Banks and COVID-19

Banking Sector Performance During the COVID-19 Crisis

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COVID-19 and the Economy

- COVID-19 resulted in a large shock to the economy

- Both the pandemic and the mitigation strategies (NPIs) have an adverse impact
  - Demand –reduced consumption out of concern/social distancing and stay at home orders
  - Supply – sick workers, reluctance to work, closing of non-essential businesses
  - High frequency data suggest that NPIs led to an immediate decline of about 10 percent decline in economic activity across Europe and Central Asia (Demirguc-Kunt, Lokshin and Torre, 2020)

- Corporates had to scramble for cash to cover operating costs as a result of the revenue shortfall.

What about the Banks?

- Banks expected to play a key role absorbing the shock, by supplying much needed funding (Acharya & Steffen, 2020)

- To do so, central banks and governments enacted a wide range of financial sector interventions
  - While these actions aim to increase the flow of credit in the short term, they may affect the resilience of the banking sector in the longer term (e.g., deterioration of asset quality)

  - As the crisis continues, the net effect of these policy measures on the banking sector is largely unknown

In our research

1. Use stock prices to assess the impact of the pandemic on the banking sector
   - Aggregate impact to the sector
   - Within the sector, differential impact across banks

2. Examine the impact of policy announcements on the:
   - Aggregate response of bank stocks
   - Within banks, differential response across banks with different characteristics

Impact of the pandemic on the banking sector

Data and methodology

- Data on all publicly-traded banks (Refinitiv)
  - 896 commercial banks in 53 countries
  - Stock prices, balance sheets and ownership for May 2018 – April 2020

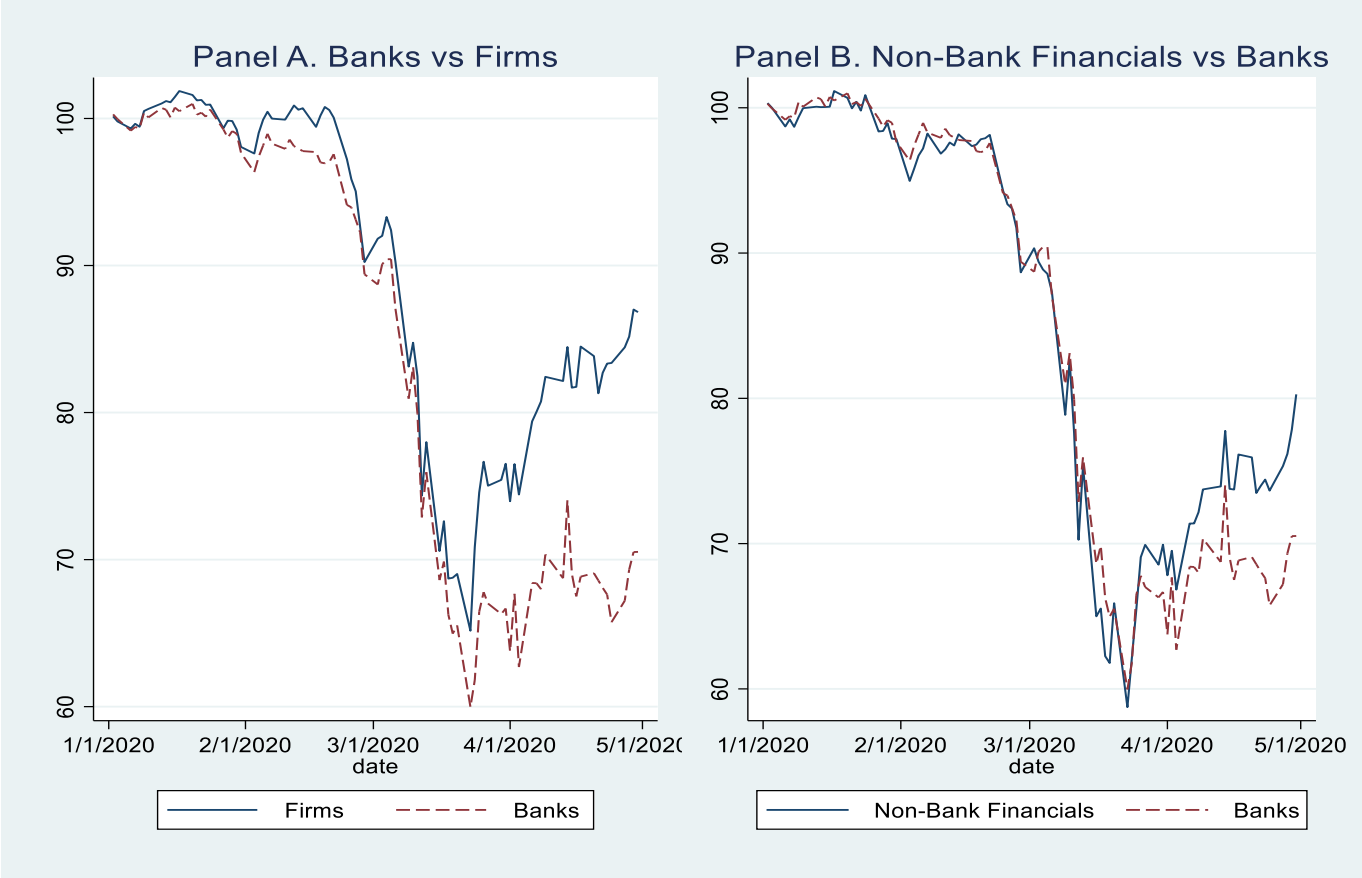
- We mainly focus on four bank characteristics prior to the crisis:
  1. Liquidity risk: -1 * liquidity ratio (cash-to-total assets ratio)
  2. Size: bank total assets
  3. Oil exposure: correlation of bank stock and oil price returns
  4. State ownership: equity participation from domestic government > 0

