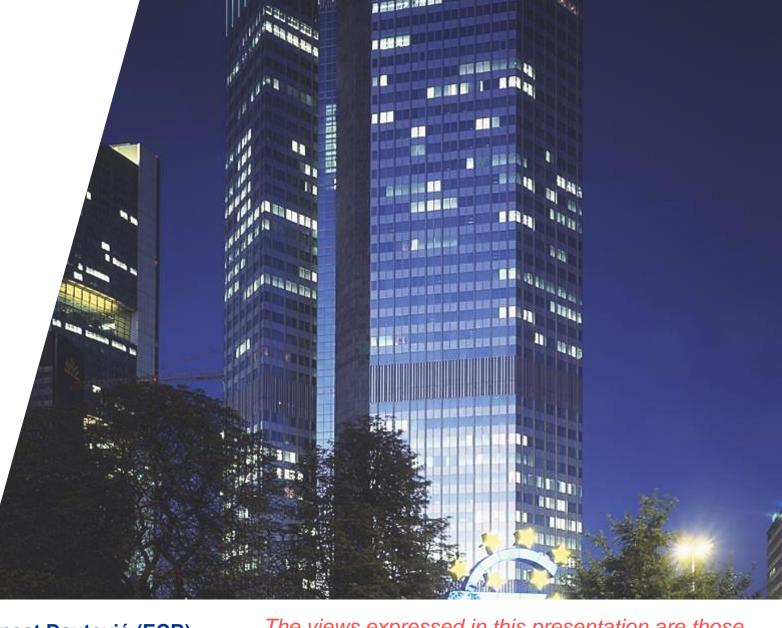


Supervisory Policy Stimulus: Evidence from the Euro Area Dividend Recommendation

ECB Banking Supervision Research Conference



May 2-3, 2023 Frankfurt am Main Ernest Dautović (ECB) Leonardo Gambacorta (BIS) Alessio Reghezza (ECB) The views expressed in this presentation are those of the authors and do not necessarily reflect the official positions of the ECB or the BIS.

#### **ECB Dividend Recommendations**

- At the outset of Covid-19 supervisory initiatives related to banks' distribution practices
- In the euro area, the ECB issued three unprecedented <u>dividend recommendations</u> (DRs) –
   a soft law measure not obliging banks to follow
- Aim: preserving lending activity and capital
- Most euro area banks complied with the DRs

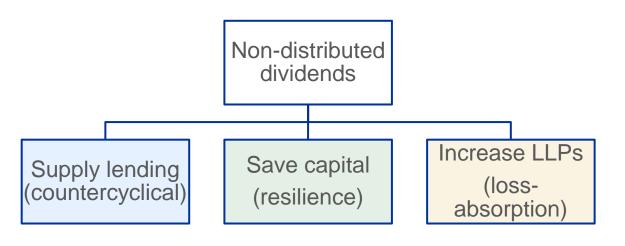
#### **European Central Bank (ECB) Recommendation ECB/2020/19**

"These Recommendations were based on the consideration that it is crucial that credit institutions continue to fulfil their role of funding households, small and medium-sized businesses and corporations ... was deemed to be a priority over discretionary dividend distributions and share buy-backs."

#### Literature background

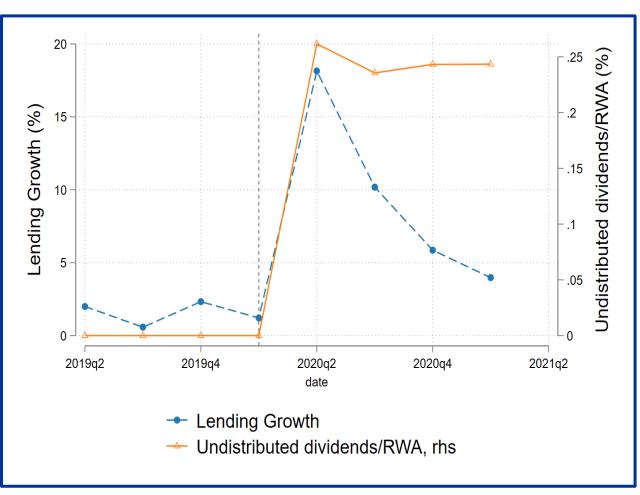
- Dividend restrictions can have negative effects on banks' stock prices, Andreeva et al. (2021), Matyunina and Ongena (2022), Lee (1995).
- Stock price effects are short-lived, prices preserve mean-reverting behaviour in the medium-run, i.e. initial reaction is excessive, Andreeva et al. (2021), Lee (1995).
- Idea of banking sector-wide dividend restrictions in downturns is not completely new, Forti and Schiozer (2015), Ashraf et al. (2016).
- In times of crisis banks act procyclically: not decrease dividend distributions, or actually expand them, to signal capital and liquidity strength in bad states, Acharya et al. (2012), Kauko (2012), Abreu and Gulamhussen (2013), Wu (2018), Saunders and Wilson (2020)
- From this standpoint, supervisory action can then be justified and timely to conserve capital and provide lending

