

# Do COVID-19 Stimulus Payments Stimulate the Economy? Evidence from Card Transaction Data in South Korea

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- The COVID-19 Pandemic: unprecedented health shock → economic recessions
  - Global GDP is estimated to reduce by \$12.5 trillion by end-2021 (IMF, 2020)
- Massive stimulus programs are introduced (e.g. cash transfers, wage subsidies, rent waiver, etc)
- Direct cash transfers have been adopted by several countries
  - The CARES Act: \$1.8 trillion budget
  - cf. The 2008 Tax rebate: \$0.1 trillion budget
- Do these payments effectively stimulate the economy?
  - What is the spending impact of the payments?

- Spending responses to economic stimulus payments during the previous recessions in the US
  - Johnson et al. (2006), Parker et al. (2013), and many others
  - Estimated MPC: 50% - 90% (Parker et al., 2013)
  - Hard to directly apply findings of these studies
- COVID-19 stimulus payments in the US
  - Baker et al. (2020), Chetty et al. (2020), Coibion et al. (2020), Misra et al. (2020)
  - Little variation in the timing of the payment disbursement
  - Investigate only short-term consumption impact

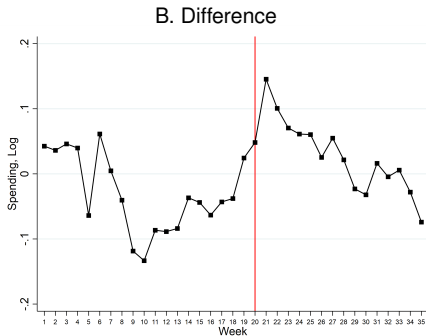
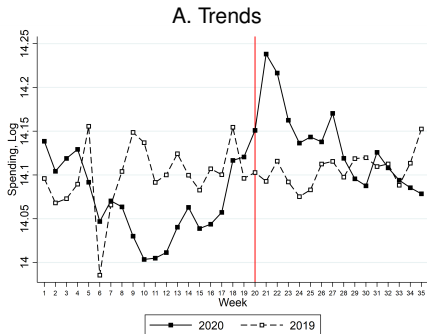
- We study spending responses to the COVID-19 stimulus payments in South Korea (Korea)
- First-ever national across-the-board income grant in Korea
  - Implemented in May 2020
  - About KRW 14 trillion budget
  - KRW 400k (single) to 1 mil. (a family of 4 and above)
    - Cf. US (up to \$1200), Hong Kong (\$1290), Singapore (up to \$656), Japan (\$952) for a single individual
  - Modes of payments: 1) cash, 2) a direct deposit to a credit or debit card account, 3) gift certificates or a prepaid gift card
  - 99.5% received the payments by early June

- Two unique policy rules:
  - Only redeemable in the province of residence (until August 31, 2020)
  - Sector-specific spending restrictions
    - Department stores, hyper-marts, gyms, hotels, entertainment outlets, and online transactions
- Contributions
  - Investigating longer-term association between spending and the stimulus payments
    - Provide complementary evidence about the extent the stimulus payments stimulate the economy
  - Spending impact of the stimulus payments without lockdowns
    - Good setting to understand the role of risk avoidance behavior

- Offline card transaction data from Shinhan Card (22% market share)
  - Based on 3.42 billion card transactions in Seoul (both credit and debit)
  - Transaction records obtained from the payment terminal of each store
  - Estimates of total spending of each block are provided mkshare
    - A block is the minimal geographic boundary defined by Statistics Korea (sized less than 0.1 km<sup>2</sup>)
- We use the block-week level panel data
  - Covers the period from January 2019 through July 2020 and 15,698 census blocks

# Data

## Trends of Log(Card Spending) in 2019 and 2020



covid

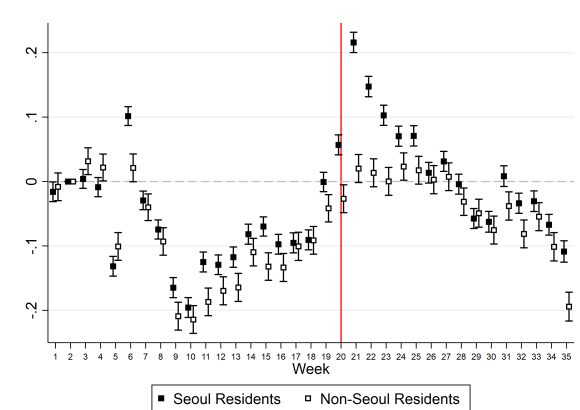
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- Several existing COVID-19 related studies estimate differential changes in outcomes of interest between 2020 and 2019
- Consider a difference-in-differences specification:

$$Y_{i,t} = \beta_0 + \sum_{k \neq 2} \delta_k 1[Week_t = k] 1[Year_t = 2020] + \beta_1 1[Year_t = 2020] + \lambda_i + \omega_t + \epsilon_{i,t} \quad (1)$$

- $i, t$ : block, week
- $Y_{i,t}$ : average daily card spending
- $\delta_k$ : DID estimates capturing the effect of COVID-19 and stimulus payments ( $k \geq 20$ )

