

Do Cash Transfers Stimulate the Macroeconomy?

Nov 2024 Mundell-Fleming Lecture

**+ elements from Apr 2025 Phillips Lecture
“Rethinking Keynesian Fiscal Stimulus”**

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By Valerie A. Ramey

Hoover Institution, NBER, CEPR

Introduction

- Numerous countries used **Keynesian fiscal stimulus** during the Global Financial Crisis and COVID.

- Temporary transfers were important parts of the stimulus packages.

- In my survey of **what we knew about multipliers** in 2019 (JEP 2019), I wrote:

“There is not much aggregate time series evidence for sizeable multipliers for temporary transfers, though calibrated New Keynesian models suggest they can be high if they are targeted and if monetary policy is accommodative.” (p. 106)

- Here I assess the evidence on the macro effects of standard transfers and argue that these measures likely provided **little or no aggregate stimulus in advanced economies**.

Outline of My Talk

1. The **rise, fall, and rebirth** of Keynesian fiscal stimulus

Key theme: There are cycles in Keynesian influence due to interplay of

- **events**
- **theories**
- **empirical evidence**

2. The **debt consequences** of Keynesian fiscal stimulus

3. Have transfers been an effective macroeconomic stimulus?

4 case studies

4. Summary and Conclusions

1. The Rise, Fall, and Rebirth of Keynesian Fiscal Stimulus



The Rise of Keynesian Fiscal Stimulus

- The **Great Depression** (event) → Keynes' *General Theory* (1936)
 - Consumption depends on current disposable income
 - The marginal propensity to consume (MPC) = 0.8 → multiplier = 5
 - Multipliers were likely between 2 and 3 in the U.K. and U.S.
- Evidence: **Econometrics** + **WWII** experience convinced economists & policymakers that manipulating government spending and taxes could stabilize business cycles
 - Keynesian ideas dominated the 1940s – 1960s
 - Keynesian fiscal stimulus was a policy tool for stabilizing business cycles

The Fall of Keynesian Fiscal Stimulus

- After 1970s, monetary replaced fiscal policy as a stabilization tool

- Why? New theories + new evidence

1. Permanent Income Hypothesis augmented with Rational Expectations

→ very small marginal propensity to consume (MPC) out of transitory income

2. Friedman-Schwartz evidence -- monetary policy can have powerful effects on output

3. Speed of policy response: slow fiscal, nimble monetary



The Fall of Keynesian Fiscal Stimulus (cont.)

- Undergraduate textbooks continued to discuss fiscal multipliers.
- Graduate textbooks did not. The following books make no mention of multipliers:
 - Sargent *Macroeconomic Theory* 1979
 - Sargent *Dynamic Macroeconomic Theory* 1987
 - Blanchard and Fischer *Lectures on Macroeconomics* 1989
 - *Handbook of Macro* 1999
 - Obstfeldt-Rogoff *Foundations of International Macroeconomics* 1996
- Many textbooks were only about monetary policy
 - Woodford, Gali, Walsh
 - Most work on fiscal policy was neoclassical and addressed long-term issues

The Rebirth of Keynesian Fiscal Stimulus

- **Global Financial Crisis** in 2007-09: ZLB constrained monetary policy
 - Dusted off the Keynesian fiscal stimulus playbook
- But little research on size of fiscal multipliers since the 1970s
 - Only a few researchers were studying the effects of fiscal policy
 - No one was sure what the macro effects of the stimulus would be
- Events led to a subsequent Renaissance in fiscal research
 - *Handbook of Macro* 2016 – more than **125 mentions of multipliers**

Why Many Economists Currently Believe that Keynesian Stimulus is Effective

- Since 1980s, active literature **estimating consumption responses in household data**
 - many of these papers estimated MPCs out of temporary income that were higher than those predicted by the **permanent income hypothesis**

e.g. Agarwal, Fagereng, Japelli, Johnson, Kueng, Parker, Pistaferri, Qian, Souleles, Shapiro, Slemrod, Zeldes

- Examples of some of the high estimated MPCs
 - 2001 U.S. rebate: Nondurables **MPC = 0.375 - 0.66**
 - 2008 U.S rebate: total consumption **MPC = 0.7 - 0.9**
 - Singapore 2011: total consumption **MPC = 0.8**
 - Norwegian lottery winners: total consumption **MPC = 0.5 - 0.7**



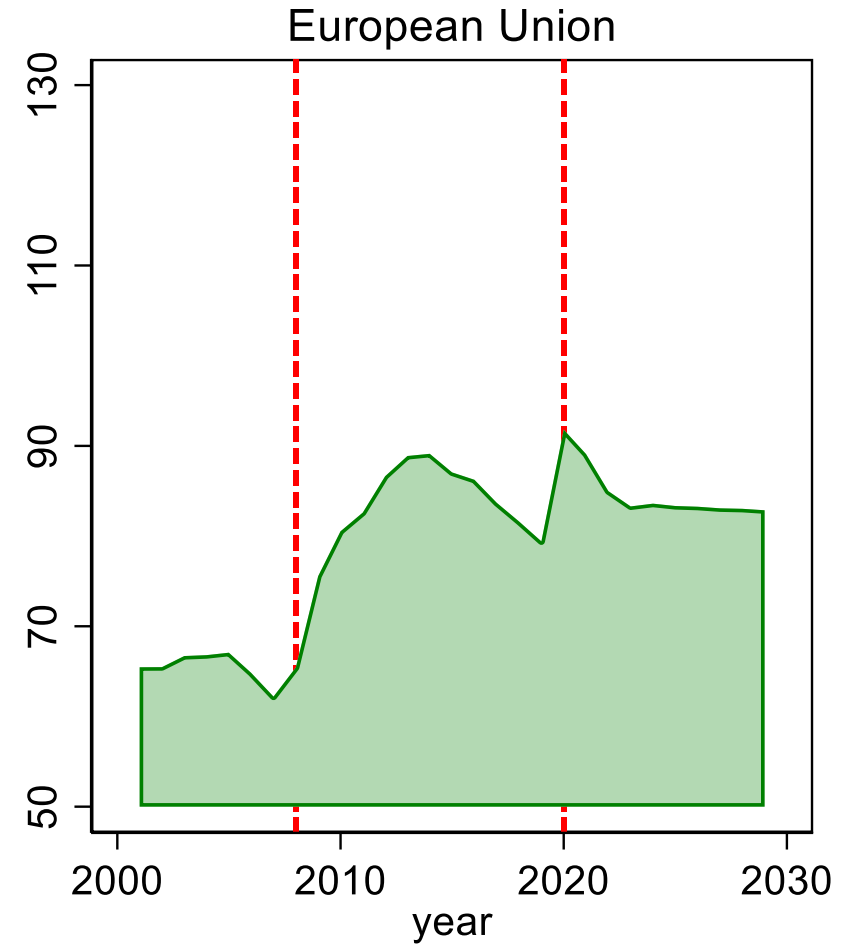
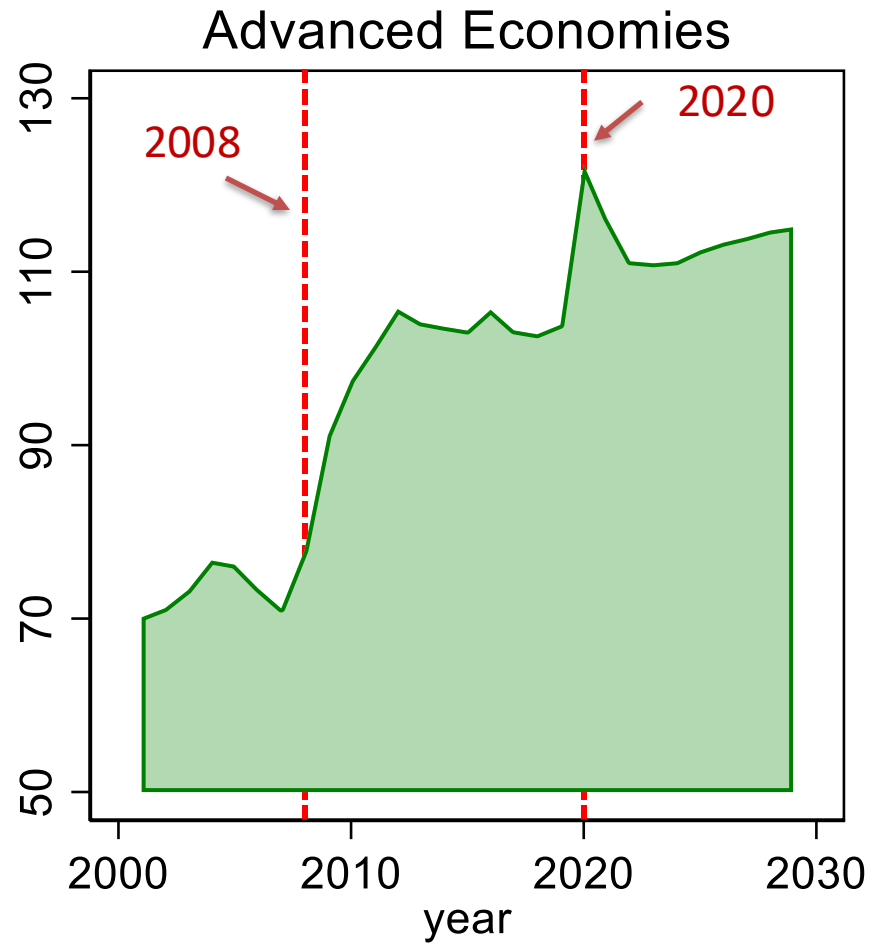
Why Economists Believe that Keynesian Stimulus is Effective (cont.)

