

Discussion of The disciplining effect of bank supervision: evidence from SupTech

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Banco Central do Brasil: ADAM and EVE (2021 annual report)

Adam is a system that aims to find credit operations whose expected loss has not been properly recognized by financial institutions. It is a high-performance system, with a very low number of false positives and a great built-in supervisory intelligence. The system used a training dataset of more than ten thousand analyses performed by inspectors in recent years. Besides selecting the operations, the current version of the application provides a vast set of actions that could be used by supervisors in each case. The processing speed of Adam is a highlight as long as it is able to analyze more than three million credit borrowers in a single day. For the sake of comparison, the BCB would spend ten high-performance inspectors for more than seventy years to do the same job.

In turn, **EVE** proposes to perform automatically an end-to-end formal examination activity. Besides the various analyses that are usually carried out in an inspection, the tool prepares reports and draft letters to be sent to the financial institutions. The current version performs a credit risk inspection, but future versions will be expanded to other subjects, such as inspections of treasury operations, liabilities, and economic-financial situation. It is estimated that it performs between 80% and 90% of the work of a typical examination that is performed manually. For comparison purposes, EVE performs in two days an inspection that would normally take 45 days with two examiners. Automation was initially applied as a pilot in the credit fintech segment, but the methodology has great potential to be extended to other segments.



BIS- Financial Stability Insights (n37)



Source: FSI surveys of central banks and supervisory authorities.

This paper: the sample period is 2008-2021 <u>and</u> the treatment effect is analyzed over next 8 quarters

- What are the SupTech tools available before 2019?
- Are the (analyzed) SupTech tools getting better?
- Is it a multitude of tools? Is it different versions of the same tool?
- RegTech* in Brazil?
 - ◇ Are RegTech and SupTech complements or substitutes?
 - ◊ Variation in adoption of RegTech across banks of different sizes, in different municipalities,...

* the use of new technologies to solve regulatory and compliance requirements more effectively and efficiently (from the perspective of Financial Services Providers)



Four comments

- 1. Channels/drivers: supervisory scrutiny channel
 - ∧ Alternative explanations
 - ◊ Alternative test approaches
- 2. The effect on banks' balance sheets
 - ◊ Discussion of the robustness checks
- 3. Effect on firm outcomes
 - ◊ A critical assessment of the economic magnitudes

4. Other suggestions

- \diamond 'sanctions' versus 'recommendations' \rightarrow also in SREP: P2R and P2G
- ◊ Banks and non-banks



The supervisory scrutiny channel: within municipality spillovers

Effect is also present for non-treated banks in treated municipalities

First additional test (test loses power over time)

Is it effective? Is probability of a SupTech event in a municipality lowered following recent treatment?

Second additional test (falsification)

Does effect in Table 6 disappear (becomes substantially smaller) if you include municipality x time fixed effects?

ightarrow Comparing treated vs control in same municipality

Third additional test (learning through observing)

Overlapping borrowers with treated banks (correlated with sharing a municipality)

Information acquisition through consulting credit register: e.g.: treated banks adjust status of loan (arrear/subprime). Common lender may observe this if the lender consults the credit register for that specific borrower

Treatment spillover/information revelation (and not ' fear of being on the watchlist')



Robustness tests on the bank balance sheet effects

SupTech signal: assessment of financial institutions' on- and off-balance positions:

(1) temporal, (2) comparative and (3) intrinsic assessment

- 1. Are parallel trends a good thing?
 - ◊ Shows that outcome variables are not cause of SupTech intervention
 - Why fix/adjust something that is not broken?
 - Where is the monitoring signal coming from? (i.e. some variables should not have parallel trends!)
- 2. Is propensity score matching (nearest neighbour) appropriate?
 - ◇ Matching on observables: but then, why are they not treated? ATE versus ATT.
 - ◊ Targeted analyses and interventions? Supervisory discretion?
- 3. Placebo to rule out impact of other (simultaneous) unrelated events
 - Unrelated events do not happen at placebo date



Real effects

Table	14:	The	effect	of	SupTecl	i events	on	firm	outcomes	
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	(1)	(2)	(3)	(4)
	Δ Credit	Δ Employment	Δ Revenue	Δ Productivity
Panel A:				
Post	0.1480^{***}	0.0006	-0.0004	0.0060
	(0.0271)	(0.0020)	(0.0018)	(0.0177)
Exposure	-0.0247***	0.0040***	0.0039^{***}	-0.0120*
	(0.0075)	(0.0011)	(0.0012)	(0.0062)
Arrears	0.0021	-0.0194	-0.0191***	0.0013
	(0.0052)	(0.0011)	(0.0011)	(0.0032)
$Post \times Exposure$	-0.0820***	-0.0041**	-0.0032^{*}	0.0507
	(0.0202)	(0.0015)	(0.0017)	(0.0324)
$Post \times Arrears$	0.0111	0.0037	0.0148*	0.0123
	(0.0151)	(0.0036)	(0.0075)	(0.0086)
Exposure \times Arrears	0.0442***	0.0047**	0.0040	-0.0028
	(0.0099)	(0.0020)	(0.0018)	(0.0073)
$Post \times Exposure \times Arrears$	-0.0349*	-0.0081*	-0.0093	-0.0025
	(0.0201)	(0.0041)	(0.0120)	(0.0121)
R-squared	0.1329	0.1903	0.1393	0.0950

(same for panel B or for Table 13)

- The credit multiplier
 - ◊ Small, but larger for firms with arrears
 - Post x Exposure
 - Post x Exposure x Arrears
 - ◊ Asymmetric
 - No real effects of additional credit ('Post')
 - Why?
- Firms with arrears are already downsizing (Arrears)
 - (coefficient in column 2, row 3 not significant)?
 - Zombies?
- Quarterly or annual growth?