Impact of the pandemic on the banking sector

Bank stock returns from January to April 2020

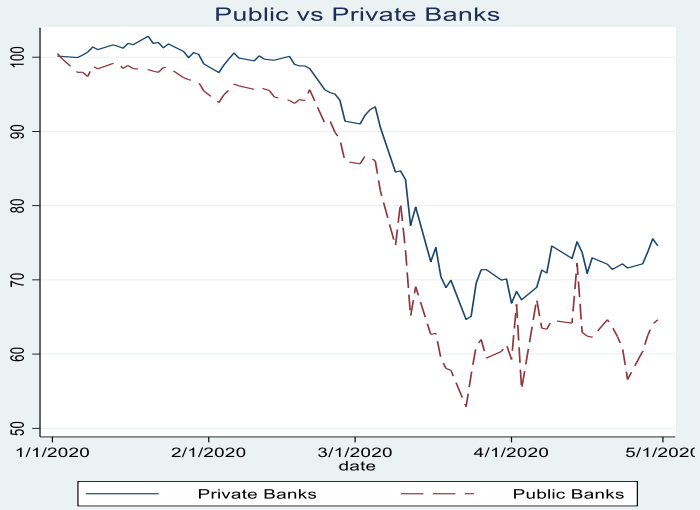
Across countries, bank stocks underperform relative to:

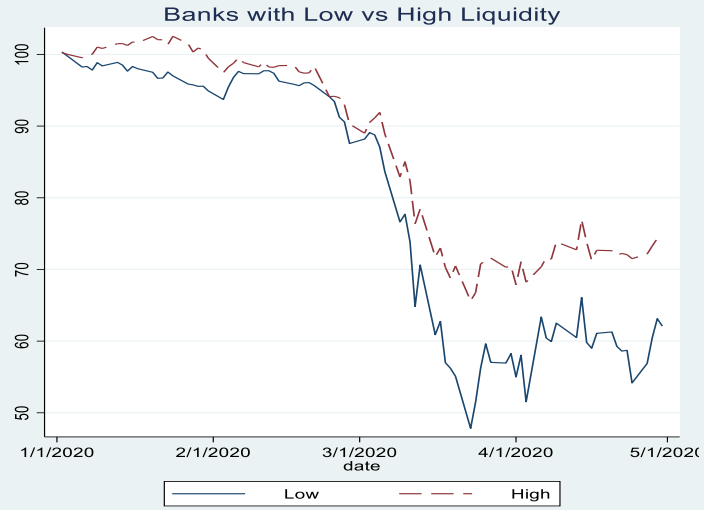
- Other publicly traded companies (Panel A)
- Other non-bank financial institutions (Panel B)

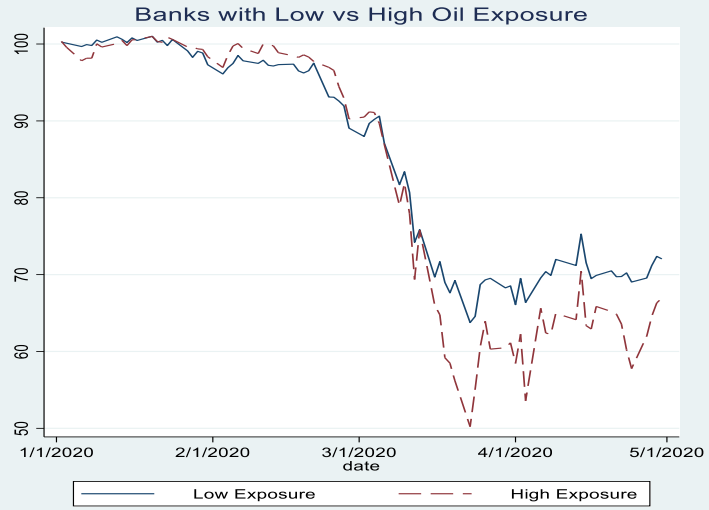


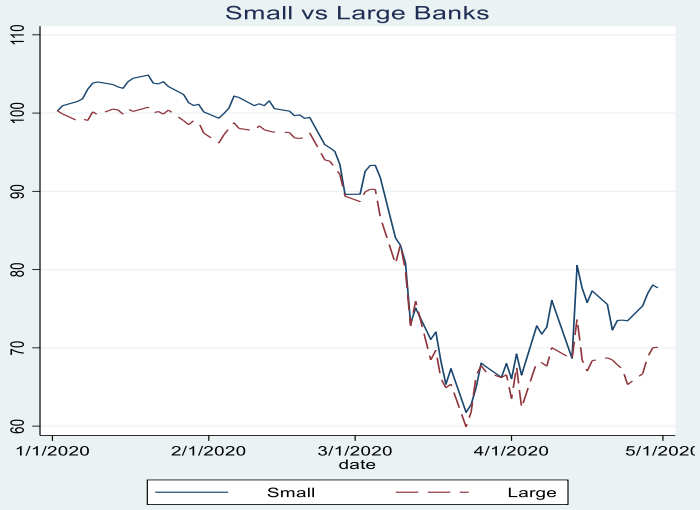
Impact of the pandemic on the banking sector

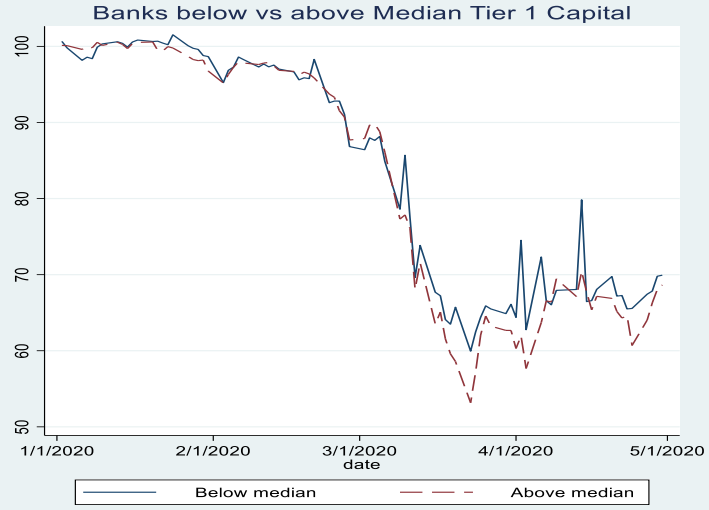
Bank stock returns by bank characteristics – some were hit more severely