## Dividend capital allocation decision



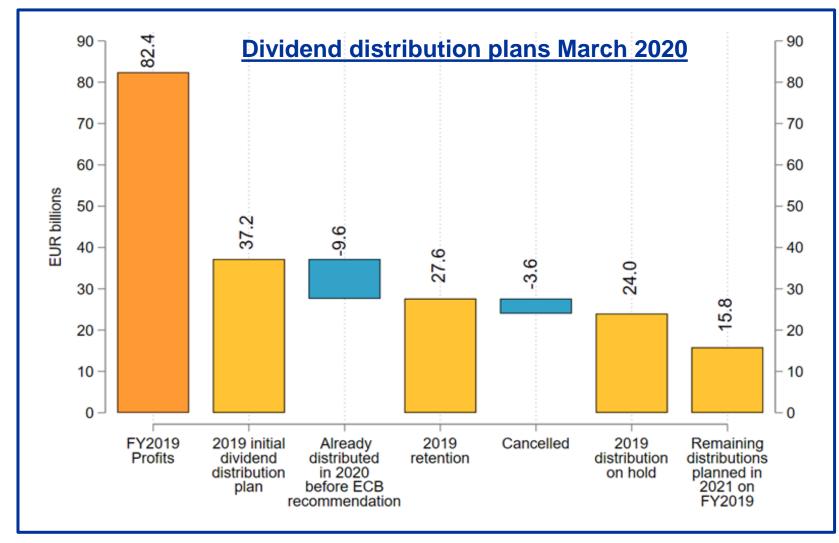
#### What we do...

- i. Estimate impact on lending growth to NFCs,
- Investigate credit allocation across firms in different sectors,
- iii. Examine risk-taking by banks



Note: The chart illustrates the spike in credit growth (q-o-q) and the planned but non-distributed dividends as a share of RWAs (rhs). Lending growth is the percentage change from previous quarter, while planned but undistributed dividends are in percent of risk-weighted assets (RWAs). The dashed vertical line is at 2020Q1, the time of the ECB dividend recommendation. Source: ECB supervisory survey on dividend plans and supervisory reporting.

## The dividend plans data

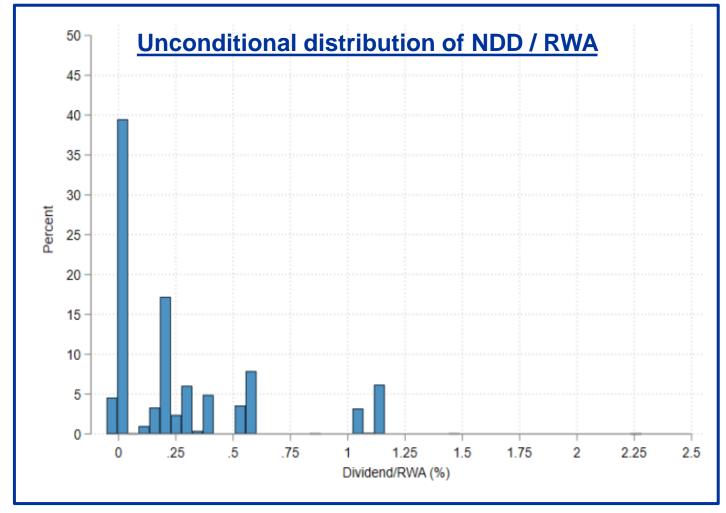


The chart plots the aggregate evolution of dividend distribution plans by significant banks in the euro area as of March 2020. From the initial plan to distribute EUR 37.2 billion, banks already distributed EUR 9.6 billion in the first three months of 2020. As of March 2020, the amount of planned not yet distributed dividends is the 2019 retention. Source: ECB banking supervision survey on dividend distribution plans.

- Source: ECB banking supervision survey in March 2020
- **Pay-out ratio**: 45-57%
- 2019 retention ~ 33.5 bps of CET1 ratio

#### Identification

$$Treat_{bt} = \frac{Dividends (Plan_{FY19} - Distr_{20})_b}{RWA_{bt}} = \frac{NDDb}{RWA_{bt}}$$



- Control group: ~41% of bank-firm-year obs.
   spike at 0
- Treatment group: ~59% of obs.

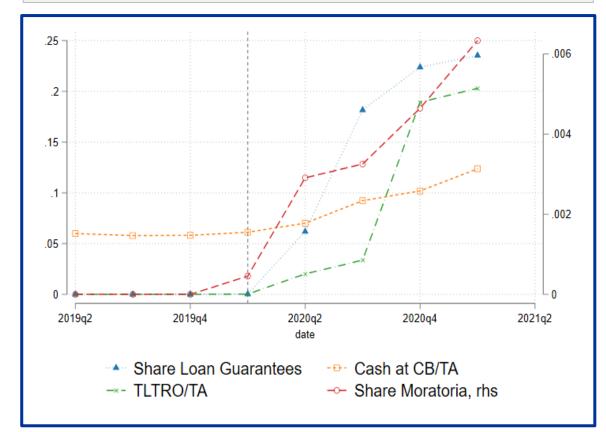
#### **Identification:**

- Use the survey prior to the DR
- Pandemic shock exogenous, as subsequent DR
- Plans set up in FY19 pre-determined to Covid-19 and DR
- Credit registry data: firm demand
- Compare lending of two banks differently affected by DR to same firm

Note: This graph plots the distribution of Dividends/RWA for the sample 99 banks employed throughout the analysis. Source: ECB banking supervision survey on dividend distribution plans.

