Contents

HAFiscal Replication Package

Paper: *Welfare and Spending Effects of Consumption Stimulus Policies*
Authors: Christopher D. Carroll, Edmund Crawley, William Du, Ivan Frankovic, Hakon Tretvoll
Keywords: heterogeneous agents, fiscal policy, stimulus checks, iMPCs, HANK, consumption, welfare, QE replication

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Instant Results (No Installation Required)

Want to explore fiscal policy effects right now?

| LAUNCH | **INTERACTIVE DASHBOARD** |

The **interactive dashboard** lets you:

- Compare stimulus checks, UI extensions, and tax cuts
- Adjust model parameters in real-time
- Visualize fiscal multipliers under different monetary policies
- See results in seconds (no 100+ hour computation needed)

No installation required — runs entirely in your browser via MyBinder.

For local installation, see dashboard/DASHBOARD_README.md or README/DASHBOARD.md.

Quick Start

New to HAFiscal? Start with the Getting Started Guide for navigation and workflow guidance.

For detailed documentation, see the README/ directory.

The README/ directory contains:

- **GETTING-STARTED.md** — Navigation guide and workflow overview (start here if new)
- **Detailed README** — Complete replication instructions and documentation
- INSTALLATION.md — Installation and setup instructions
- CONTRIBUTING.md — Contribution guidelines
- QUICK-REFERENCE.md — Quick reference guide
- TROUBLESHOOTING.md — Common issues and solutions

Research Questions and Contributions

Primary Research Questions

1. **What are the welfare and spending effects of different consumption stimulus policies** (stimulus checks, tax cuts, unemployment insurance extensions) across the income and wealth distribution?

2. **How do heterogeneous-agent mechanisms** (liquidity constraints, sticky expectations, splurge behavior) affect the distributional and aggregate impacts of fiscal stimulus?

3. **What is the optimal design of stimulus policies** when accounting for household heterogeneity in marginal propensities to consume (MPCs)?

Key Contributions

1. **Comprehensive HANK model calibration**: Extends heterogeneous-agent New Keynesian (HANK) models to match both microeconomic evidence on intertemporal MPCs (iMPCs) and macroeconomic evidence on aggregate consumption dynamics, using Survey of Consumer Finances (SCF) 2004 data.

2. **Novel behavioral mechanisms**: Implements and quantifies the role of:

   - **Sticky expectations** (following Carroll et al. 2020, cAndCwithStickyE in bibliography)
   - **Splurge behavior** (lumpy consumption responses to windfalls)
   - **Liquidity constraints** and heterogeneous wealth distributions

3. **Distributional welfare analysis**: Provides systematic welfare comparisons across alternative stimulus designs, highlighting how policy effectiveness varies dramatically across households with different liquid wealth positions.

4. **Methodological extension**: Builds on the computational framework of Auclert et al. (2021, Auclert2021) and extends the two-asset HANK literature (Kaplan & Violante 2014, kaplan2014model; Fagereng et al. 2021, fagereng-mpc-2021) to incorporate additional behavioral frictions.

Literature Connections

Core Methodological Foundations

HANK Models and Computational Methods:

- **Auclert et al. (2021)** [Auclert2021]: Sequence-space Jacobian methods for solving heterogeneous-agent models (computational framework extended here)
- **Kaplan & Violante (2014)** [kaplan2014model]: Two-asset model with liquid/illiquid assets and high MPCs for hand-to-mouth households (calibration strategy extended)
- **Carroll et al. (2017)** [cstwMPC]: Distribution of wealth and MPCs in heterogeneous-agent models (empirical targets extended)

Sticky Expectations and Consumption Dynamics:

- **Carroll et al. (2020)** [cAndCwithStickyE]: Sticky expectations model explaining aggregate consumption persistence (mechanism implemented here)
- **Lian (2023)** [Lian2023-ca]: Future consumption mistakes and high MPCs (related behavioral mechanism)

Empirical Evidence on MPCs and Consumption Responses

Microeconomic MPC Estimates:

- **Fagereng et al. (2021)** [fagereng-mpc-2021]: Norwegian lottery data showing MPC heterogeneity by liquid assets (empirical target)
- **Kotsogiannis & Sakellaris (2024)** [kotsogiannisMPCs]: Tax lottery estimates of iMPCs (complementary evidence)
- **Boehm et al. (2025)** [boehm2025fivefacts]: Randomized experiment on MPCs (recent empirical evidence)
- **Parker et al. (2013)** [parker2013consumer]: Economic stimulus payments of 2008 (empirical benchmark)

Consumption During Unemployment:

- **Ganong & Noel (2019)** [ganongConsumer2019]: Consumer spending during unemployment (UI extension analysis relates)
- **Graves (2024)** [gravesUnemployment]: Unemployment risk and consumption dynamics (related mechanism)

Fiscal Multipliers and Policy Analysis

Fiscal Multipliers in HANK Models:

