Non-standard monetary policy, asset prices and macroprudential policy in a monetary union

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Unconventional monetary policy:
Effectiveness and risks
Banca d'Italia
Rome, October 21, 2016
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Motivation

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- "Should any threat to financial stability materialise, specific macro-prudential measures should be implemented by national authorities to deal with local risks, without the need to alter the expansionary stance of monetary policy."

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- "We are closely monitoring risks to financial stability, but we do not see them materialising for the moment. Should this be the case, macroprudential policy not monetary policy would be the tool of choice to address these risks."

  Mario Draghi, Brussels, 23 September 2015.

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- Risks for region-specific financial stability.

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  - the APP interaction with region-specific macroprudential policy.

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  - a high loan-to-value (LTV) ratio,
  - irrational, overly optimistic expectations on real estate prices.
- Region-specific macroprudential measures can stabilize private sector borrowing, with limited negative effects on economic activity.

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  - region-specific real estate markets and collateral constraints (Iacoviello 2005) $\Longrightarrow$ allow for region-specific amplification effects of APP,
  - irrational, overly optimistic expectations about real estate prices (Dupor 2005) $\Longrightarrow$ excessive increase in households borrowing, role for macroprudential intervention.

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  - unrestricted,
  - restricted,
  - borrowers.

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- Rationale for restricted households: APP lowers long-term yields and stimulates restricted households' consumption and investment (as in Chen et al. 2012).

Borrowers

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- Indebted households ("**Borrowers**") are subject to the borrowing constraint: they can borrow an amount equal to a fraction of the expected value of their real estate (collateral):

$$-B_{D,t}^{S} R_{t}^{S} \leq m_{t} E_{t} \left(Q_{t+1}^{h} h_{D,t} \right),$$

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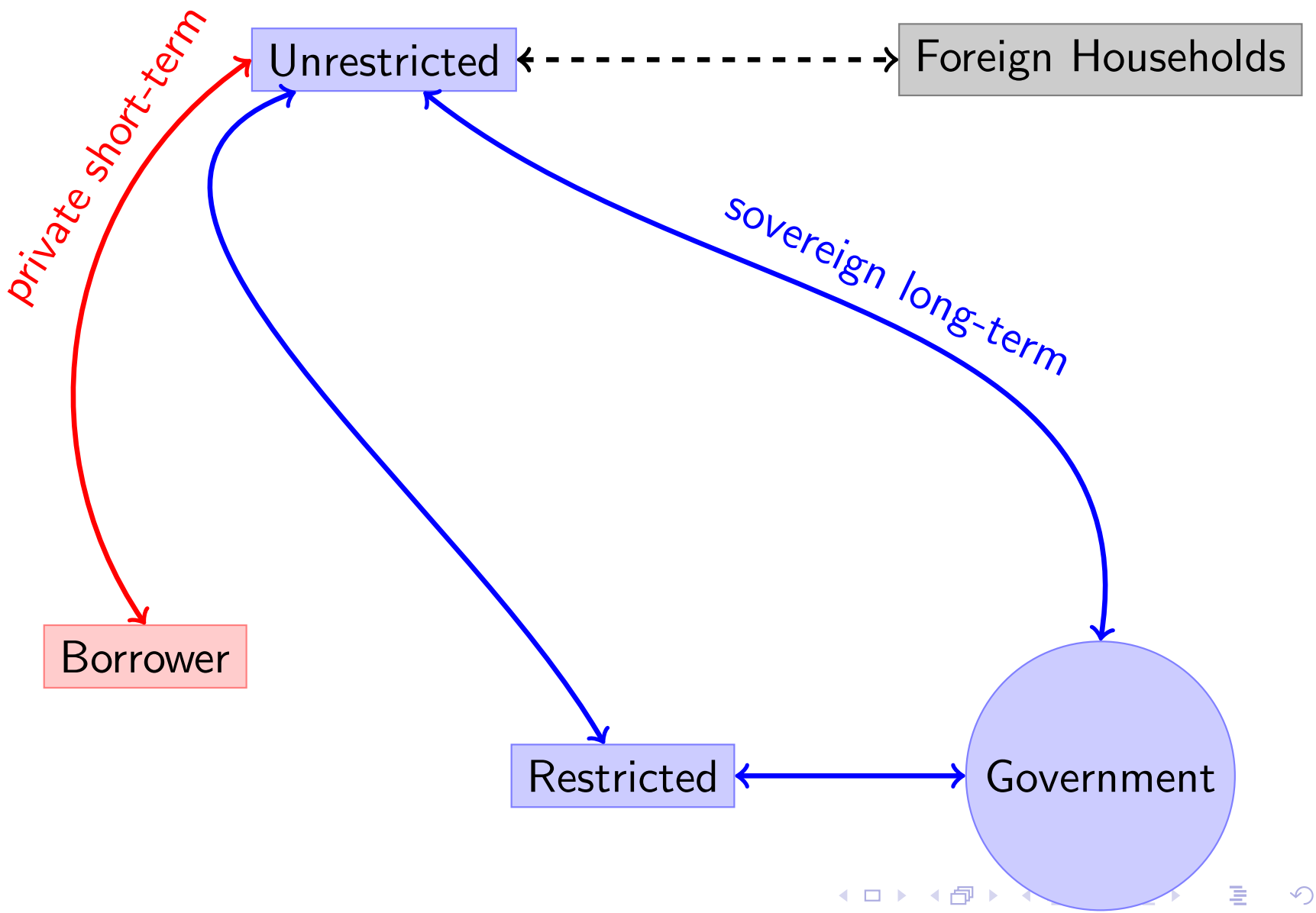
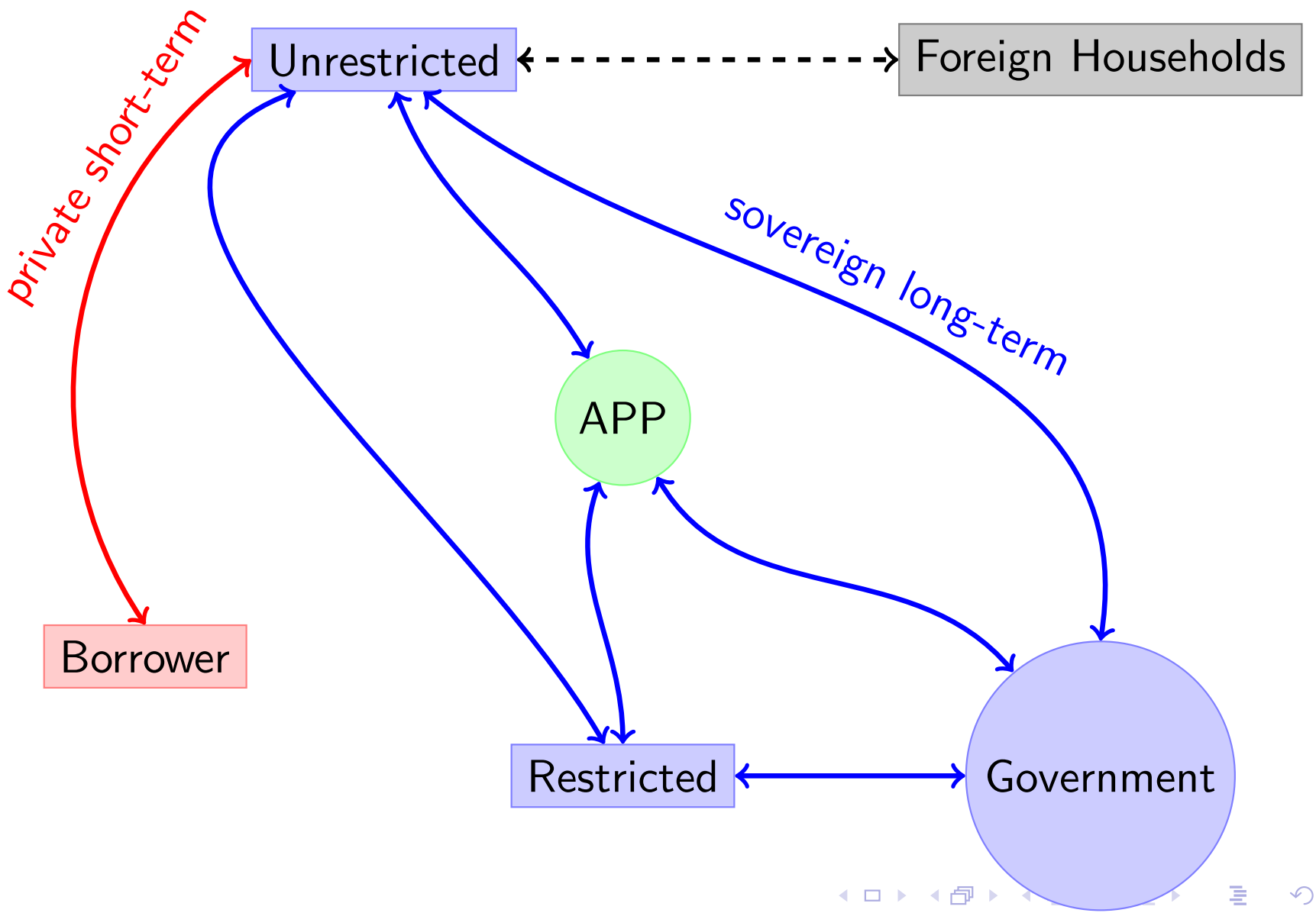
- The housing demand implied by the first-order condition is (housing is a real asset)