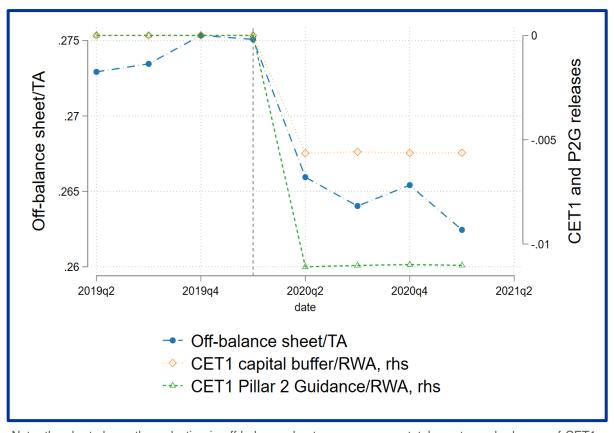
# Confounding effects

- Fiscal policy measures (guarantees & moratoria)
- Unconventional monetary policy (APPs, TLTRO)



Note: the chart shows the timeline of the main variables capturing the variation stemming from monetary and fiscal policy measures aimed at sustaining credit growth. The dashed vertical line is at 2020Q1. The share of debt repayment moratoria (rhs) and loan guarantees are sample averages of the shares in total loans aggregated at bank-firm level. Cash at CB/TA is the ratio of cash and cash held at the central bank to total asset and is a proxy for ECB asset purchases. TLTRO is the ratio of TLTRO III uptake over total assets at bank level. Sources: Anacredit, ECB supervisory and monetary policy reporting. Authors calculations.

- Off-balance sheet exposures (credit line drawdowns)
- Capital buffer and guidance releases (CBR, P2G)



Note: the chart shows the reduction in off-balance sheet exposures over total assets, and releases of CET1 regulatory capital buffer and CET1 Pillar 2 Guidance over RWA. Off-balance sheet exposures (drawn credit lines) when they are moved to the balance sheet increase lending mechanically. Capital releases instead give regulatory space to banks to issue loans without breaching regulatory requirements. The dashed vertical line is at 2020Q1. Source: ECB supervisory reporting. Authors calculations.

## Results: baseline, firm size, vulnerable sectors

- Average treatment effect on lending growth is 4.3 p.p. for a 1 p.p. increase in NDD/RWA
- Stronger for SMEs (+6.8 p.p.) than for large firms (+4.2 p.p.)
- Smaller for micro firms, in line with Chodorow et al. (2022)
- Stronger for Covid-19 vulnerable sectors: +5 p.p. vs. non-vulnerable ones (+2.2 p.p.)

Full baseline in annex

Dep.var.: Lending Growth $_{bft}$	Base	line	Firm	Size	Vulnerable Sectors		
	(1)	(2)	(3)	(4)	(5)	(6)	
$(Dividends/RWA)_{bt}$	4.311	4.444	4.169	4.368	2.234	2.823	
Medium ent. $\times$ (Dividends/RWA) <sub>bt</sub>	(0.000)***	(0.000)***	$(0.000)^{***}$ 2.052	(0.000)*** 1.636	(0.009)***	(0.006)***	
Small ent. $\times$ (Dividends/RWA) <sub>bt</sub>			(0.001)*** 2.678	(0.001)*** 1.811			
Micro ent. $\times$ (Dividends/RWA) <sub>bt</sub>			(0.001)*** -1.000	(0.003)*** -1.652			
Vulnerable sectors $\times$ (Dividends/RWA) <sub>bt</sub>			(0.293)	(0.037)**	2.882 (0.000)***	2.216 (0.000)***	
Observations	6,360,304	6,360,304	5,806,988	5,806,988	6,360,304	6,360,304	
N. Banks	99	99	99	99	99	99	
N. Firms	541,183	541,183	483,069	483,069	541,183	541,183	
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes	
Firm * time FE	Yes	Yes	Yes	Yes	Yes	Yes	
Bank FE	No	Yes	No	Yes	No	Yes	

Signif. Levels: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1. P-values in parenthesis derived from two-way clustered standard errors at bank and firm levels.

