"MONETARY POLICY ACCORDING TO HANK"

Greg Kaplan Benjamin Moll Giovanni L. Violante

Discussion by Yuriy Gorodnichenko (UC Berkeley)

Transmission of Monetary Shocks

- Classic question
- Key building blocks
    - New Keynesian models: intertemporal substitution
    - “Old” Keynesian models: income effect

TRANSMISSION OF MONETARY SHOCKS

- Classic question

- Key building blocks
  - New Keynesian models: intertemporal substitution
  - “Old” Keynesian models: income effect

- New theme in recent monetary economics research
  - Heterogeneity is potentially important for aggregate dynamics
  - Monetary shocks induce re-distribution

Transmission of Monetary Shocks

- Classic question

- Key building blocks

  - New Keynesian models: intertemporal substitution
  - “Old” Keynesian models: income effect

- New theme in recent monetary economics research

  - Heterogeneity is potentially important for aggregate dynamics
  - Monetary shocks induce re-distribution

- This paper: a **beautiful** model of how household heterogeneity interacts with price stickiness.

TRANSMISSION OF MONETARY SHOCKS

- Classic question

- Key building blocks
  - New Keynesian models: intertemporal substitution
  - “Old” Keynesian models: income effect

- New theme in recent monetary economics research
  - Heterogeneity is potentially important for aggregate dynamics
  - Monetary shocks induce re-distribution

- This paper: a **beautiful** model of how household heterogeneity interacts with price stickiness.

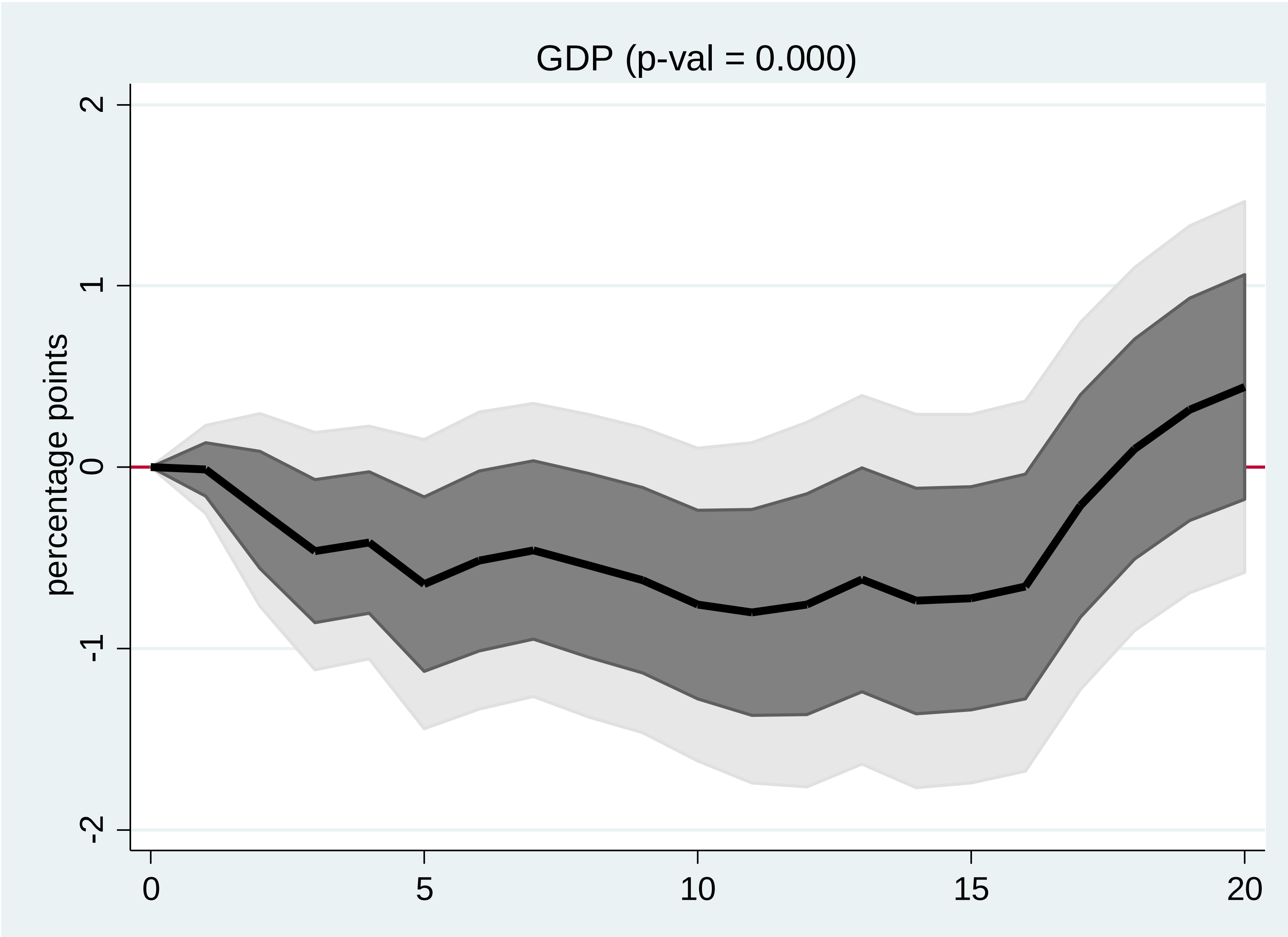
- My comments: evaluate implications of the model empirically.

EMPIRICAL FRAMEWORK

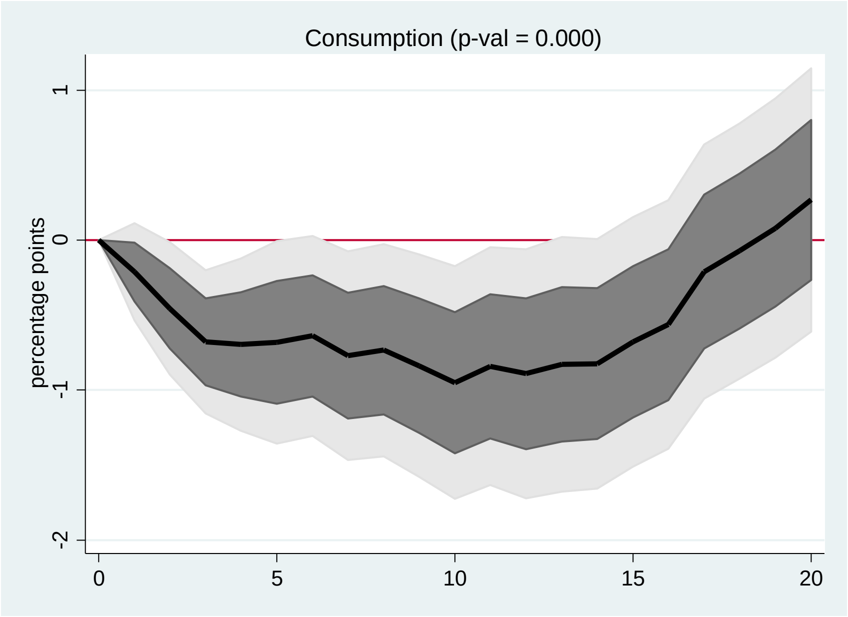
- Romer and Romer (AER 2004) shocks (updated to 2008).
- Jorda (AER 2005) projections