$$\lambda_{D,t} Q_{t}^{H} = \chi \frac{1}{h_{D,t}} + \beta_{D} E_{t} \left(\lambda_{D,t+1} Q_{t+1}^{H} \right) + \gamma_{D,t} m_{t} E_{t} \left(Q_{t+1}^{H} \right).$$

WRAPPING UP: MARKET CLEARING



WRAPPING UP: APP



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$$\begin{aligned} \lambda_{D,t} Q_{t}^{H} &= \chi \frac{1}{h_{D,t}} + \beta_{D} E_{t} \left(\lambda_{D,t+1} \theta_{t+1} Q_{t+1}^{H} \right) + \\ & \gamma_{D,t} m_{t} E_{t} \left(\theta_{t+1} Q_{t+1}^{H} \right). \end{aligned}$$

Home macroprudential rule

In one scenario, it is assumed that a Home-specific macroprudential rule holds,

$$m_t = \rho_m m_{t-1} + \rho_{B_D} \left(\frac{B^S_{D,t}}{GDP_t} - \frac{B^S_{D,t-1}}{GDP_{t-1}} \right),$$

where $0 \leq \rho_m \leq 1$ and $\rho_{B_D} > 0$. The rule is in line with existing literature (e.g., Angelini et al., 2014, Brzoza-Brzezina et al., 2015)

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- Remaining parameters set in line with literature and with Eurosystem evidence on long-term interest rate response to APP.

Simulations

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- Scenario 1: APP (purchases of EA sovereign bonds, euro 180 billion per quarter, for 7 quarters, bonds are held to maturity (8 years); 2-year FG; Home and REA LTV ratios set at their steady-state values (90% and 50%, respectively).

