	-0.003** 0.00	-0.002** 0.00			-0.002** 0.00
Change in Fiscal subsidies (t-4)									-0.008 0.01									-0.002 0.00
Interest rates (t-1)	-0.004** 0.00	0.002 0.00		-0.000 0.00	0.002 0.00	0.001 0.00	0.000 0.00	0.000 0.00	0.001 0.00	0.001 0.00	0.002** 0.00		0.002** 0.00	0.002** 0.00	0.002** 0.00	0.002** 0.00	0.002** 0.00	0.002** 0.00
Real house price growth (t-1)	0.511*** 0.14	0.489*** 0.14		0.472*** 0.14	0.467*** 0.13	0.494*** 0.14	0.438*** 0.14	0.436*** 0.14	0.484*** 0.14	0.053*** 0.01	0.051*** 0.02		0.049** 0.02	0.050*** 0.02	0.037* 0.02	0.040 0.02	0.039 0.02	0.050*** 0.02
Real GDP growth (t-1)	-0.051 0.12	0.264* 0.15		0.180 0.13	0.053 0.18		0.182 0.16	0.185 0.15	0.109 0.15	-0.112** 0.04	-0.042 0.03		-0.049 0.03	-0.058 0.04		-0.072** 0.04	-0.072** 0.03	-0.069* 0.04
VIX (log)	-0.001 0.01	-0.012 0.01	0.018** 0.01	-0.014* 0.01	-0.022*** 0.01	-0.008 0.01	-0.004 0.01	-0.006 0.01	-0.009 0.01	0.002 0.00	0.006* 0.00	0.004 0.00	0.006* 0.00	0.007 0.00	0.006 0.00	0.008* 0.00	0.007* 0.00	0.006 0.00
Real GDP per cap (log) (t-1)	-0.231** 0.09									0.016 0.01								
Financial crisis dummy	-0.003 0.02									0.006 0.00								
Inflation (t-1)	0.014 0.23									0.143* 0.07								
Δ Central gov debt (t-1)	-0.003* 0.00									-0.001 0.00								
Interest rates			0.002 0.00									0.001* 0.00						
Real house price growth			0.432*** 0.09									0.093*** 0.02						
Real GDP growth			0.721*** 0.23									-0.275*** 0.05						
				0.000 0.00									-0.000 0.00					
					0.000 0.00									-0.000* 0.00				
Constant	2.447** 0.91	0.067*** 0.02	0.044 0.05	0.222*** 0.06	0.163*** 0.04	0.178*** 0.05	0.156*** 0.05	0.160*** 0.05	0.178*** 0.05	-0.156 0.11	-0.020** 0.01	0.013 0.01	0.006 0.01	-0.010 0.01	-0.002 0.01	0.003 0.02	0.005 0.02	0.002 0.01
Country fixed effects	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	602	640	657	555	458	640	655	655	625	529	594	584	486	422	567	576	576	558
R-squared	0.381	0.272	0.347	0.340	0.368	0.300	0.283	0.284	0.307	0.107	0.080	0.157	0.117	0.121	0.094	0.089	0.092	0.103
Number of countries	39	40	40	40	34	40	40	40	40	37	39	38	38	33	38	38	38	38