Impact of the pandemic on the banking sector

Methodology: testing the existence of a banking sector premium

- We study changes in banks' abnormal stock returns, where abnormal returns are:
  - Difference between realized and expected returns implied by a market model
  - Accumulated over a month

- We run monthly regressions exploiting the cross-section of banks:

$$ARet_{b,c,t} = \alpha_0 + \alpha_1 Iliq_b + \alpha_2 Oil_b + \alpha_3 Size_b + \alpha_4 Public_b + \gamma_r + u_{b,c,t}, \text{ where:}$$

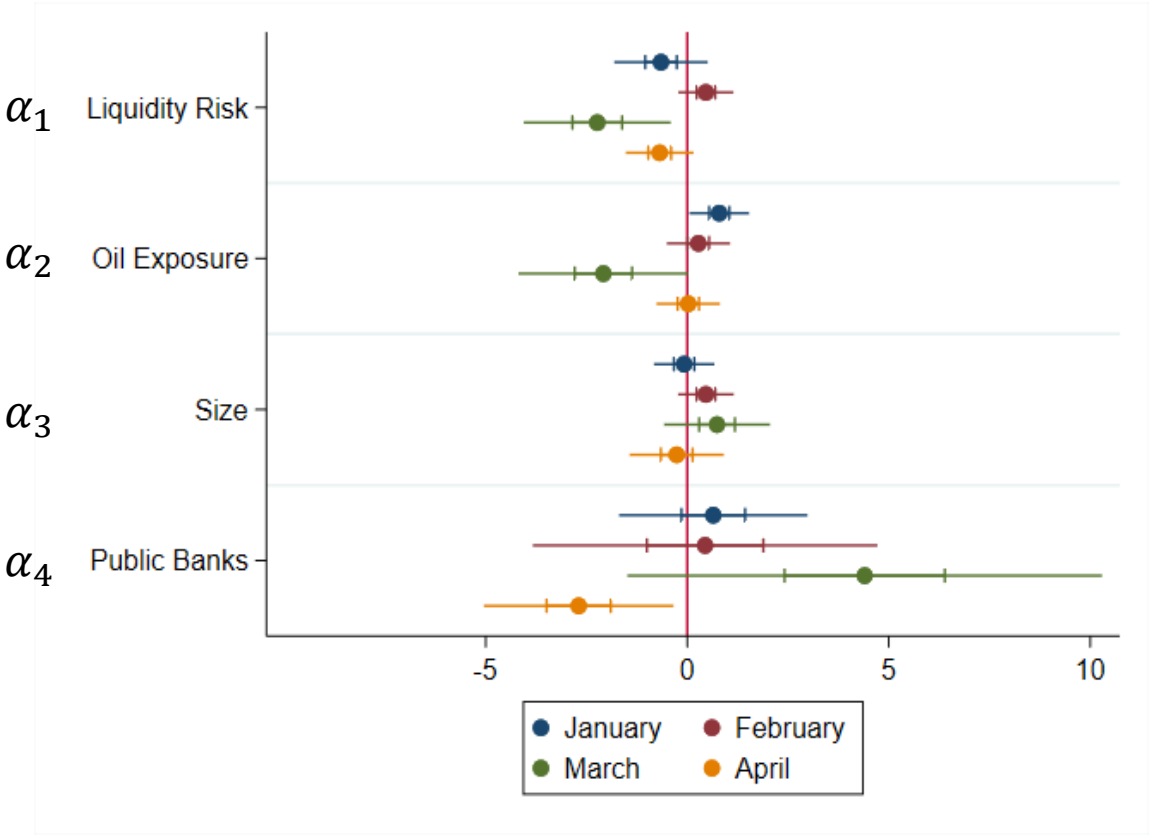
- $ARet_{b,c,t}$: cumulative abnormal returns of bank *b* from country *c* at month *t*
- α_0 : abnormal return of the average bank at a given month (significant large drops in March, April)
- $\alpha_1, \dots, \alpha_4$: role of ex-ante liquidity risk, oil exposure, size, state ownership

Impact of the pandemic on the banking sector

Results on abnormal returns of banks

$$ARet_{b,c,t} = \alpha_0 + \alpha_1 Iliq_b + \alpha_2 Oil_b + \alpha_3 Size_b + \alpha_4 Public_b + \gamma_r + u_{b,c,t}$$

Banks' abnormal returns



Within the banking sector, more severe decline for:

- α_1 = Banks with higher liquidity risk
- α_2 = Banks more exposed to oil
- α_4 = State-owned banks