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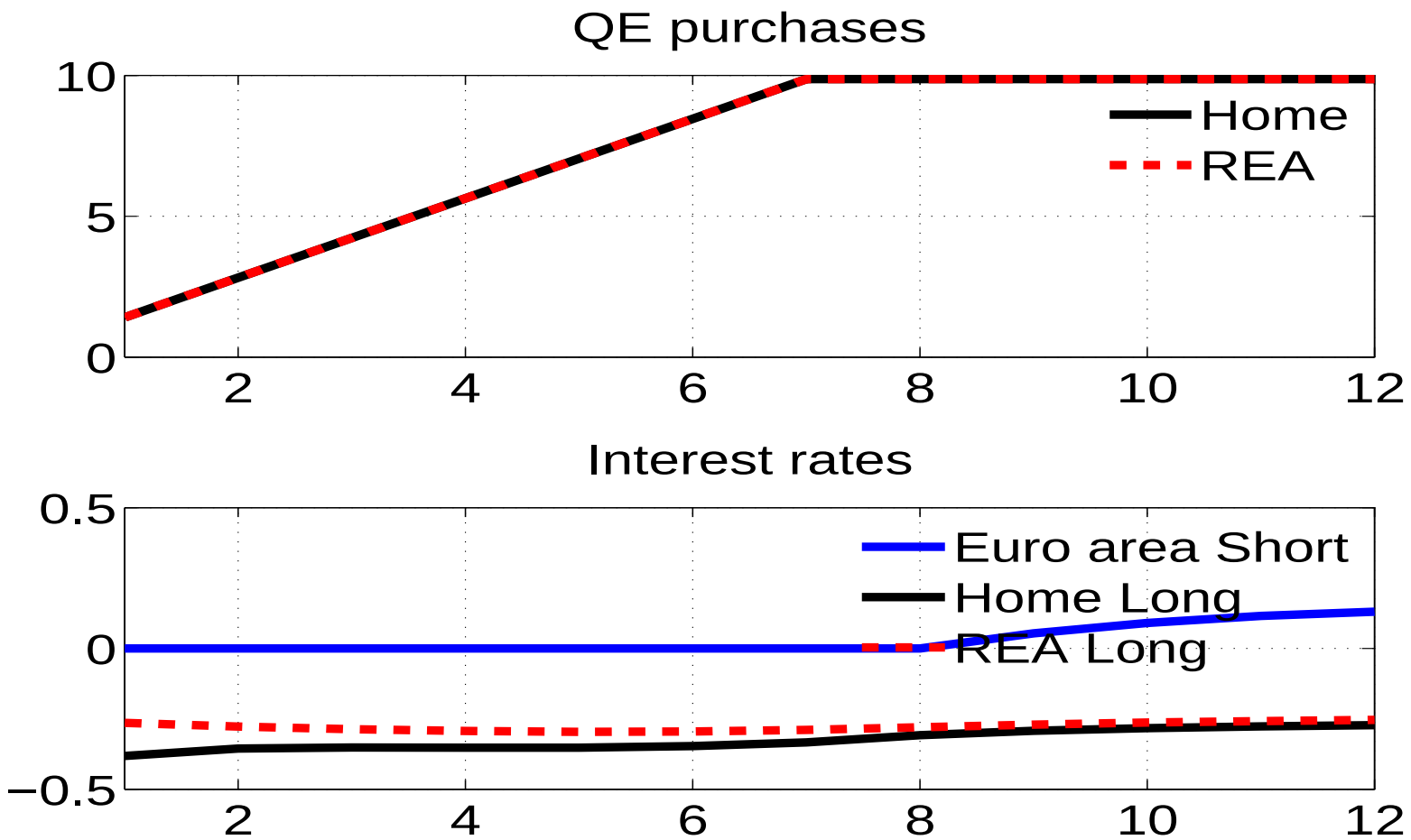
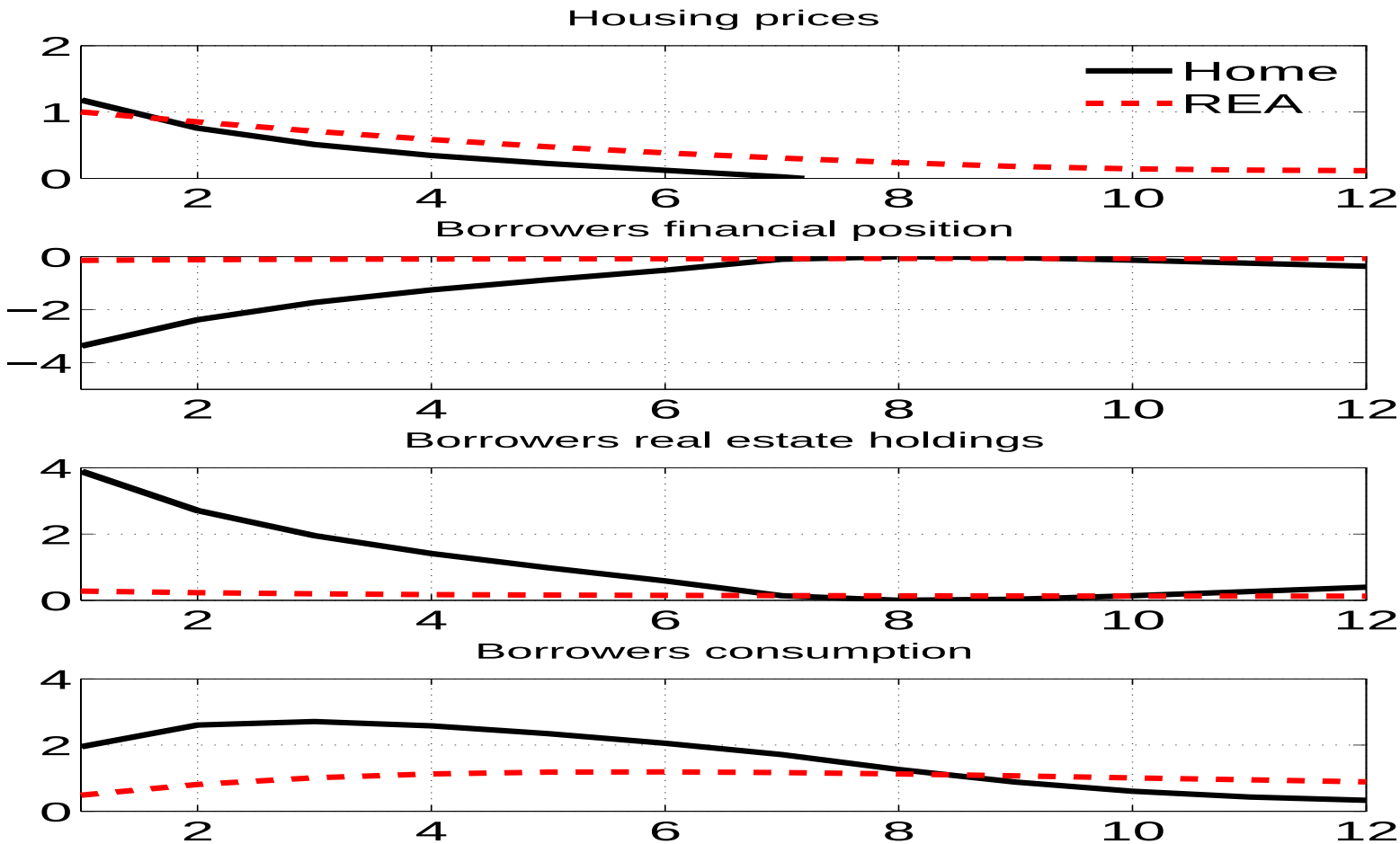
- the implied increase in the real estate value favors further borrowing and consumption by borrowers, because of the borrowing constraint (collateral effect);
- the collateral effect is larger in the Home region than in the REA, because of the larger Home LTV ratio.