- High micro MPC estimates →
 - New theories of household behavior
e.g. Kaplan-Violante 2014; Huntley-Michelangeli 2014
 - New macro models with heterogeneous households, some with high MPCs because of myopic behavior, incomplete markets, and/or financial rigidities.
e.g. Auclert, Bilbiie, Gali, Kaplan, McKay, Moll, Reis, Rognlie, Straub, Violante
- Macro models calibrated with high micro MPCs imply sizeable multipliers
- In response, policymakers adopted big stimulus packages in crises

2. The Debt Consequences of Keynesian Fiscal Stimulus

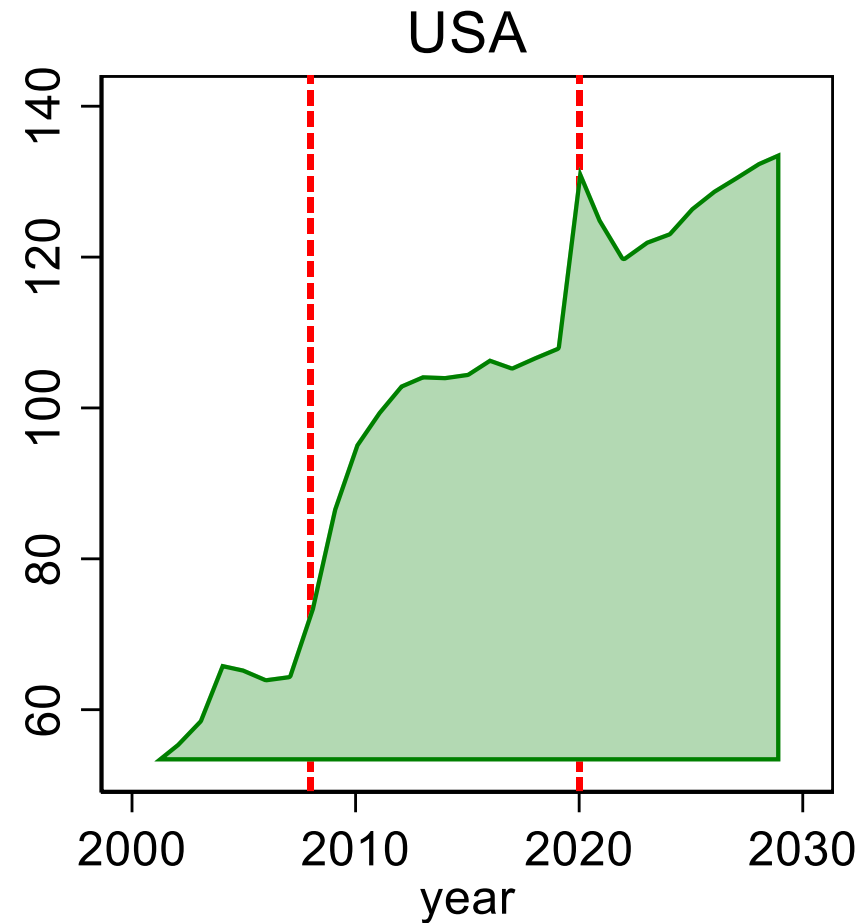
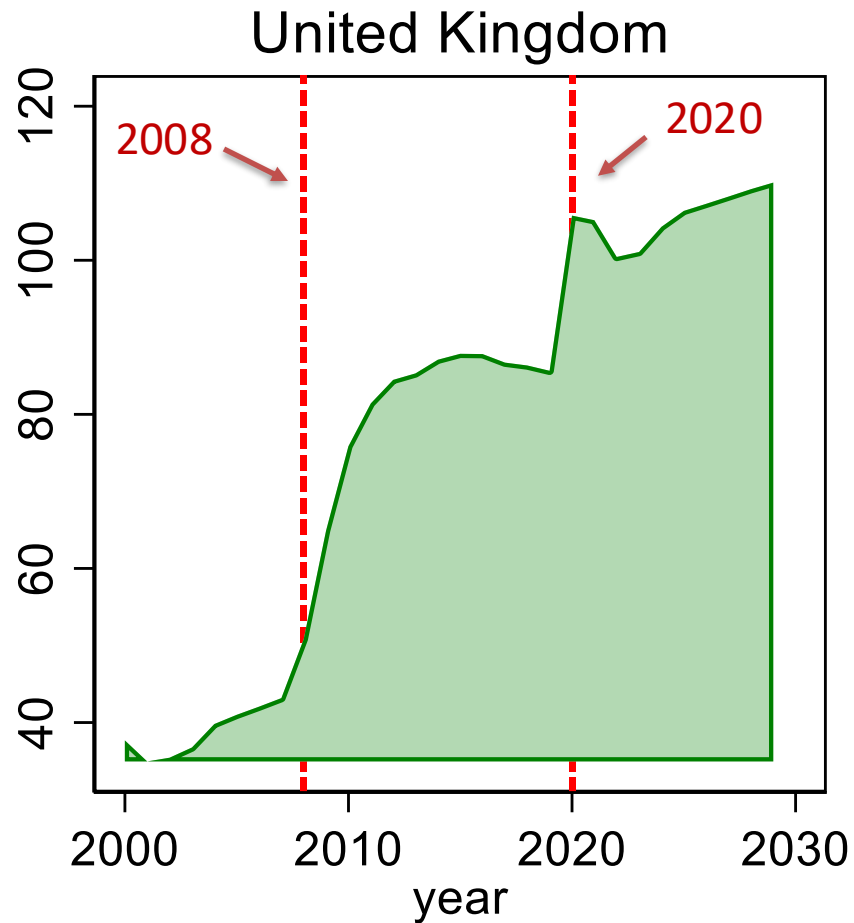
- Virtually all the stimulus packages were deficit-financed
- Contrary to some theoretical arguments, deficits so far have not financed themselves (except through inflation).
- In fact, every round of Keynesian stimulus has led to a ratchet up effect on debt-to-GDP ratios.

The Ratchet Effect of Crises on Government Debt



Gross general government debt % of GDP; WEO

UK and USA



Notice the “ratchet up effect” of government stimulus on debt ratios

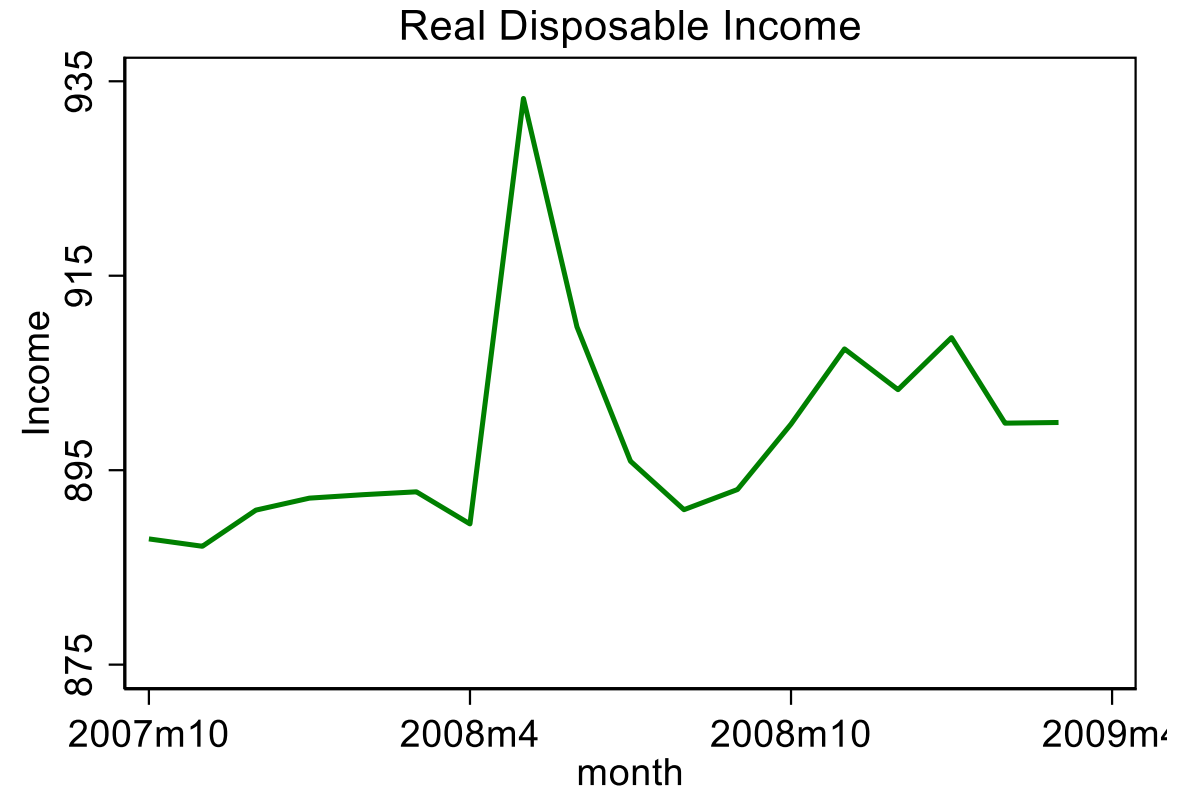
3. Have Transfers been an Effective Macroeconomic Stimulus?

- Ramey (2019), Orchard, Ramey, Wieland (forthcoming *QJE, EJ*) and Ramey (*IMF Economic Review*) conduct a series of **historical macro plausibility case studies** and find little or no evidence of macro effects.
- I'll review four case studies
 - Briefly review the 2008 and 2001 U.S. rebates (Orchard et al.)
 - Singapore natural experiment
 - Australia during GFC