$$\Delta X_{t+h} = \sum_{s=1}^{4} \alpha_s^h \Delta X_{t-s} + \sum_{m=1}^{20} \beta_s^{(h)} \epsilon_{t-m}^{RR} + error, \quad h = 0, \ldots, H$$

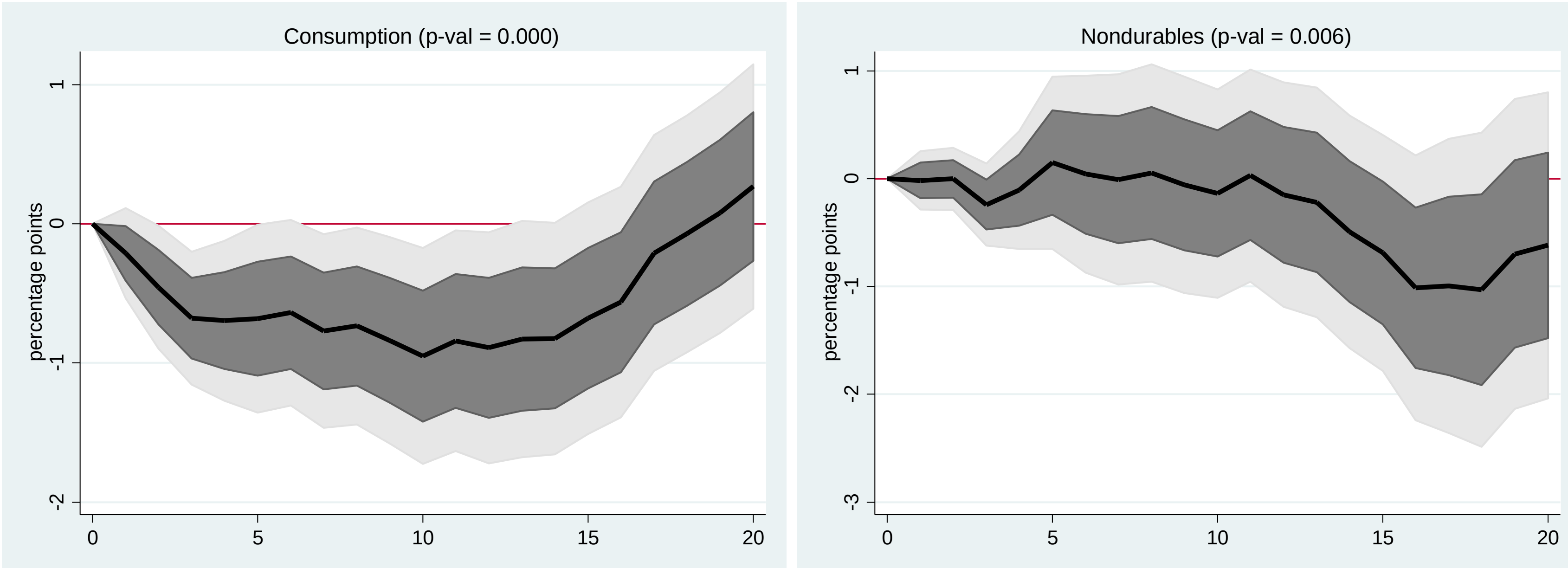
Cumulative impulse response for X is $\{\theta_h\}_{h=0}^{H}$ where $\theta_h = \sum_{q=0}^{h} \hat{\beta}_1^{(h)}$.


GDP (p-val = 0.000)
percentage points
2
1
0
-1
-2
0
5
10
15
20

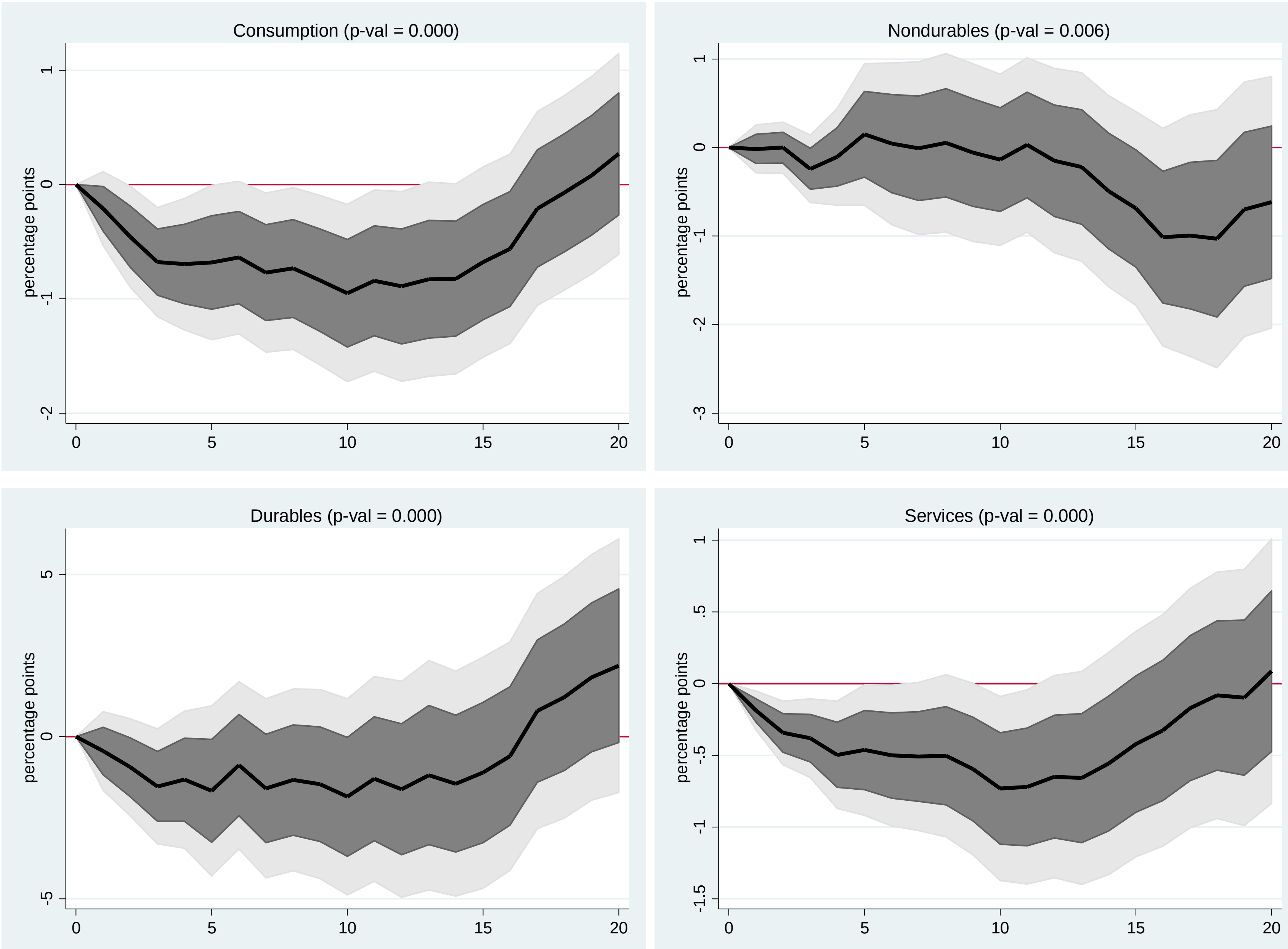
POINT #1: WHAT CONSUMPTION IS MOVED BY MONETARY SHOCKS?



