

# Small Bank Financing and Funding Hesitancy in a Crisis: Evidence from the Paycheck Protection Program

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# Motivation

The PPP tries to deliver credit to – constrained and economically critical – small businesses during a crisis

Two actors

- Bank intermediaries who deliver the funds
- Small businesses targeted by PPP

Research issue

- How do these players impact PPP delivery?
- Why?

# Motivation 1: Bank Intermediaries

The PPP tries to deliver funding quickly to small businesses

Banks seem like a great delivery channel

- They have extensive branching networks
- Small businesses have bank accounts

Empirical questions

- Do banks shape PPP credit supply? How? Why?
- Is there variation between how small and big banks prioritize businesses?

# Motivation 2: Small businesses

Highly constrained even in normal times

- PPP is super-cheap and immediately available
- Has positive valuation effects (to be shown)

PPP should be welcome

- Is it, really?
- Or is there some aversion to PPP? Why?

# Preview of Results

# Results 1: Small Firm Prioritization by Small Banks

Intermediary priorities matter in PPP delivery

- Large clients go first
- *Small* banks attenuate large firm prioritization
- Prior relationships (DealScan + UCC) matter
  - Special role for small banks

# Results 1: Small Firm Prioritization by Small Banks

Small businesses pair with small banks. Why?

- The traditional rationale: soft information
  - Small business lending involves soft information. Difficult to transmit up hierarchies (e.g., Stein 2002, Berger et al 2005)
  - Co-locate lending and decision-making, as in small banks
- We suggest another rationale outside soft information
  - Based on prioritization of small business lending
  - Less likely to take back seat if small businesses in small banks.

# Results 2: Funding Hesitancy

For the COVID-19 disease, there are vaccines

- Yet we find that there is vaccine hesitancy

For COVID-19 economic fallouts, we have PPP

- Do we find a "funding hesitancy?" Yes.
- Firms return PPP funds quickly -- without using them.
- Share prices of PPP returners *increase*



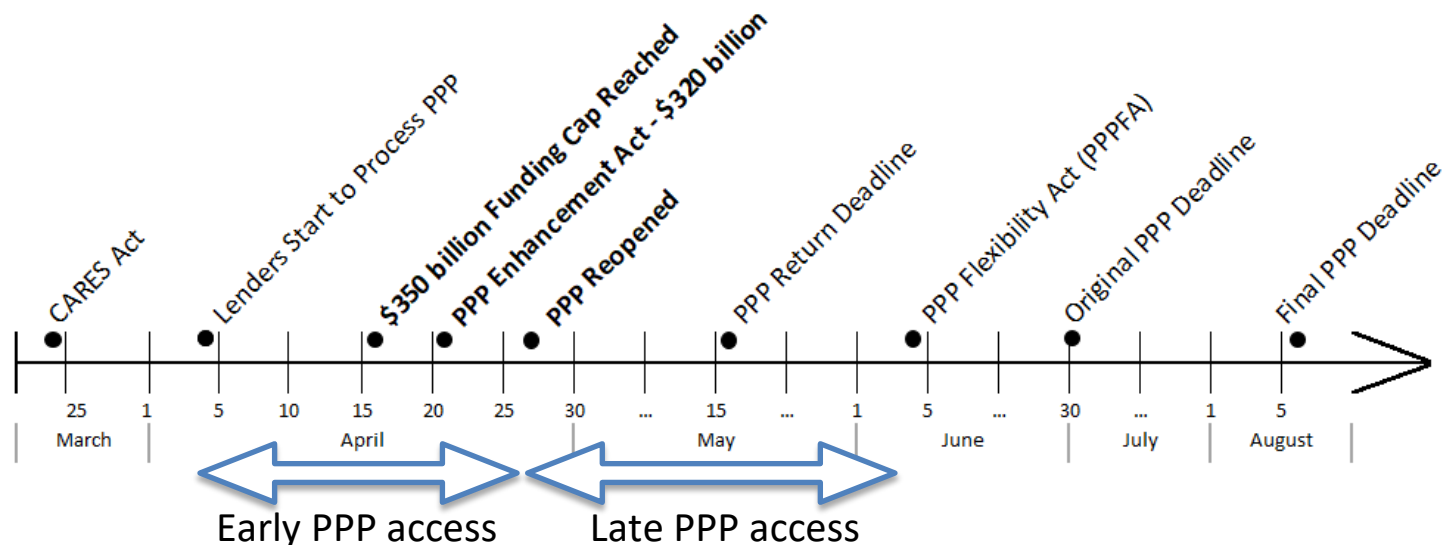
# Results 2: Funding Hesitancy

Funding hesitancy partly reflects wariness of the heavy hand of the government.