U.S. Rebates

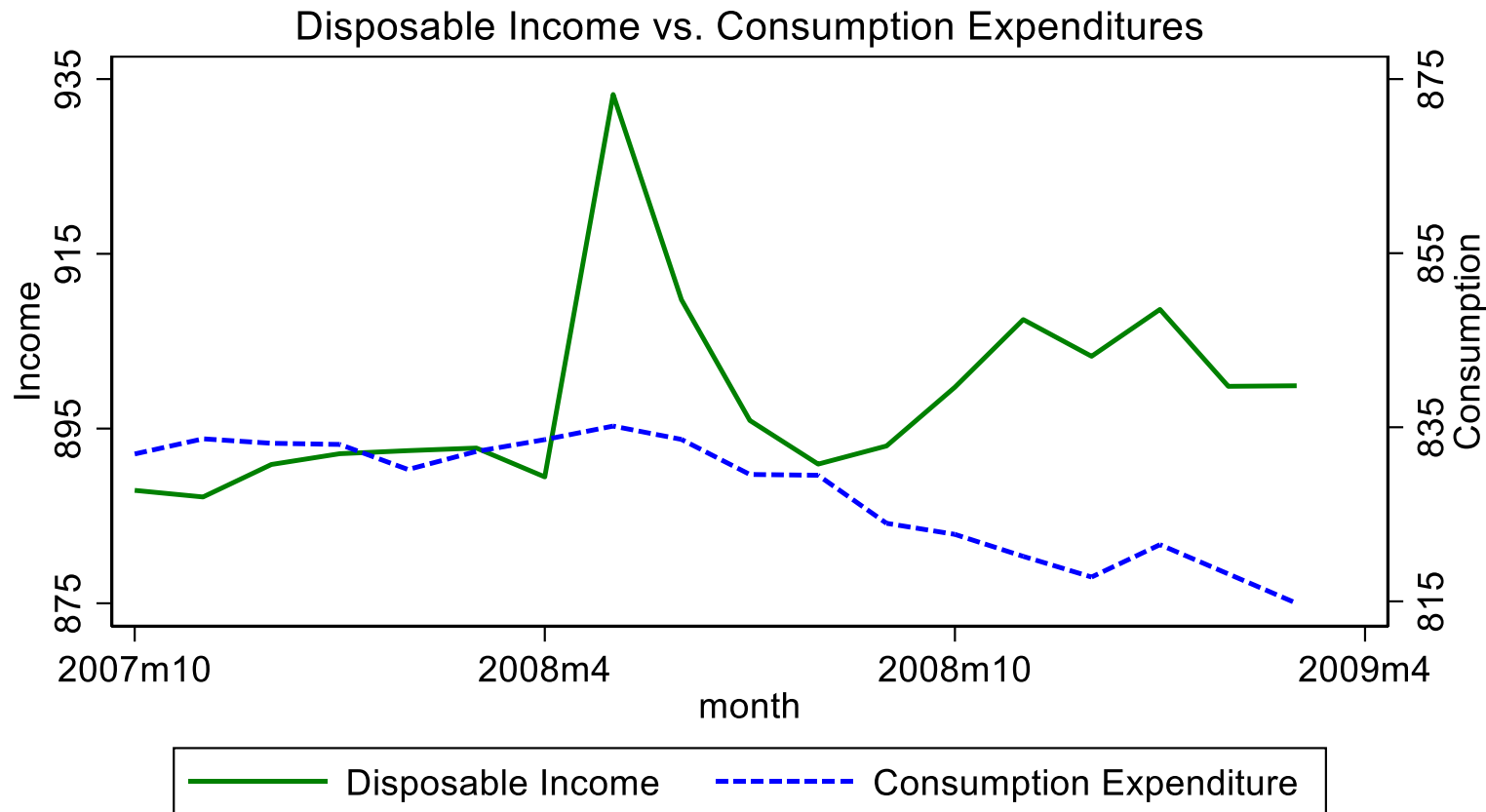
2008 U.S. Rebates

- Enacted Feb. 2008
- **\$100 billion**, equal to 11% of January disposable income (monthly basis)
- **Average check was \$1,000.**
- Paid out from **April through August 2008**; 50% of total was distributed in May.



What happened to aggregate consumption?

2008 U.S. Rebates



- Big disposable income spike, no consumption spike.
- Feldstein (2008), Taylor (2009) looked at macro data, **concluded MPCs were low.**

But a few years later, influential new micro estimates appeared

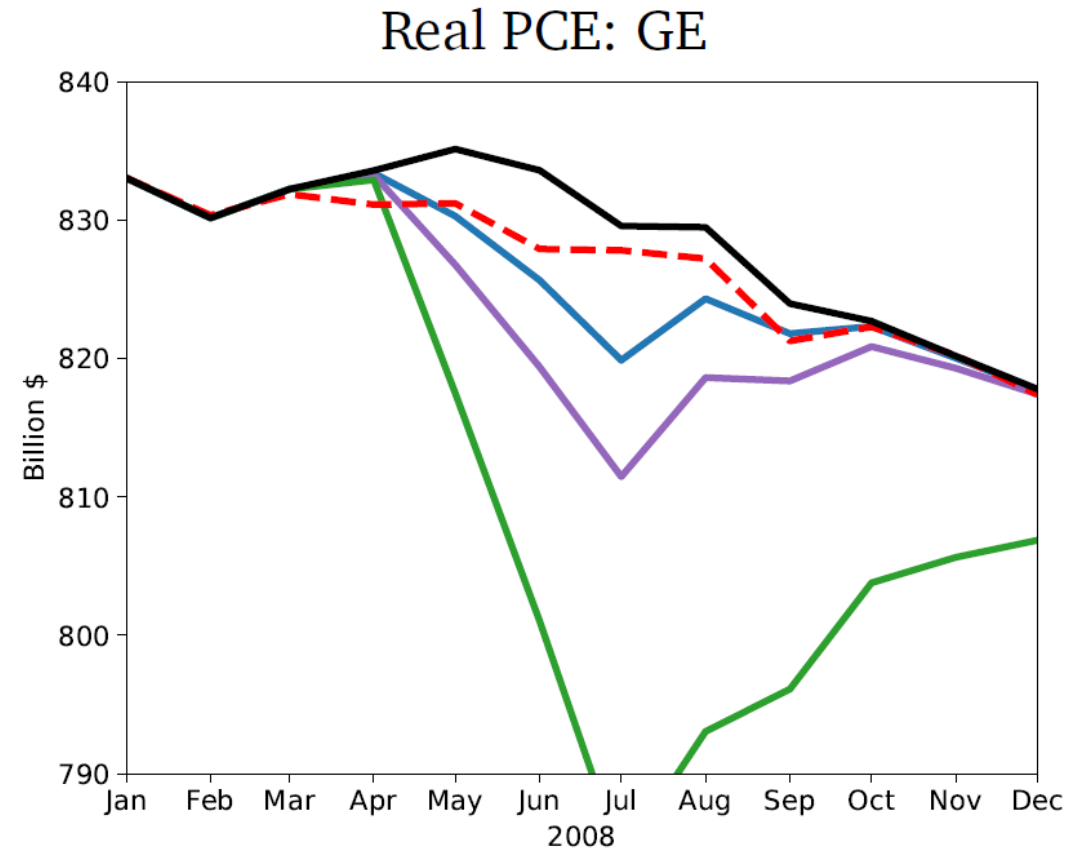
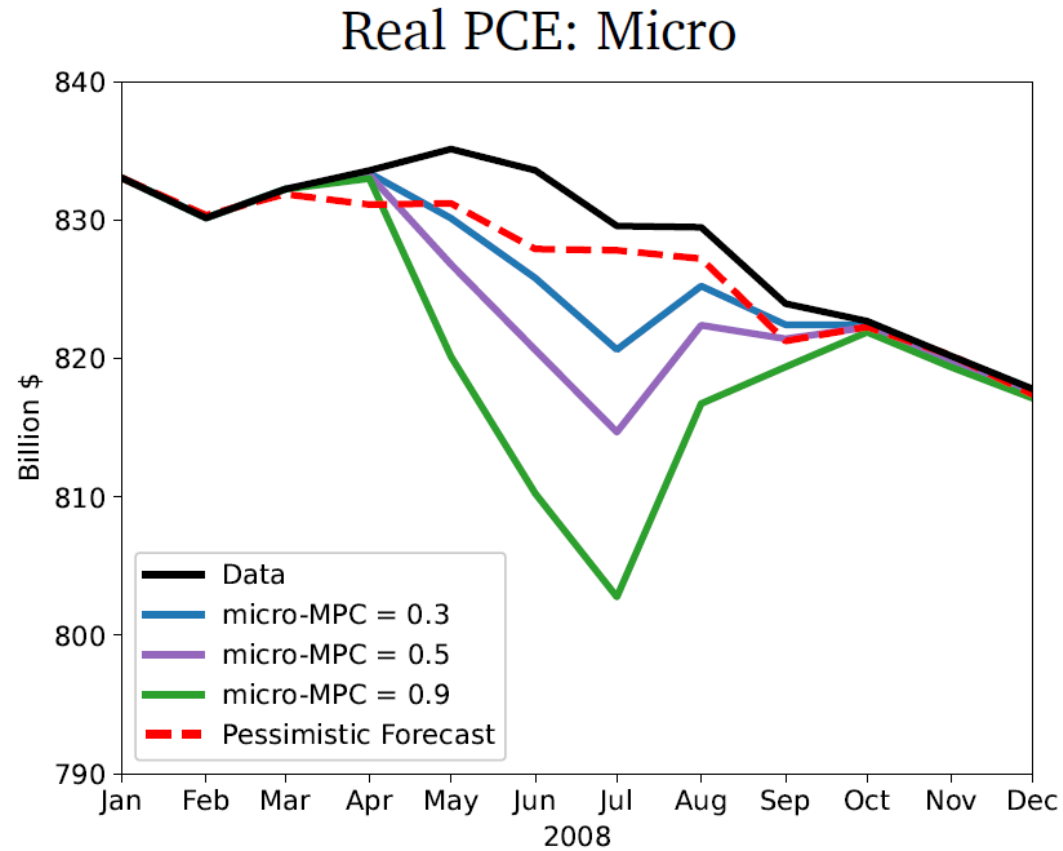
- **Parker and co-authors** (2014a,b) estimated micro MPCs from 2008 rebates
 - Added rebate questions to BLS CEX, Nielsen household surveys
 - Great natural experiment, standard applied micro methods
 - Estimated very high MPCs: **0.5 to 0.9** on total consumption
- Policymakers and researchers **believed the micro estimates** and ignored the simple macro analysis
 - **Micro estimates** were considered to be more “**credible**” than **time series macro estimates**

Angrist-Pischke “credibility revolution” in applied micro

Orchard, Ramey, Wieland Historical Macro Plausibility Analysis

- Studied the 2001 and 2008 U.S. tax rebates (QJE, EJ).
- Used the leading micro MPC estimates and standard macro models to create **historical counterfactuals** --- how would the economy have performed in 2001 and 2008 if there had been no tax rebates?
- In both cases, we found pronounced V-shaped counterfactuals that we argued were **implausible based on narrative and forecasting evidence**.
- We then **revisited** both the micro estimates and the macro models to try to **reconcile micro and macro**.
 - Discovered the micro estimates were biased upward
 - Discovered relative price effects left out of standard macro models
- Concluded that the **multipliers on the tax rebates were less than 0.2**.

Micro and GE Counterfactuals for the 2008 Rebate



- Counterfactuals imply U.S. economy would have **collapsed** in the Summer of 2008 and recovered in the Fall if no rebate.
- We use narratives, professional forecasts, and our own forecasting model to show these counterfactuals are **implausible**.

