

*"Discussion" of*  
*"Macroeconomic stabilization, fiscal consolidation*  
*and recessions with heterogeneous agents"*  
*Evi Pappa & Morten Ravn*

**Kurt Mitman**  
IIES, CEPR & ADEMU

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## Introduction

- Workhorse model in public economics:  
Bewley-Imrohoroglu-Huggett-Aiyagari incomplete markets model.
  - Matches joint distribution of earnings, consumption and wealth
  - Generates realistic distribution of MPCs
  - Can generate realistic consumption responses to transitory income and transfers.

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  - Matches joint distribution of earnings, consumption and wealth
  - Generates realistic distribution of MPCs
  - Can generate realistic consumption responses to transitory income and transfers.
- Workhorse model in monetary economics:  
Representative-Agent New-Keynesian model.
  - Nominal rigidities allow output to be demand determined.
  - Meaningful role for monetary policy.
  - Can match the data.

## Introduction

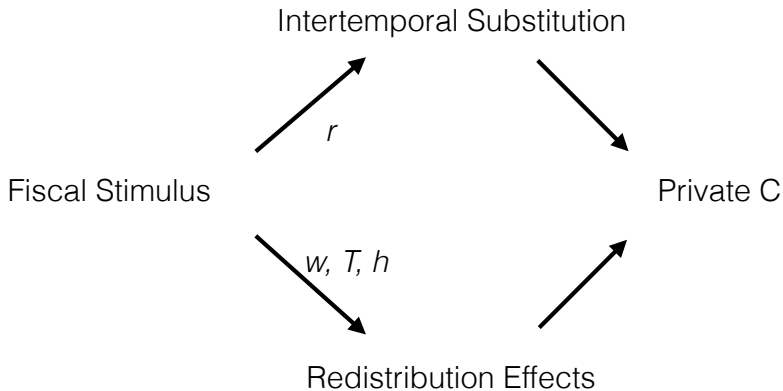
- Research frontier: Combine
  - Representative-Agent New-Keynesian model.
  - Aiyagari model.
    - ↳ AiyaGalí
      - Allows for demand determined output *and*
      - Consumption responses in line with the data

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- Why AiyaGalí?
  - Models key transmission mechanism of stimulus policies.
  - Delivers price level determinacy (Hagedorn 2016)
    - Allows for arbitrary combinations of fiscal and monetary policy (e.g. fixed nominal rate)
    - Overcomes indeterminacy in liquidity trap (Cochrane 2015)
    - Well-defined fiscal multiplier at ZLB

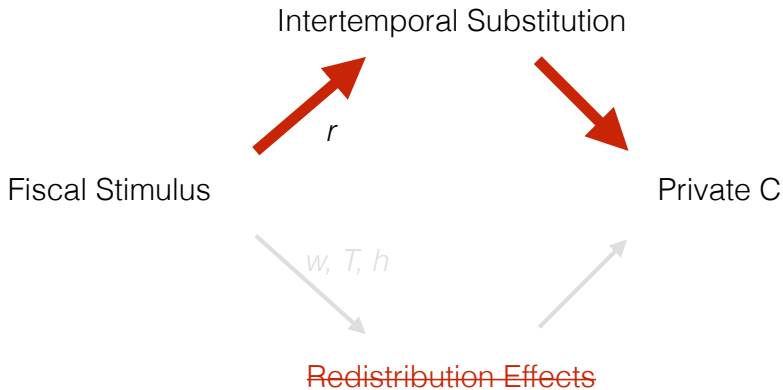
# Transmission Mechanism of Fiscal Stimulus