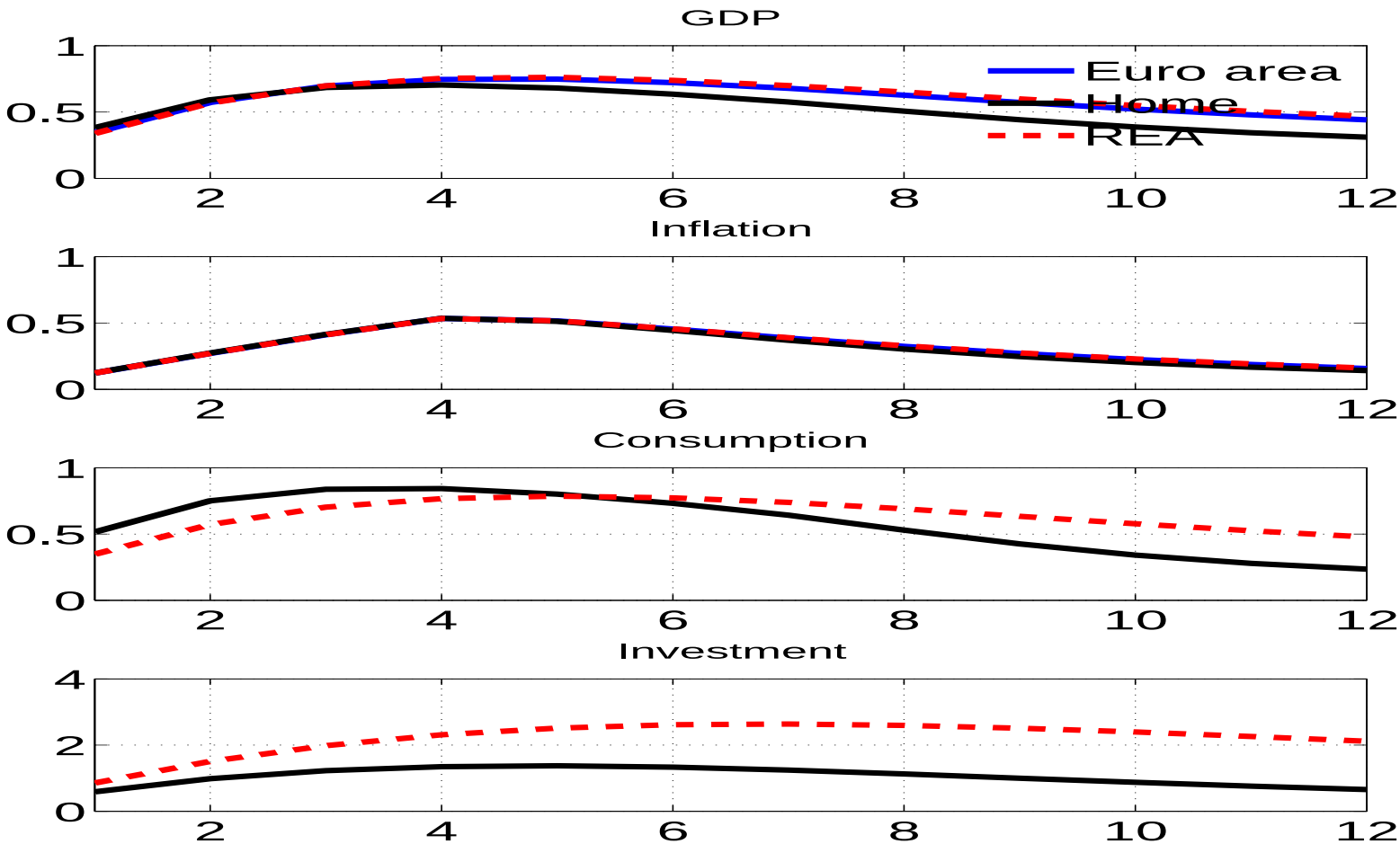
APP. Effects on interest rates



APP. Effects on Home real estate and borrowing



APP. Macroeconomic effects



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- Such value is line with evidence provided by Hartmann (2015): average increase in the overvalued component of housing prices of around 5% per year over the 2002-2007 run-up in the EA.