- Discontinuity evidence shows this effect
- Consistent with evidence on penalties due to government investigations going back to Jarrell and Peltzman, 1985

# Research Design

# The PPP Setting



## Paycheck Protection Program (PPP)

- PPP extraordinarily inexpensive
- Applying involved simple process with little “soft” information gathering
- Rush for PPP funding
  - Phase 1 \$349 billion allocation exhausted within 15 days

# Our Multiple Datasets

# 1. SBA PPP Release, December 2020

## Aggregates

Number	5,156,849
Jobs	50,785,196
Amount	\$522.95 billion
Median	\$22,880
Mean	\$101,849
Fees	\$18.2 billion

## Recipient Types

Type	Number	Amount (\$B)	Median	Mean
Corporations	1,498,551	207.97	41,120	137,782
LLC	1,455,353	135.25	25,000	92,935
Subchapter S	701,332	98.06	40,000	139,824
Non-profit Organizations	178,533	36.85	41,600	206,393
Sole Proprietorship	817,826	16.94	11,400	20,719
LLP	36,448	6.07	46,904	166,446
Independent Contractors	144,472	1.64	8,976	11,383

1. No firm characteristics nor valuation effects
2. Cannot identify PPP returners

## 2: Public PPP Borrowers

- 739 firms from EDGAR search minus 57 financials
- Of the remaining 682 firms
  - 586 match to COMPUSTAT
  - 663 to Yahoo! Finance
  - 538 to SBA disclosures
  - 405 to UCC or DealScan relationships data (231 DealScan)
  - 439 to 8-K announcements (243 in 10-Ks or news stories)
- For this sample, we
  - Have firm characteristics – controls in regressions
  - Have share prices – can thus compute valuation effects that give some insights on treatment effects that are otherwise hard to identify
  - Can identify PPP returners from filings

### 3: Bank Relationships; DealScan + UCC

- Bank relationships for small firms notoriously difficult to find
- UCC filings record security interest in secured loans (Gopal and Schnabl, 2020)
- 32,666,981 filings between 1976 and 2020, 99.7% in 2007-2020
  - 1.79 mm to 2.8 mm per year
  - 5.52 mm borrowers, 271,400 secured parties
  - CA, TX, FL, NY, IL are top 5 states with 32% share
- UCC-SBA PPP sample
  - A separate dataset of 3.3 million PPP borrower names matched with SBA releases provided to us by the UCC filings provider

# Results 1

## Big versus Small Bank Prioritization



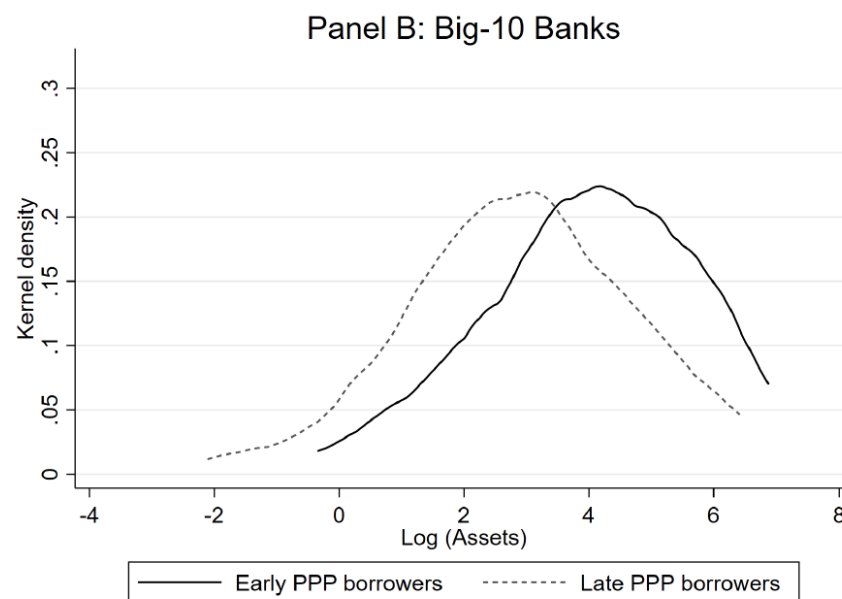
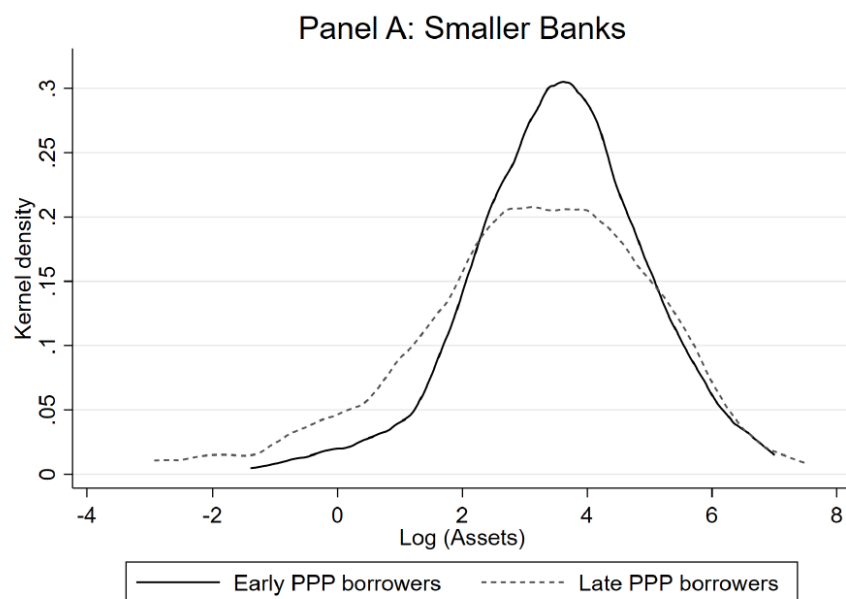
# Large firms go early --- Public Firms

