

# Unused Bank Capital Buffers and Credit Supply Shocks at SMEs during the Pandemic

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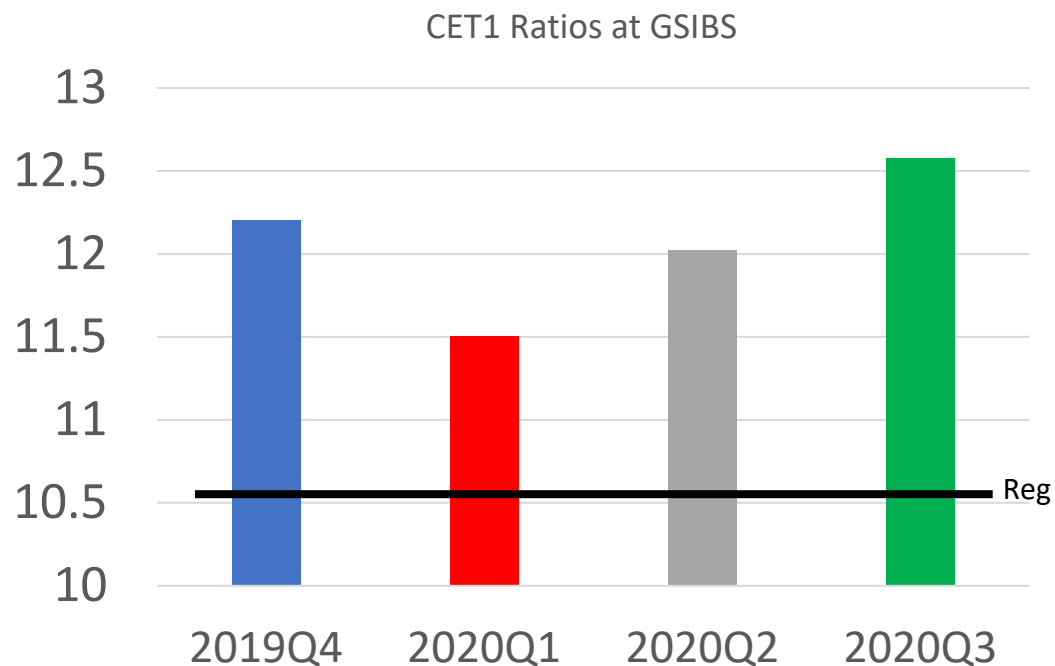
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# Background

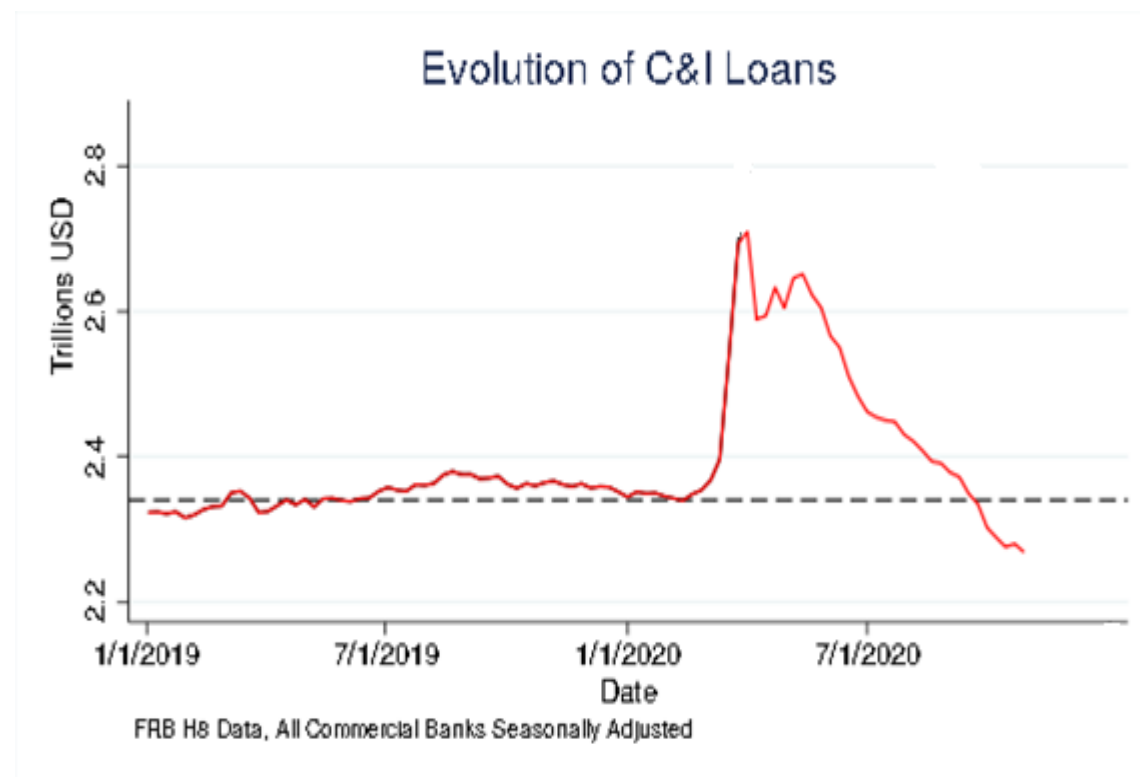
- The Basel III framework introduced regulatory capital buffers (capital conservation, CCyB, and GSIB surcharge) above minimum requirements as a new feature of the post-crisis regulatory reform.
- The capital buffers are intended to:
  - Absorb bank losses in times of stress.
  - Help support the economy by maintaining the flow of credit during a downturn.
- Buffers were effective in incentivizing banks to raise capital ratios during good times
- Research Question: Were buffers ***“usable” during the downturn?***
  - If not, did the un-usability lead to credit supply shocks during the pandemic?