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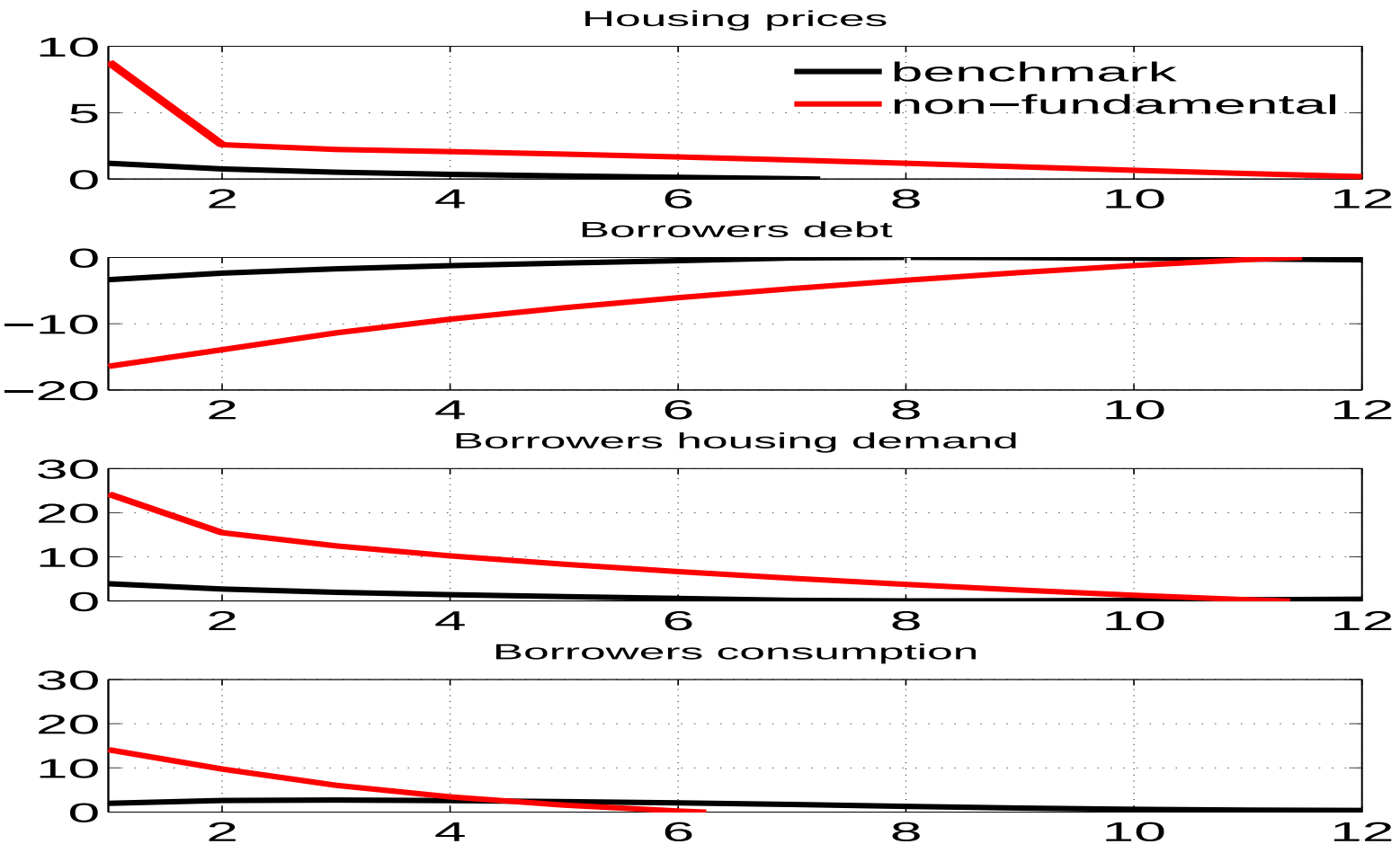
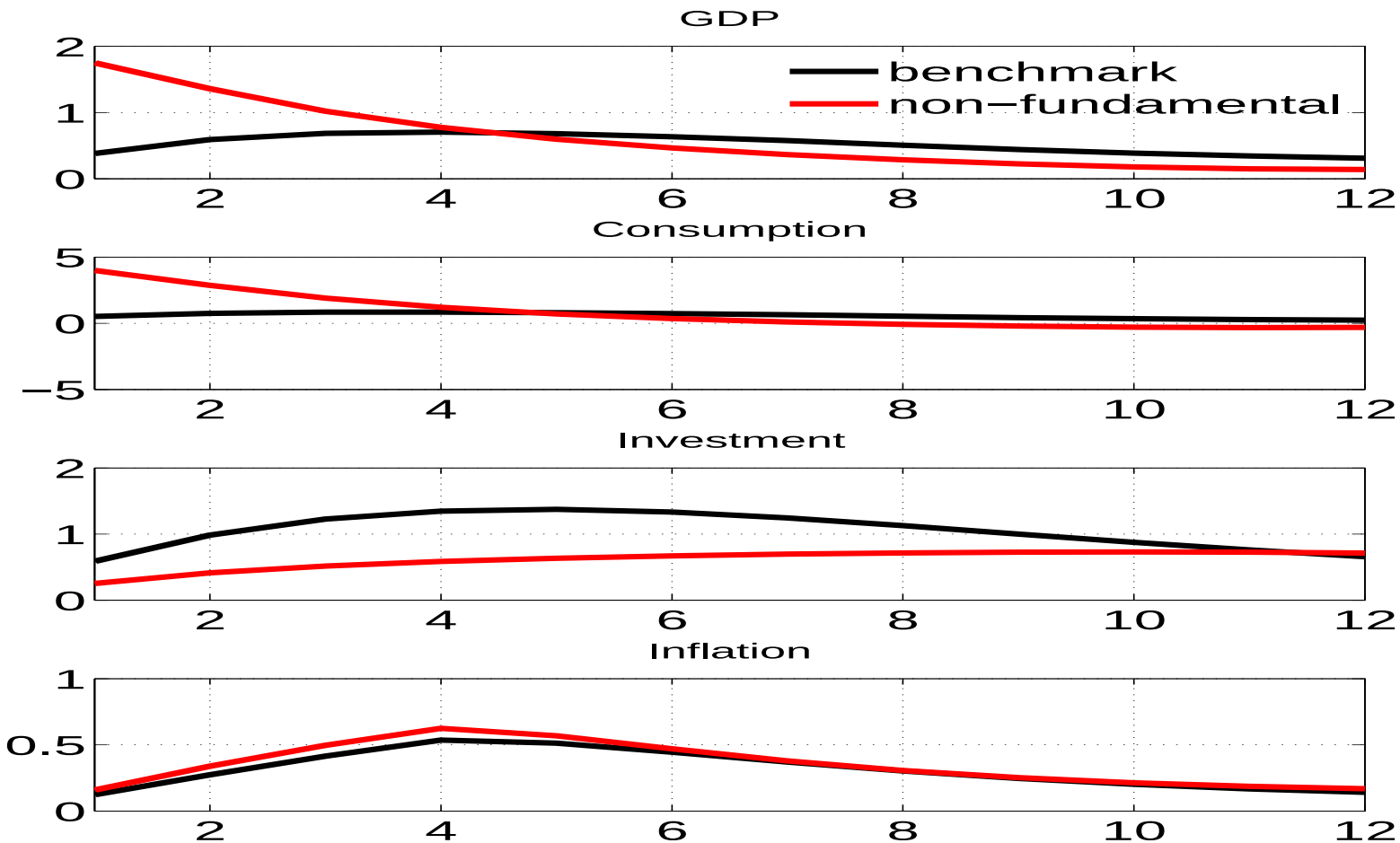
- larger collateral effect than in scenario 1.