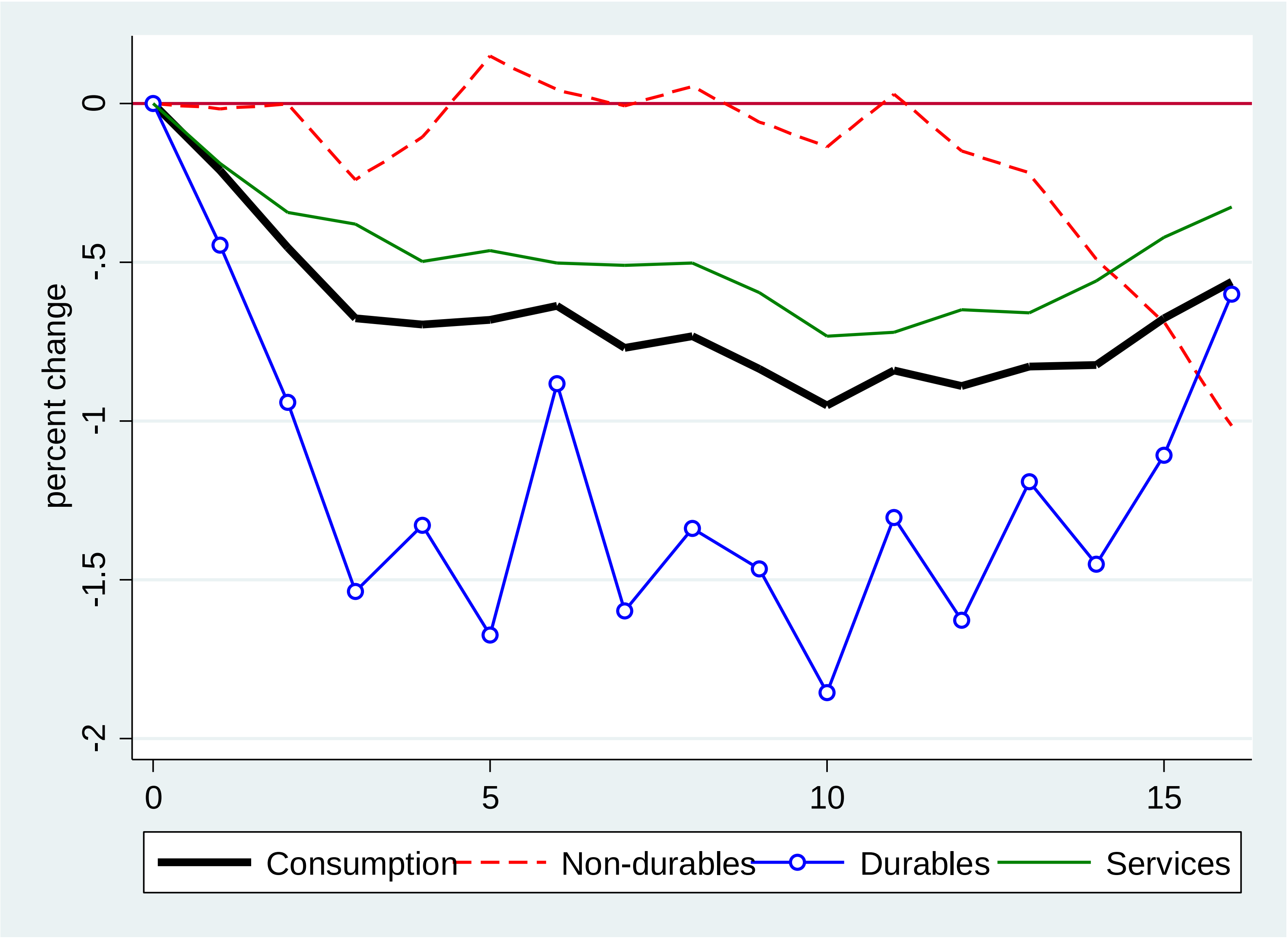
POINT #1: WHAT CONSUMPTION IS MOVED BY MONETARY SHOCKS?



POINT #1: WHAT CONSUMPTION IS MOVED BY MONETARY SHOCKS?