Examine Financial sector policy announcements

Data

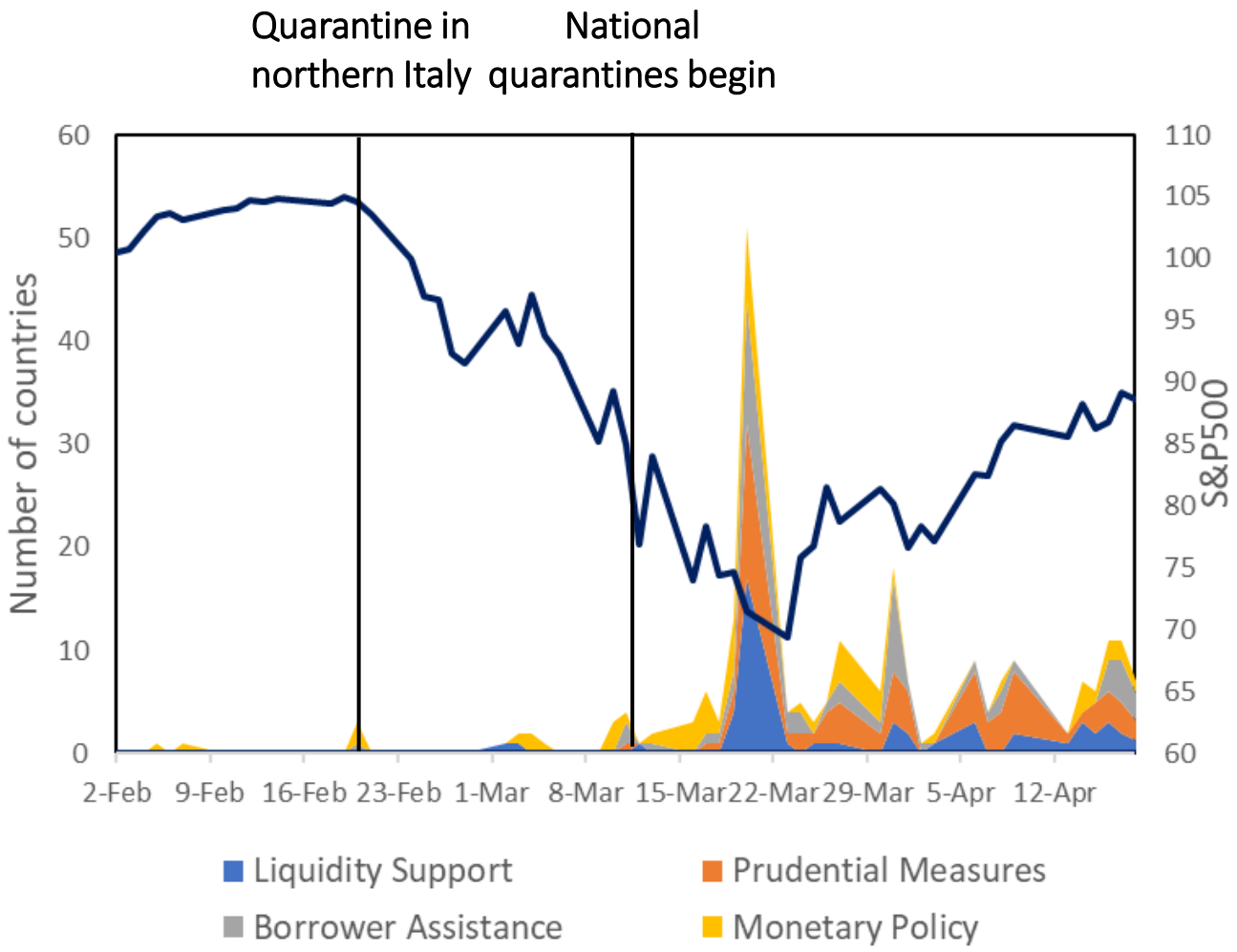
- Global data set on financial sector initiatives from February 2 to April 17
  - Compiled and made publicly available by the World Bank
  - 389 financial sector policy announcements in 45 countries
  - Information on the day of the announcement and type of policy

- We classify policies into four categories:
  1. Liquidity support: measures to expand bank short-term funding
  2. Prudential measures: temporary relaxation of regulatory requirements
  3. Borrower assistance: government-sponsored guarantees for firms/households
  4. Monetary policy: a) policy rate cuts and b) asset purchases

Example of policy announcements

Policy category	Total	Examples	Country	Date
Liquidity Support	183	Reserve requirements rate for deposits down to 25% from 31%	Brazil	21-Mar
		Establishment of buy/sell USD/INR Swap line with US Fed	Multiple	20-Mar
Prudential	333	Loan deferment programs for 6 months for the financially vulnerable individuals	South Korea	11-Mar
		6 months forbearance (considering extending to 10 months) on all insured mortgages	Canada	20-Mar
		Regulatory flexibility so that banks can use their capital buffers	Mexico	8-Apr
Borrower Support	151	Package of $15 billion for small business loans	Japan	11-Mar
		Ministry of Finance guarantees up to 80% of the value of financing provided to SMEs	Romania	20-Mar
Asset Purchases	22	Large scale purchase of government bonds from the secondary market	Poland	31-Mar
		Authorized purchase of government bonds in the secondary market for up to $ 2 billion	Colombia	14-Apr
Policy Rates	95	Cut its benchmark interest rate by 25 basis point, taking it to a record low 1%	Thailand	5-Feb
		On 2/20, BI cut its seven-day reverse repo rate by 25 basis points to 4.75 percent, marking the first cut in the BI policy rate since October.	Indonesia	20-Feb

Financial sector policy announcements



- Up to mid March, few policy announcements, mostly in the form of conventional monetary policy
- Financial sector policies began increasing rapidly thereafter:
  - By March 18, most countries included liquidity support measures and borrower assistance
  - By the end of our sample, 40 countries had introduced prudential actions

Policy announcements in our sample

	Developed Countries (17)		Developing Countries (28)	
	Announcements by category	Single policy announcements	Announcements by category	Single policy announcements
Policy category				
Liquidity	40	14	43	18
Prudential	99	47	42	18
Borrower Support	57	11	32	16
Asset Purchases	22	17	8	2
Policy Rates	10	6	36	28
Total policies	228	95 (42%)	161	82 (51%)
Policy categories announced in the same day				
Liquidity + Prudential	13		7	
Liquidity + Borrower Support	9		2	
Liquidity + Prudential + Borrower Support	1		5	
Liquidity + Policy Rates	2		3	
Prudential + Borrower Support	35		6	

Notes: Data obtained from the World Bank (World Bank, 2020) covering the period February 2 to April 17 2020.