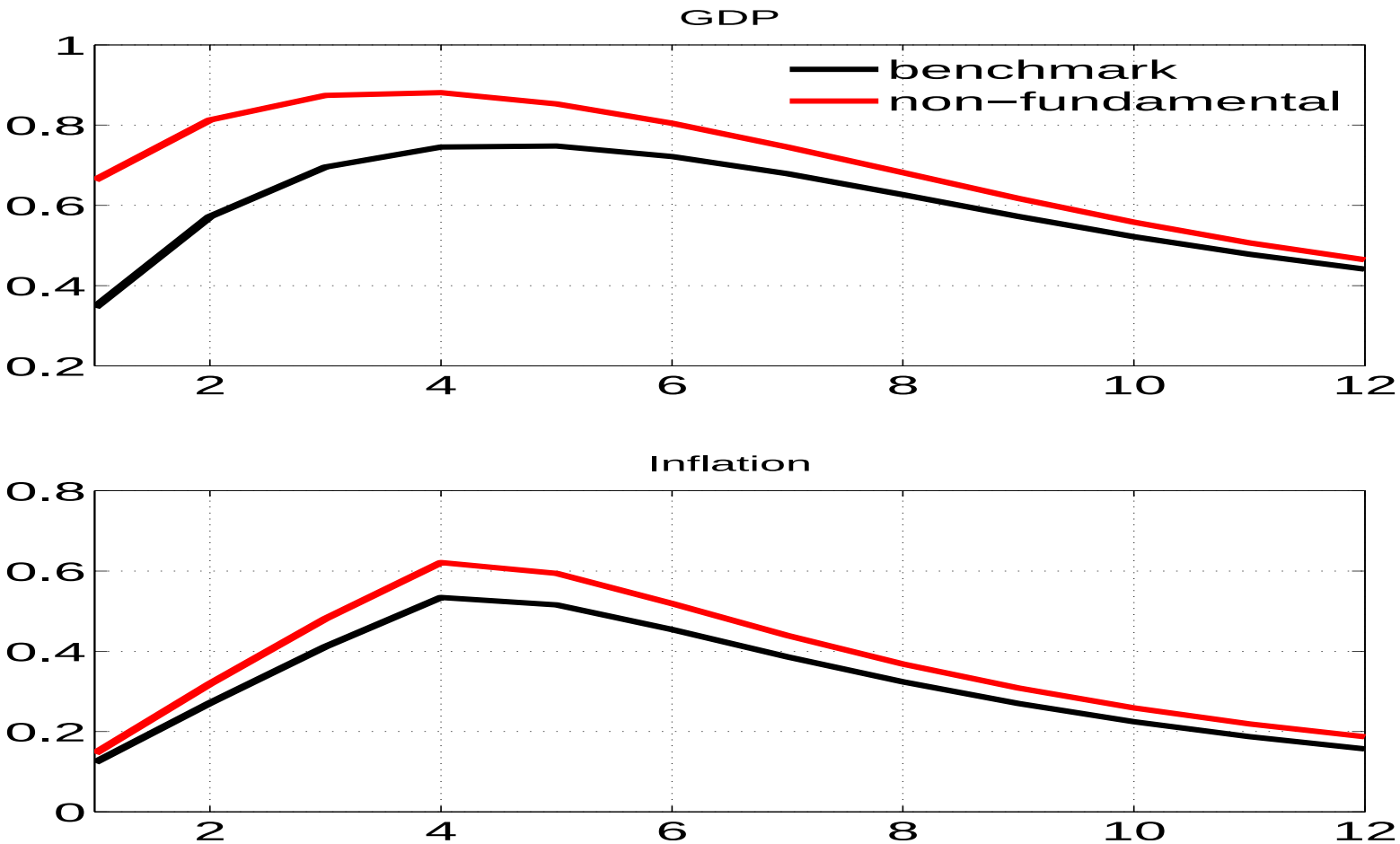
APP and Home expectation shock. Effects on Home real estate and borrowing



APP and Home expectation shock. Effects on Home macroeconomic variables



APP and Home expectation shock. Effects on EA macroeconomic variables



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- We calibrate the parameters in the rule to obtain a situation in which, under the combination of APP and non-fundamental shock, an increase in household debt is in line with the one observed in the benchmark scenario.