Formal (sanctions) and informal (suptech) supervisory actions: Akin to Pillar 2 requirements and Pillar 2 guidance

- Also following stress tests, there are mandatory as well as suggestive measures:
 - The Pillar 2 guidance is set as part of the Supervisory Review and Evaluation Process. Unlike the <u>Pillar 2</u> <u>requirement</u>, it is not legally binding.
 - P2G and P2R have been shown to have differential effects (but so far inconclusive)
 - 3

Working Paper Series

Cyril Couaillier, Alessio Reghezza, Costanza Rodriguez d'Acri, Alessandro Scopelliti

How to release capital requirements during a pandemic? Evidence from euro area banks

We uncover two main results. First, capital relief measures were successful in supporting redit supply and did not result in unwarranted risk-taking - overall vindicating the expansionary merits of releasing capital measures in crisis time. Second, we show that actions trump words, as the type of relief matters: while capital requirement releases supported lending, allowing banks to operate below the P2G had no significant impact on banks' lending behaviour during the pandemic. As such, for relief measures to successfully convince banks to use the freed capital, Supervisory forward guidance: the effectiveness of the 2020 euro area supervisory capital relief on the bank credit supply channel

Author & abstract	Download	Download 20 References		Related works & more	Corrections
Author					
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(European Central Bank (ECB))

Abstract

We investigate the effectiveness of the euro area's single supervisory mechanism's capital relief measures in response to the outbreak of the coronavirus pandemic, in terms of large non-financial corporations' lending outcomes. Using a granular borrower level dataset and controlling for the policies of other euro area authorities, bank characteristics and demand effects, we find that the lifting of the pillar 2 guidance (P2G) capital recommendation had a considerable statistically significant impact in supporting bank credit supply. The results are attributed to both, the capital made available and announcement effects. The latter are generated by the communication of supervisory plans and the fact the P2G was not designed to be ex ante "releasable". The announcement of granted supervisory flexibility seems to have reduced uncertainty surrounding forthcoming regulatory responses in the beginning of the pandemic and acted as a de facto "supervisory forward guidance" in support of bank business decisions. Going forward we propose the creation of a formal supervisory forward guidance strategy, to complement the existing communication channels, to the benefit of banks' and market participants' decision making during both normal and crisis times. Our work therefore contributes to the literature threefold: (i) it introduces a novel granular supervisory dataset at the borrower level, (ii) it is one of the first papers to take a euro area supervisory perspective in analysing the effectiveness of capital relief measures at the onset of the Covid-19 pandemic, and (iii) it proposes a new supervisory policy instrument, the "supervisory forward guidance" with the goal of informing and steering banks' and market participants' expectations in order to prevent distress episodes

Suggested Citation

Silviu Oprică & Claudia Schwarz, 2024. "Supervisory forward guidance: the effectiveness of the 2020 euro area supervisory capital relief on the bank credit supply channel," Journal of Banking Regulation, Palgrave Macmillan, vol. 25(1), pages 20-41, March.



Other issues that deserve more attention/discussion

Pooling banks and non-banks

- ◊ Comes with different supervisors (DESUP, DESUC, DECON)
- Different business models: Different regulation? Differences in compliance costs? Different need for RegTech?
- ◊ Are SupTech actions more prevalent for certain types of Fis? Due to FI-type, or due to supervisory differences?
- ◊ Is municipality effect confined to banks having similar supervisor?
- Suptech event: DESIG observes signal upon which DESUP, DESUC, DECON take action
 - ◊ Alternative 1: DESIG observes signal upon which DESUP, DESUC, DECON does NOT take action →ATT
 - ◇ Alternative 2: DESUP, DESUC, DECON take actions, irrespective of DESIG signal → SupTech versus Sup
- How is supervision organized?
 - ◊ Three entities? Regional vs National supervision? Different for large and small banks?



Numbers and details

- 15.6 million (quarterly) loan observations vs 132k (monthly) bank observations
 - ◇ +/- 120*3 loans per bank
 - ◊ SupTech has differential benefits for large vs small banks?
- Why In(Rate)?
- Notes to tables:
 - ◇ Table 6: Ratio of NPL, LLP,... ←→Tables 8, 9, 10: Ln of these ratios
 - ◊ Tables 11-14: X growth: change or log change?
- Table 12 (col 2 vs col 1): 50% of observations are single bank borrowers: ILST?