Impact of policy announcements on bank stocks

Event study methodology

- Use accumulated abnormal bank returns over a window of **-1** to **n** days after announcement
  - Where n = 0, 1, 2 and 3 days after announcement

- For each policy category, we run:

$$ARet^{n}_{b,c,t} = \alpha_{0,n} + \alpha_{1,n}Iliq_b + \alpha_{2,n}Oil_b + \alpha_{3,n}Size_b + \alpha_{4,n}Public_b + \gamma_c + \gamma_t + u_{b,c,t}$$

- $ARet^{n}_{b,c,t}$ is the abnormal return of bank *b* in country *c* in day *t*
- $\alpha_{1,n}$, $\alpha_{2,n}$, $\alpha_{3,n}$, $\alpha_{4,n}$ capture cross−sectional differences in the response of bank stocks
- γ_c and γ_t are country and announcement date fixed effects

Impact of policy announcements on bank stocks

Challenges to our identification

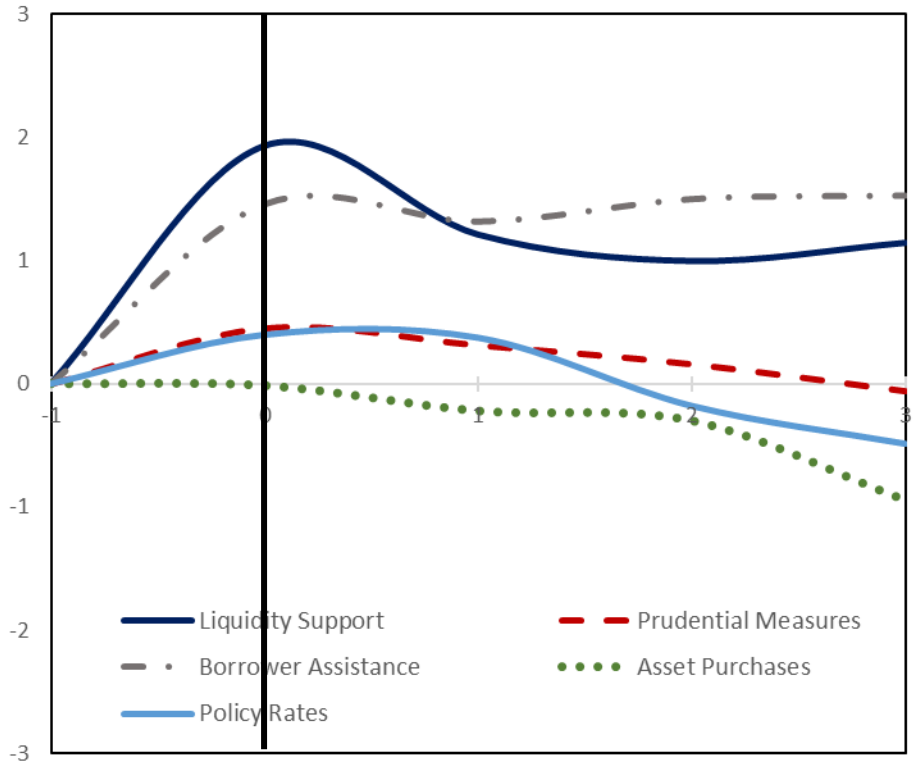
- International spillovers from US/Euro policies
  - Exclude data from days when US/Euro major announcements of same policy type were made
- Multiple policies announced on the same day
  - Condition our sample to country-dates where only policies of a particular type were announced
- Policies may be anticipated, biasing downwards our results
  - Identify emergency meetings by monetary authorities or when interest rate cuts were larger than the anticipated

Impact of policy announcements on bank abnormal returns

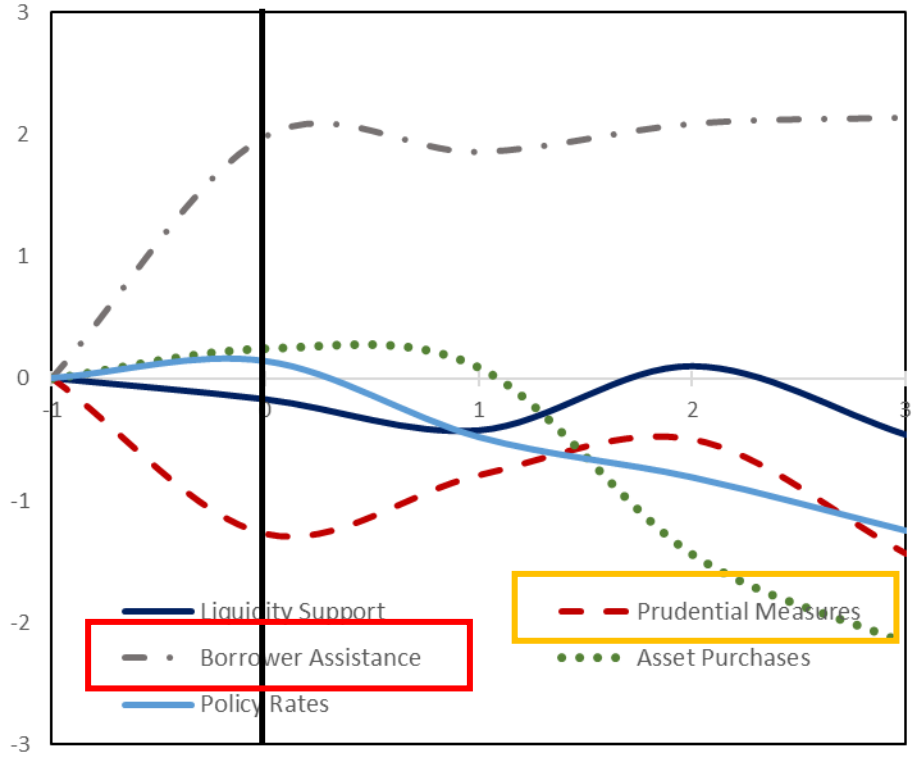
Aggregate impact of announcements on the banking sector

$$ARet_{b,c,t}^{n} = \boldsymbol{\alpha_{0,n}} + \gamma_c + \gamma_t + u_{b,c,t}$$

