BANK OF ENGLAND

Appendix to Staff Working Paper No. 836
The role of households' borrowing constraints in the transmission of monetary policy

Fergus Cumming and Paul Hubert

December 2019

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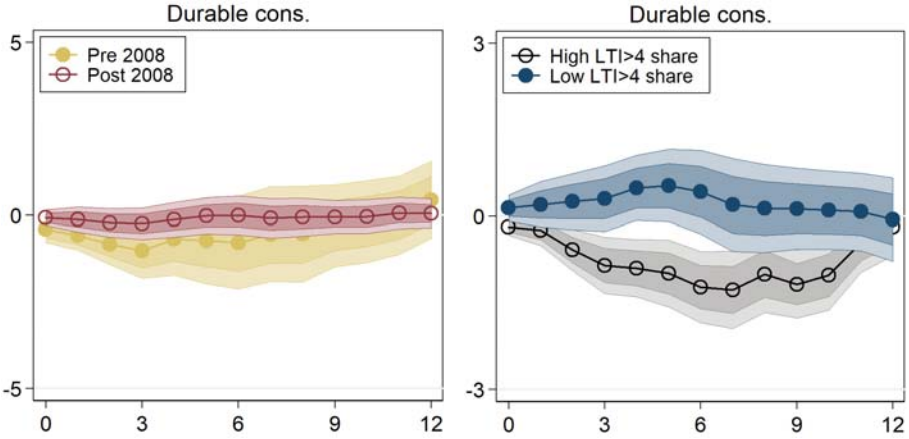
ISSN 1749-9135 (on-line)

Appendix
For online publication

Figure 11: The impact of the Great Recession

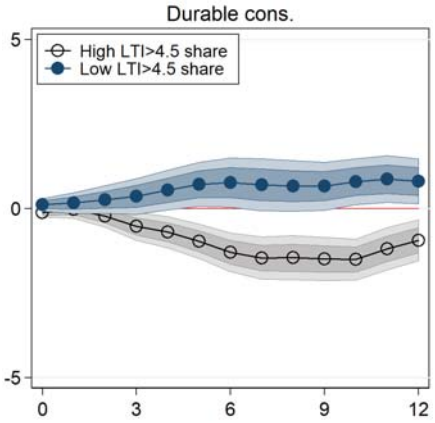
(a) Pre/Post Great Recession (b) Excluding the Great Recession



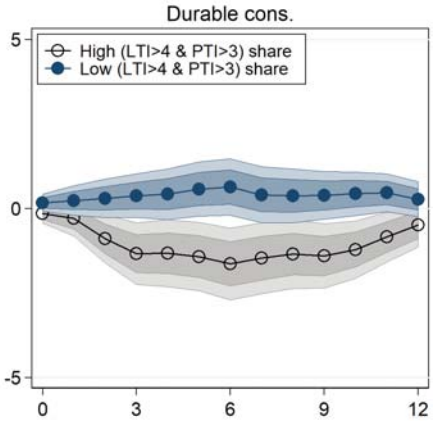
Note: This figure shows the estimates of the effect of ϵ_t^i over 12 months for different macroeconomic variables, based on the OLS estimation of equation 4 over the sample April 2005 - December 2017. In the left panel, the state variable in equation 4 is a dummy that takes the value 1 after September 2008. The yellow line shows the effect of a contractionary monetary policy before 2008. The red line shows the effect of a contractionary monetary policy after 2008. In the right panel, the sample is restricted to excluded the 12 months following the bankruptcy of Lehman Brothers. The black empty circle corresponds to the effect of a contractionary monetary policy with a high share of LTI above 4 whereas the blue full circle corresponds to the effect of a contractionary monetary policy with a low share of LTI above 4. The shaded areas represent 68 and 90% confidence intervals.