# Spending Responses to COVID-19 Stimulus Payments



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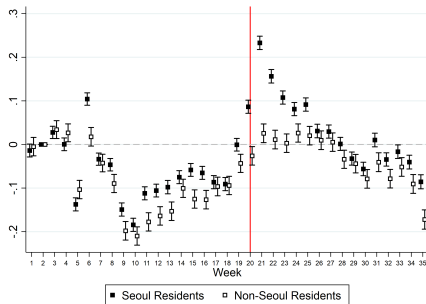
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# Spending Responses to COVID-19 Stimulus Payments

- Fungibility of income might not hold
  - Evidence of labeling effects of different income sources in the context of public transfers (Kooreman, 2000; Beatty et al., 2014; Hastings and Shapiro, 2018)
  - Thaler's (1999) mental accounts framework is one possible mechanism
- Examine longer term spending responses to the stimulus payments
- Examine whether the spending impact was driven by the prespecified sectors

# Spending Responses by Sector

A. Allowed Sectors



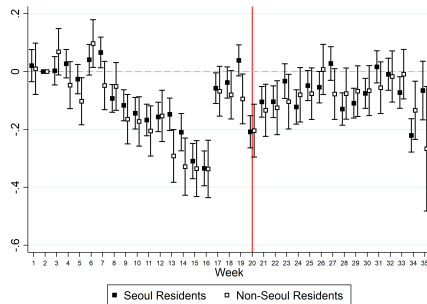
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B. Non-allowed Sectors

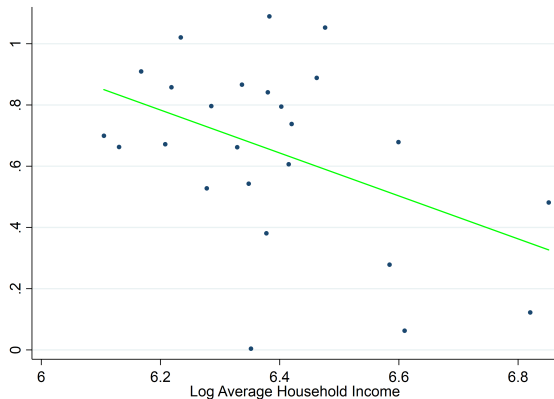


# Marginal Propensity to Consume

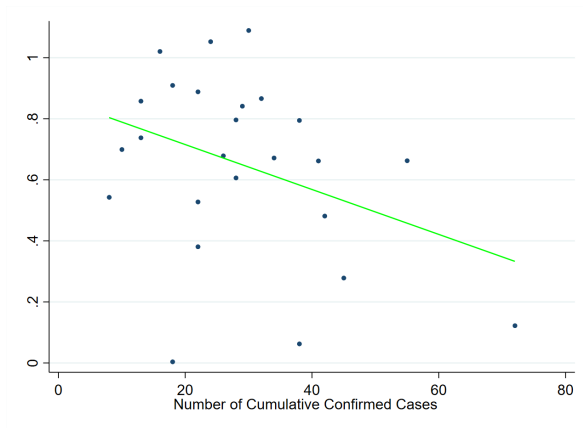
- The stimulus payments boosted card spending for 5-6 weeks
  - Increased spending after the disbursement of payments
  - The positive impact dissipated over the next few weeks
- The size of stimulus payments to Seoul residents (excl. cash, gift certificate, and prepaid cards): KRW 2.04 trillion
  - Including other modes: KRW 2.38 trillion
  - Increase in consumption spending during weeks 20-27: KRW 497.1 billion
  - MPC = 24.4% (upper bound  $\simeq$  35%)
  - Lower than estimates of tax rebates during previous recessions in the US

cash

# Spending Responses by Average Monthly Income

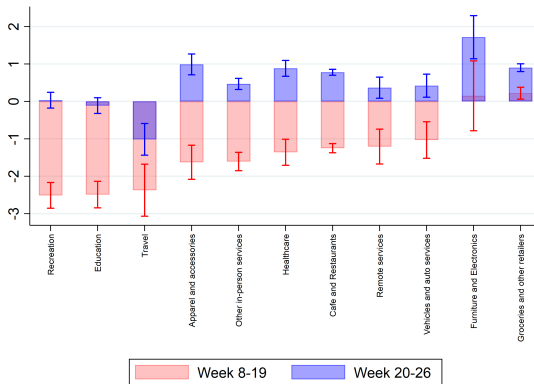


# Spending Responses by Cumulative COVID-19 Cases



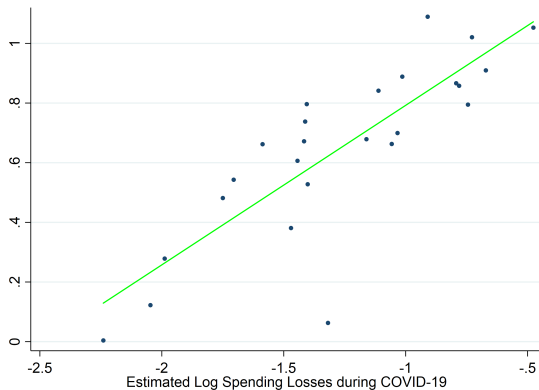
rate

# Spending Responses by the Size of Spending Losses during COVID-19



allowed

# Spending Responses by the Size of Spending Losses during COVID-19



- The stimulus payments increased card spending for 5 weeks
  - $MPC \simeq 24\%$
- Heterogeneous spending impact
  - Greater spending impact among low income groups
  - Weaker spending impact in district with more cumulative cases
- Stronger spending responses in sectors or areas with weaker COVID-19 shocks
  - Might need other safety nets for those who actually experienced severe recession shocks