Strictly positive dividend plans

# Results: Interactions with government guarantees

Dep.var.: Lending Growth $_{bft}$	Guara	antees	Distanc	e MDA
	(1)	(2)	(3)	(4)
(Dividends/RWA) $_{bt}$	1.480 (0.090)*	1.878 (0.098)*	5.101 (0.000)***	6.490 (0.000)***
(Share of Loan Guarantees) $_{bft} > 0$	0.312 (0.000)***	0.315 (0.000)***	(0.000)	(0.000)
(Share of Loan Guarantees) $_{bft} > 0 \times (Dividends/RWA)_{bt}$	5.436 (0.009)***	5.379 (0.016)**		
Distance $MDA_{bt} = < p25$	()	(====)	0.003	
Distance MDA <sub>bt</sub> =< p25 ×(Dividends/RWA) <sub>bt</sub>			(0.721) -5.797 (0.007)***	-7.292 (0.017)**
Observations	6,359,243	6,359,243	6,359,243	6,359,243
N. Banks	99	99	99	99
N. Firms	541,138	541,138	541,138	541,138
Bank and bank-firm controls	Yes	Yes	Yes	Yes
Firm * time FE	Yes	Yes	Yes	Yes
Bank FE	No	Yes	No	Yes

Note: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1. P-values in parenthesis are derived from two-way clustered standard errors at both bank and firm levels. The dependent variable is the growth in the stock of debt (Lending growth). The exogenous variables include the ratio of dividend planned in 2019 but not distributed in 2020 to risk weighted assets (Dividends/RWA); a dummy variable that takes the value 1 if a bank has granted a loan that is partially or fully pledged by a government guaranteed scheme, and 0 otherwise (Share of Loan Guarantees > 0).

- DR supported bank lending also in the absence of gov. guarantees (+1.5 p.p.)
- Guarantees and DR acted as complements in supporting lending growth ,(+5.4 p.p.)
- No lending by banks with low capital space (capital constraints are still binding)
- Possible they used the funds to accumulate capital or LLPs

### Results: risk-taking

Dep.var.: Lending Growth $_{bft}$	Impaire	Impaired Firms		Zombie Firms Impaired, Zombie Firms		Impaired, Zombie Firms		L Banks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$(Dividends/RWA)_{bt}$	2.543 (0.001)***	2.663 (0.041)**	3.115 (0.000)***	2.952 (0.011)**	3.057 (0.000)***	3.678 (0.004)***	3.815 (0.000)***	3.272 (0.000)***
$p25 < \text{impaired}_f(19Q4) < p95$	-0.008 (0.000)***	-0.008 (0.000)***	(0.000)	(0.011)	-0.008 (0.000)***	-0.008 (0.000)***	(0.000)	(0.000)
$p25 < impaired_f(19Q4) < p95 \times (Dividends/RWA)_{bt}$	0.671 (0.194)	0.100 (0.858)			0.1522 (0.767)	-0.892 (0.060)*		
$\mathrm{Zombie}_f$	,	, ,	0.004 (0.596)	0.006 $(0.447)$	-0.003 (0.699)	-0.001 (0.904)		
$Zombie_f \times (Dividends/RWA)_{bt}$			-2.545 (0.057)*	-3.774 (0.007)***	-2.509 (0.065)*	-4.606 (0.002)***		
$NPL_{bt} < p50$			(0.001)	(0.001)	(0.000)	(0.002)	0.015 (0.054)*	
$NPL_{bt} < p50 \times (Dividends/RWA)_{bt}$							2.772 (0.288)	7.769 (0.001)***

#### Banks' risk aversion:

- 1. No additional lending to impaired firms and no lending to zombie firms
- 2. Stronger lending by banks with structurally low NPLs
- 3. No effects for <u>single-bank-relationship firms</u> (micro and small enterprises: riskier, low collateral and econ. of scale)

Note: zombie firms are defined as being those above the p95 of accumulated impairments within a bank-firm relationship as of 2019Q4 (34'826 firms and 233'214 obs. in the regressions)

# Conclusions and policy implications 1/2

- DRs new policy tool that can reinforce effectiveness of countercyclical policies in a downturn:
  - We find strong complementarity with government guarantees (fiscal policy)
- DRs can move resources from inefficiently(?) high shareholder consumption to credit
  - Investor consumption excessively sensitive around distribution dates (Bauer et al. 2022):
  - credit is likely to have higher multiplier than consumption in a downturn >
     banks benefit

# Conclusions and policy implications 2/2

- Temporary nature of DRs necessary to limit unintended effects:
  - o **supervisory forward guidance:** clear communication on duration, clear justification:
  - If not, financial stability can be undermined
- DRs can increase solvency and loss absorption capacity:
  - Tail risk: in case of bail-in, debtholders and eventually taxpayers take a lower hit
- DRs complement and address some of the concerns to buffer releases/usability:
  - Buffer releases can be (mis)used to distribute more dividends
  - DRs would eliminate this unintended effect
- DRs are the new kid on the block which is likely to be used in future crisis



# Thank you!

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# Annexes

# Annex – Empirical design

$$Credit\ growth_{fbt} = \alpha + \beta_2 \frac{NDD}{RWA_{bt}} + \beta_3 \mathbf{X_{bt-1}} + \beta_4 \mathbf{Z_{fbt-1}} + [\eta_{ft}] + [\rho_b] + [\phi_{ilst}] + \epsilon_{fbt}$$