Singapore

The Case of Singapore

- One of the leading studies that finds very high micro MPCs is Agarwal and Qian's 2014 AER study of a natural experiment in Singapore.
- Singapore is also interesting because it is a small open economy.
- This case study is useful because it demonstrates that :
 - Sometimes its difficult to make a credible plausibility case.
 - But the steps in the process can lead to a serendipitous discovery.

Agarwal-Qian's Natural Experiment

- Feb. 2011 **surprise announcement** of program of government payments to Singapore citizens to “share the nation’s economic growth.”
 - Targeted to lower income households.
 - Payments were **11%** of aggregate monthly personal disposable income.
 - **Foreigner residents**, who are 40% of the population, were **ineligible**.
- Growth dividends **payments** disbursed near the end of **April 2011**.

The Strait Times,

19 February 2011

\$1.5 billion in Growth Dividends for S'poreans

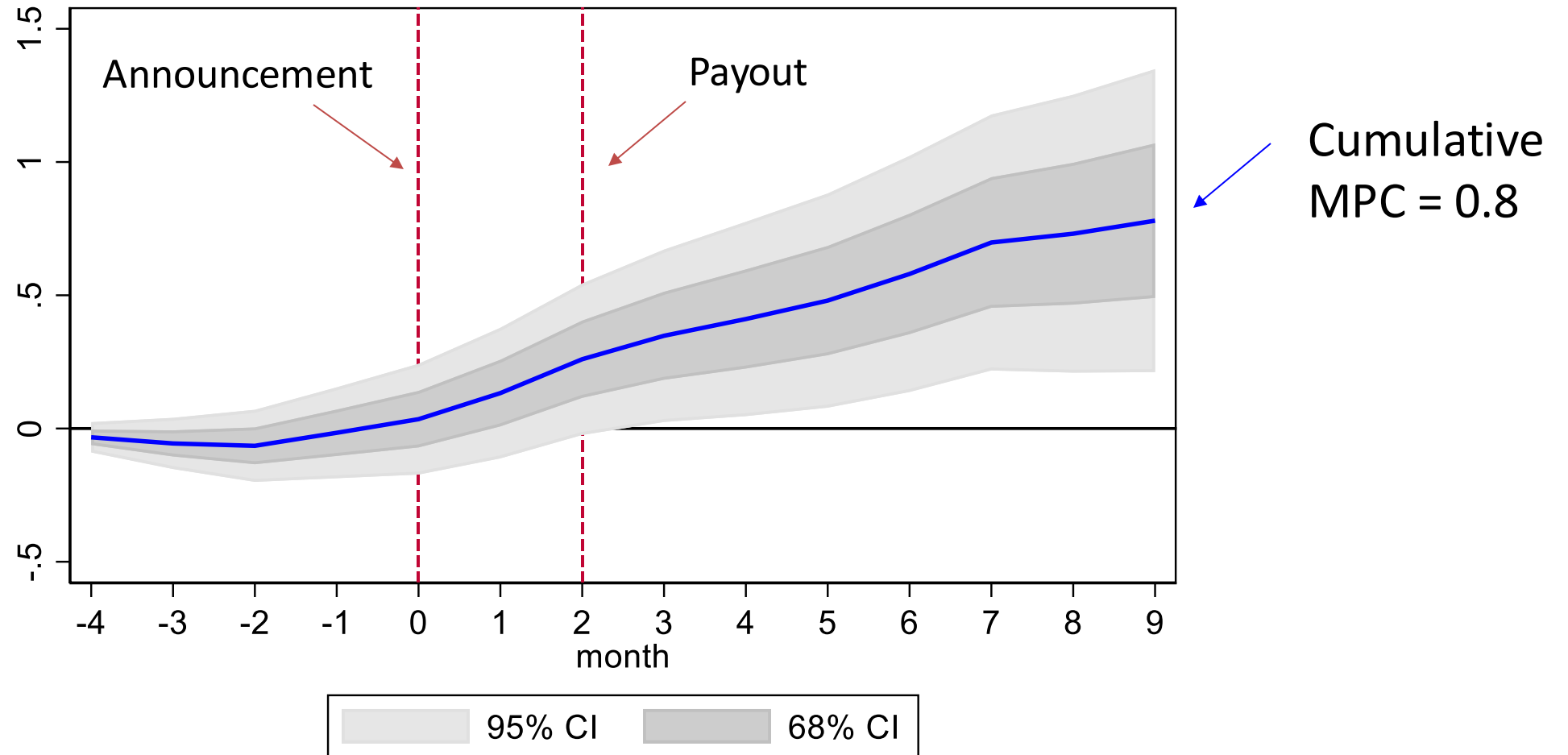


The \$600 she will get in Growth Dividends will go a long way towards paying for her personal daily expenses, says retiree Wong Siew Yin (right), 61, with family members (from left) Dorcas Chua, 39, William Koh, 36, Koh Jian Hui, 10, and Koh Cheng Yue, 63. ST PHOTO: ALPHONSUS CHERN

Agarwal-Qian Analysis

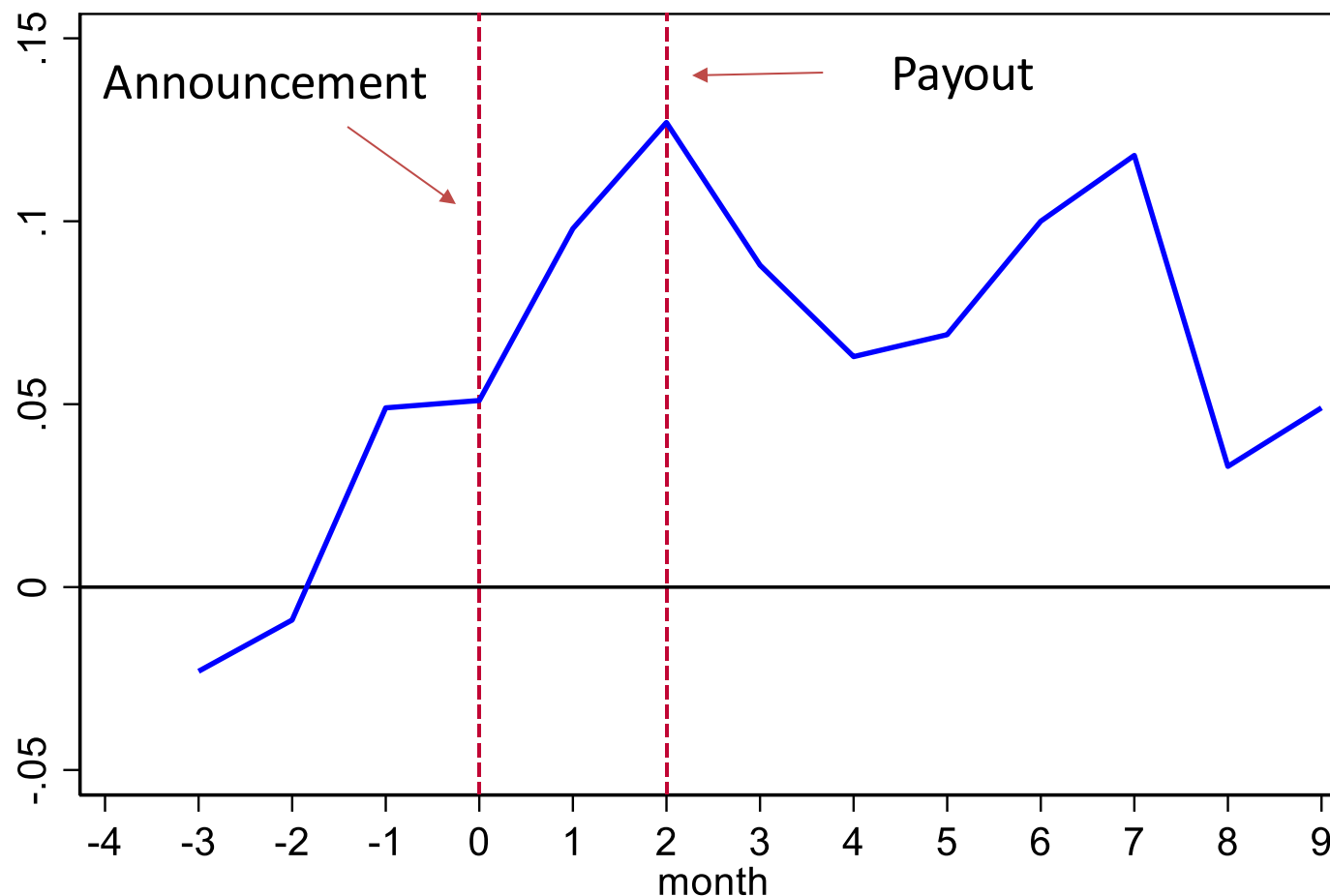
- Use a **proprietary dataset from the largest Singapore bank**.
 - 180,000 consumers, monthly panel, 2010:04 – 2012:03
 - Information on **credit & debit card, bank checking account spending**
 - Impute dividend payment based on rules and individual characteristics
 - **Control group** is foreigners matched on characteristics
- Estimate a **distributed lag model** of consumption on growth dividend, interacted with announcement date and disbursement date. Also, individual & month fixed effects.
- **Ideal natural experiment**, rich data, great control group.

Agarwal-Qian Cumulative MPC Estimates from Debit/Credit Card Spending



Individuals spent 80 ¢ of every \$ of payments within 10 months.

