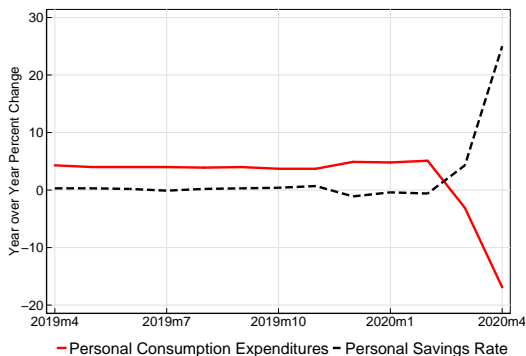


Initial Impacts Of the Pandemic on Consumer Behavior: Evidence from Linked Income, Spending, and Savings Data

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Arlene Wong Diana Farrell Fiona Greig

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Fall in Aggregate Spending and Rise in Aggregate Savings



Source: Bureau of Economic Analysis.

- This paper explores linkages between household spending, income, savings.

Introduction

- Which factors drive the joint movements in spending and savings?
 - I.e., Shut-downs and health risks, income losses, role of transfers
 - Use bank account data on household spending, income and savings
- Results are useful for understanding causes and dynamics of recession:
 - supply (shutdowns) vs. demand (spillovers)
 - current vs. future dynamics
 - inflation vs. deflation
- Policy implications for fiscal stimulus

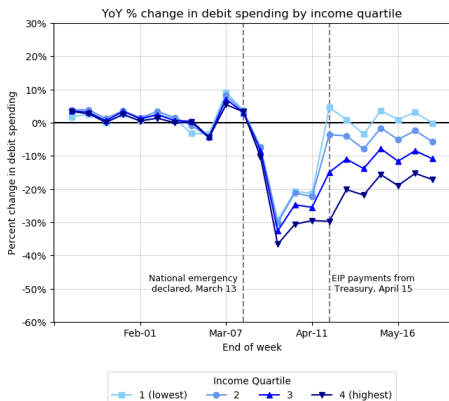
Data Description

- JPMCI household-by-day bank account data for 8 million customers
 - Detailed credit and debit card spend
 - Liquid asset balances
 - Labor income and employer information from direct deposit inflows
- Key advantages of data:
 - Links HH spending, income and savings.
 - Individual covariates, e.g. zipcode, industry of employment.
 - Large sample size, wide geographic coverage, spans income spectrum.

Data Description

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 - Large sample size, wide geographic coverage, spans income spectrum.
- Q: How does the distribution of spending and saving evolve?

Result 1: Spending recovers faster for low income households

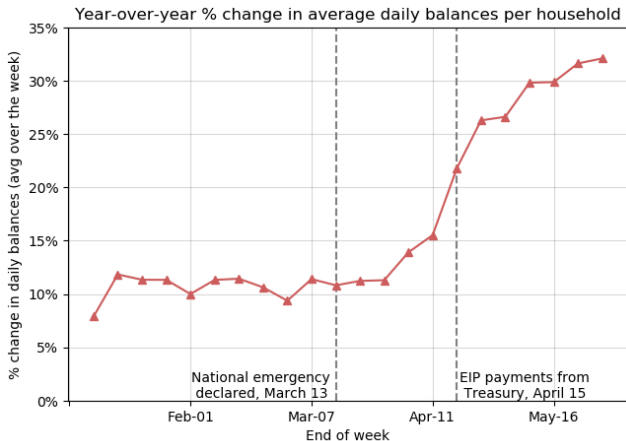


- Large and pervasive initial declines. [Credit card spend](#)
- Faster recovery in spending for lower income households.
- Similar patterns in lower-income sectors. [Details](#)

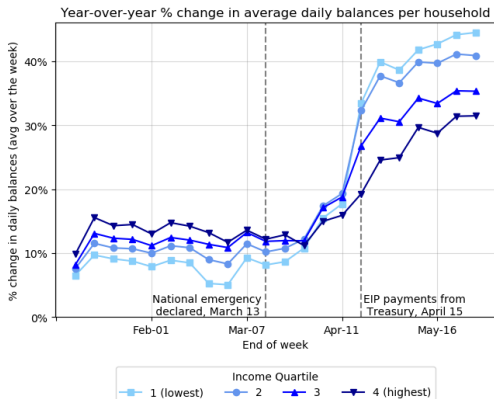
Income or Location?