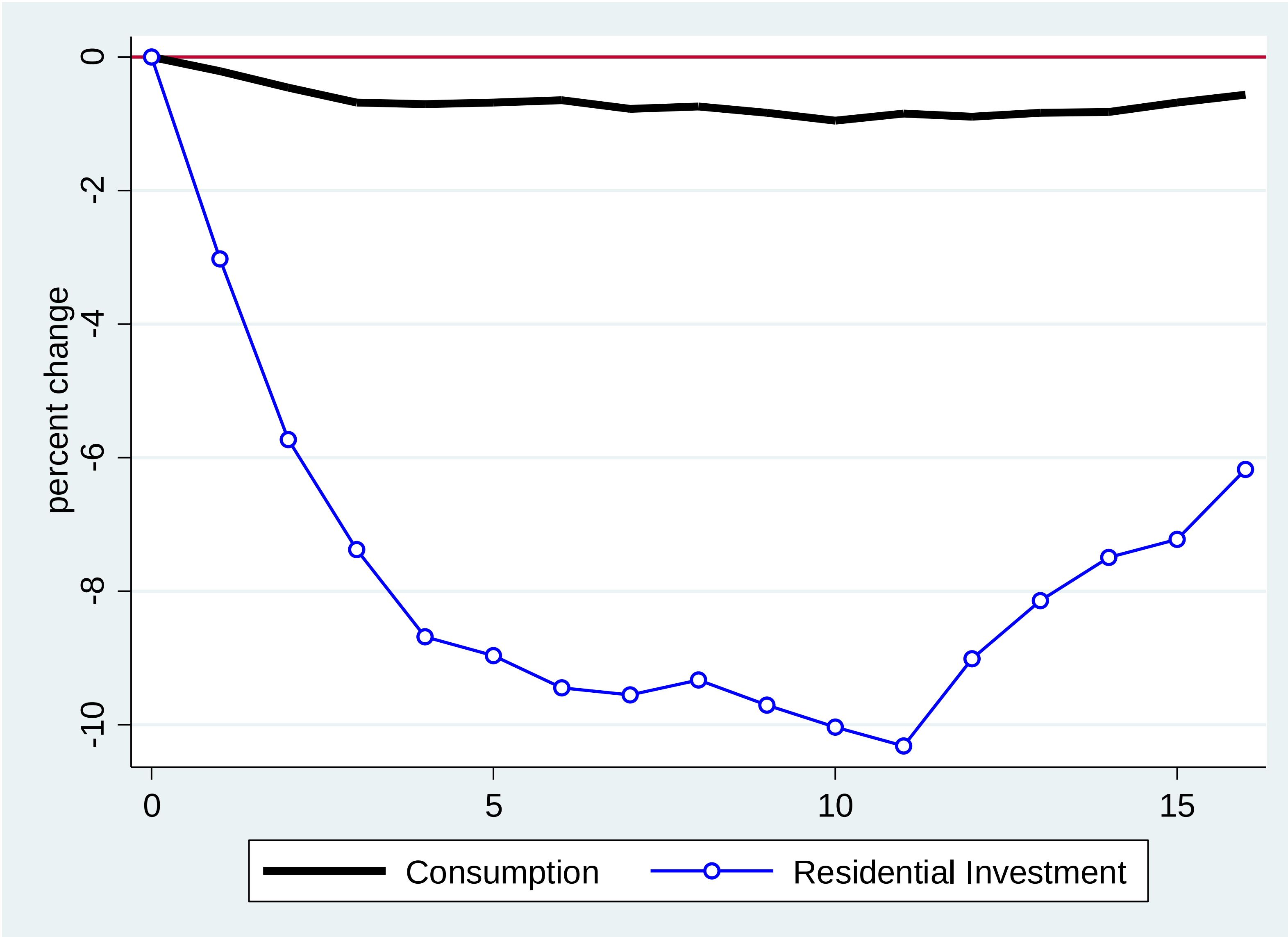


POINT #1: WHAT CONSUMPTION IS MOVED BY MONETARY SHOCKS?



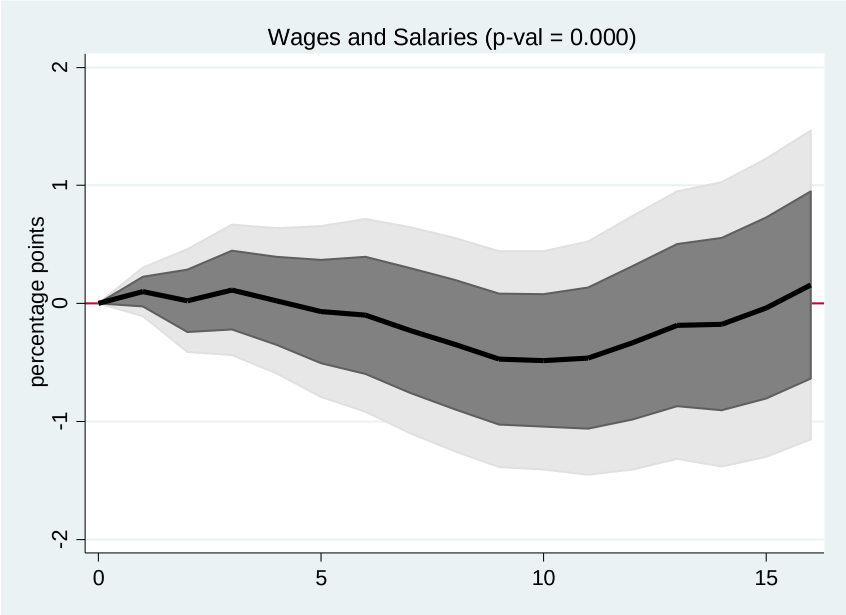
Aggregate consumption is moved by durables & services. Non-durables have little effect.