Agarwal-Qian Monthly MPC Estimates

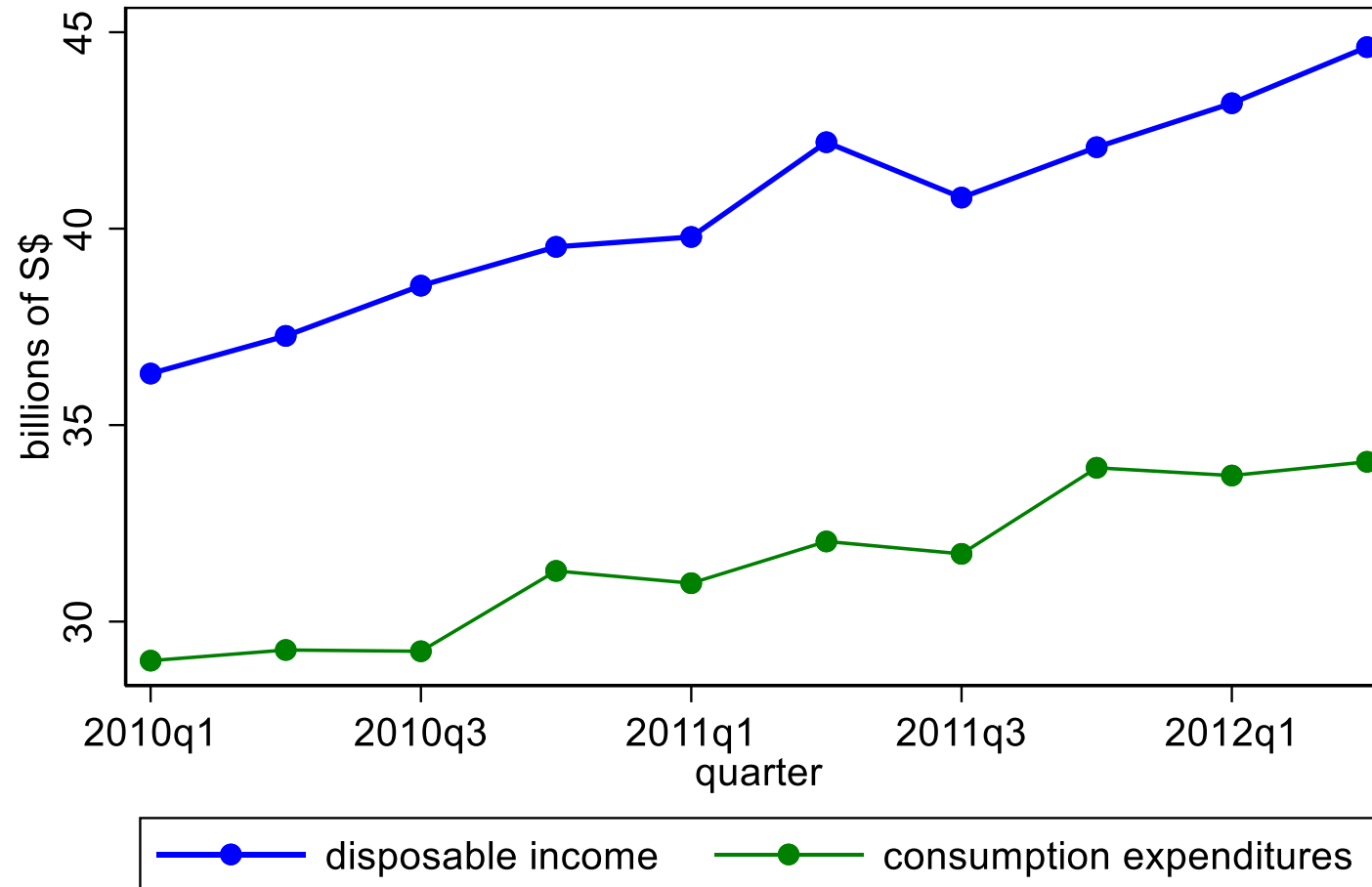


These estimates are what Auclert et al. call “intertemporal MPCs” or iMPCs for short.

What are the Macro Implications?

- Aggarwal, Auclert, Rognlie, and Straub (NBER Macro Annual 2023) analyze **fiscal policy in small open economies with heterogeneous agents**.
- They show: if (i) economy is completely open; and (ii) central bank keeps real interest rates fixed, then:
 - The response of **aggregate consumption** should be identical to the **iMPCs** from the micro data.
 - The response of imports should be identical to the iMPCs from the micro data.
- Let's look at the aggregate data in Singapore.

Singapore Disposable Income and Consumer Expenditures



- Payout is visible in the aggregate disposable income series.
- Consumption doesn't seem to respond much, but series is noisy.

Serendipity – How I discovered Repeated Natural Experiments

- Agarwal-Qian do not discuss the **motivation behind the government payout.**

- I was worried about endogeneity that could affect a macro analysis.

My RA Megan Liu and I researched the historical context.

- We discovered that **2011 was an election year in Singapore.**

- Singapore parliamentary elections must be held at least every 5 years.

- The government sometimes gives out large payments to citizens just before an election.

- The 2011 growth dividend studied by Agarwal-Qian was **the third such payout during an election year since 2000.**

Election Year Payouts to Households

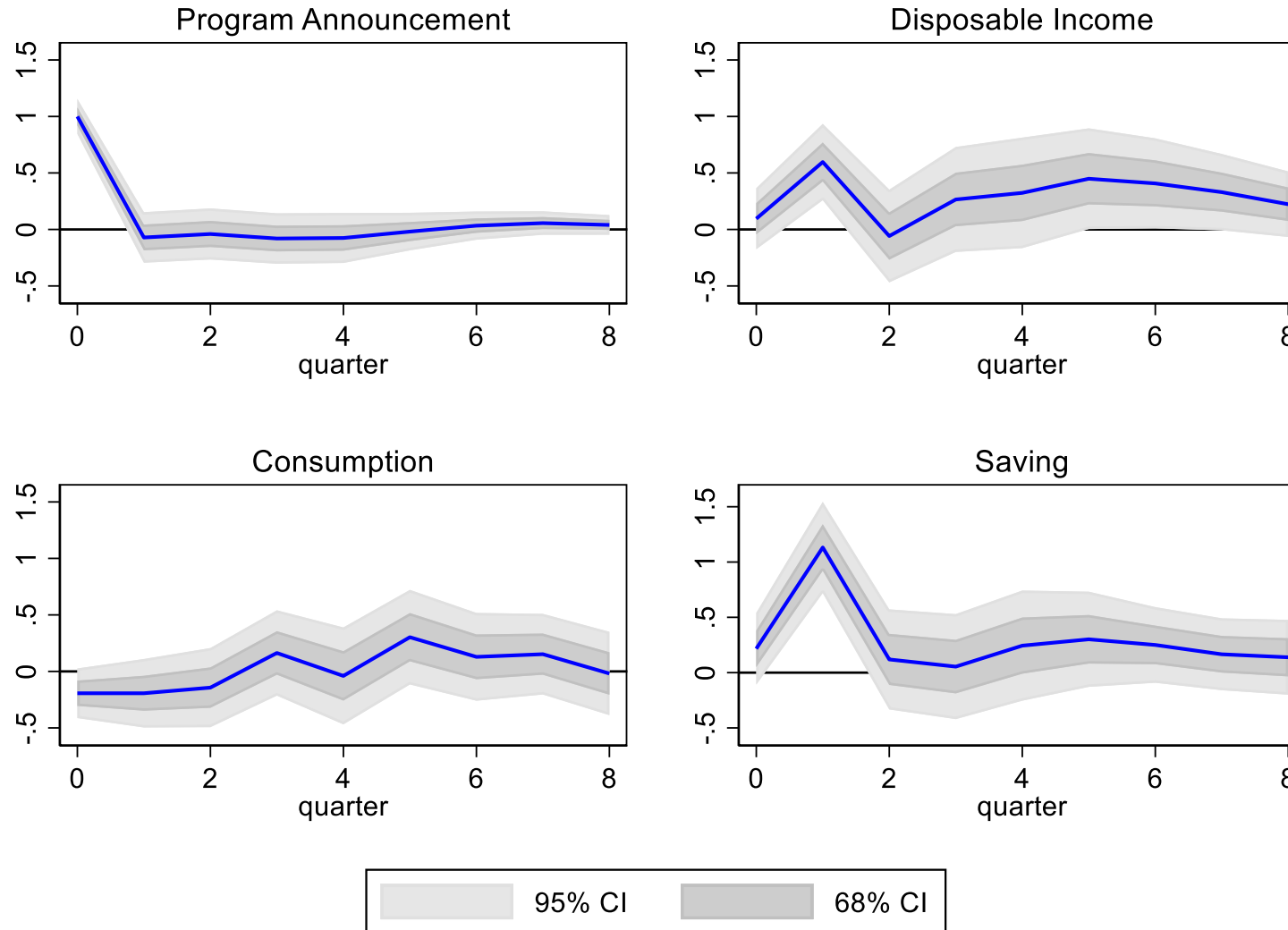
- 2001 New Singapore Shares S\$ 2.7 billion --- half could be cashed the 1st year
- 2006 Progress Package S\$ 2.6 billion
- 2011 Grow and Share Program S\$ 3.2 billion --- S\$ 1.5 billion was transfers

I used narrative methods to create an **external instrument** using the S\$ cash values of the payouts during election years.