	Early PPP borrowers			Late PPP borrowers			Difference tests	
	Mean	Median	SD	Mean	Median	SD	N	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Public PPP borrower sample								
<i>Firm size</i>								
PPP Loan Amount (\$ million)	2.671	1.482	3.084	1.982	0.723	3.098	679	0.000
Book Value of Assets (\$ million)	120.3	39.2	520.2	99.8	23.3	367.7	569	0.000
Market Cap (\$ million)	115.4	41.6	282.6	101.4	24.6	297.1	561	0.000
Sales (\$ million)	77.8	25.8	160.9	86.8	11.1	229.8	569	0.000
# Employees ('000)	0.254	0.109	0.380	0.217	0.061	0.359	561	0.000
<i>Other financial characteristics</i>								
Firm Age (years)	15.694	12.000	12.958	15.315	10.500	13.104	569	0.199
Book Equity <0 (1/0)	17.7%	—	—	32.1%	—	—	568	0.000
Tobin's Q	1.773	1.201	2.181	1.516	0.972	2.188	569	0.001
Sales Growth	0.617	0.032	3.484	0.468	0.002	2.536	511	0.571
Dividend Payer (1/0)	15.3%	—	—	13.6%	—	—	569	0.172
Current Ratio	2.651	1.876	2.872	2.551	1.407	4.150	568	0.002
Cash/Non-Cash Assets	1.086	0.237	3.353	1.086	0.215	2.730	569	0.587
Free Cash Flow/Assets	0.144	0.032	0.872	0.327	0.047	2.106	477	0.235
<i>Financial constraints</i>								
Has Credit Rating (1/0)	2.7%	—	—	2.6%	—	—	682	0.531
WW Index $\geq$ p75 (1/0)	72.4%	—	—	71.0%	—	—	406	0.857
SA Index $\geq$ p75 (1/0)	76.1%	—	—	79.5%	—	—	527	0.641

Intermediary supply effects shape PPP delivery?

# Do Big and Small Banks Prioritize Firms Differently?

## Public Firms, Log Assets

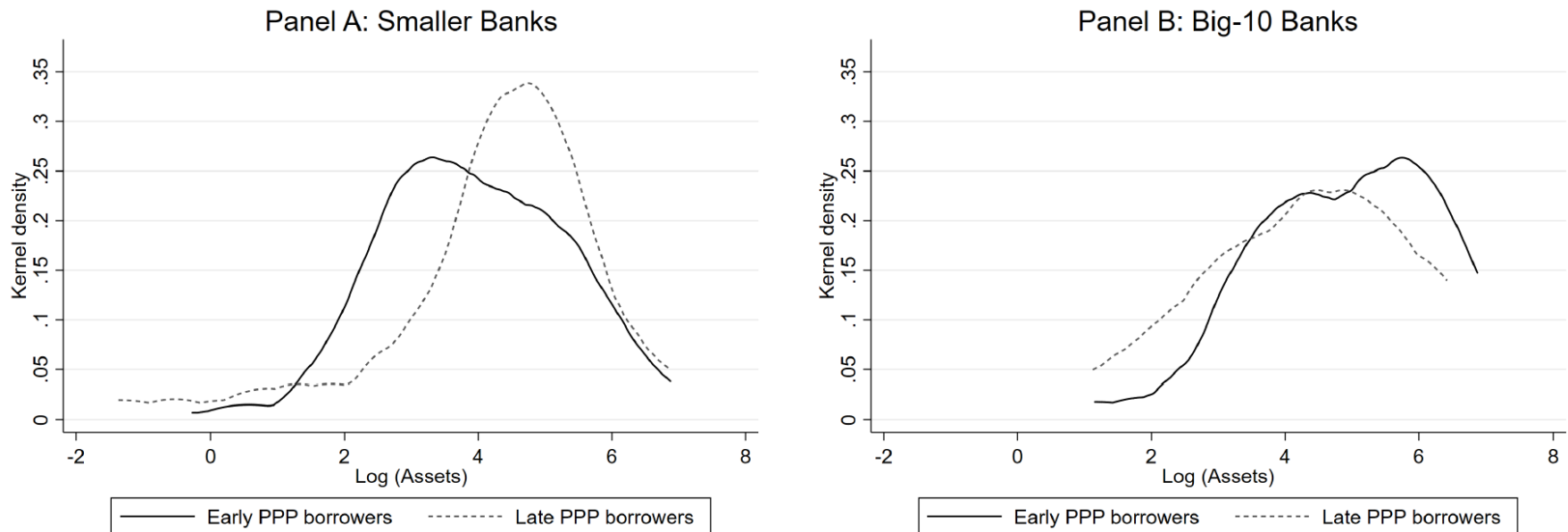


- Big banks push large *firms* earlier -- small banks seem more even handed
- Small firms disadvantaged with big banks ("small fish in a big pond" effect)