- Higher income households tend to live in cities
 - Cities had greater disease burden, more restrictive shut-downs
- Answer: Income levels **not** proxying for location
 - Similar coefficients with and without zip fixed effects [Details](#)

Rise in Liquid Balances Mirror Drops in Spending



Result 2: Stronger Growth in Balances For Lower Income Quartile



- Stronger growth for low income households *implies* reduced liquid wealth inequality.

Summary and Preliminary Interpretations

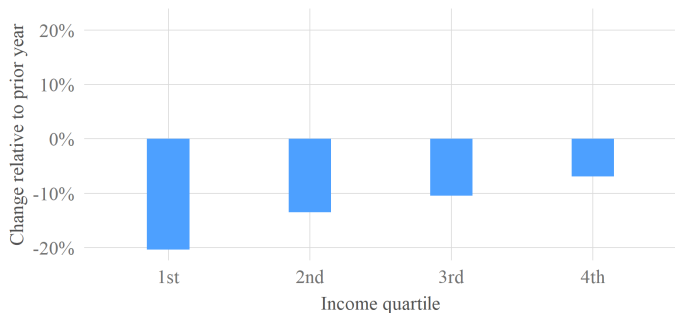
Key Results:

- ① Large and pervasive initial spending decline:
 - Too large to be explained by job losses alone.
- ② Divergent patterns by income emerge mid-April:
 - Spending recovers faster for lower income households.
 - Savings grows faster for lower income households.

What explains these patterns in spending and savings?

- One potential explanation: Government income support.

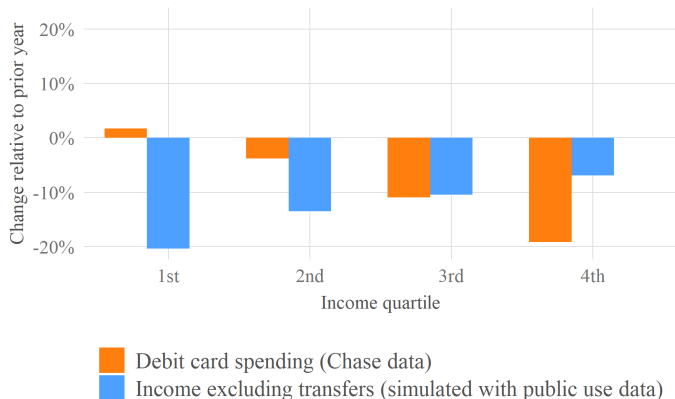
Estimated changes in income and spending



Income excluding transfers (simulated with public use data)

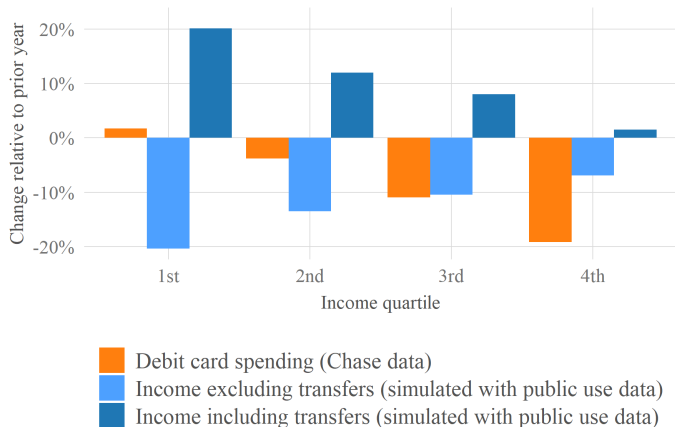
Simulated income using statutory provisions of the CARES Act, information from the CPS and the unemployment insurance calculator in Ganong, Noel and Vavra (2020).

Estimated changes in income and spending



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Estimated changes in income and spending



Simulated income using statutory provisions of the CARES Act, information from the CPS and the unemployment insurance calculator in Ganong, Noel and Vavra (2020).