Figure 12: Different LTI thresholds

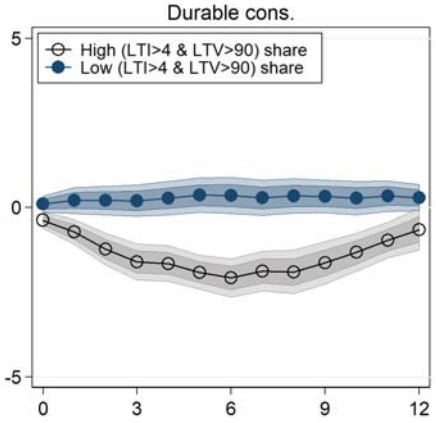
(a) LTI>4.5



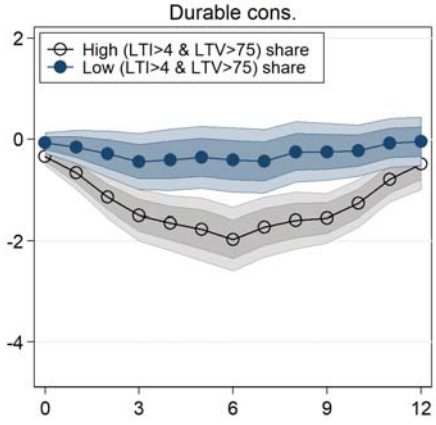
(b) LTI>4 & PTI>3



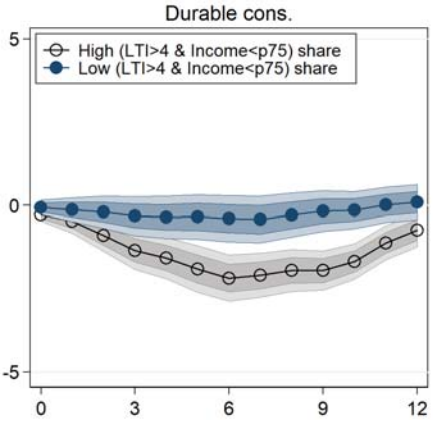
(c) LTI>4 & LTV>90



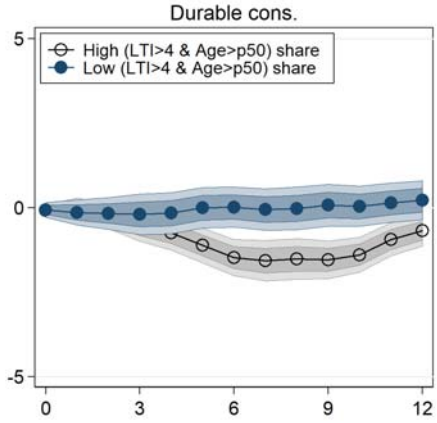
(d) LTI>4 & LTV>75



(e) LTI>4 & Income<p75



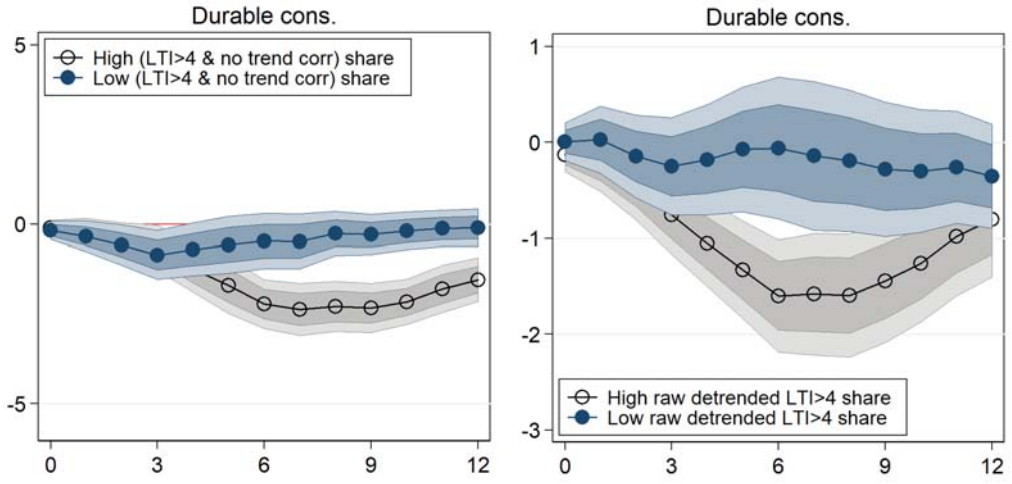
(f) LTI>4 & Age>p50



Note: Note: This figure shows the estimates of the effect of ϵ_t^i over 12 months for consumption, based on the OLS estimation of Equation 4 over the sample April 2005 - December 2017. The state-variable is computed using different conditions on households' characteristics. The black empty circles correspond to the effect of a contractionary monetary policy with a high share of households above a conditional LTI of 4. The blue full circles correspond to the effect of a contractionary monetary policy when this share is low. The shaded areas represent 68 and 90% confidence intervals.