# Do Big and Small Banks Prioritize Firms Differently?

## Public Firms, Log Assets, Bank Relationships

### Bank relationship

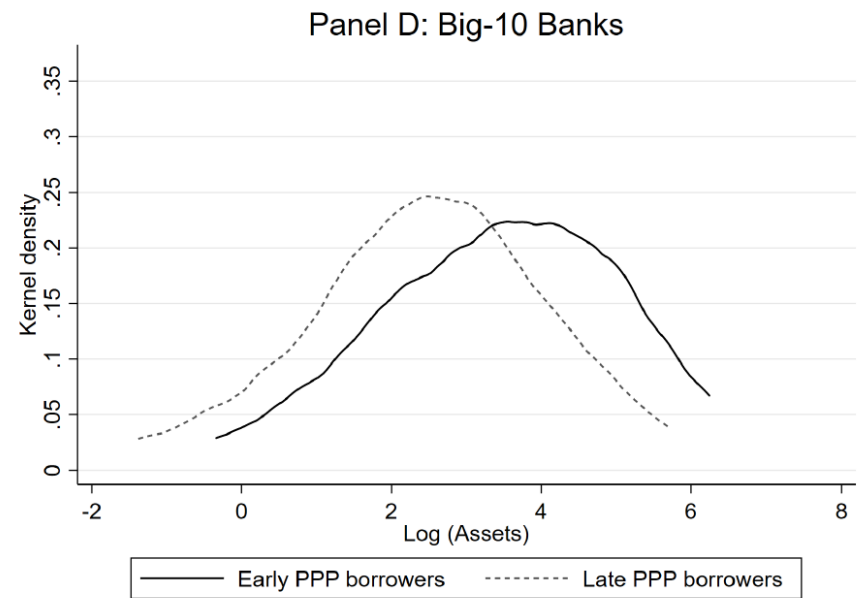
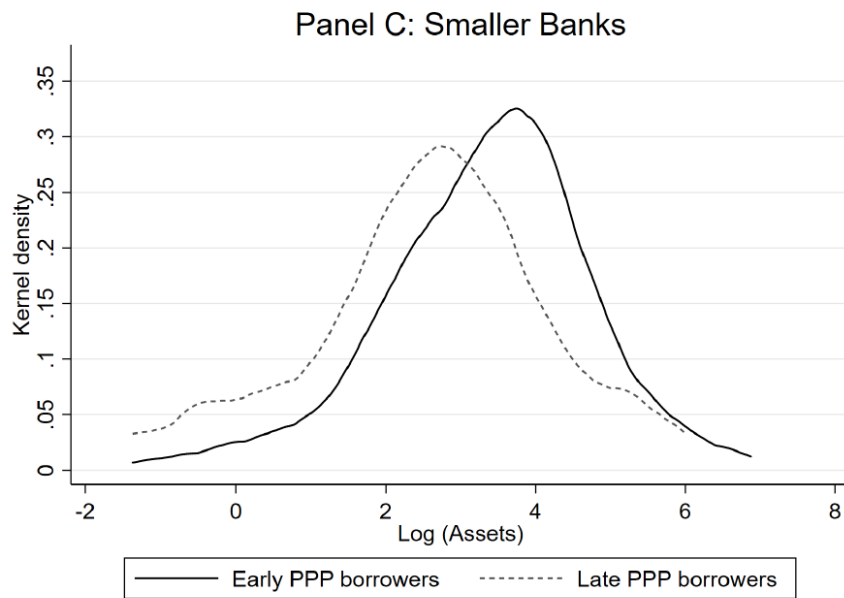


- Smaller firms with bank relationships go early with small banks but maybe not with big banks.

# Do Big and Small Banks Prioritize Firms Differently?

## Public Firms, Log Assets, **NO** Bank Relationships

### No bank relationship

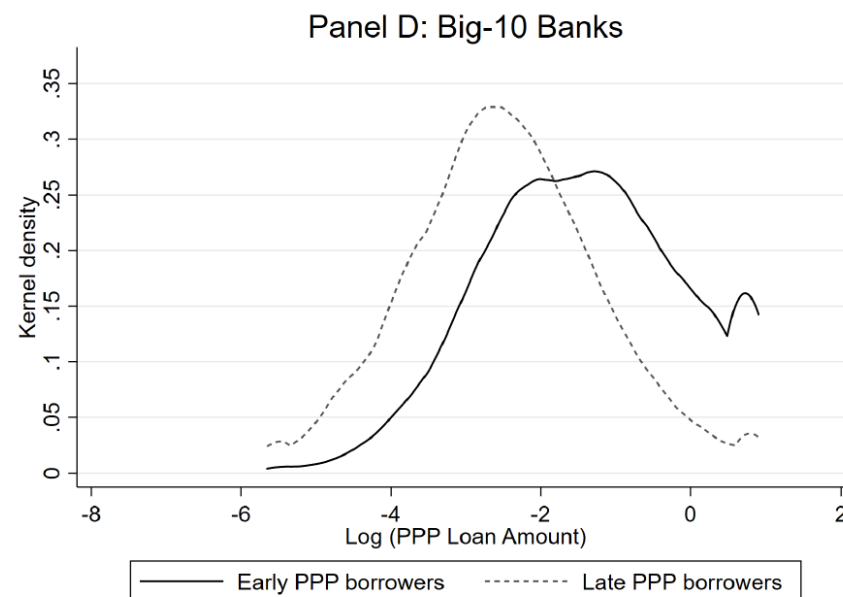
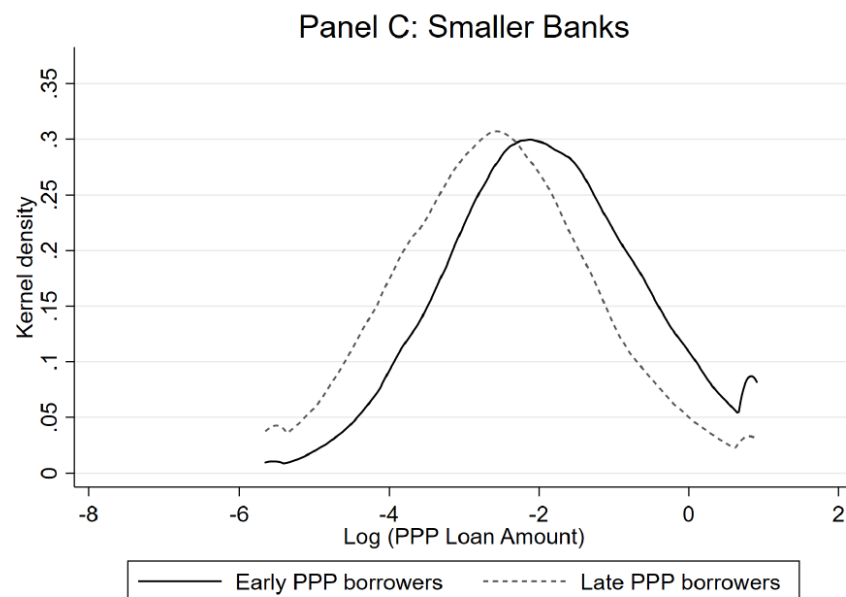