- **Time frame**: '19Q1 '21Q1
- NDD: planned but Non-Distributed Dividends (NDD) as of March '20
- $X_{bt-1}$  bank-specific characteristics: TA, NIM, NPLs, Mkt debt / TA, RWA/TA, distance to MDA, LLPs.
  - ➤ It includes also controls for monetary policies (i.e. TLTRO3, APP & PEPP)
  - Off-bal. exposure (credit line drawdowns)
- $Z_{bft}$  fiscal policy measures: share of loans with moratoria and guarantees
- $\mu_{ft}$  firm-time FE capturing time-variant firm level changes, notably credit demand á la Khwaja and Mian (2008)
- γ<sub>b</sub> time-invariant bank FE
- $\varphi_{ilst}$  industry-location-size-time FE (robustness including firms with a single bank relationship)
- Data:
  - i. Euro area wide credit registry (AnaCredit) > bank-firm level
  - ii. Reporting on moratoria and guarantees > bank-firm level
  - iii. ECB data on TLTROs > bank level
  - iv. COREP/FINREP data on bank balance sheets > bank level
  - v. SSM surveys on bank dividend distribution plans > bank level

# Annex – Full baseline

Note: a large firm employs more than 250 employees; has an annual turnover greater than EUR 50 million; and annual balance sheet greater than EUR 43 million. A medium firm employs less than 250 but more than 50, employees, has an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million. A small firm employs fewer than 50 persons and has an annual turnover and/or annual balance sheet total that does not exceed EUR 10 million. Finally, a micro firm employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million

Table 2: Baseline Estimates: Dividends and Lending with firm size and vulnerable sectors

Dep.var.: Lending Growth $_{bft}$	Base	eline	Firm	Size	Vulnerable Sectors		
	(1)	(2)	(3)	(4)	(5)	(6)	
$({\rm Dividends/RWA})_{bt}$	4.311	4.444	4.169	4.368	2.234	2.823	
Medium ent. × (Dividends/RWA) $_{bt}$	(0.000)***	(0.000)***	(0.000)*** 2.052	(0.000)*** 1.636	(0.009)***	(0.006)***	
Small ent. $\times$ (Dividends/RWA) $_{bt}$			(0.001)*** 2.678 (0.001)***	(0.001)*** 1.811 (0.003)***			
Micro ent. $\times$ (Dividends/RWA) $_{bt}$			-1.000 (0.293)	-1.652 (0.037)**			
Vulnerable sectors × (Dividends/RWA) $_{bt}$			(/		2.882 (0.000)***	2.216 (0.000)***	
${\rm Ln}({\rm TA})_{bt-1}$	0.006	-0.169	0.005	-0.192	0.005	-0.171	
$({\rm Mkt~debt~funding/TA})_{bt-1}$	(0.039)** -0.053	(0.104) -0.212	(0.080)* -0.056 (0.224)	(0.082)* -0.120	(0.045)** -0.057	(0.101) -0.211	
$(RWA/TA)_{bt-1}$	(0.196) -0.014 (0.774)	(0.433) -0.516 (0.043)**	-0.019 (0.725)	(0.680) -0.535 (0.040)**	(0.163) -0.019 (0.706)	(0.436) -0.522 (0.041)**	
(NIM annualised) $_{bt-1}$	3.711 (0.000)***	2.442 (0.142)	3.936 (0.000)***	2.479 (0.159)	3.751 (0.000)***	2.413 (0.147)	
$(NPL \ ratio)_{bt-1}$	0.169 (0.019)**	0.291 (0.197)	0.161 (0.027)**	0.270 (0.235)	0.171 (0.018)**	0.290 (0.199)	
(CET1 MDA Distance) $_{bt-1}$	0.452 (0.000)***	1.867 (0.000)***	0.480 (0.000)***	1.913 (0.000)***	0.446 (0.000)***	1.854 (0.000)***	
$(Cash/TA)_{bt-1}$	0.111 (0.069)*	-0.013 (0.890)	0.106 (0.114)	-0.008 (0.932)	0.109 (0.075)*	-0.012 (0.894)	
$({\rm Provisions/TA})_{bt-1}$	-0.078 (0.921)	10.865 (0.005)***	-0.203 (0.810)	11.349 (0.004)***	-0.080 (0.919)	10.809 (0.006)***	
(Share Debt Moratoria) $_{bft}$	0.024 (0.083)*	0.002 (0.729)	0.022 (0.135)	0.000 (0.948)	0.024 (0.082)*	0.002 (0.718)	
(Share Loan Guarantees) $_{bft}$	0.368	0.370 (0.000)***	0.373 (0.000)***	0.376 (0.000)***	0.368	0.371 (0.000)***	
$(TLTRO/TA)_{bt-1}$	0.186 (0.000)***	0.206 (0.001)***	0.195 (0.000)***	0.217 (0.001)***	0.186 (0.000)***	0.206 (0.001)***	
(Off-balance sheet/TA) $_{bt-1}$	-0.035 (0.133)	0.077 $(0.474)$	-0.039 (0.120)	0.105 (0.281)	-0.035 (0.137)	0.076 (0.478)	
Firm-Quarter FE Bank FE	Yes No	Yes Yes	Yes No	Yes Yes	Yes No	Yes Yes	
Observations N. Banks	6'359'243 99	6'359'243 99	5'805'927 99	5'805'927 99	6'359'243 99	6'359'243 99	
N. Firms R <sup>2</sup>	541'138 0.471	541'138 0.472	483'024 0.470	483'024 0.471	541'138 0.471	541'138 0.473	

Note: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1. P-values shown in parenthesis are derived from two-way clustered standard errors at both bank and firm levels. The regression sample includes only multiple bank-firm relationships. The dependent variable is the growth in the stock of debt (Lending growth). The exogenous variables include the ratio of dividend planned in 2019 but not distributed in 2020 to risk weighted assets (Dividends/RWA). Control variables are specified in Equation 1.