SVAR Model with External Instrument

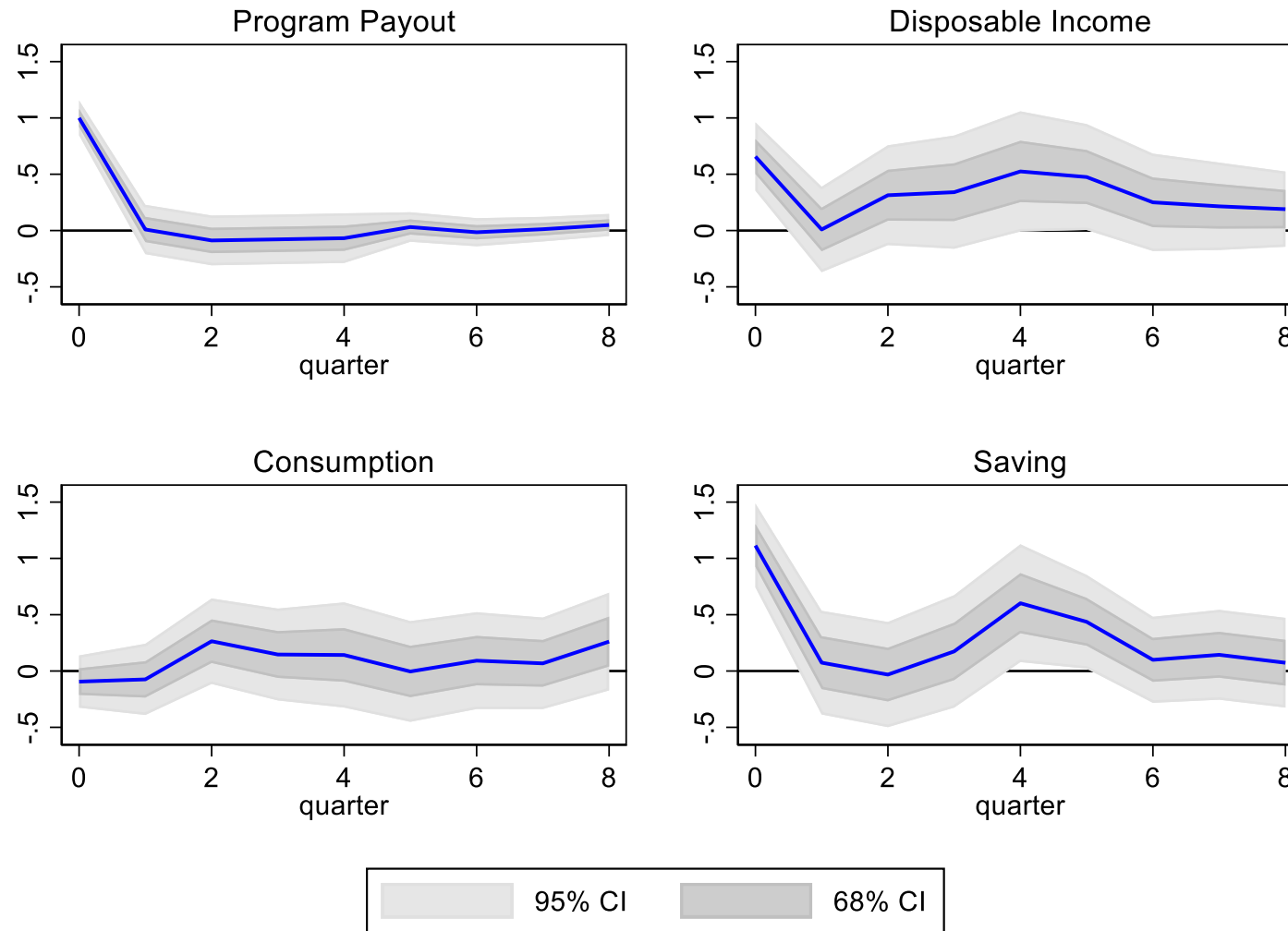
- Quarterly National Accounts data, 1999Q1 – 2019Q4 (exclude Asia crisis, COVID)
 - 4-variable Structural Vector Autoregressions (SVAR)
 - External instrument first: either announcement or actual payout
 - Real disposable income, real consumption, real saving
- All variables are a percent of trend disposable income, estimated from a polynomial trend.
- Estimate **impulse responses** to announcement or payout.

Response to Announcement



- **Announcement** shock peak normalized to 1% of trend disposable income.

Response to Payout



- **Payout** shock peak normalized to 1% of trend disposable income.

Summary of Singapore Macro Estimates

The announcement and payout shocks have quantitatively and statistically:

- Significant effects on aggregate disposable income.
- Significant effects on aggregate saving.
- Insignificant effects on aggregate consumer expenditures .

Robustness checks also showed:

- Insignificant effects on aggregate monthly retail sales .
- Insignificant effects on imports.

Puzzle that needs reconciliation: Agarwal-Qian find very high household MPCs in micro data but macro data suggests $MPC \approx 0$.

Australia

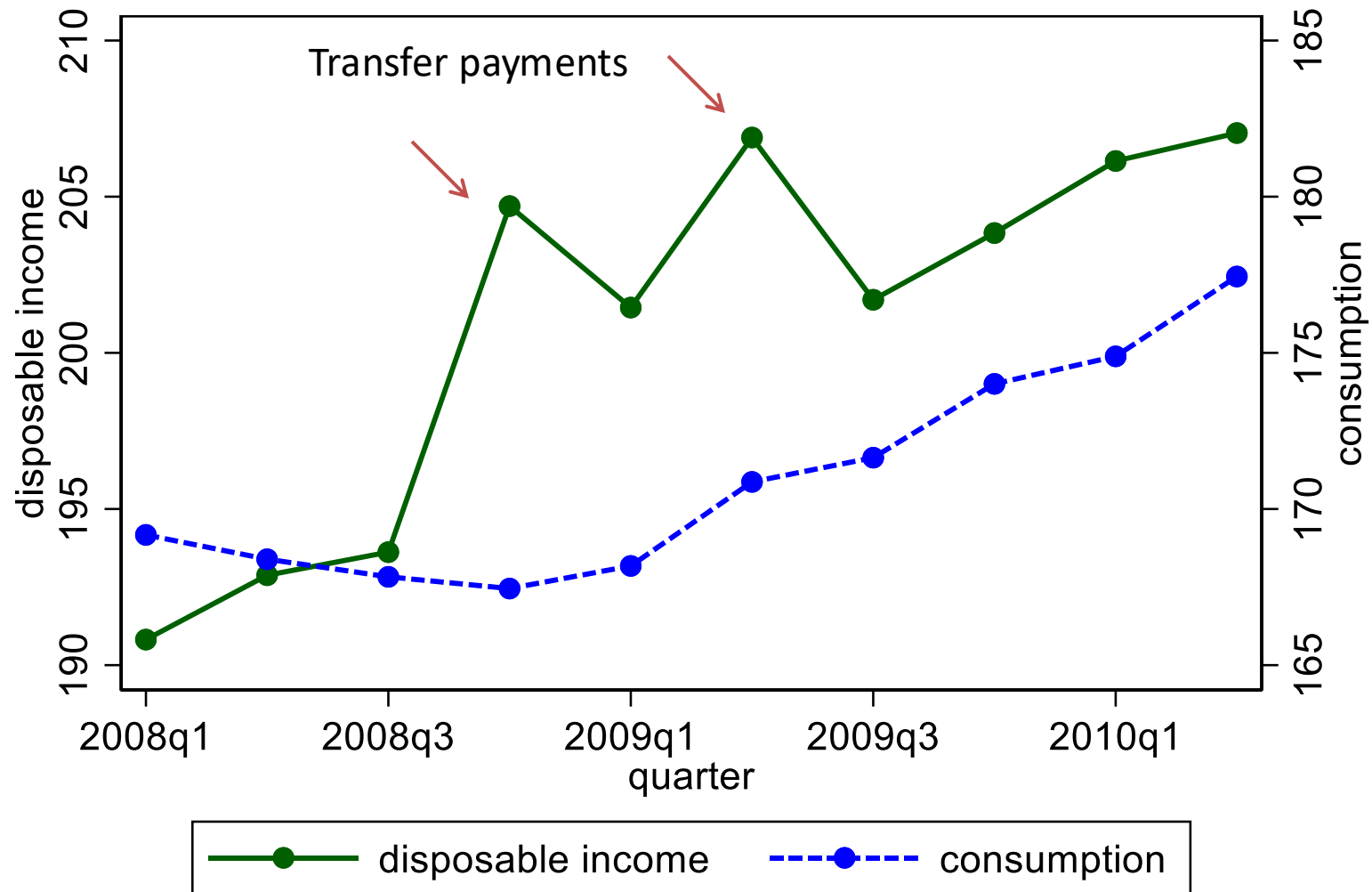
State of Australian Economy During the Global Financial Crisis

- Entered crisis period with **budget surpluses**.
- **Financial system** remained sound – top Australian banks still rated AA or better.
- **Exports began to recover** quickly in early 2009 because of East Asian growth.
- The **RBA cash rate** bottomed out at 3%, far above the zero lower bound.
- Nevertheless, Australia enacted **huge fiscal stimulus**.
 - According to Oct. 2009 Senate report, they did so because of the dire IMF predictions for the global economy.

Australia 2008-2009 Stimulus Payments

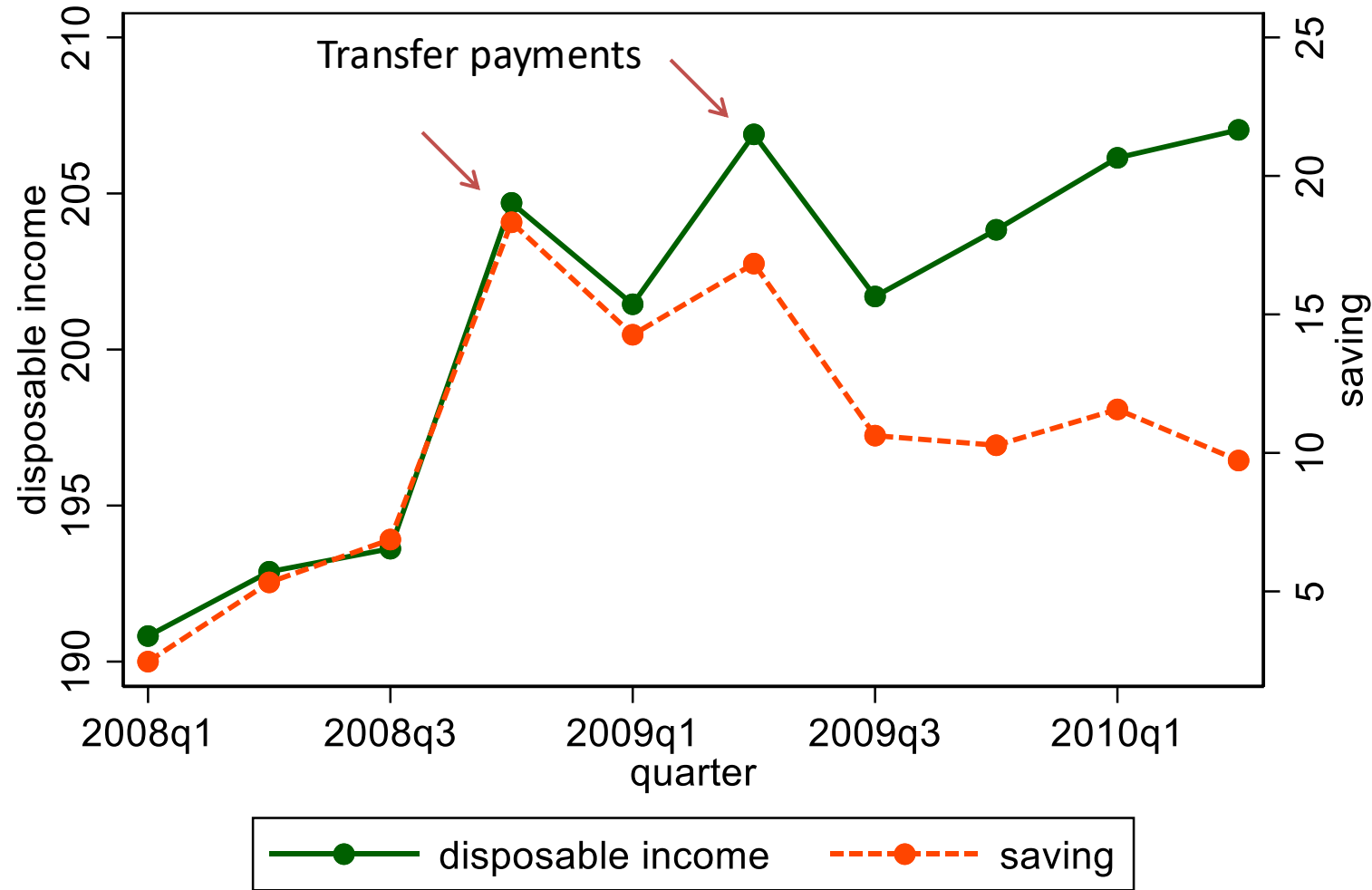
- Australia had the third-highest stimulus payments during GFC (after USA & South Korea) – **over 4 % of 2008 GDP**.
- AU\$ **10.4 billion** in transfers to households – announced Oct. 2008, disbursed Dec.
- AU\$ **42 billion** – announced Feb. 2009
 - AU\$12.7 was transfers, disbursed in Apr. 2009
 - AU\$ 26 billion in infrastructure investment
- AU\$ **22 billion** additional for infrastructure, announced May 2009.