# Bank Capital and Lending

Despite the recession, CET1 ratios remain high and above pre-pandemic levels:



- In 2020, bank C&I lending remained weak:
  - Decline in loan demand: (Drawdowns and Repayments of credit lines)
  - Increased Borrower Risk
  - Credit supply factors?



# Motivation

- *“There has been a concern that the buffers were not being used and there was a reluctance to use them.”*
  - **Andrea Enria, chair of the ECB’s Single Supervisory Mechanism, Financial Times, January 28, 2021**
- *“...lending to corporates by banks with a smaller capital headroom on top of the combined buffer requirement (CBR) has decreased significantly....”*
  - **ECB Financial Stability Review (May 2021)**
- *“...questions have arisen over banks' ability and willingness to use the regulatory buffers available to them... in a period of stress, banks might react with many of the same procyclical behaviors that we've seen in the past...”*
  - **S&P Global, June 11, 2020**

# Contribution

- Fact: **None** of the U.S. BHCs have used their regulatory buffers during the COVID-19 pandemic.
- This paper examines the lending implications of a reluctance to use regulatory buffers
  - Explores some of the reasons for banks' reluctance to use their buffers.
  - Uses regulatory loan-level data for U.S. large banks (i.e., 50k borrowers, incl. private firms).
- Empirical approach:
  - Controlling for CET1 ratio, compare C&I commitment growth between:
    1. “Buffer-constrained” banks (banks entering the pandemic with a capital ratio **close** to the regulatory buffer threshold)versus
    2. “Buffer-unconstrained” banks (banks entering the pandemic with a capital ratio **far** from the regulatory buffer threshold)