## Private Consumption Channel



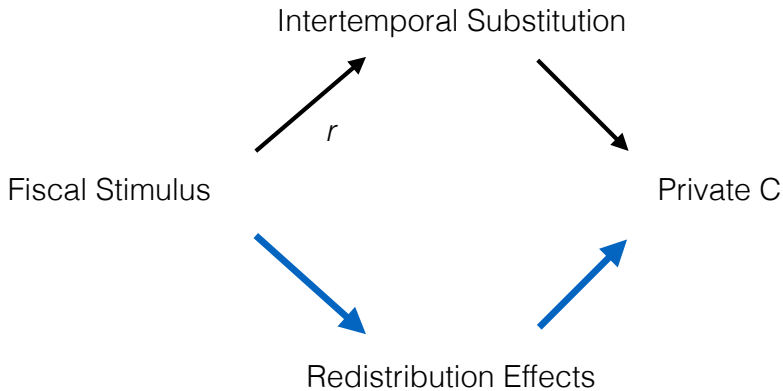
## The Multiplier in RANK

Private Consumption Channel



## The Multiplier in HANK

Private Consumption Channel

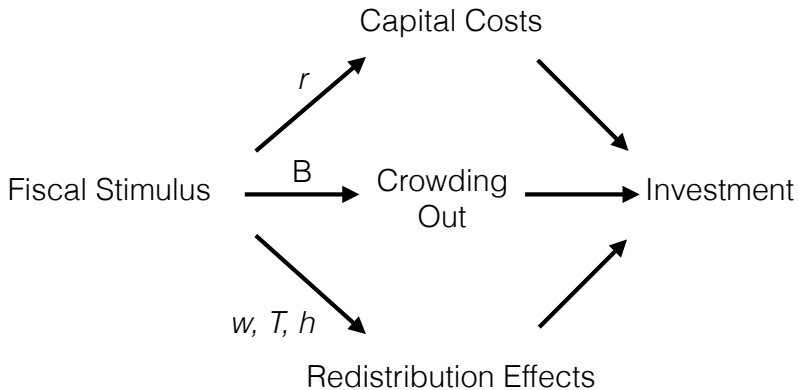


*Depend on entire distribution  
and path of  $w, T, h$*



# The Multiplier in HANK

## Investment Channel



## Tax Financed Multiplier

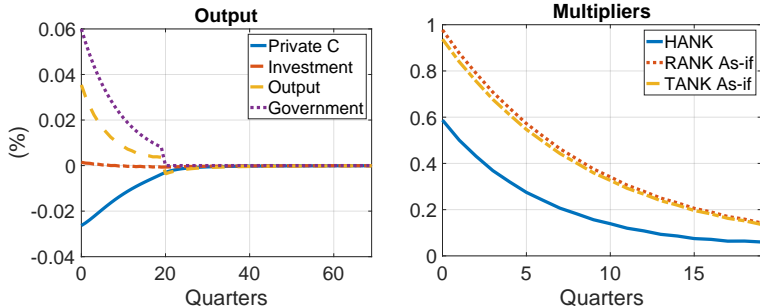


Figure: "The Fiscal Multiplier" Hagedorn, Manovskii & Mitman (2018)

- Tax-financing leads to crowding out of private C
- Distributional effects account for crowding out

## Deficit Financed Multiplier

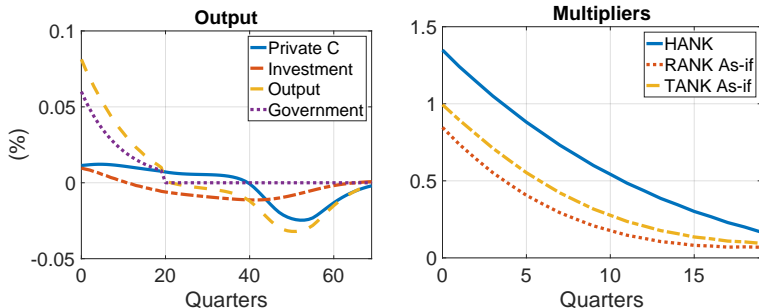


Figure: "The Fiscal Multiplier" Hagedorn, Manovskii & Mitman (2018)

- Deficit-financing leads to crowding in of private C
- Distributional channel yields multiplier  $> 1$
- Dynamic multiplier effects important (missed in TANK models)

## Indeterminacy Problem Persists in ReHANK

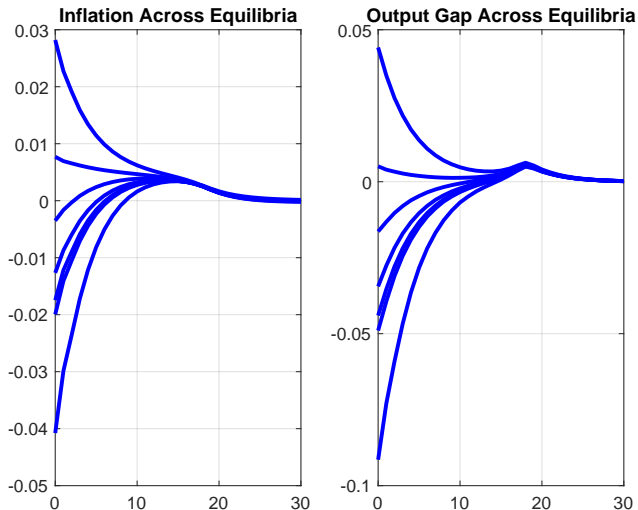


Figure: Hagedorn, Manovskii and Mitman (2018)

## Unique Equilibrium in Our NoHANK Framework

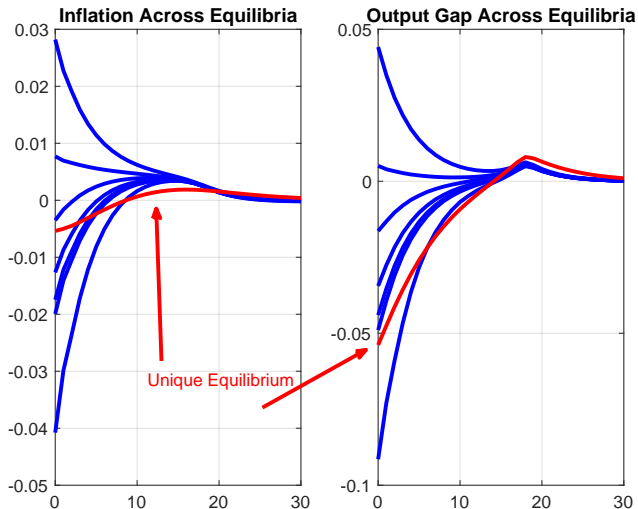


Figure: Hagedorn, Manovskii and Mitman (2018)

## A Puzzling Preponderance of "Puzzles"

HANK model + nominal government debt and budget:

- Divergence at frictionless limit? NO
- Contractionary TFP shocks expansionary? NO
- Forward guidance infinitely powerful? NO
- All those extra equilibria Morten talked about? Unique equilibrium

## Concluding Thoughts

- NoHANK exciting new framework with key ingredients needed to study stabilization policies:
  - Intertemporal motives and distributional effects.
  - Investment channel.
  - Uniquely determined price level.
  - Unique fiscal multiplier for arbitrary combinations of monetary and fiscal policies including the ZLB.

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- Going forward:
  - Adding in more frictions and amplification mechanisms (as in HANK&SAM)
  - Given the importance of distributional channel, better estimating of HANK models with micro data
  - More work applying this framework for economies in a currency union!