Full sample of announcements



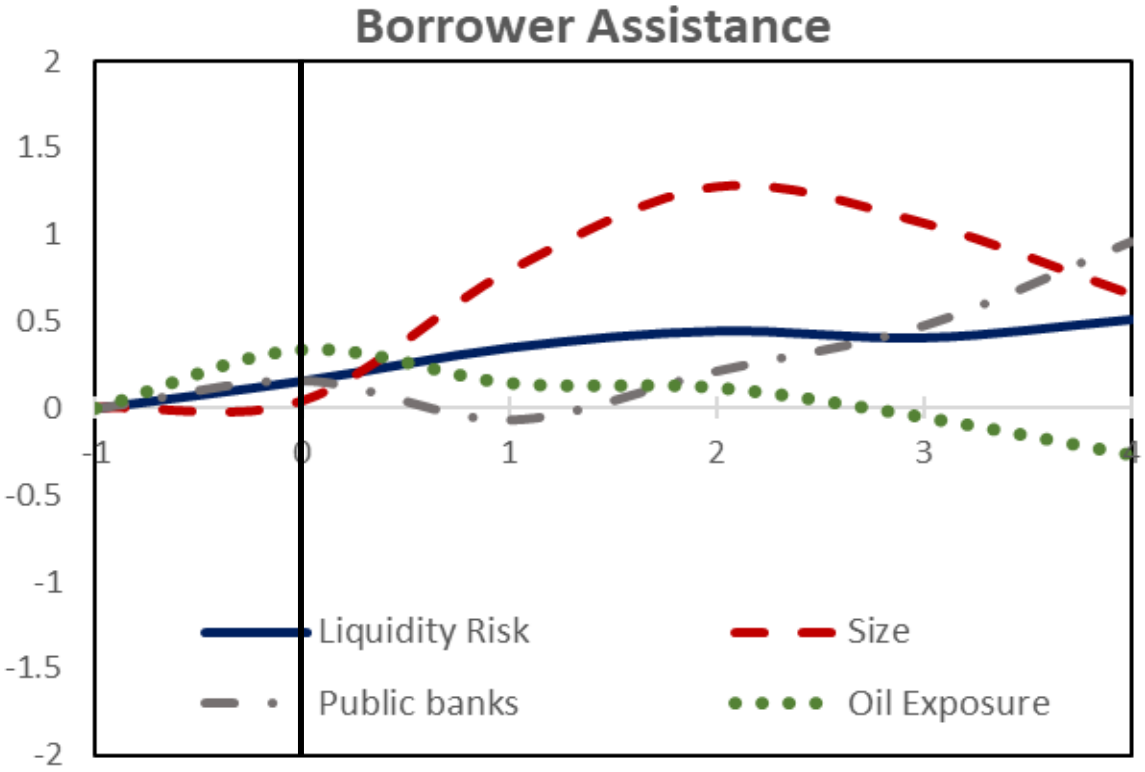
Restricted sample of announcements



Impact of policy announcements on bank abnormal returns

Within the banking sector, differences across banks

$$ARet^{n}_{b,c,t} = \alpha_{0,n} + \alpha_{1,n} Iliq_b + \alpha_{2,n} Oil_b + \alpha_{3,n} Size_b + \alpha_{4,n} Public_b + \gamma_c + \gamma_t + u_{b,c,t}$$

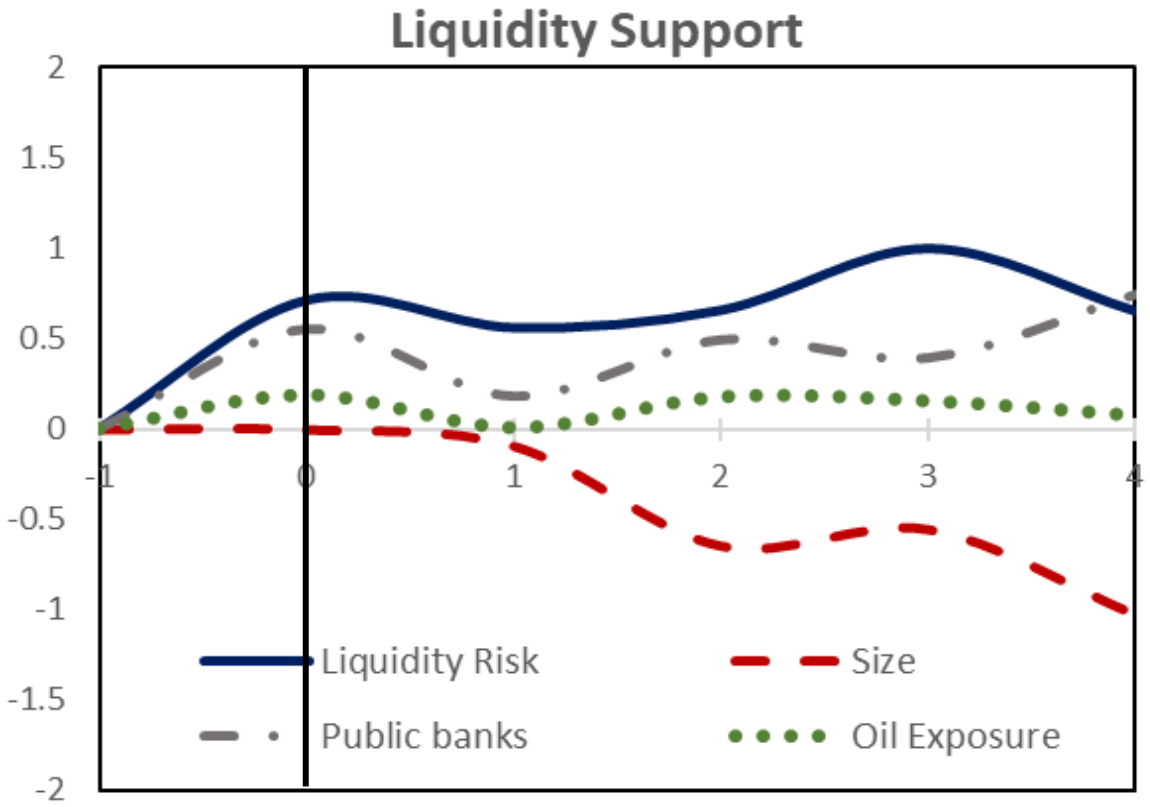


- Disproportionately benefiting larger banks and banks with lower liquidity provisions
- These measures require significant fiscal commitments
- Heterogeneity across countries:
  - Positive impact in developed countries
  - No effect in developing countries, where there is less room for fiscal expansion