- Absent bank relationships, small and big banks seem to behave similarly.

# Do Big and Small Banks Prioritize Firms Differently?

## *SBA-PPP* Firms, Log PPP Amount. *With* Bank Relationship

### Bank relationship



- Small and big banks show pro-large firm behavior.
- Relative size of shift seems greater for big banks.

# Early versus Late PPP Borrowers

## The Full Sample, Applying through Relationship Bank

	Dependent variable = Early PPP Borrower (1/0)		
	(1)	(2)	(3)
Relationship Bank PPP (1/0)	0.0950*** (17.38)		-0.102*** (-13.97)
Small Bank Relationship (1/0)		0.213*** (32.29)	0.0971*** (16.14)
Relationship Bank PPP (1/0) $\times$ Small Bank Relationship (1/0)			0.242*** (47.74)
NAICS-6 FEs	Yes	Yes	Yes
ZIP-5 FEs	Yes	Yes	Yes
# obs.	298,842	298,842	298,842
Adjusted $R^2$	0.150	0.169	0.186

- Firms applying through their relationship banks obtain early PPP access,
- ... especially when the relationship bank is a *small* bank

# Summary: Intermediary effects shape PPP supply

- Large firms gain early PPP access
- Large firm preference especially pronounced for big banks
- Bank relationships attenuate large firm preference effect, only for small banks
- Applying through relationship bank helps obtain early PPP access, especially so for relationships with small banks

## Bottom line:

- Intermediary supply effects matter
- A non-soft-information rationale for small bank-small firm matching
  - Franchise value of small business lending
  - Avoids "small fish in a big pond" effect

# Results 2

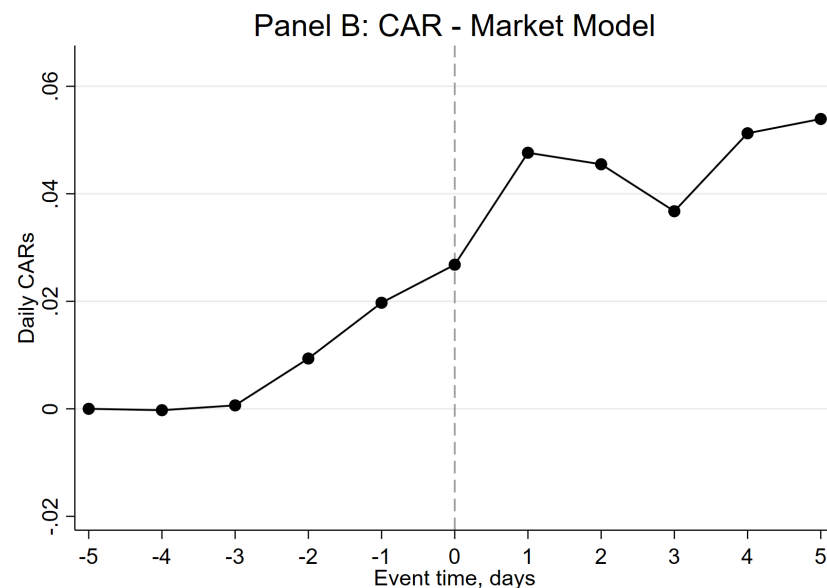
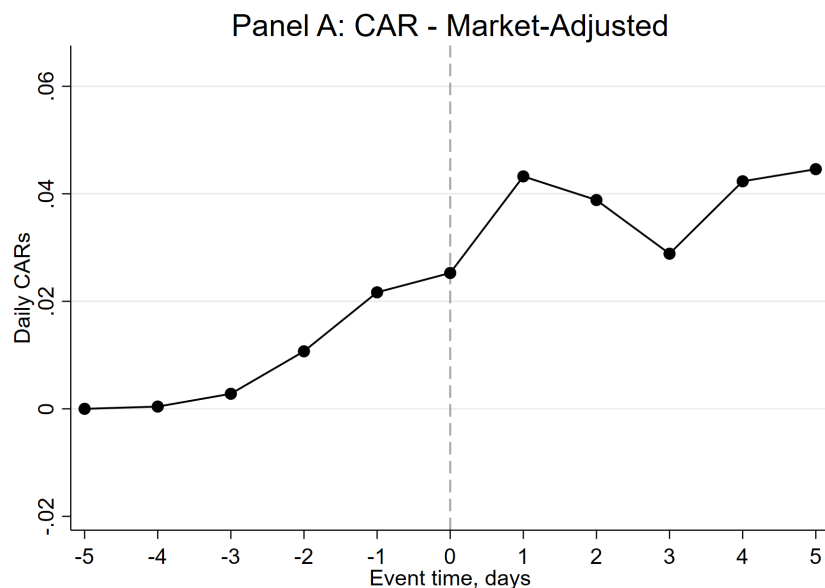
## Funding Hesitancy