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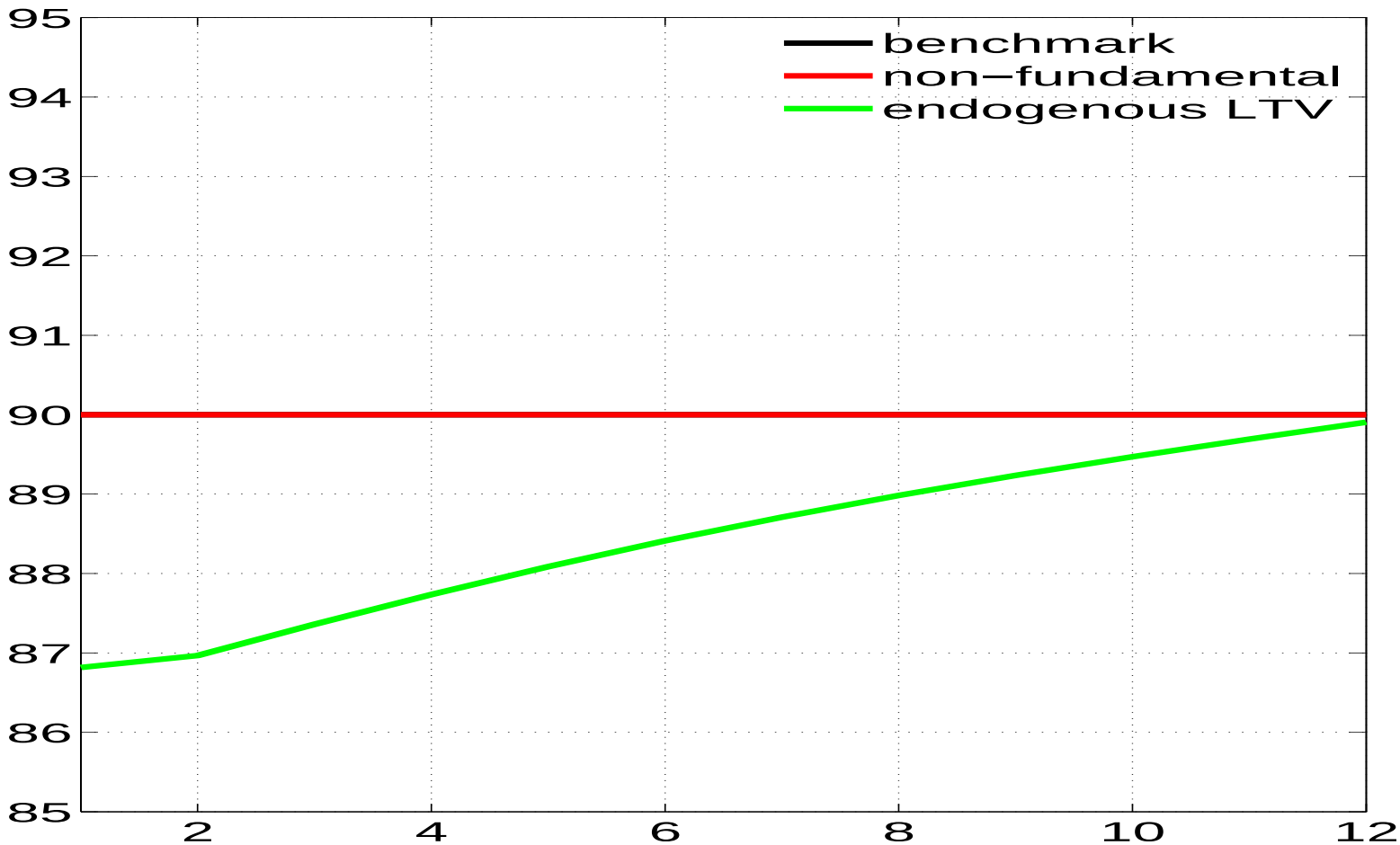
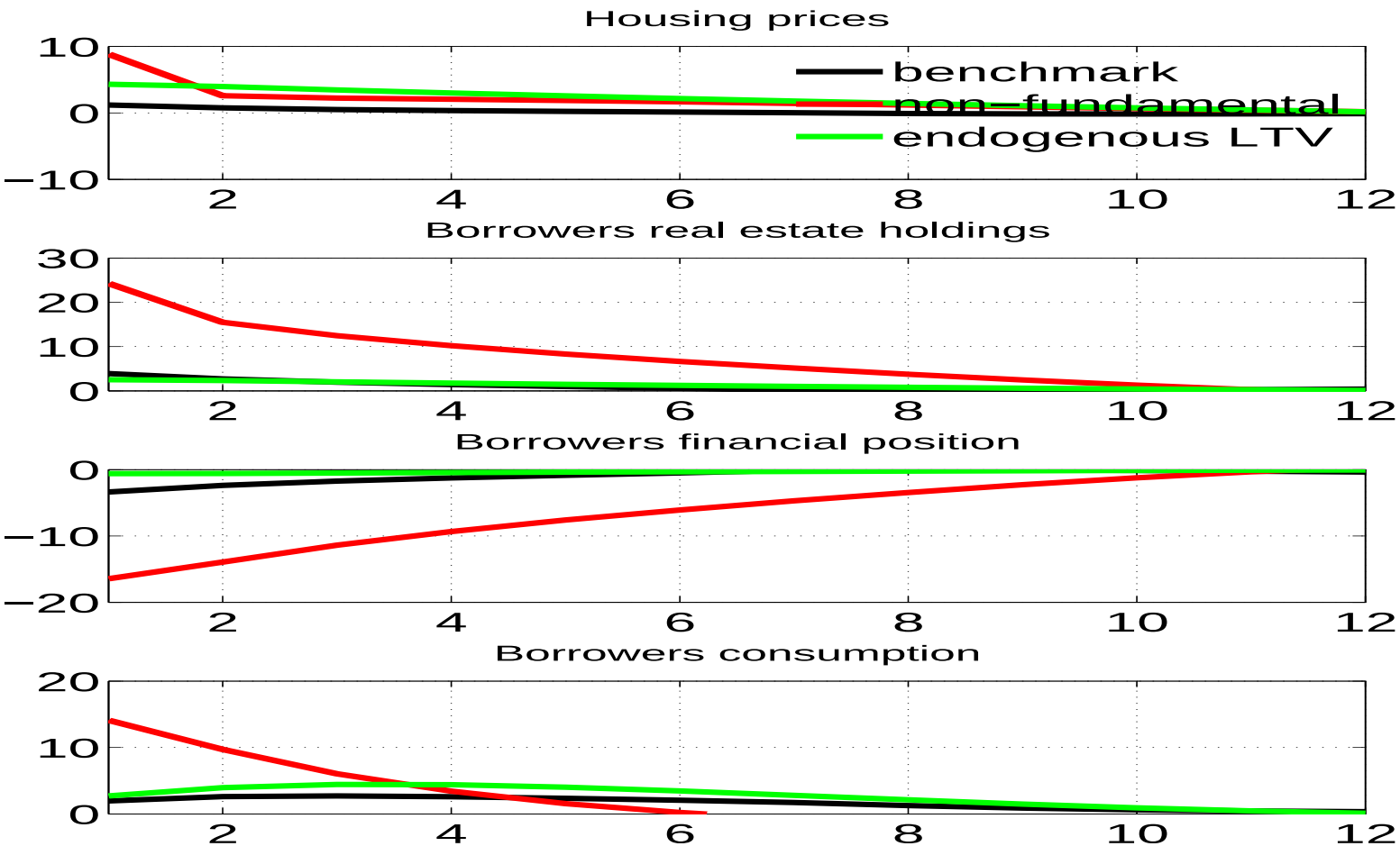
  - larger increase in investment compensates for the lower increase in consumption.