## Annex – Multi e single relationship samples with ILS

Table: Frequency distribution table: single-multi relationship vs. firms' size

Table: ILS regression	a tar tha millti and	l albala rala	Stickelle comple	20
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	13 IOI 11 IG 11 IOIII AI I	1 2011 (112 12)	1110 /1 1.51 1107 .5611 1 10 /10	
<u> </u>		9		

	(1)	(2)	(3)	(4)
VARIABLE	Lending growth	Lending growth	Lending growth	Lending growth
SAMPLE	Multi Rel.	Single Rel.	Multi Rel.	Single Rel.
Dividends / RWA	4.859***	0.463	4.724***	-0.671
	-1.198	-0.86	-1.504	-1.633
Obs.	6,065,711	4,792,236	6,065,711	4,792,234
N. banks	99	98	99	97
N firms	525,982	991,818	525,982	991,816
Bank and bank-firm controls	Yes	Yes	Yes	Yes
ILS-date FE	Yes	Yes	Yes	Yes
Bank FE	No	No	Yes	Yes

	Firms' size											
	Large	Medium	Small	Micro	Total							
Single Rel.	438,386	781,493	2,167,369	11,622,159	15,009,407							
% of row	2.92	5.21	14.44	77.43	100							
% of column	34.88	39.41	41.99	71.49	60.87							
Multiple Rel.	818,460	1,201,349	2,993,697	4,633,846	9,647,352							
% of row	8.48	12.45	31.03	48.03	100							
% of column	65.12	60.59	58.01	28.51	39.13							
Total	1,256,846	1,982,842	5,161,066	16,256,005	24,656,759							
% of row	5.1	8.04	20.93	65.93	100							
% of column	100	100	100	100	100							

# Annex – Single relationships and Industry Location Size (ILS)

Table 6: Robustness: Industry-location-size fixed effects and inclusion of single bank relationship firms

Dependent Variable:	Lending Growth						
	(1)	(2)	(3)	(4)	(5)	(6)	
Dividends/RWA	2.943 (0.006)***	2.711 (0.082)*	3.711 (0.000)***	3.514 (0.001)***	1.179 (0.098)*	1.007 (0.486)	
Medium firms $\times Dividends/RWA$	(0.000)	(0.002)	1.727 (0.003)***	1.436 (0.002)***	(0.000)	(0.100)	
Small firms $\times Dividends/RWA$			2.299	1.628			
Micro firms $\times Dividends/RWA$			(0.008)*** -2.088	(0.010)*** -2.590			
Vulnerable Sectors $\times Dividends/RWA$			(0.060)*	(0.023)**	2.704 (0.000)***	2.036 (0.003)***	
Observations	11,362,178	11,362,178	11,362,178	11,362,178	11,362,178	11,362,178	
N. Banks	99	99	99	99	99	99	
N. Firms	1,463,993	1,463,993	1,463,993	1,463,993	1,463,993	1,463,993	
Bank and bank-firm controls	Yes	Yes	Yes	Yes	Yes	Yes	
ILS*time FE	Yes	Yes	Yes	Yes	Yes	Yes	
Bank FE	No	Yes	No	Yes	No	Yes	

Signif. Levels: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1. Std. errors in parenthesis derived from two-way clustered standard errors at bank and firm levels.

- Shortcoming of the Khwaja and Mian (2008) is the exclusion of firms with only one bank relationships
- The ILS FE approach allows to include also single bank-firm relationships in the panel.
- Results are still statistically significant when single bank relationships are included
- Estimates are however ~30% lower driven by the non-significant effect of firms with a single relationship
- ILS FE on a multi-relationship sample has same magnitudes of estimates as baseline

<u>Note</u>: the ILS FE is formed by the interaction of industry (4-digit NACE) – location (2-digit postal code) – size (4 categories)

#### Annex – Results: Persistence

Table 5: Results interaction with quarterly dummies

Dependent Variable:	Lending	Growth
Model:	(1)	(2)
Dividends/RWA $\times 2020Q2$	3.793	2.452
	(0.079)*	(0.357)
Dividends/RWA $\times 2020Q3$	12.977	11.415
	(0.001)***	(0.001)***
Dividends/RWA $\times 2020Q4$	1.995	1.058
	(0.221)	(0.527)
Observations	6,359,243	6,359,243
N. Banks	99	99
N. Firms	541'138	541'138
Bank and bank-firm controls	Yes	Yes
Firm * time FE	Yes	Yes
Bank FE	No	Yes

Signif. Levels: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1. Std. errors in parenthesis derived from two-way clustered standard errors at bank and firm levels.