# (Surprising) Baseline Evidence

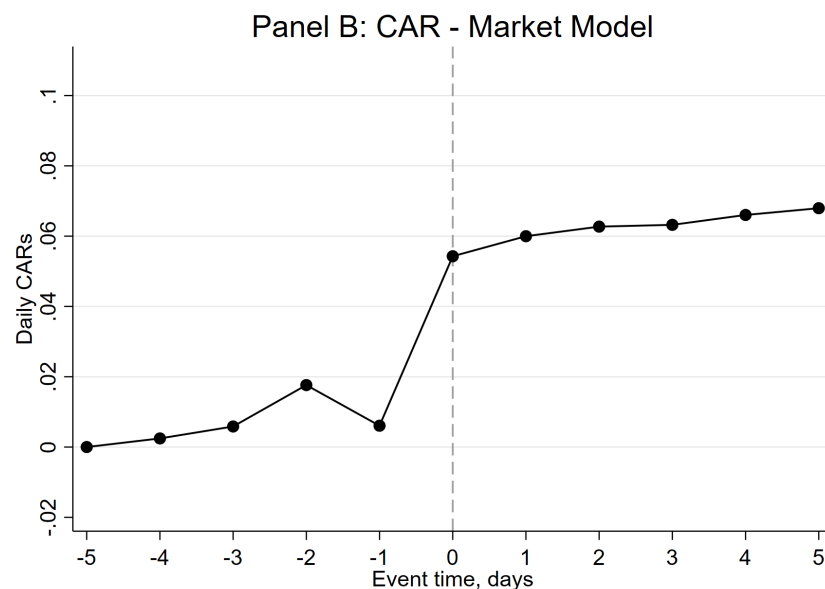
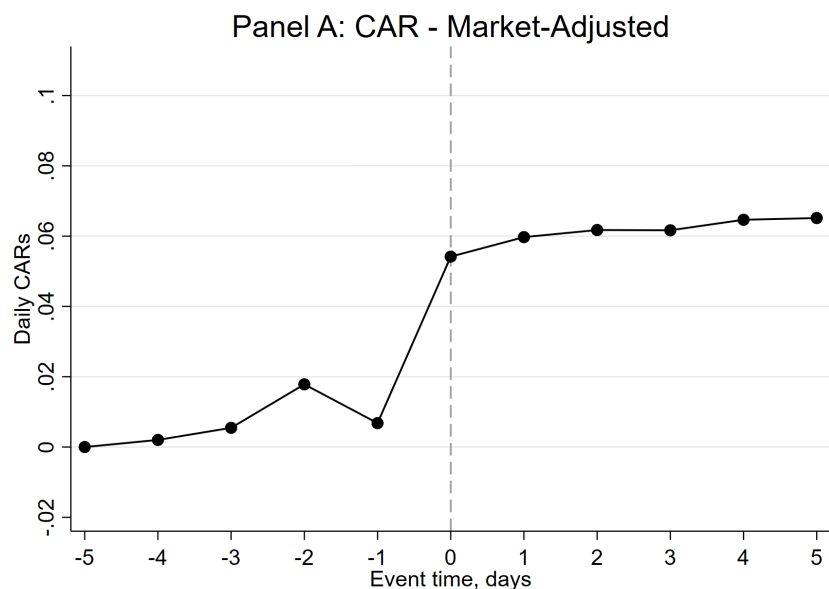
- Over 100 firms returned PPP funds before using them
  - Identified from SEC filings
- If PPP uptake is bad news, it might explain PPP return
  - Taking PPP has *positive* valuation effects
  - Adjusted for partial anticipation of uptake
- Moreover, curiously,
  - Returning PPP has *positive* announcement effects

# PPP Uptake: *Positive* Valuation Effects



- Confirmed in regression analysis with pandemic-period abnormal returns, firm fixed effects, and clustering by calendar date
- Adjusting for partial anticipation  $AR_{adj} = \frac{AR_{unadj}}{1-p(X)}$  where  $p(.)$  = probability of uptake
- Bang for the buck treatment effects