References

- André, C.** (2011) *Improving the Functioning of the Housing Market in the United Kingdom*.
- Atterhöf, M. and Song, H. S.** (2009) ‘A Survey of Policies That May Increase Access to Home Ownership for Low-Income Households’, *Housing, Theory and Society*, 248–270.
- Auguste, S., Bebczuk, R. and Moya, R.** (2011) ‘The Demand for Mortgages under Macro Volatility: The Argentine Case’.
- Boelhouwer, P.** (2007) ‘House Prices and Income Tax in the Netherlands: An International Perspective’, *Housing Studies*.
- Bohle, D.** (2014) ‘Post-Socialist Housing Meets Transnational Finance: Foreign Banks, Mortgage Lending, and the Privatization of Welfare in Hungary and Estonia’, *Review of International Political Economy*, **21**, 913–948.
- Campbell, J. Y., Ramadorai, T. and Ranish, B.** (2015) ‘The Impact of Regulation on Mortgage Risk: Evidence from India’, *American Economic Journal: Economic Policy*, **7**, 71–102.
- Chang, C.-O. and Chen, M.-C.** (2011) *Taiwan: Housing Bubbles and Affordability*.
- Cheung, C.** (2011) ‘Policies to Rebalance Housing Markets in New Zealand’, *OECD Economics Department Working Papers*.
- Elsinga, M., Priemus, H. and Cao, L.** (2009) ‘The Government Mortgage Guarantee as an Instrument in Housing Policy: Self-Supporting Instrument or Subsidy?’, *Housing Studies*, **24**, 67–80.
- Figari, F., Hollan, K., Matsaganis, M. and Zolyomi, E.** (2016) *Recent Changes in Housing Policies and Their Distributional Impact across Europe*.
- Garnier, G., György, E., Heineken, K., Mathé, M., Puglisi, L., Ruà, S., Skonieczna, A. and van Mierlo, A.** (2014) *A Wind of Change? Reforms of Tax Systems since the Launch of Europe 2020*, Boeck Universiteit, LIII.
- Gilbert, A.** (2004) *Helping the Poor through Housing Subsidies: Lessons from Chile, Colombia and South Africa*, 28.
- Gobillon, L. and le Blanc, D.** (2008) ‘Economic Effects of Upfront Subsidies to Ownership: The Case of the Prêt à Taux Zéro in France’, *Journal of Housing Economics*, **17**, 1–33.
- Hegedüs, J. and Teller, N.** (2004) *Housing Subsidies Supporting Low-Income Households (A Review of International Experiences)*.
- Helble, M. and Yoshino, N.** (2016) *The Housing Challenge in Emerging Asia : Options and Solutions*.
- Hoebeeck, A. and Inghelbrecht, K.** (2017) *The Impact of the Mortgage Interest and Capital Deduction Scheme on the Belgian Mortgage Market*.
- Hoek-Smit, M. C.** (2005) *The Housing Finance Sector in Indonesia **.
- Jahoda, R. and Godarová, J.** (2014) ‘Distribution Impact of the Mortgage Interest Deduction in the Czech Republic’, *Review of European Studies*, **6**.
- Kritayanavaj, B.** (2002) ‘Financing Affordable Homeownership in Thailand’, *Housing Finance International*.
- Marais, L. and Cloete, J.** (2017) ‘Housing Policy and Private Sector Housing Finance: Policy Intent and Market Directions in South Africa’, *Habitat International*, 22–30.
- Matsaganis, M. and Flevotomou, M.** (2007) *The Impact Of Mortgage Interest Tax Relief In The Netherlands, Sweden, Finland, Italy And Greece*.
- Micco, A., Parrado, E., Piedrabuena, B. and Rebucci, A.** (2012) *Housing Finance in Chile : Housing Finance in Chile :*
- Randolph, B., Pinnegar, S. and Tice, A.** (2013) ‘The First Home Owner Boost in Australia: A Case Study of Outcomes in the Sydney Housing Market’, *Urban Policy and Research*, **31**, 55–73.
- Rolland, B.** (2011) *Les Politiques Du Logement En France*.

- Schneider, M. and Wagner, K.** (2015) *Housing Markets in Austria, Germany and Switzerland*.
- Sekine, E., Kodachi, K. and Kamiyama, T.** (2008) 'The Development and Future of Securitization in Asia', *Nomura Institute of Capital Markets Research*, 1–47.
- Stephens, M., Lux, M. and Sunega, P.** (2015) 'Post-Socialist Housing Systems in Europe: Housing Welfare Regimes by Default?', *Housing Studies*, 30, 1210–1234.
- Walks, A. and Clifford, B.** (2015) 'The Political Economy of Mortgage Securitization and the Neoliberalization of Housing Policy in Canada', *Environment and Planning A*, 47, 1624–1642.
- Whitehead, C. and Scanlon, K.** (2002) *Fiscal Instruments for the Provision of Affordable Housing Conference Paper*.