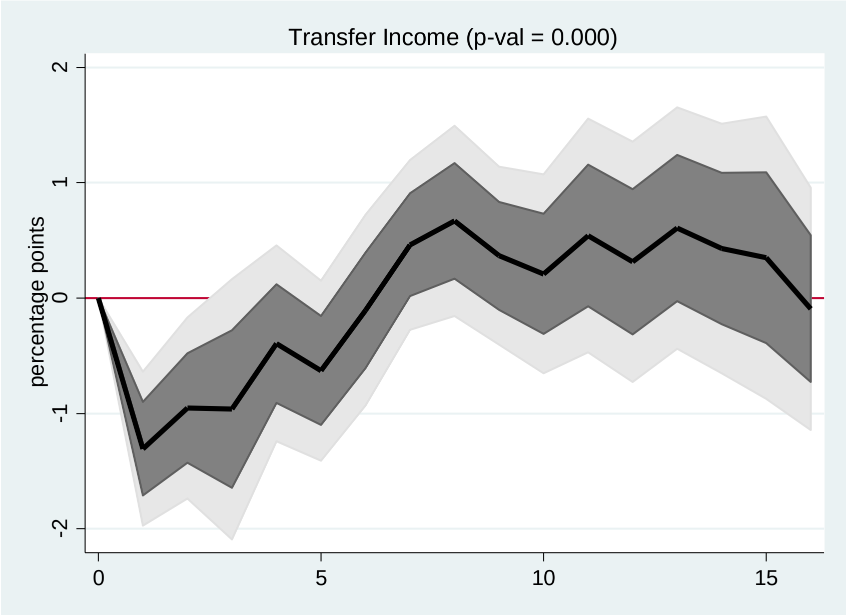
Point #2: Consumption vs. Investment



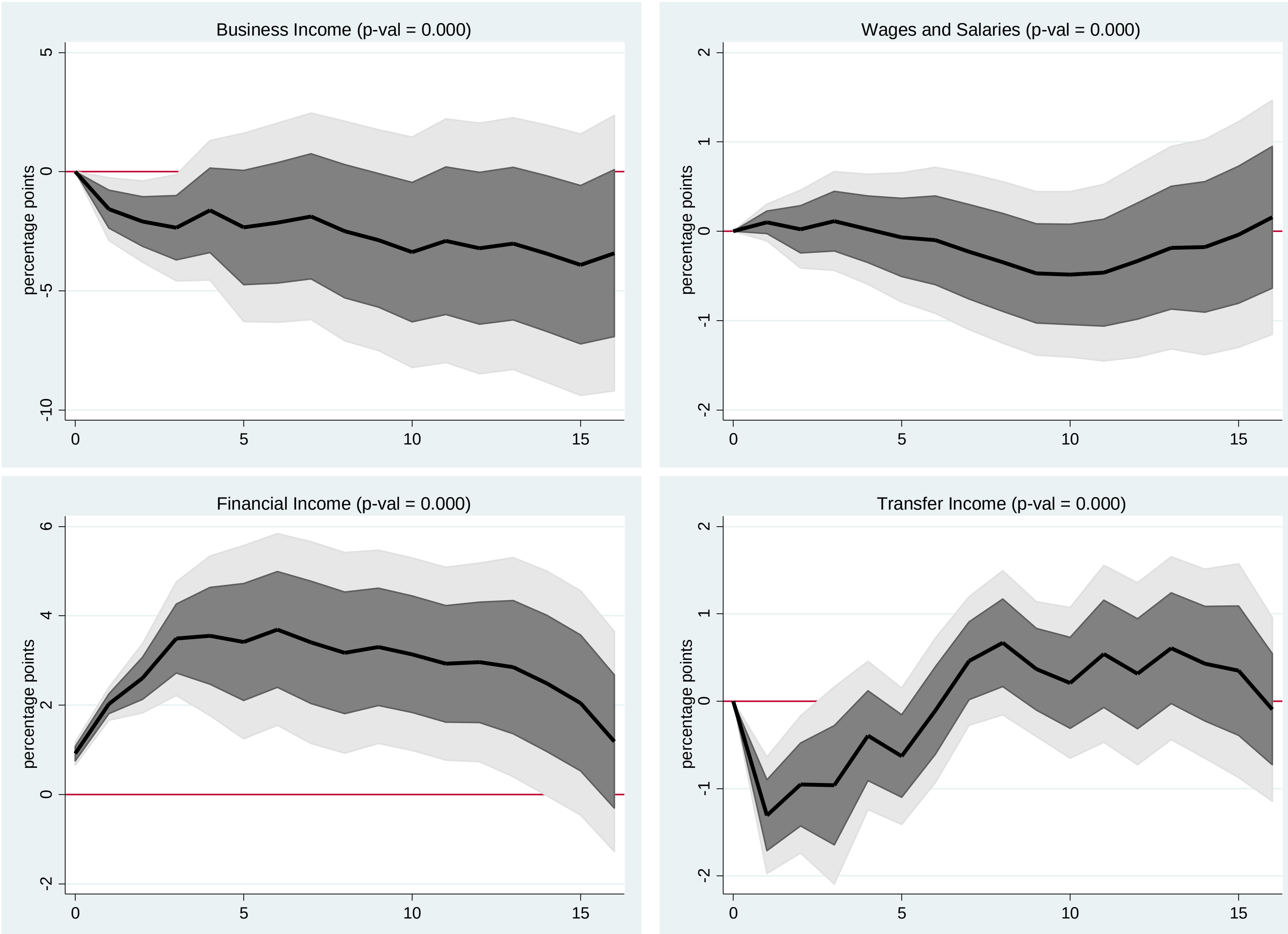
Other (smaller) component of GDP are more sensitive to MP.

POINT #3: INCOME RESPONSES BY TYPE





POINT #3: INCOME RESPONSES BY TYPE



Model: labor + transfers are key. Data: little reaction for earnings.

POINT #4: GHH PREFERENCE

- Earnings: $z_i w l_i$
- Optimality condition for labor: $\psi l^{1/\phi} = w$

POINT #4: GHH PREFERENCE

- Earnings: $z_i w l_i$
- Optimality condition for labor: $\psi l^{1/\phi} = w$
    - labor supply of household i does not vary with wages received by household i.

Point #4: GHH preference

- Earnings: $z_i w l_i$
- Optimality condition for labor: $\psi l^{1/\phi} = w$
  - labor supply of household i does not vary with wages received by household i.
  - if aggregate wages do not move, employment does not vary.

POINT #4: GHH PREFERENCE

	Baseline (1)	$\delta^u = 0$ (2)	Sticky wages (3)
Change in r^b (pp)	-0.23%	-0.22%	-0.23%
Change in Y_0 (%)	0.41%	0.17%	0.61%
Implied elasticity Y_0	-1.77	-0.79	-2.65
Change in C_0 (%)	0.50%	0.48%	0.70%
Implied elasticity C_0	-2.20	-2.17	-3.06
Component of Change in C due to:			
Direct effect: r^b	12%	12%	9%
Indirect effect: w	59%	58%	69%
Indirect effect: T	32%	31%	24%
Indirect effect: r^a	0%	0%	0%

POINT #4: GHH PREFERENCE + STICKY WAGES

	Baseline (1)	$\delta^u = 0$ (2)	Sticky wages (3)
Change in r^b (pp)	-0.23%	-0.22%	-0.23%
Change in Y_0 (%)	0.41%	0.17%	0.61%
Implied elasticity Y_0	-1.77	-0.79	-2.65
Change in C_0 (%)	0.50%	0.48%	0.70%
Implied elasticity C_0	-2.20	-2.17	-3.06
Component of Change in C due to:			
Direct effect: r^b	12%	12%	9%
Indirect effect: w	59%	58%	69%
Indirect effect: T	32%	31%	24%
Indirect effect: r^a	0%	0%	0%