- The effect of the ECB dividend recommendation is mostly short-term, vanishes in '20Q4
- concentrated in '20Q3
- Dividend recommendation was initially planned to remain in place only until the 1<sup>st</sup> Oct. '20, it was extended in Jul. '20 until at least Jan. '21
- Only then banks deployed the additional capital to loans

### Annex – Strictly positive dividend plans

Table 7: Robustness: Robustness with banks with strictly positive dividend distribution plans

Dep.var. Lending Growth <sub><math>bft</math></sub>	Banks with Strictly Positive Dividend Plans							
	Base	eline	Firm	Size	Vulnerab	le Sectors		
	(1)	(2)	(3)	(4)	(5)	(6)		
$({\rm Dividends/RWA})_{bt}$	4.388 (0.000)***	4.027 (0.005)***	4.031 (0.000)***	3.770 (0.004)***	2.225 (0.010)***	2.403 (0.087)*		
Medium ent. $\times$ (Dividends/RWA) <sub>bt</sub>	(0.000)	(0.000)	2.155 (0.002)***	1.629 (0.003)***	(0.010)	(0.001)		
Small ent. $\times$ (Dividends/RWA) <sub>bt</sub>			2.998 (0.002)***	1.931 (0.006)***				
Micro ent. $\times$ (Dividends/RWA) <sub>bt</sub>			-0.721 (0.477)	-1.437 (0.111)				
Vulnerable sectors $\times$ (Dividends/RWA) <sub>bt</sub>					3.026 (0.000)***	2.238 (0.000)***		
$Ln(TA)_{bt-1}$	0.009	-0.118	0.008	-0.139	0.009	-0.121		
$(Mkt debt funding/TA)_{bt-1}$	(0.011)** -0.023 (0.631)	(0.277) 0.165 (0.628)	(0.023)** -0.025 (0.642)	(0.218) 0.259 (0.483)	(0.013)** -0.027 (0.573)	(0.267) $0.170$ $(0.618)$		
$(RWA/TA)_{bt-1}$	-0.029 (0.643)	-0.729 (0.042)**	-0.034 (0.616)	-0.764 (0.039)**	-0.035 (0.580)	-0.736 (0.041)**		
$(NIM annualised)_{bt-1}$	3.782 (0.000)***	6.582 (0.001)***	3.992 (0.000)***	6.478 (0.002)***	3.830 (0.000)***	6.539 (0.001)***		
$(NPL \ ratio)_{bt-1}$	0.423 (0.000)***	1.664 (0.003)***	0.428 (0.000)***	1.700 (0.004)***	0.424 (0.000)***	1.656 (0.004)***		
CET1 MDA Distance) $_{bt-1}$	0.499 (0.001)***	2.039 (0.000)***	0.533 (0.002)***	2.044 (0.000)***	0.494 (0.001)***	2.024 (0.000)***		
$(\operatorname{Cash}/\operatorname{TA})_{bt-1}$	0.140 (0.116)	-0.117 (0.344)	0.132 (0.178)	-0.108 (0.420)	0.136 (0.129)	-0.116 (0.346)		
$(Provisions/TA_{bt-1})$	0.096 (0.935)	12.851 (0.006)***	-0.124 (0.919)	13.182 (0.006)***	0.091 (0.938)	12.808 (0.006)***		
$(Share\ Debt\ Moratoria)_{bft}$	0.034 (0.056)*	0.007 $(0.313)$	0.035 (0.072)*	0.008 $(0.351)$	0.034 (0.057)*	0.007 $(0.304)$		
(Share Loan Guarantees) $_{bft}$	0.359 (0.000)***	0.365 (0.000)***	0.363 (0.000)***	0.370 (0.000)***	0.359 (0.000)***	0.366 (0.000)***		
$(TLTRO/TA)_{bt-1}$	0.183 (0.000)***	0.245 (0.000)***	0.188 (0.000)***	0.259 (0.000)***	0.183 (0.000)***	0.245 (0.000)***		
(Off balance sheet/TA) $_{bt-1}$	-0.034 $(0.275)$	0.114 $(0.326)$	-0.036 (0.270)	0.153 $(0.236)$	-0.034 (0.281)	0.114 $(0.330)$		
Firm-Quarter FE	Yes	Yes	Yes	Yes Yes	Yes No	Yes		
Bank FE	No	Yes	No			Yes		
Observations N. Banks	5'476'337	5'476'337 71	5'012'858 70	5'012'858 70	5'476'337	5'476'337		
N. Firms	71 475'966	475'966	426'261	426'261	71 475'966	71 475'966		
R <sup>2</sup>	0.481	0.483	0.480	0.482	0.481	0.483		

