What Have We Learned From HANK Models, Thus Far?

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Central Banks' Modelling Strategy

- Central Banks uses a suite of different models to inform monetary policy decisions, with two objectives:

    - Forecasting: VAR

    - Interpret data, and run counterfactuals: structural DSGE models

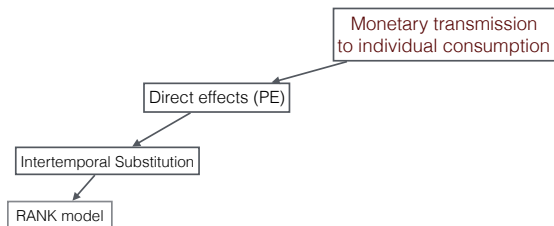   Representative household, or very limited heterogeneity (2-types)

- From the Review of Macroeconomic Modelling in the Eurosystem

    - *Given the achievements in the academic HANK literature, central banks should venture into this area of modelling [...] and advancing the empirical validation of those models*
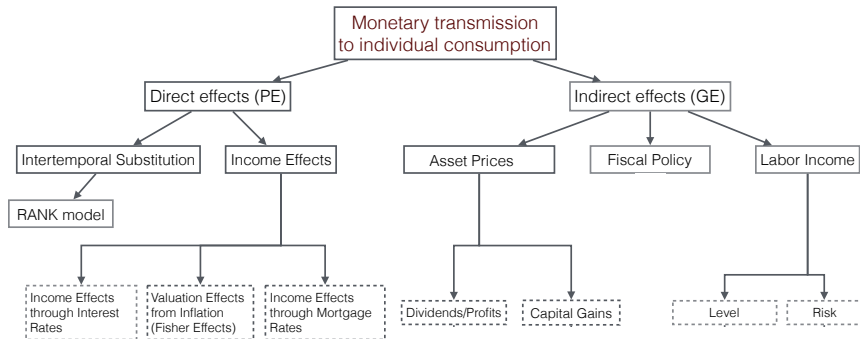
HA + NK

- **NK:** New Keynesian block

  - Phillips curve + Monetary policy rule

- **HA:** Heterogeneous Agent

  - Replaces the aggregate Euler Equation (IS curve) with modern theory of consumption and saving ('buffer stock' model)

  - Households are heterogeneous ex-ante and ex-post, and there is imperfect risk sharing among them

  → Distribution of income, consumption and wealth that resembles data

- Three groups of households (with mobility among them)

  1. Hand-to-mouth: low liquidity and high MPC

  2. Middle class: precautionary saving to stay away from credit limit

  3. Wealthy: high net-worth individuals

1. Transmission

Monetary transmission to individual consumption

Direct effects (PE)

Intertemporal Substitution

RANK model

1. Transmission

- Centrality of indirect general-equilibrium channels

- Even truer for QE

- Lots of intermediating factors outside central banks' control and depend on institutions and market structure which are country-specific

2. Amplification: redistribution channel
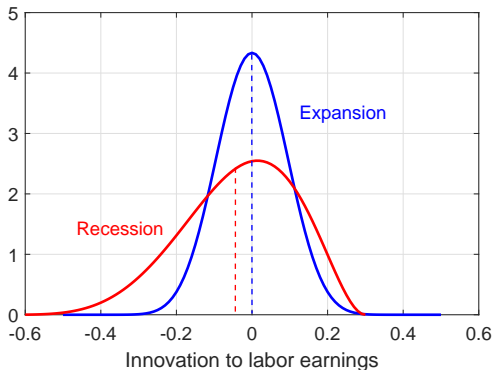
Elasticity of Individual Earnings to GDP
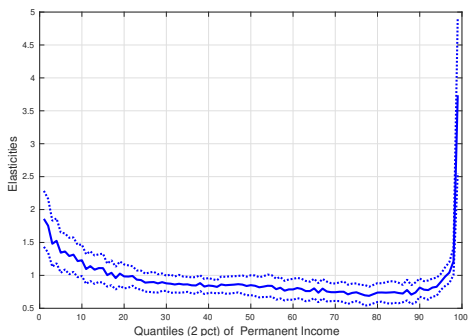
1. Redistribution of income / wealth toward households with:

   • High marginal propensity to consume

   • High marginal propensity to take risk

2. Amplification: cyclical risk channel

Cyclicality of labor market risk

2. Countercyclical precautionary saving motive

- Further fall in spending and employment

- By reverting downward spiral, effects of monetary policy amplified

2. Amplification: fiscal response channel

$$B_{t+1} + \text{Net Tax Revenues}_t = r_t B_t + G_t$$

3. Fiscal response to monetary policy shock matters in Non-Ricardian world

   - Size of the 'extra resources' is a function of the maturity structure of debt

   - Where, in the income distribution, these extra resources end up determines amplification

3. Impact on Income and Wealth Inequality

- HANK models:

  1. Monetary policy is redistributive and this matters for transmission

  2. Stabilization policy ⇔ Redistributive policy

  3. Fiscal policy is better suited to redistribute and insure risks because it can be 'targeted' more accurately

- Key obstacle of fiscal side: institutional delays and political compromise

- Should the monetary authority be concerned with inequality?

  - Fed: Yes, explicitly aiming for an 'inclusive recovery'

  - ECB: No, unless it interferes with price stability

    - Institutions with narrowly defined mission have many strengths

    - Perhaps, aim for: 'price stabilization' in the most equitable way?

4. New Data Requirements

- Granular micro data are essential to the mission of the ECB

- HFCS is a great first step, but ideally:

  1. Larger sample size to explore all dimensions of heterogeneity

  2. Longitudinal dimension

  3. Better coverage of the top of the distribution

- Possible complementary data sources:

  1. Administrative big-data (public or proprietary), e.g. bank-transaction

  2. Links through SSN

  3. Real-time, or high frequency, data

- Needed: rich dataset providing comprehensive household finance pulse