# PPP Return: *Positive* Valuation Effects



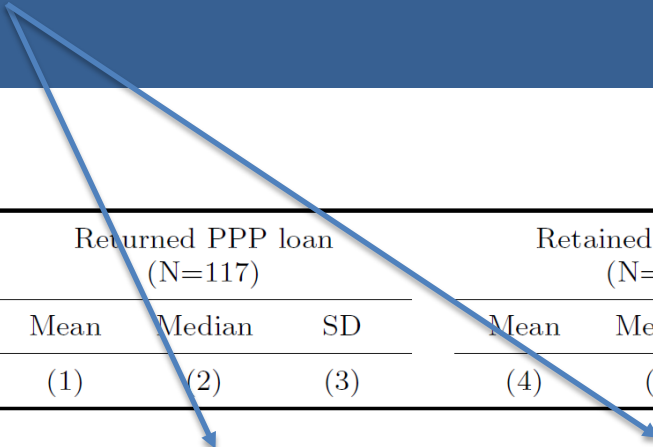
- Confirmed in regression analysis with pandemic-period abnormal returns, firm fixed effects, and clustering by calendar date
- Adjusting for partial anticipation  $AR_{adj} = \frac{AR_{unadj}}{1-p(X)}$  where  $p(.)$  = probability of return
- Bang for the buck treatment effects

# Explaining Funding Hesitancy

# Why do firms return PPP?

- Can't be its direct costs as PPP is inexpensive
- There must be indirect costs.
  - We propose government investigations as their source.
- Evidence
  - PPP return more likely for larger, better firms
  - Investigations more likely above \$2 million PPP amount
    - PPP *return* discontinuously increases at \$2+ mm amount
    - PPP *applications* discontinuously decreases at \$2+ mm amount

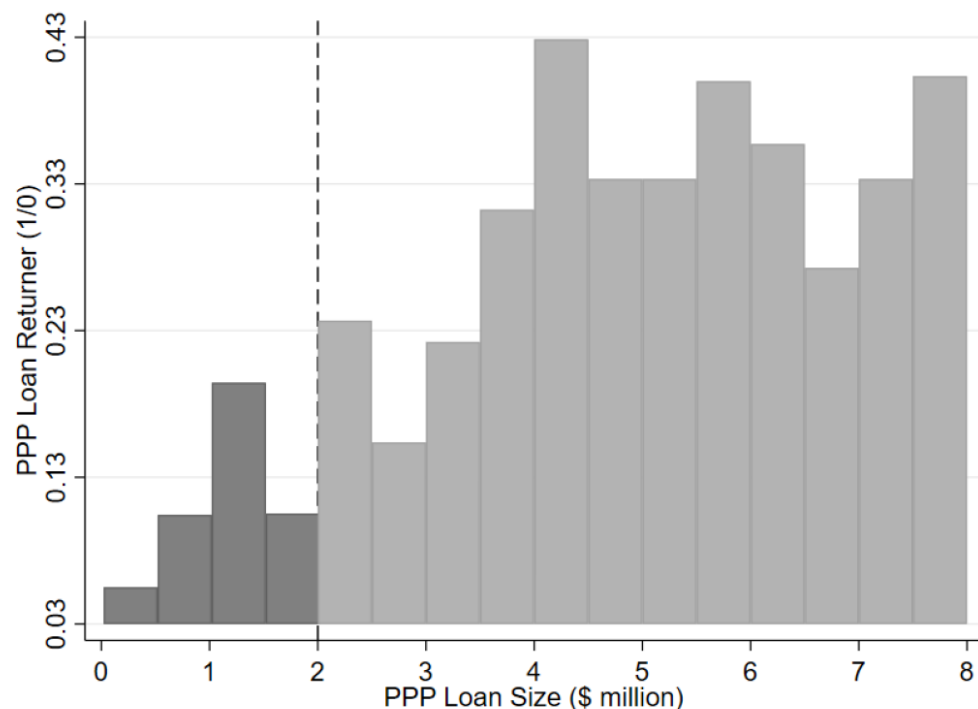
# Which Firms Return PPP?



	Returned PPP loan (N=117)			Retained PPP loan (N=565)			Difference tests	
	Mean	Median	SD	Mean	Median	SD	N	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Firm size</i>								
PPP Loan Amount (\$ million)	4.430	3.330	4.105	2.023	0.956	2.681	679	0.000
Book Value of Assets (\$ million)	288.4	86.0	1,032.0	71.4	27.7	126.7	569	0.000
Market Cap (\$ million)	276.1	118.0	565.1	71.0	28.2	133.0	561	0.000
Sales (\$ million)	159.1	49.6	321.5	61.7	19.2	127.2	569	0.000
<i>Stock returns</i>								
Covid Period Return	-0.332	-0.384	0.362	-0.315	-0.388	0.386	638	0.823
Stimulus Day Return	0.070	0.065	0.091	0.052	0.036	0.120	644	0.020
PPP Grant Abnormal Return	0.031	0.017	0.108	0.021	0.001	0.127	646	0.151

- Large -- and better -- firms tend to return funds

# PPP Return and Size: Loan Amount



- Large firms are more likely to return PPP funds
- PPP return propensity drops and then sharply increase around \$2 million discontinuity