POINT #4: GHH PREFERENCE + STICKY WAGES

	Baseline (1)	$\delta^u = 0$ (2)	Sticky wages (3)
Change in r^b (pp)	-0.23%	-0.22%	-0.23%
Change in Y_0 (%)	0.41%	0.17%	0.61%
Implied elasticity Y_0	-1.77	-0.79	-2.65
Change in C_0 (%)	0.50%	0.48%	0.70%
Implied elasticity C_0	-2.20	-2.17	-3.06
Component of Change in C due to:			
Direct effect: r^b	12%	12%	9%
Indirect effect: w	59%	58%	69%
Indirect effect: T	32%	31%	24%
Indirect effect: r^a	0%	0%	0%

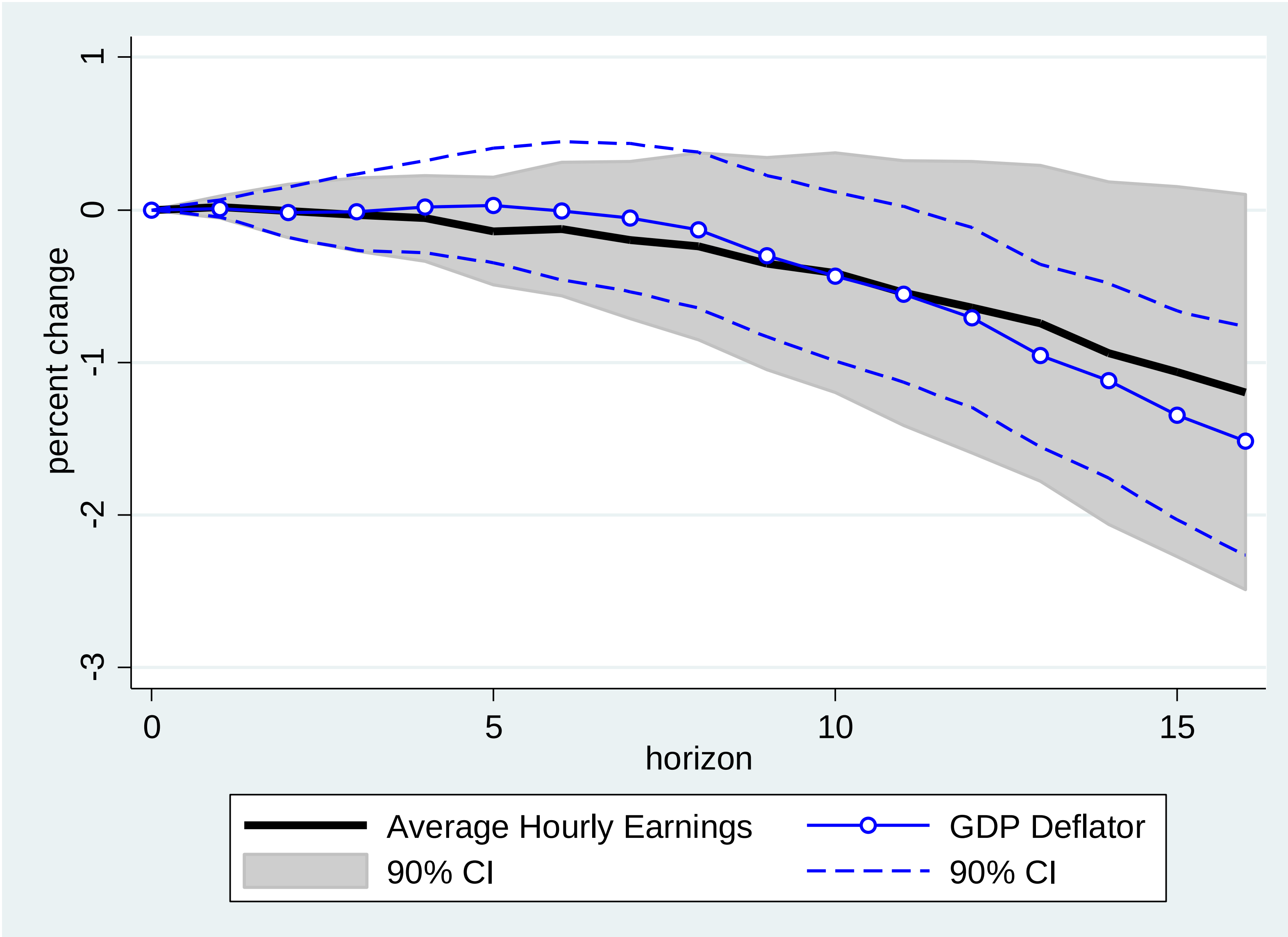
?

Suppose wages are increasingly sticky so that $w_t = \overline{w}$. Then there is no change in employment, earnings are fixed. The indirect channel of monetary policy transmission is shut down.

POINT #4: GHH PREFERENCE

- Earnings: $z_i w l_i$
- Optimality condition for labor: $\psi l^{1/\phi} = w$
  - labor supply of household i does not vary with wages received by household i.
  - if aggregate wages do not move, employment does not vary.
  - wages are strongly procyclical.