Implications

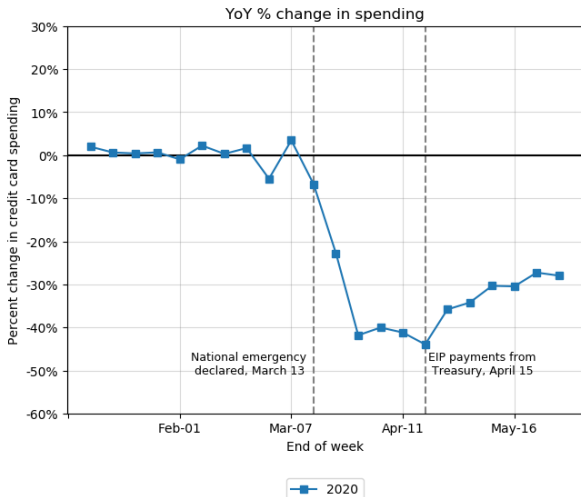
- Aggregate spending rebounded, but still below pre-pandemic levels
- Government income support partially driving spending recovery & savings growth
- Phasing out stimulus too quickly may transform supply-side recession into a broader recession due to declines in income and demand.

Future Work

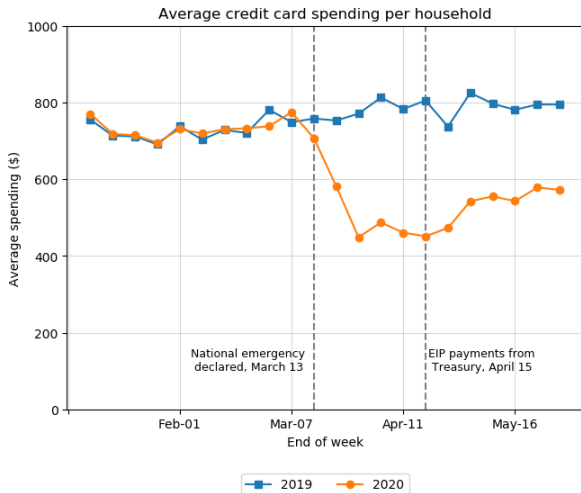
- Research questions:
 - Role of direct vs. indirect spillover effects for business cycle dynamics?
 - Role of fiscal transfers for stabilizing consumption?
- Future work:
 - Tracing out individual joint income-spending-savings dynamics directly
 - Estimating MPC using total spending data (debit, credit, cash, other).
 - Estimating composition effects (luxuries vs necessities, durables vs. non-durables).

Spare Slides

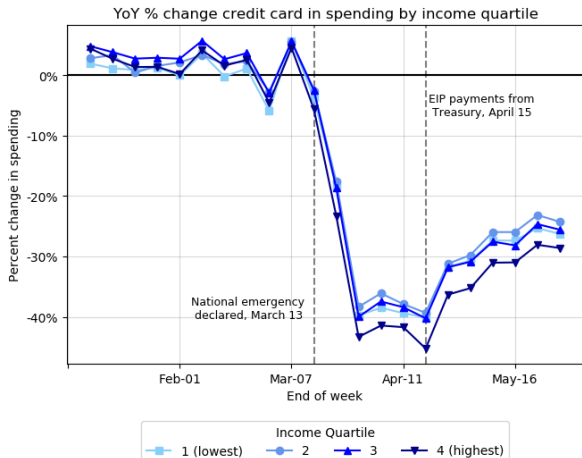
Aggregate Credit Card Spend (Year over Year)



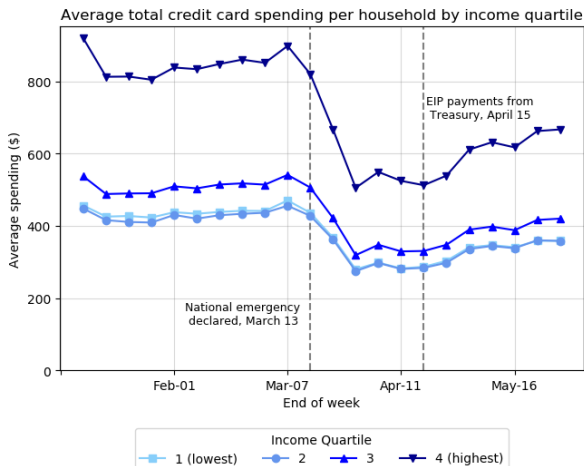
Aggregate Credit Card Spend (Levels)