Impact of policy announcements on bank abnormal returns

Within the banking sector, differences across banks

$$ARet^{n}_{b,c,t} = \alpha_{0,n} + \alpha_{1,n} Iliq_b + \alpha_{2,n} Oil_b + \alpha_{3,n} Size_b + \alpha_{4,n} Public_b + \gamma_c + \gamma_t + u_{b,c,t}$$

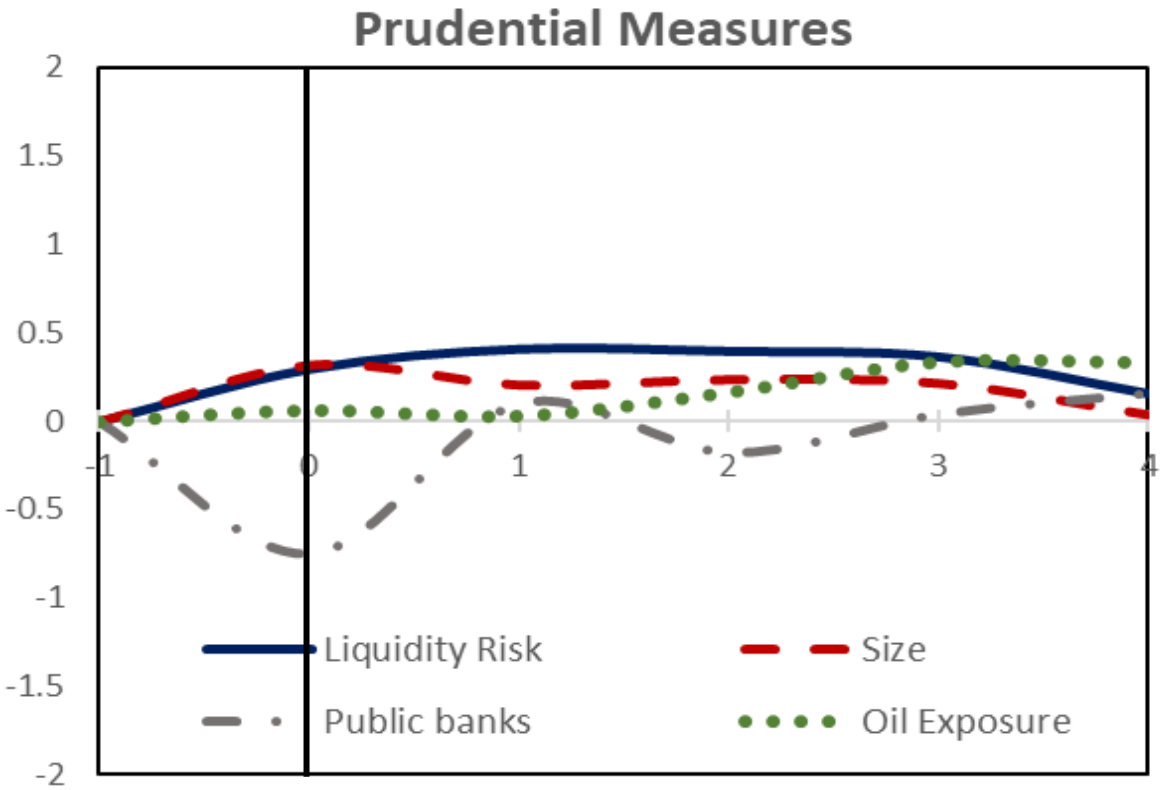


- Within banks, these policies disproportionately benefit:
  - Banks with ex-ante lower liquidity
  - Smaller banks
  - State-owned banks

Impact of policy announcements on bank abnormal returns

Within the banking sector, differences across banks

$$ARet^{n}_{b,c,t} = \alpha_{0,n} + \alpha_{1,n} Iliq_b + \alpha_{2,n} Oil_b + \alpha_{3,n} Size_b + \alpha_{4,n} Public_b + \gamma_c + \gamma_t + u_{b,c,t}$$