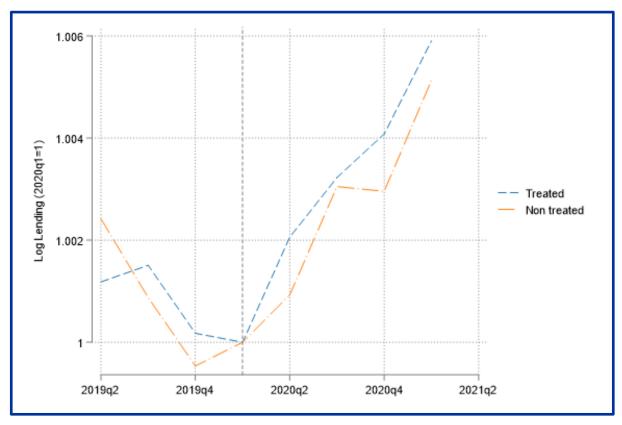
Note: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1. P-values in parenthesis are derived from two-way clustered standard errors at both bank and firm levels. The regression sample contains only multiple bank-firm relationships. The dependent variable is the growth in the stock of debt (Lending growth). The exogenous variables include the ratio of dividend planned in 2019 but not distributed in 2020 to risk weighted assets (Dividends/RWA). Control variables are specified in Equation 1.

## Annex – Alternative treatment periods

Placebo Treatment Period	19Q2	-20Q1	19Q3-20Q1		19Q4	-20Q1	20Q1	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(Dividends/RWA) <sub>bt</sub>	0.435	-57.610	1.037	0.679	3.029	3.953	0.373	-2.911
	(0.647)	(0.000)***	(0.481)	(0.775)	(0.155)	(0.150)	(0.546)	(0.290)
$Ln(TA)_{bt-1}$	0.005	-0.034	0.004	-0.018	0.003	-0.055	0.006	-0.016
	(0.129)	(0.782)	(0.209)	(0.893)	(0.417)	(0.611)	(0.091)*	(0.901)
$(Mkt debt funding/TA)_{bt-1}$	0.068	-1.998	0.067	-2.354	0.065	-2.239	0.067	-2.512
	(0.121)	(0.002)***	(0.128)	(0.002)***	(0.145)	(0.002)***	(0.124)	(0.002)***
$(RWA/TA)_{bt-1}$	0.005	0.437	-0.000	0.618	-0.016	0.410	0.009	0.763
	(0.926)	(0.121)	(0.996)	(0.045)**	(0.776)	(0.024)**	(0.883)	(0.099)*
$(NIM annualised)_{bt-1}$	2.197	-1.857	2.279	-2.800	2.482	-2.128	2.151	-3.458
7.7.7.	(0.003)***	(0.434)	(0.001)***	(0.333)	(0.000)***	(0.412)	(0.005)***	(0.157)
$(NPL \ ratio)_{bt-1}$	0.309	-0.234	0.309	-0.102	0.312	-0.274	0.308	0.130
, Jul. 1	(0.022)**	(0.504)	(0.021)**	(0.789)	(0.016)**	(0.496)	(0.023)**	(0.780)
CET1 MDA Distance) <sub>bt-1</sub>	0.405	2.105	0.400	2.225	0.385	1.960	0.411	2.333
***	(0.005)***	(0.005)***	(0.005)***	(0.010)**	(0.008)***	(0.002)***	(0.005)***	(0.012)**
$(Cash/TA)_{bt-1}$	0.139	-0.146	0.137	-0.164	0.139	0.062	0.154	-0.329
(	(0.112)	(0.324)	(0.116)	(0.435)	(0.118)	(0.819)	(0.119)	(0.157)
(Share Debt Moratoria) <sub>bft</sub>	-0.022	-0.029	-0.021	-0.028	-0.020	-0.029	-0.022	-0.027
, inj.	(0.596)	(0.418)	(0.599)	(0.441)	(0.612)	(0.419)	(0.595)	(0.457)
(Share Loan Guarantees) <sub>bft</sub>	2.918	2.887	2.917	2.893	2.911	2.890	2.918	2.897
( ) January of E	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
$(TLTRO/TA)_{bt-1}$	1.565	-0.663	1.556	-0.642	1.539	-0.632	1.578	-0.556
(111107) 111/00-1	(0.000)***	(0.252)	(0.000)***	(0.298)	(0.000)***	(0.263)	(0.000)***	(0.303)
(Off balance sheet/TA) <sub>bt-1</sub>	0.011	-0.322	0.009	-0.320	0.005	-0.272	0.014	-0.356
(711 1/11111/10 1/111/01-1	(0.762)	(0.001)***	(0.817)	(0.006)***	(0.897)	(0.005)***	(0.708)	(0.005)***
Firm-Quarter FE	Yes							
Bank FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	2720382	2720382	2720382	2720382	2720382	2720382	2720382	2720382
N. Banks	95	95	95	95	95	95	95	95
N. Firms	376407	376407	376407	376407	376407	376407	376407	376407
$\mathbb{R}^2$	0.427	0.430	0.427	0.430	0.427	0.430	0.427	0.430

Signif. Levels: \*\*\*: 0.01, \*\*: 0.05, \*: 0.1. P- values in parenthesis derived from two-way clustered standard errors at bank and firm levels.

#### Annex – Parallel trends



Note: This figure shows the trends of the logarithm of the average bank-firm level lending for the group of control banks either did not follow the ECB recommendation on dividends distribution or were not affected by it (orange dot-dashed line) and the treated group of banks that followed the recommendation suspending partly or in full their dividend distribution plans (blue dashed line). Source: Anacredit and authors' calculations.