Australia Disposable Income and Consumption



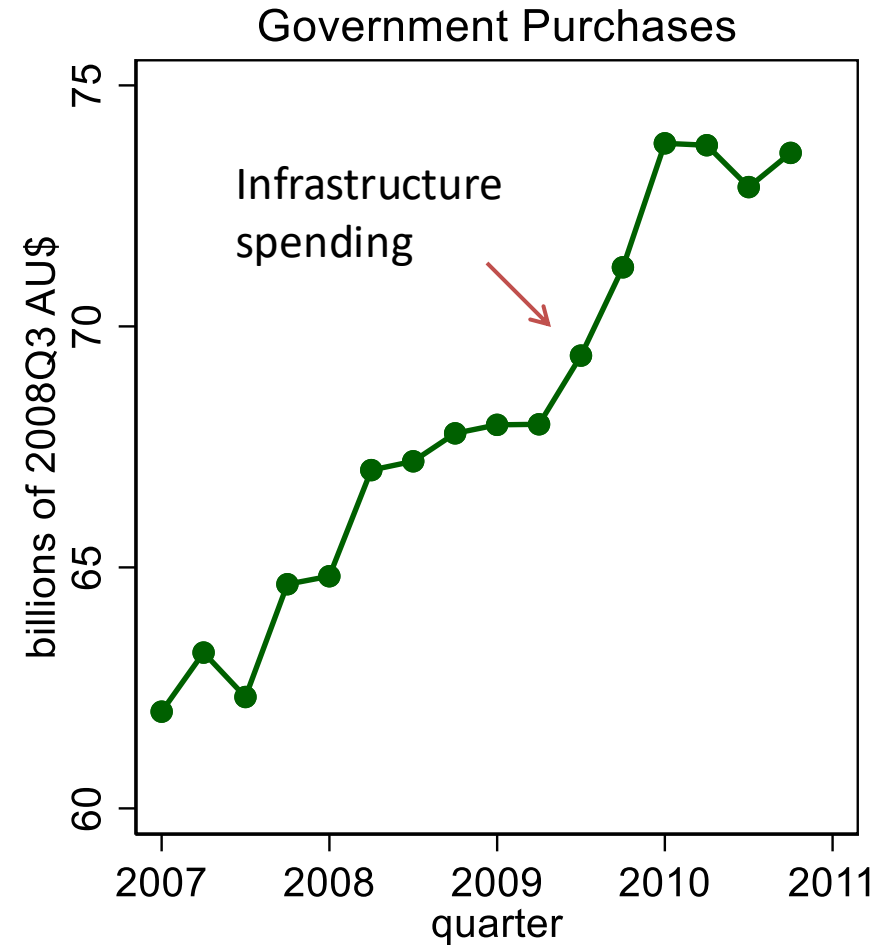
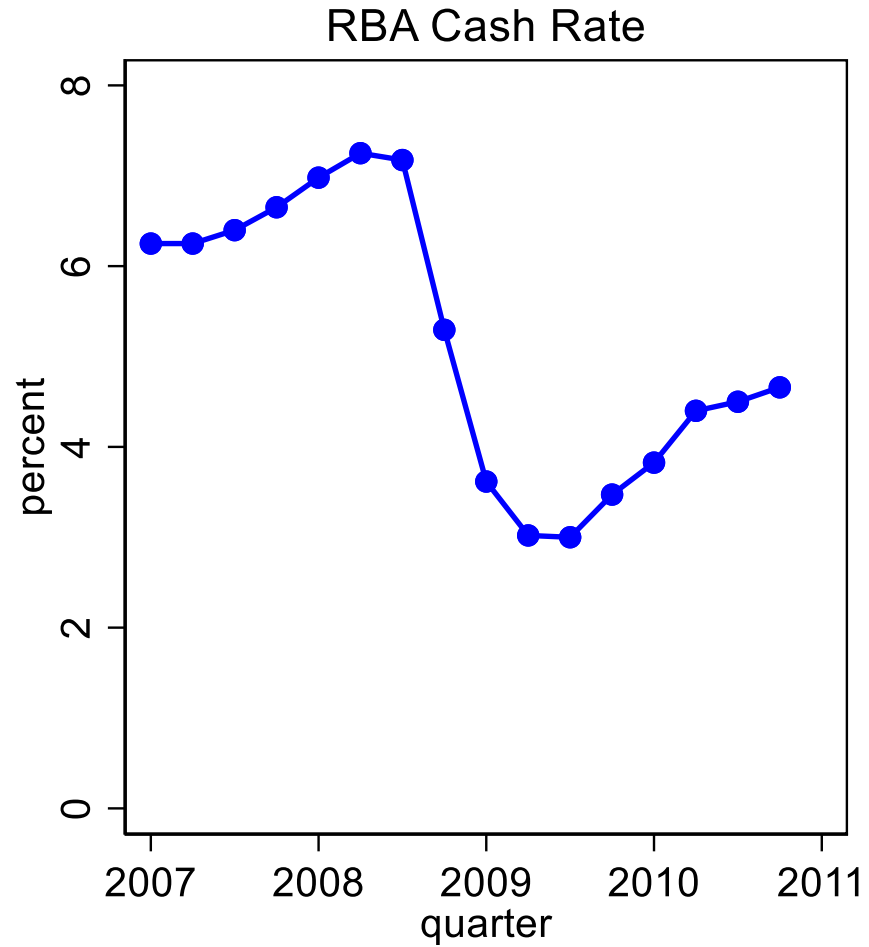
Billions of 2008q3 AU\$, quarterly rates.

Australia Disposable Income and Saving



Billions of 2008q3 AU\$, quarterly rates.

Australia Monetary Rates and Government Purchases



How Much Did the Fiscal Payments Stimulate the Economy?

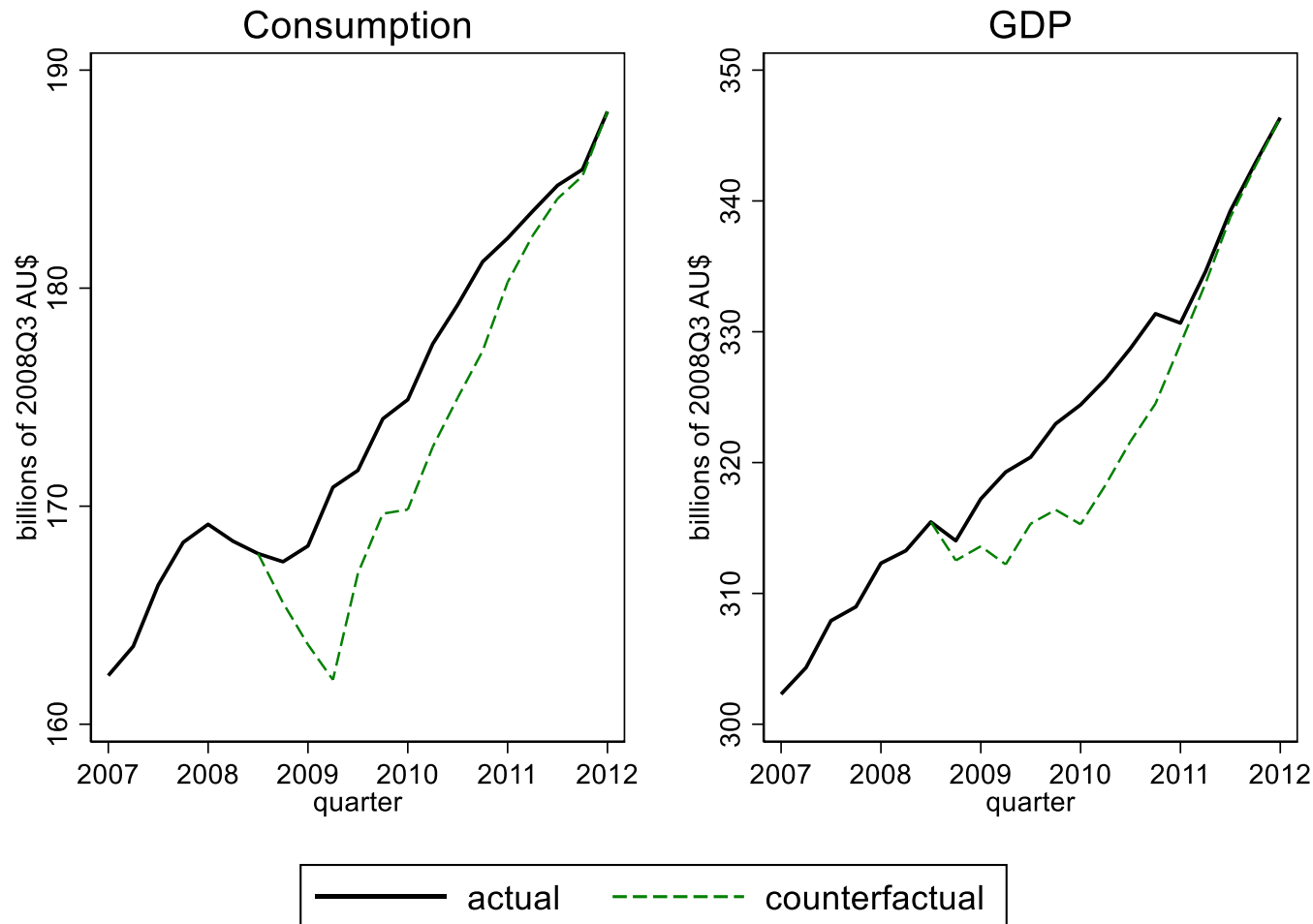
- Andrew Leigh (2012) – methods similar to Shapiro-Slemrod for U.S.
 - Used survey data asking consumers how much of the transfers they spent.
 - Estimated an $MPC = 0.4$.
- Aisbett, Brueckner, Steinhauser, Wilcox (JMCB 2024)
 - Used Nielsen household data with information on receipt of transfers.
 - Estimated $MPC = 0$.