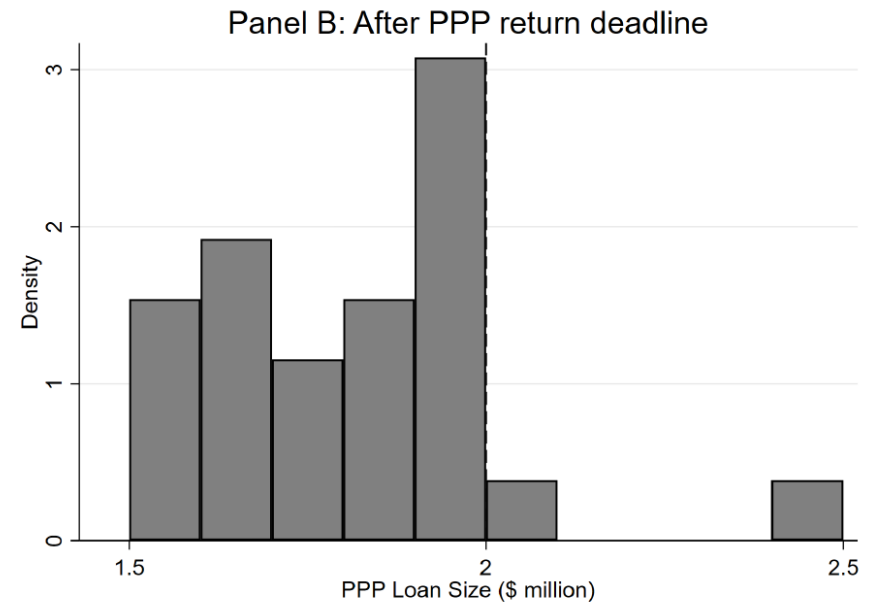
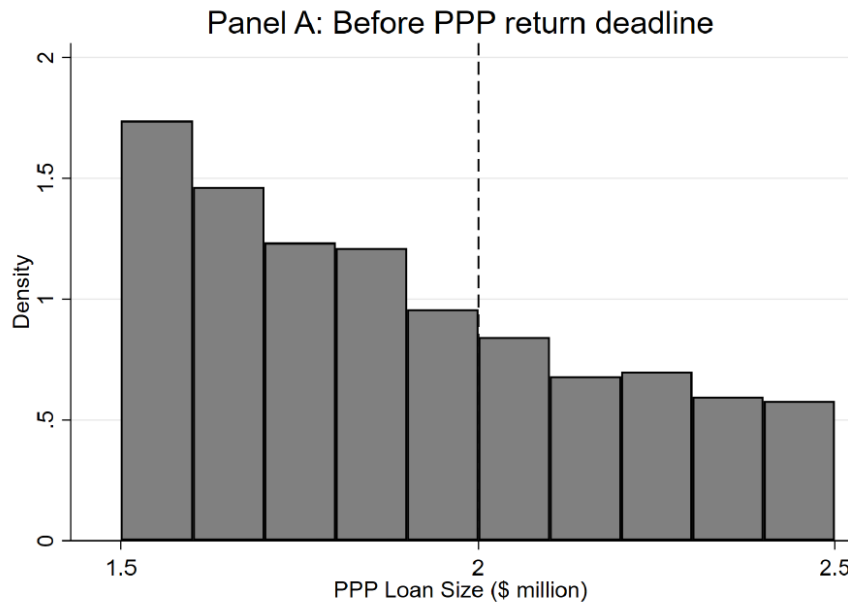
# PPP Return and Size: \$2+ mm Discontinuity

	Dependent variable = PPP Loan Returner (1/0)		
	(1)	(2)	(3)
Log (PPP Loan Amount)	0.0751*** (7.22)	0.0489** (2.74)	0.0449 (1.63)
Above \$2M (1/0)		0.0885* (1.82)	0.00473 (0.08)
Log (PPP Loan Amount) <sup>2</sup>			0.0208** (2.76)
Firm Characteristics	No	No	Yes
Penny Stock Dummy	No	No	Yes
Industry Dummies	No	No	Yes
Returns Controls	No	No	Yes
# obs.	568	568	534
Adjusted $R^2$	0.0600	0.0628	0.127

- The propensity to return loans seems to increase at a loan amount of \$2 million.
- Public PPP sample size limits power for discontinuity designs



# PPP Application: \$2+ mm discontinuity



- \$2+ mm loans not repaid before 05.18.2020 are subject to scrutiny
- In the SBA PPP sample, applications drop *sharply* above \$2 mm *after* 05.18.2020

# Absent scrutiny, PPP return *hurts* firms: UK Evidence

- The U.K. rates relief “PPP” program also saw funding returns
  - In the UK program, there is no threat of or actual investigations
- “PPP” returns by Tesco, Sainsbury's, Morrison's, Asda, B&M, Pets at Home saw *negative* valuation effects between -2.05% and -11.08%
  - In the U.S., PPP returns have positive valuation effects
- “PPP non-return” -- Marks and Spencer said it would not return
  - It had +9.02% announcement effect
- Supports investigation threats as a source of U.S. funding hesitancy

# Conclusions

## **Intermediary supply effects matter**

- How best to deliver credit to underserved, critical sectors in a crisis?
- Banks seem like the natural delivery system
- However, with resource scarcity banks' priorities matter
  - Large firms are prioritized, especially in big banks and in the absence of prior bank relationships

## **Small firms with small banks – a rationale**

- A non-soft-information rationale for small bank-small firm matching
  - Franchise value of small business lending
  - Avoids "small fish in a big pond" effect

# Conclusions

## **Funding hesitancy**

- Reluctance to take subsidized PPP funding
  - The “free” money has positive announcement effects
  - Yet, returning it also has positive announcement effects
- Firms seem wary of ex-post scrutiny – subjective standards for ex-post investigation create indirect costs that drive funding hesitancy.
- Policy implication is that we need objective standards not only for qualifying for government programs but also for ex-post scrutiny of applicants and perhaps clear safe harbors for recipients.