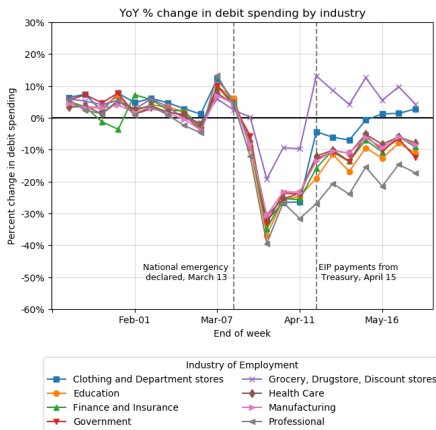
% Credit Card Spend by Income Quartiles



\$ Credit Card Spend by Income Quartiles



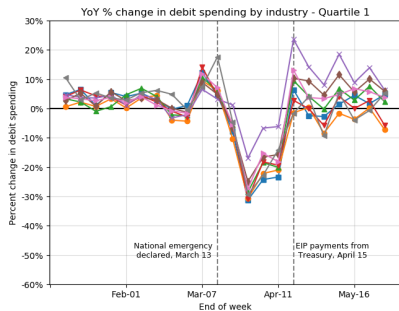
Spending Changes by Industry of Employment



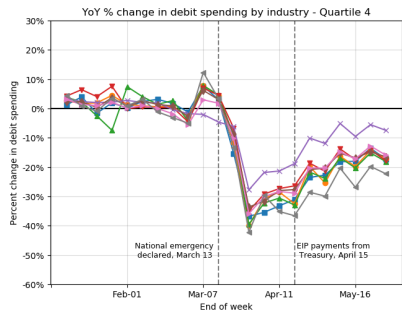
- Smaller spending decline, faster recovery for grocery sector workers.
- Larger spending decline, slower recoveries in higher-income sectors.

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Further Split of Spending Changes by Industry and Income



(a) Quartile 1



(b) Quartile 4

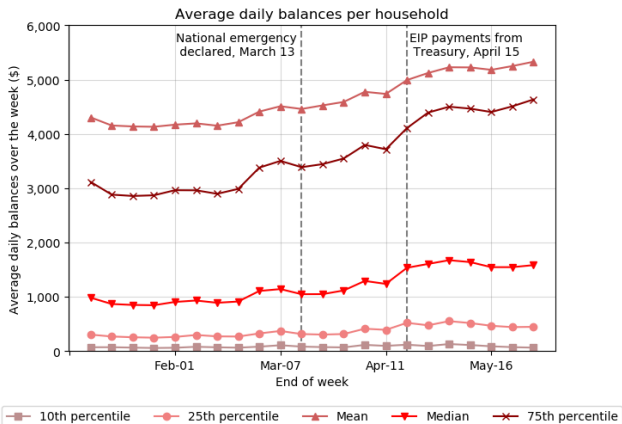
- Smaller differences across industries, controlling for income quartiles.
- Large differences within industry, *across income quartiles*.
- Suggests household income groups, rather than industry of employment, matters for understanding spending patterns. [Back](#)

Role of physical location

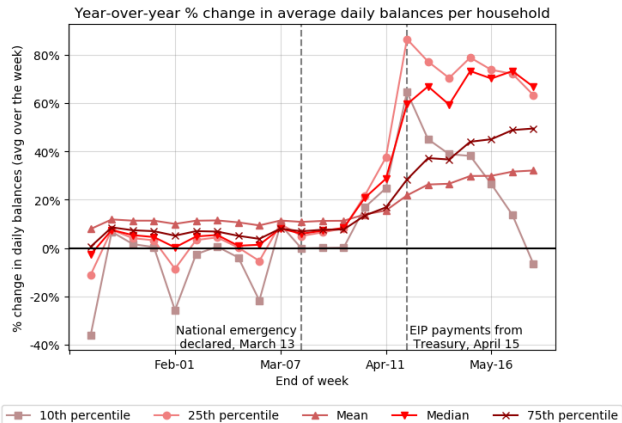
<i>Dependent variable:</i>								
Debit Card Spending Growth								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Income Q2	-0.053*** (0.004)	-0.054*** (0.004)	-0.062*** (0.002)	-0.058*** (0.001)	-0.055*** (0.003)	-0.054*** (0.002)	-0.063*** (0.011)	-0.064*** (0.010)
Income Q3	-0.119*** (0.004)	-0.124*** (0.004)	-0.142*** (0.002)	-0.132*** (0.001)	-0.132*** (0.003)	-0.127*** (0.002)	-0.129*** (0.011)	-0.127*** (0.010)
Income Q4	-0.223*** (0.004)	-0.221*** (0.004)	-0.246*** (0.002)	-0.224*** (0.001)	-0.238*** (0.003)	-0.226*** (0.002)	-0.273*** (0.011)	-0.271*** (0.010)
Constant	0.037*** (0.003)		-0.020*** (0.001)		-0.005** (0.002)		0.070*** (0.008)	
Geography FE	NO	YES	NO	YES	NO	YES	NO	YES
Observations	65,675	65,675	65,675	65,675	24,923	24,923	3,587	3,587
Adjusted R ²	0.042	0.249	0.301	0.580	0.265	0.595	0.159	0.306

Significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

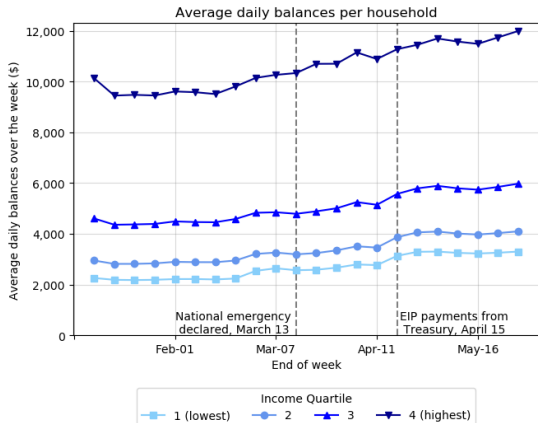
Change in Distribution of Liquid Asset Balances (\$)



Change in Distribution of Liquid Asset Balances (%)

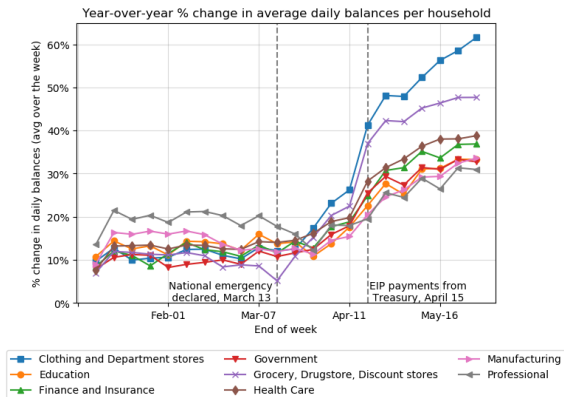


Larger \$ Rise in Balance For Higher Income Quartile



- Large dollar rise in liquid balances by highest income quartile, reflecting scale effects. [Back](#)

Growth of Balances by Industry of Employment



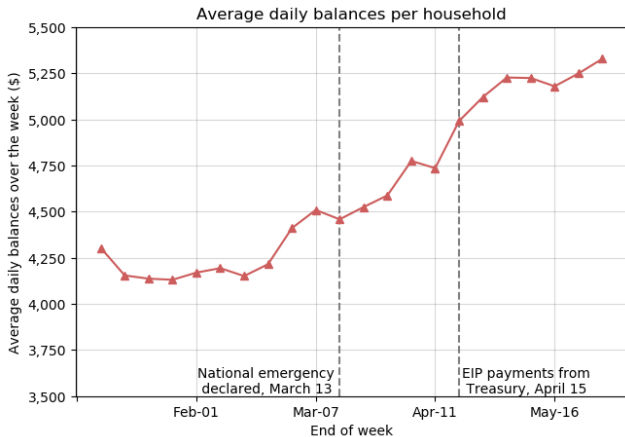
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Decomposition of Total Liquid Balances by Income Groups

	Initial Balances	Share of Initial Balances	Increase in Balances	Share of Increase in Balances	Final Balances	Share of Final Balances
Quartile 1	\$3.3B	12.6%	\$0.8B	15.2%	\$4.1B	13.0%
Quartile 2	\$4.1B	15.5%	\$1.1B	19.2%	\$5.1B	16.2%
Quartile 3	\$6.1B	23.1%	\$1.4B	25.9%	\$7.5B	23.6%
Quartile 4	\$12.9B	48.8%	\$2.2B	39.7%	\$15.0B	47.2%
Total	\$26.4B	100.0%	\$5.5B	100.0%	\$30.2B	100.0%

- Lower income households driving more of the aggregate increase in balances than expected from initial shares.
- Poor are increasing savings relative to rich during the pandemic.
- Reflects a decline in liquid wealth inequality. [Back](#)

Rise in Liquid Balances Mirror Drops in Spending



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