Australia Counterfactuals

I calibrated Aggarwal, Auclert, Rognlie, Straub's SOE heterogeneous agent model to **Leigh's estimates** to create counterfactuals for consumption and GDP.

- I set openness parameter at 0.2 to match Australia.
- I included both the transfers payouts and infrastructure spending.

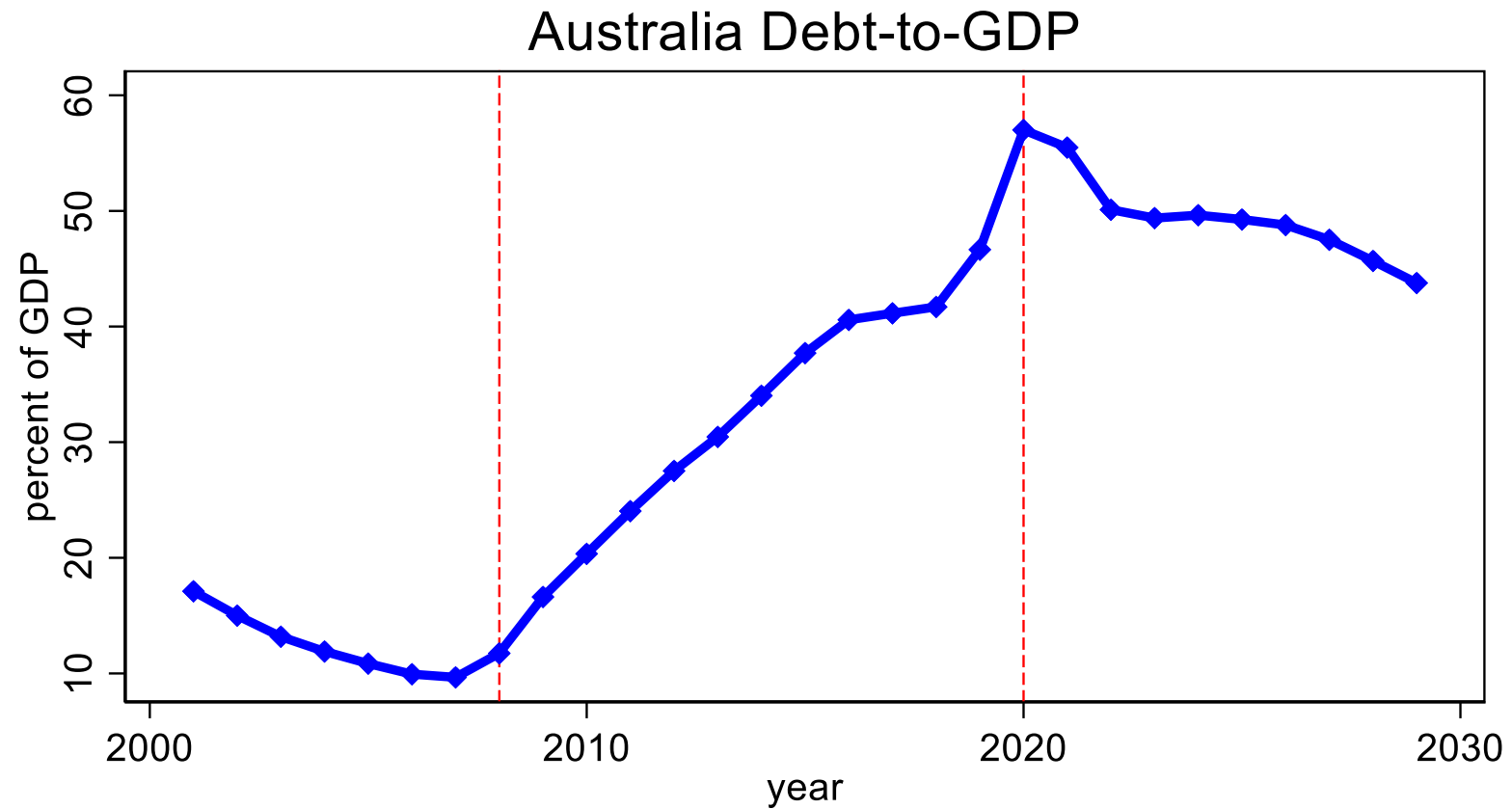
Australia Counterfactuals



Series & period	% Change in Consumption
Australia data 2008q1 – 2008q4	- 1%
Counterfactual 2008q1 – 2009q2	-4.2%
Australia data 1975q2 – 1975q4	-2.6%
U.S. 2008q2 – 2009q2	-2.4%

How could Australia have done so much worse than the U.S.?

Lingering Consequences



Conclusions

1. Cyclicality in the prominence of **Keynesian thinking**:

Due to **interplay of events, theories, and empirical evidence**

2. The Keynesian stimulus adopted during the crises ratcheted up the **debt-to-GDP ratios**.

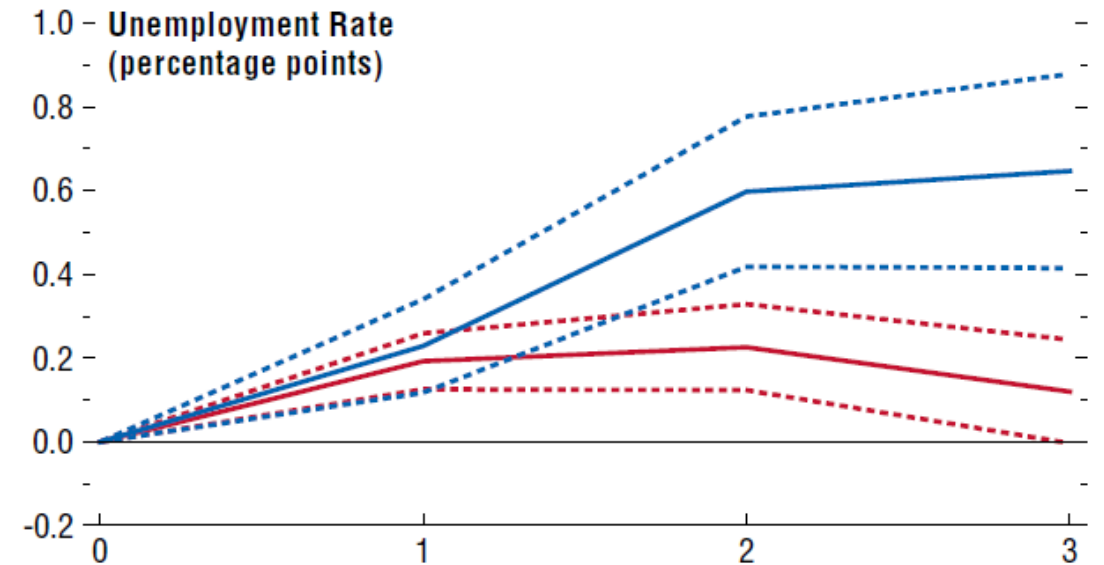
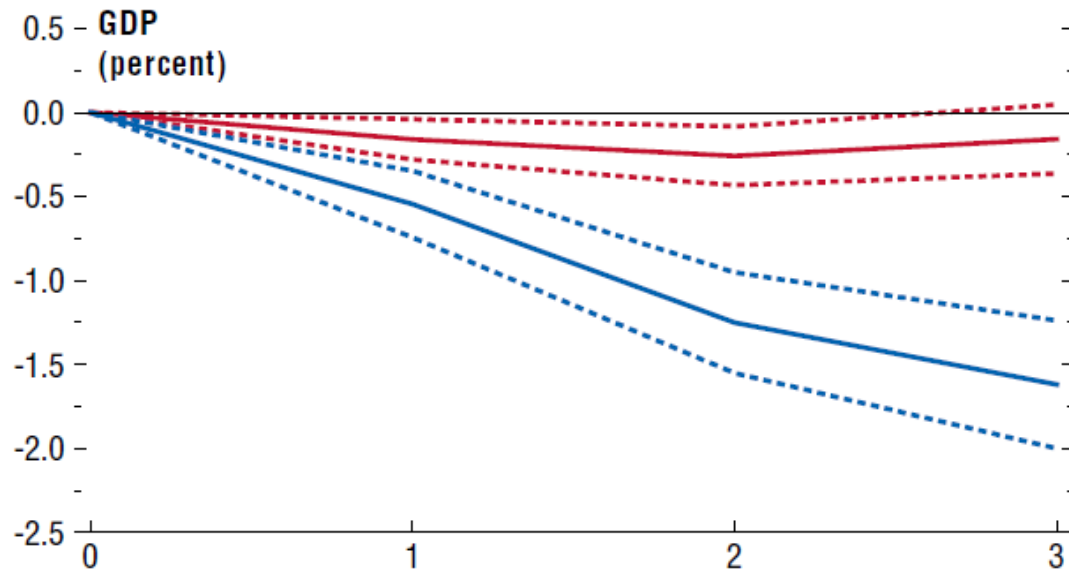
I didn't even mention the GDP loss due to higher taxes

3. Are **temporary transfers** effective stimulus?

- Not in any of the four case studies I have done
- More case studies on the way – Alaska

The Cost of Stimulus Payments: Raising Taxes

The Effects of a 1% of GDP Fiscal Consolidation: Tax vs. Spending Based
(WEO 2010, Chapter 3)



— Tax-based

— Spending-based