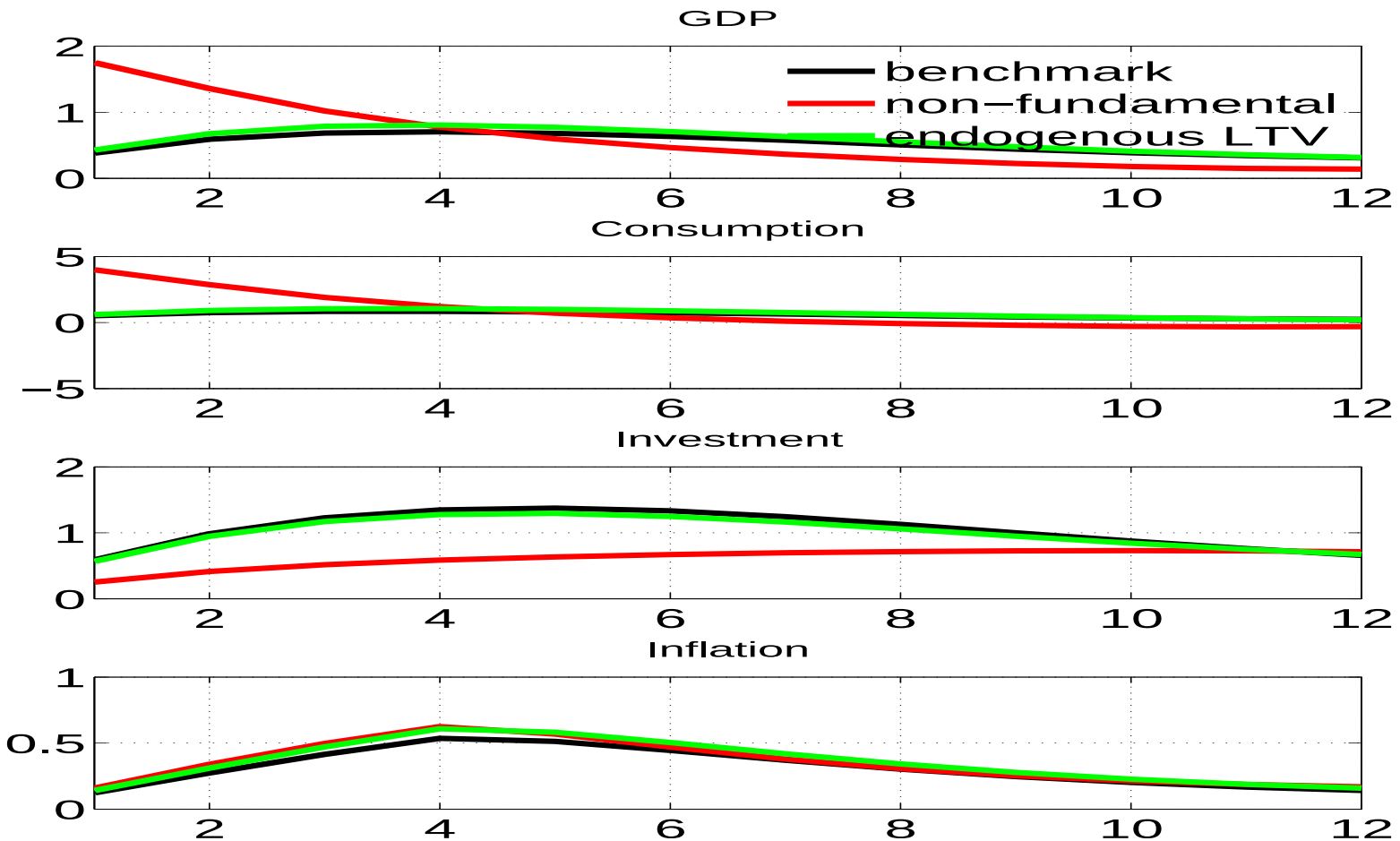
APP, Home expectation shock and macroprudential policy. Home LTV ratio



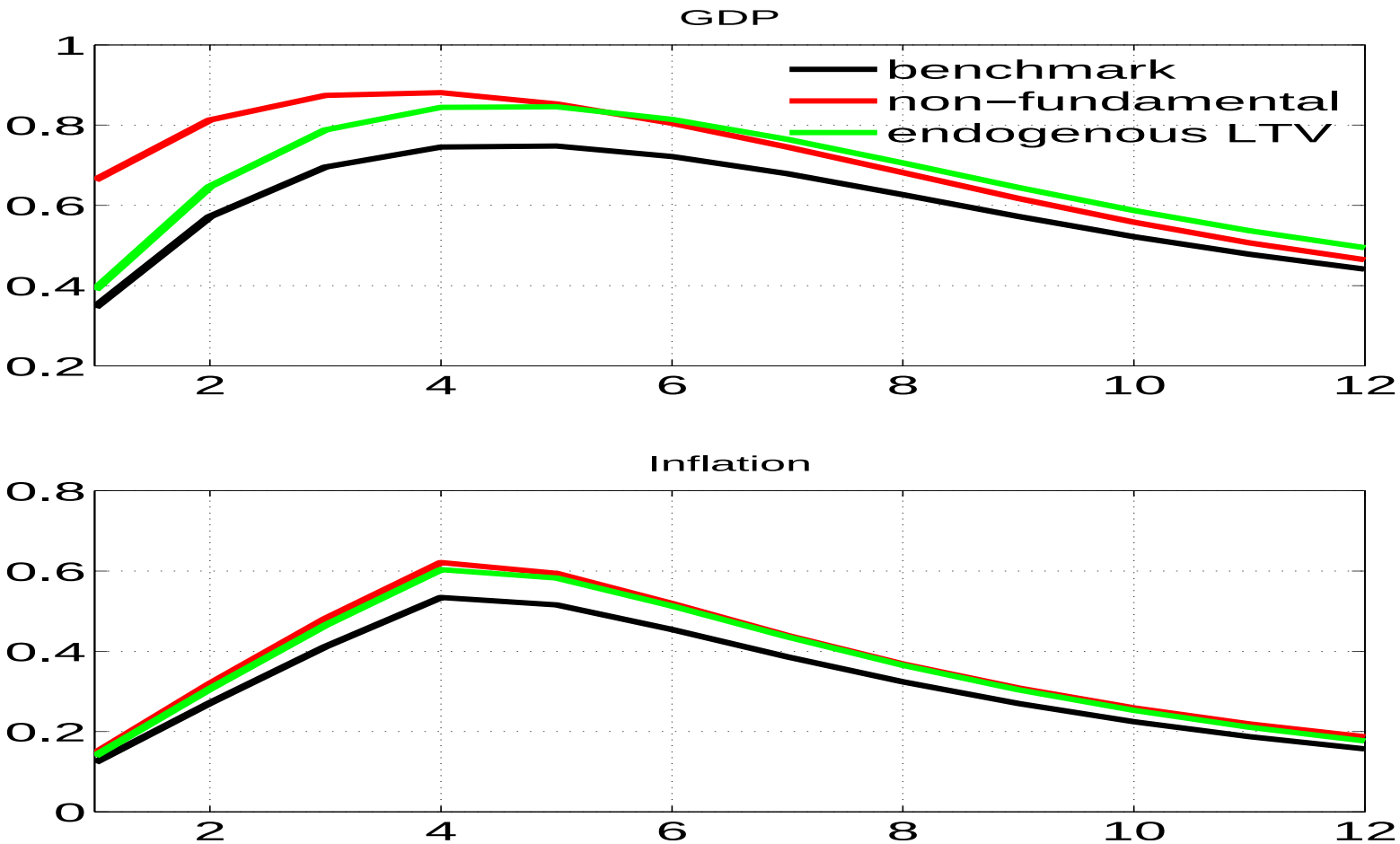
APP, Home expectation shock and macroprudential policy. Effects on Home real estate and borrowing



APP, Home expectation shock and macroprudential policy. Effects on Home macroeconomic variables



APP, Home expectation shock and macroprudential policy. Effects on EA variables



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- Possible synergies between non-standard monetary and macroprudential policies in a monetary union: monetary policy necessarily focuses on the union-wide economic conditions, region-specific macroprudential policies pursue financial stability at regional level.