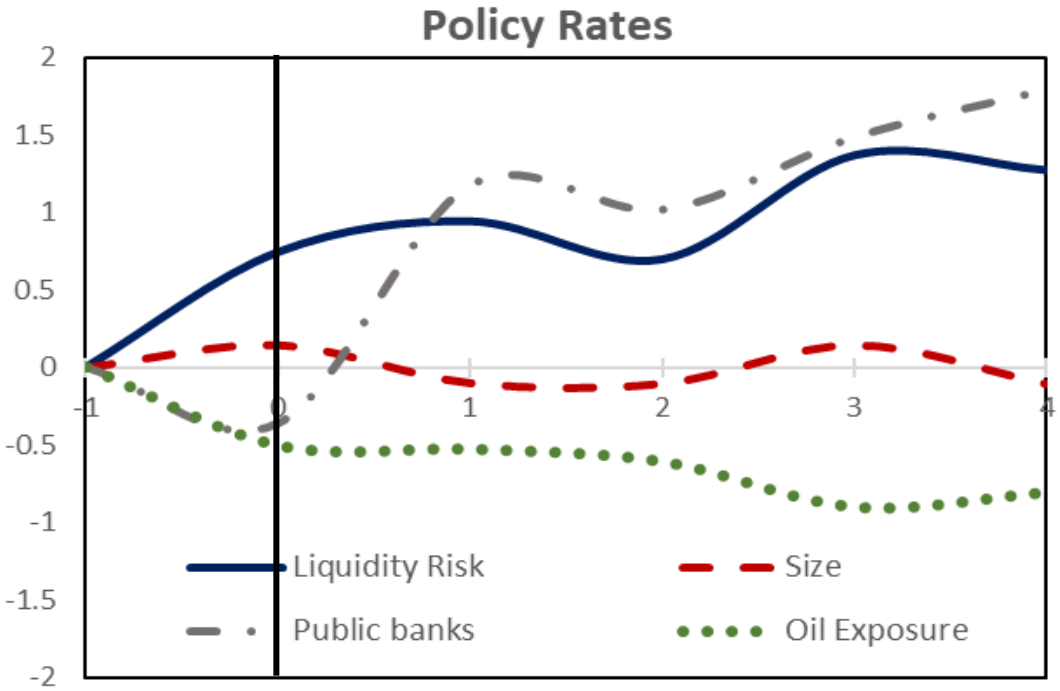
- Do not seem to be associated with clear reductions in the liquidity premium
- Prudential measures might help support credit flow throughout the lockdowns, but they entail large risks in the medium term
- Markets appear to price these risks

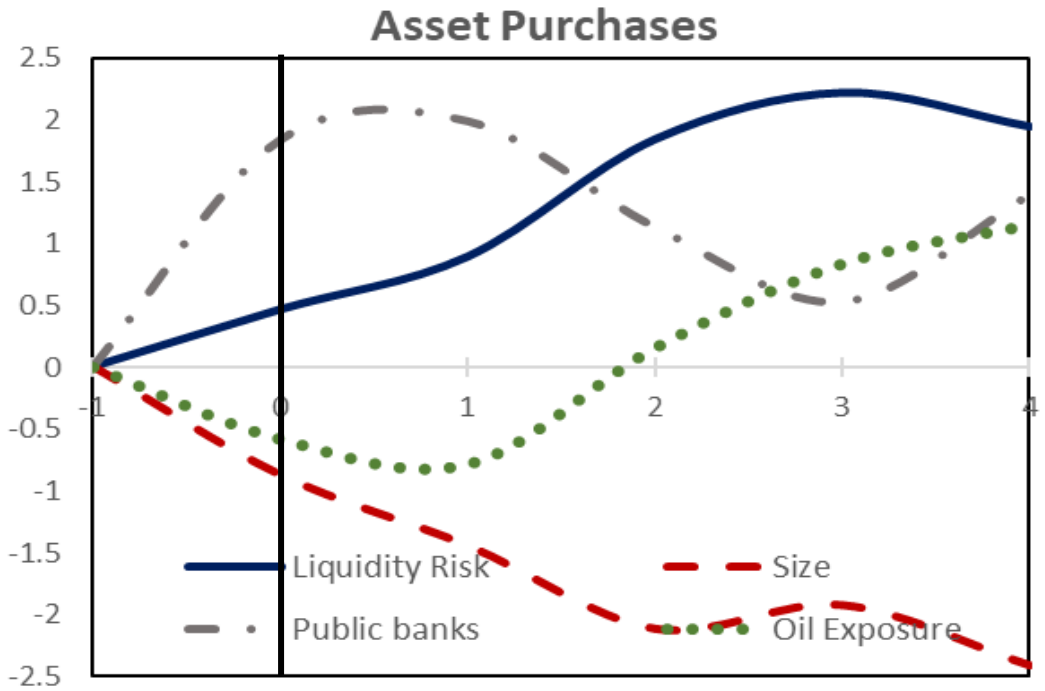
Impact of policy announcements on bank abnormal returns

Within the banking sector, differences across banks

$$ARet^{n}_{b,c,t} = \alpha_{0,n} + \alpha_{1,n} Iliq_b + \alpha_{2,n} Oil_b + \alpha_{3,n} Size_b + \alpha_{4,n} Public_b + \gamma_c + \gamma_t + u_{b,c,t}$$

- Within the banking sector, both policies seem to reduce liquidity premium





Impact of policy announcements on bank stocks

Summary

- Liquidity support
  - No aggregate response on bank stock prices
  - Positive impact in banks with higher liquidity risk, as well as smaller and state-owned banks
- Prudential measures
  - Negative abnormal returns in bank stocks following policy announcements
- Borrower assistance
  - Strongest aggregate impact on bank stock prices
  - Disproportionately benefiting larger banks and banks with lower liquidity provisions
  - Impact among developed countries (with more room for fiscal expansion)
- Monetary policies
  - No aggregate response on bank stocks following announcements
  - Both policy rate cuts and asset purchases reduce liquidity premium

Conclusions

- The impact of the COVID-19 shock on banks was more pronounced than on all other corporates
    - Banks with lower pre-crisis liquidity and oil sector exposure were more affected, consistent with their greater vulnerability to such a shock
- While some policy measures moderated this adverse impact for some banks, this is not true for all banks or in all circumstances
    - Borrower assistance had largest impact on bank abnormal returns, but due to their reliance on fiscal expenditures, these policies do not appear to work for all. Prudential measures have a negative impact on abnormal returns, suggesting that markets price downside risk from depletion of capital buffers.

Policy

- Regulatory capital positions of most banking systems around the world were strengthened after the global financial crisis, yet it is not clear to what extent they can absorb the COVID shock without undermining their resilience.

- Overall, the crisis and the countercyclical lending role they are expected to play has put banking systems around the world under stress having a differential impact depending on their characteristics and pre-crisis vulnerabilities.

- These vulnerabilities will need to be carefully monitored in the coming year as the pandemic continues to take its toll on the world economies.

THANK YOU!