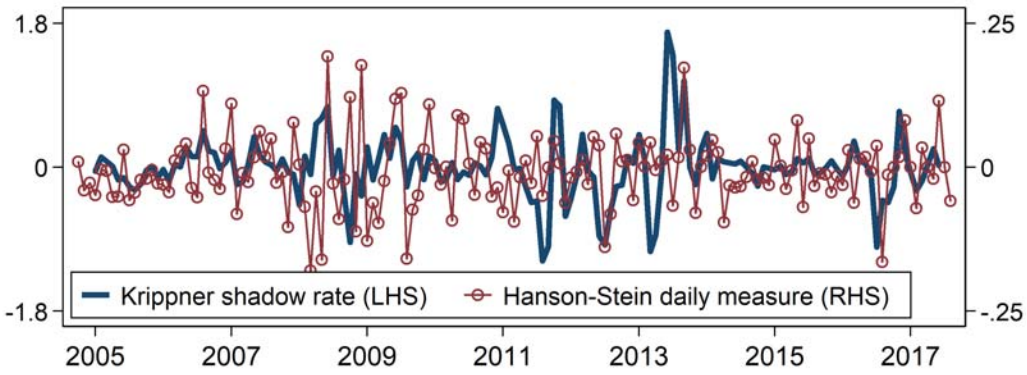
Figure 13: Different state variables

(a) Raw CF-detrended share (b) No LTI & house prices trend correction



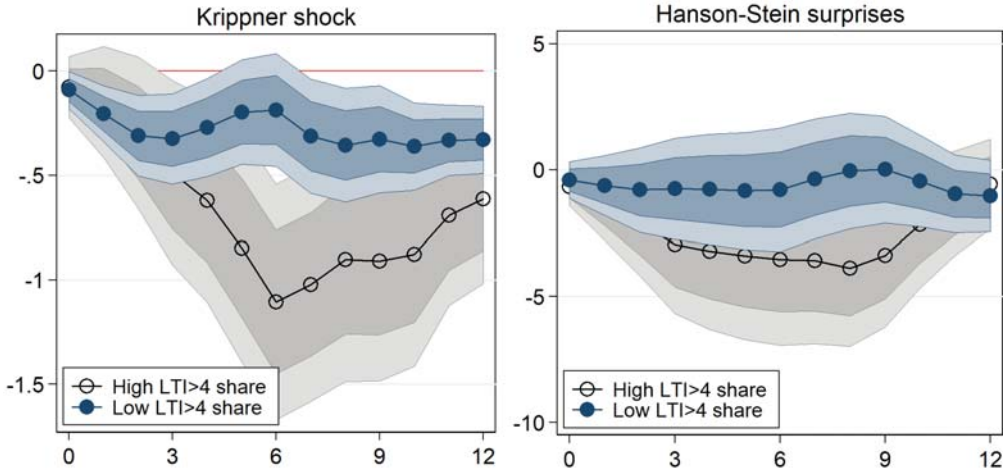
Note: Note: This figure shows the estimates of the effect of ϵ_t^i over 12 months for consumption, based on the OLS estimation of Equation 4 over the sample April 2005 - December 2017. The state-variable is computed using different assumptions. The black empty circles correspond to the effect of a contractionary monetary policy with a high share of households above a conditional LTI of 4. The blue full circles correspond to the effect of a contractionary monetary policy when this share is low. The shaded areas represent 68 and 90% confidence intervals.

Figure 14: Alternative monetary policy shocks



Note: This figure shows monetary shocks estimated based on Equation 3 with Krippner (2013)'s shadow rate as the dependent variable (solid blue line) and Hanson and Stein (2015) high-frequency monetary surprises (circled red line) as alternative instruments for the causal inference of monetary policy effects.

Figure 15: Monetary transmission with alternative shock identification



Note: Note: This figure shows the estimates of the effect of ϵ_t^i over 12 months on durable consumption, based on the OLS estimation of Equation 4 over the sample April 2005 - December 2017. The instruments for monetary policy exogenous innovations are monetary shocks using Krippner (2013)'s shadow rate (left panel) and Hanson and Stein (2015)'s monetary surprises (right panel). The black empty circles correspond to the effect of a contractionary monetary policy with a high share of households above a conditional LTI of 4. The blue full circles correspond to the effect of a contractionary monetary policy when this share is low. The shaded areas represent 68 and 90% confidence intervals.