- **Broer et al. (2023)** [broer2023fiscalmultipliers]: Fiscal multipliers from heterogeneous-agent perspective (complementary analysis)
- **Broer et al. (2025)** [broer2025stimulus]: Stimulus effects of common fiscal policies (recent related work)
- **Hagedorn et al. (2019)** [hagedorn2019fiscal]: Fiscal multiplier in HANK models (methodological connection)

Automatic Stabilizers and Welfare:

- **McKay & Reis (2016, 2021)** [mckay2016role, mckay2021optimal]: Role of automatic stabilizers and optimal design (welfare analysis relates)
- **Phan (2024)** [phan2024welfare]: Welfare consequences of countercyclical fiscal transfers (related welfare analysis)

Behavioral Mechanisms

Near-Rationality and Bounded Rationality:

- **Andre et al. (2025)** [ansQuickfix]: Near-rationality in consumption and savings (related behavioral mechanism)
- **Akerlof & Yellen (1985)** [akerlof1985near]: Near-rational model of business cycle (foundational work)
- **Ilut & Valchev (2022)** [ilutEconomic]: Economic agents as imperfect problem solvers (related framework)

Present Bias and Mental Accounting:

- **Laibson et al. (2024)** [lmmPresentBias]: Present bias amplifies balance-sheet channels (related mechanism)
- **Graham & McDowall (2024)** [graham2024mental]: Mental accounts and consumption sensitivity (related behavioral feature)

Related HANK Literature

Unemployment and Business Cycles:

- **Ravn & Sterk (2017, 2021)** [Ravn2017, Ravn2021]: Job uncertainty, HANK & SAM models (related HANK extensions)
- **Christiano et al. (2016)** [Christiano2016]: Unemployment and business cycles (search-and-matching framework)
- **Graves (2024)** [gravesUnemployment]: Unemployment risk affects business cycle dynamics (related mechanism)

Distributional Effects of Monetary Policy:

- **Gornemann et al. (2021)** [Gornemann2021]: Distributional consequences of systematic monetary policy (related distributional analysis)

Data and Calibration

SCF Data and Wealth Distribution:

- **SCF 2004** [SCF2004]: Survey of Consumer Finances 2004 (primary data source)
- **Kaplan et al. (2014)** [kaplan2014model]: Liquid wealth construction methodology (followed here)

Income Process Calibration:

- **Crawley et al. (2024)** [crawley2024parsimonious]: Parsimonious model of idiosyncratic income (income process specification)

What This Repository Provides (AI- and search-friendly summary)

- **Replication code and data** for the HAFiscal paper, built on Econ-ARK tools, with a Heterogeneous Agent New Keynesian (HANK) model calibrated to U.S. micro data.

- **Consumption stimulus policy analysis**: effects of stimulus checks, tax cuts, and UI extensions on spending, iMPCs, and welfare across the income and wealth distribution.

- **Model artifacts**: code for sticky expectations, splurge behavior, and robustness appendices (HTML/PDF links in appendices).

- **Data**: SCF-based liquid wealth and income moments (paper uses 2013-dollar SCF vintage; scripts document 2022→2013 inflation adjustment using CPI-U-RS and the 1.1587 factor).

- **Outputs**: paper PDFs, slides, tables, and figures for direct reuse in scholarly work or derivative projects.

How to Reproduce

1) **Environment**: see README/INSTALLATION.md for Python/LaTeX setup (requires Python 3.9.x).

2) **Data & code**: run `./reproduce.sh --data` from repo root to build the paper with the git-versioned SCF data (2013$).

3) **Optional SCF QA**: `./reproduce.sh --data --use-latest-scf-data` adjusts current Fed SCF $(2022) back to 2013$ using the documented CPI anchors and 1.1587 factor.

4) **Outputs**: compiled paper in `HAFiscal.pdf`, tables/figures in `Tables/` and `Figures/`.

Key Findings (Summary)

1. **Heterogeneous MPCs drive policy effectiveness**: Stimulus policies have dramatically different effects depending on how transfers are distributed across households with different liquid wealth positions.

2. **Behavioral mechanisms matter**: Sticky expectations and splurge behavior significantly affect both aggregate and distributional consumption responses to fiscal stimulus.

3. **Welfare implications vary substantially**: Optimal stimulus design depends critically on policy objectives (aggregate demand vs. distributional equity).

4. **Model matches micro and macro evidence**: The calibrated HANK model successfully reconciles high microeconomic MPCs with realistic aggregate wealth levels and macroeconomic consumption dynamics.

Citation

If you use this repository, please cite the paper and the Econ-ARK toolkit:

Carroll, C.D., Crawley, E., Du, W., Frankovic, I., & Tretvoll, H. (2025). Welfare and Spending Effects of Consumption Stimulus Policies.

Econ-ARK: https://econ-ark.org

Repository Structure (high level)

- `HAFiscal.tex` and `Subfiles/` — main manuscript and appendices.
- `Code/` — model code, data processing, and empirical scripts (SCF workflows).
- `Figures/`, `Tables/` — generated outputs.
- `README/` — detailed documentation, install, quick reference, troubleshooting.

Last Updated: December 2025