POINT #4: GHH PREFERENCE VS. SENSITIVITY OF WAGES

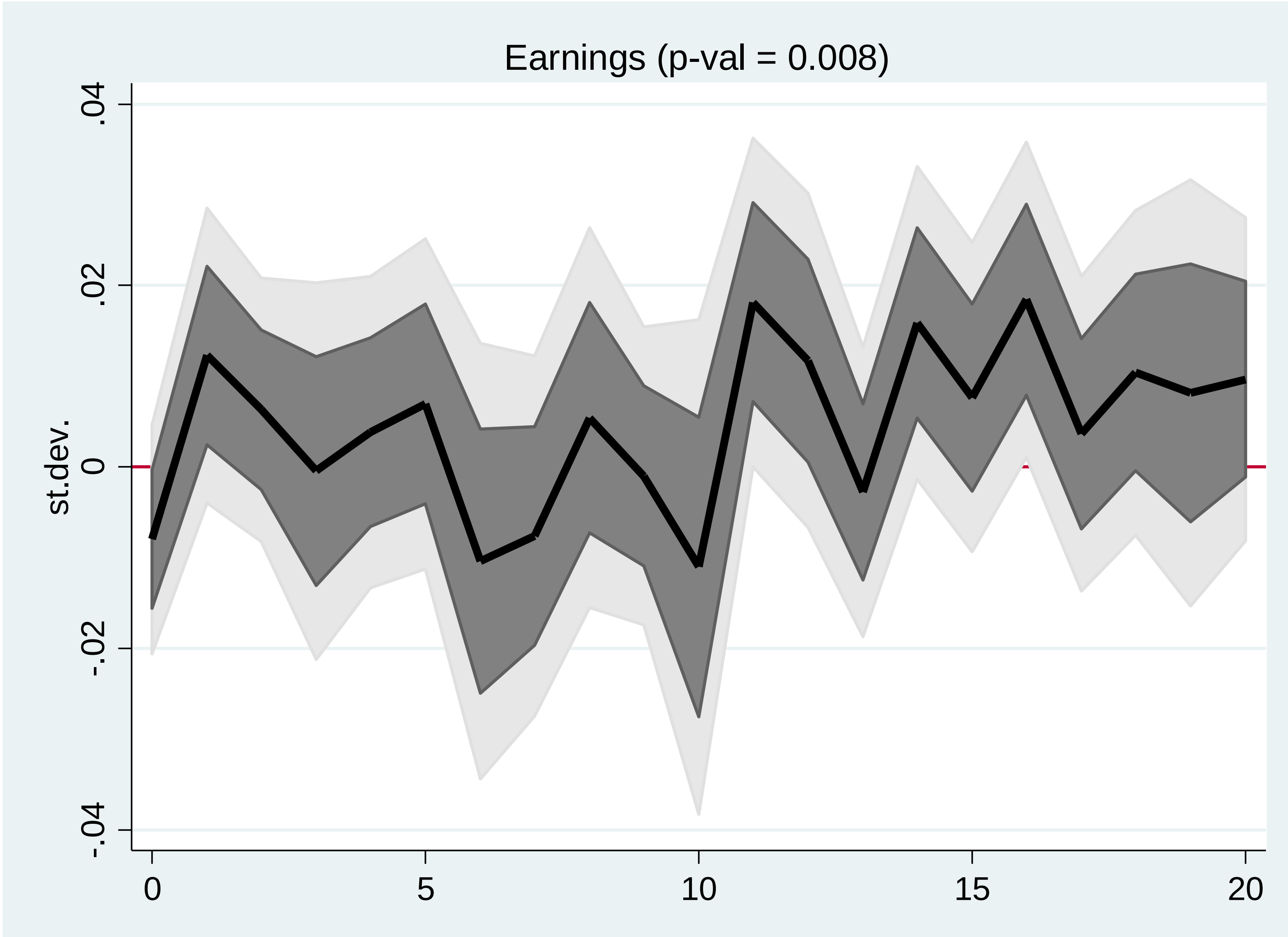


Real wages are not very procyclical.

POINT #4: GHH PREFERENCE

- Earnings: $z_i w l_i$
- Optimality condition for labor: $\psi l^{1/\phi} = w$
  - labor supply of household i does not vary with wages received by household i.
  - if aggregate wages do not move, employment does not vary.
  - wages are strongly procyclical.
  - cross-sectional dispersion of earning is stable.

POINT #4: GHH PREFERENCE VS. EARNINGS INEQUALITY



Cross-sectional earnings inequality increases (weakly) after a contractionary monetary shock. Source: Coibion et al. (2014)

Guevenen et al. (JPE 2014): skewness becomes more negative in recessions.

POINT #5: ENDOGENOUS BORROWING CONSTRAINTS

In the model, there is an exogenous borrowing constraint for liquid assets:

$$b_t \geq \underline{b} \text{ with } \underline{b} = \$10K$$

Point #5: Endogenous borrowing constraints

In the model, there is an exogenous borrowing constraint for liquid assets:

$$b_t \geq \underline{b} \text{ with } \underline{b} = \$10K$$

Iacoviello (AER 2005): households can borrow against illiquid assets (housing)

Mian/Sufi: housing wealth shocks can tighten credit constraints for households

POINT #5: ENDOGENOUS BORROWING CONSTRAINTS

In the model, there is an exogenous borrowing constraint for liquid assets:

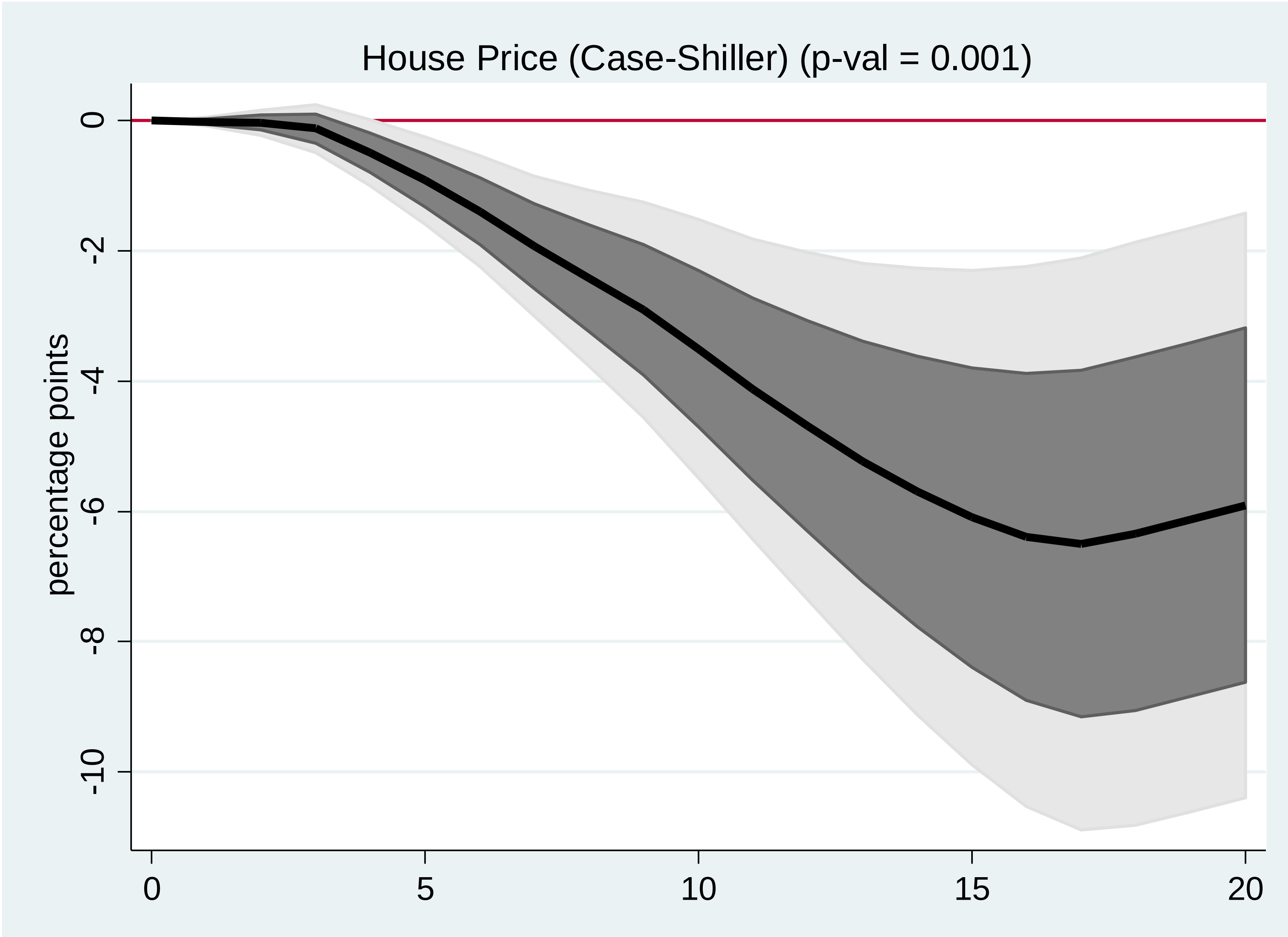
$$b_t \geq \underline{b} \text{ with } \underline{b} = \$10K$$

Iacoviello (AER 2005): households can borrow against illiquid assets (housing)

Mian/Sufi: housing wealth shocks can tighten credit constraints for households

Alternative formulation: $b_t \geq \underline{b}(a_t)$ with another channel of transmission of MP.

POINT #5: ENDOGENOUS BORROWING CONSTRAINTS

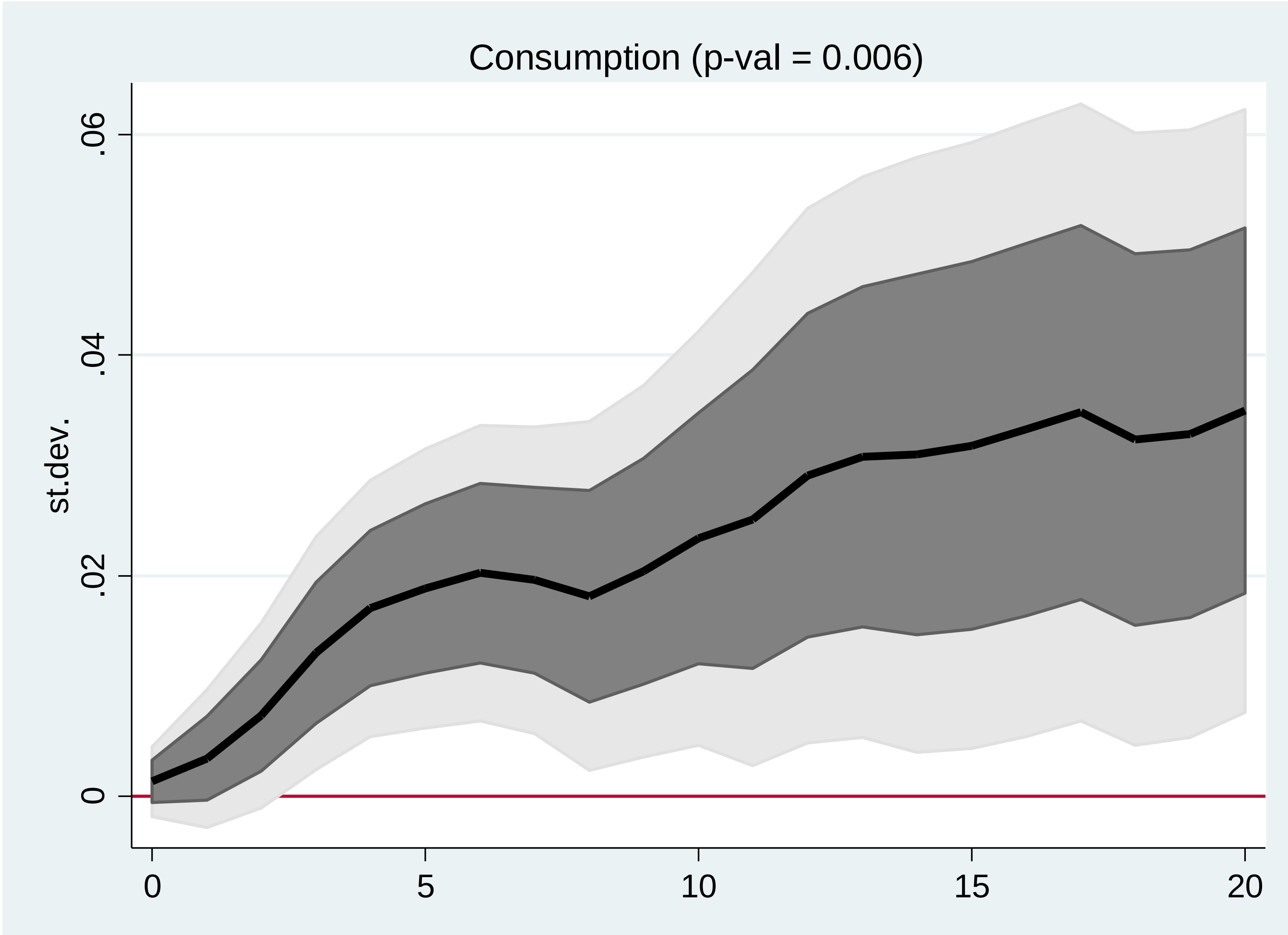


Response of house prices to a contractionary monetary shock.

POINT #6: DISTRIBUTIONAL EFFECTS OF MP SHOCKS

- *Income composition channel*
  - Heterogeneity across households in terms of their primary sources of income (earnings, business, financial or transfer income).
- *Portfolio/financial segmentation channel*:
  - If low-income households tend to hold relatively more currency than high-income households (Erosa and Ventura 2002, Albanesi 2007), then inflationary actions on the part of the central bank would represent a transfer from low-income households toward high-income households which would tend to increase consumption inequality.
- *Savings redistribution channel*
  - An unexpected increase in interest rates or decrease in inflation will benefit savers and hurt borrowers as in Doepke and Schneider (2006), thereby generating an increase in consumption inequality (to the extent that savers are generally wealthier than borrowers).
- *Earnings heterogeneity channel*
  - Unemployment disproportionately falls upon low income groups, as documented in Carpenter and Rogers (2004).

Point #6: Distributional effects of MP shocks



Response of cross-sectional consumption inequality to a contractionary monetary policy shock. Source: Coibion et al. (2014)

SUMMARY

- One of the most important questions in macroeconomics.
- Excellent start of an exciting research agenda.
- Need more work to connect the model to the data.