# Results

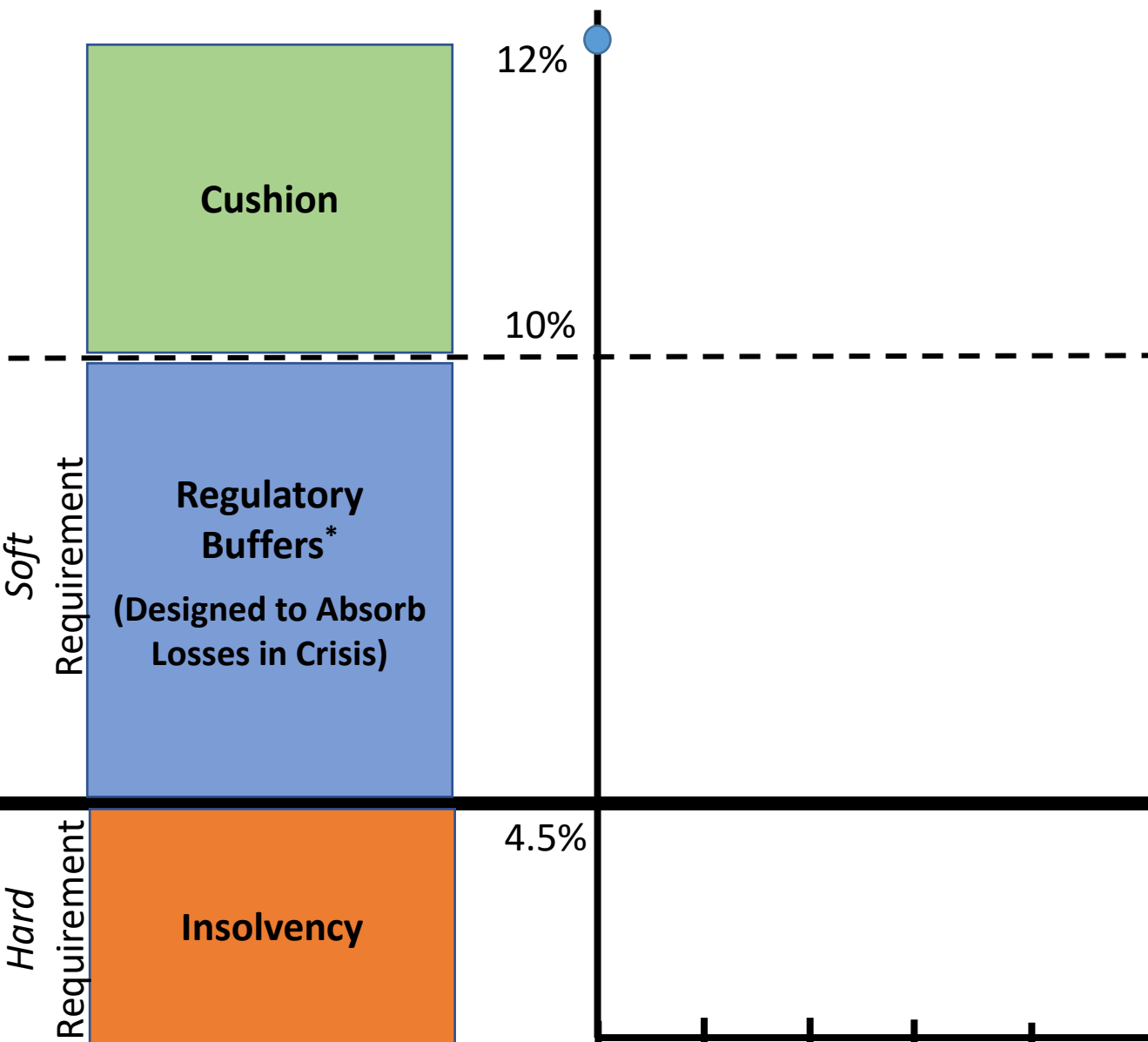
- Relative to buffer-unconstrained banks, buffer-constrained banks:
  - Reduced C&I loan commitments to SMEs by 5.6 p.p. more
  - Reduced C&I loan commitments to young firms by 4.8 p.p. more
  - Reduced C&I loan commitments to firms with pre-existing credit lines up for renegotiation during the pandemic by 9.2 p.p. more
  - Were roughly 5 percent more likely to end pre-existing lending relationships with SMEs (similar results for young firms and firms up for renegotiation)
- Why would banks view using their buffers as too expensive?
  - Costs associated with rating downgrades and dividend cuts are close to 300 basis points (3-day event window) during stress

# Which Firms?

- Our analysis finds banks are cutting credit **on the margin** to not only SMEs, but also other “non-core” borrowers (i.e. firms for which it is **relatively low cost to curtail lending to**):
  1. Private, bank-dependent SMEs
  2. Firms whose lending relationships were relatively young
  3. Firms with pre-pandemic credit lines that contractually matured at the start of the pandemic and thus were up for renegotiation (Lower Contractual Cost of Termination)

## Capital Requirements

## Capital Ratio



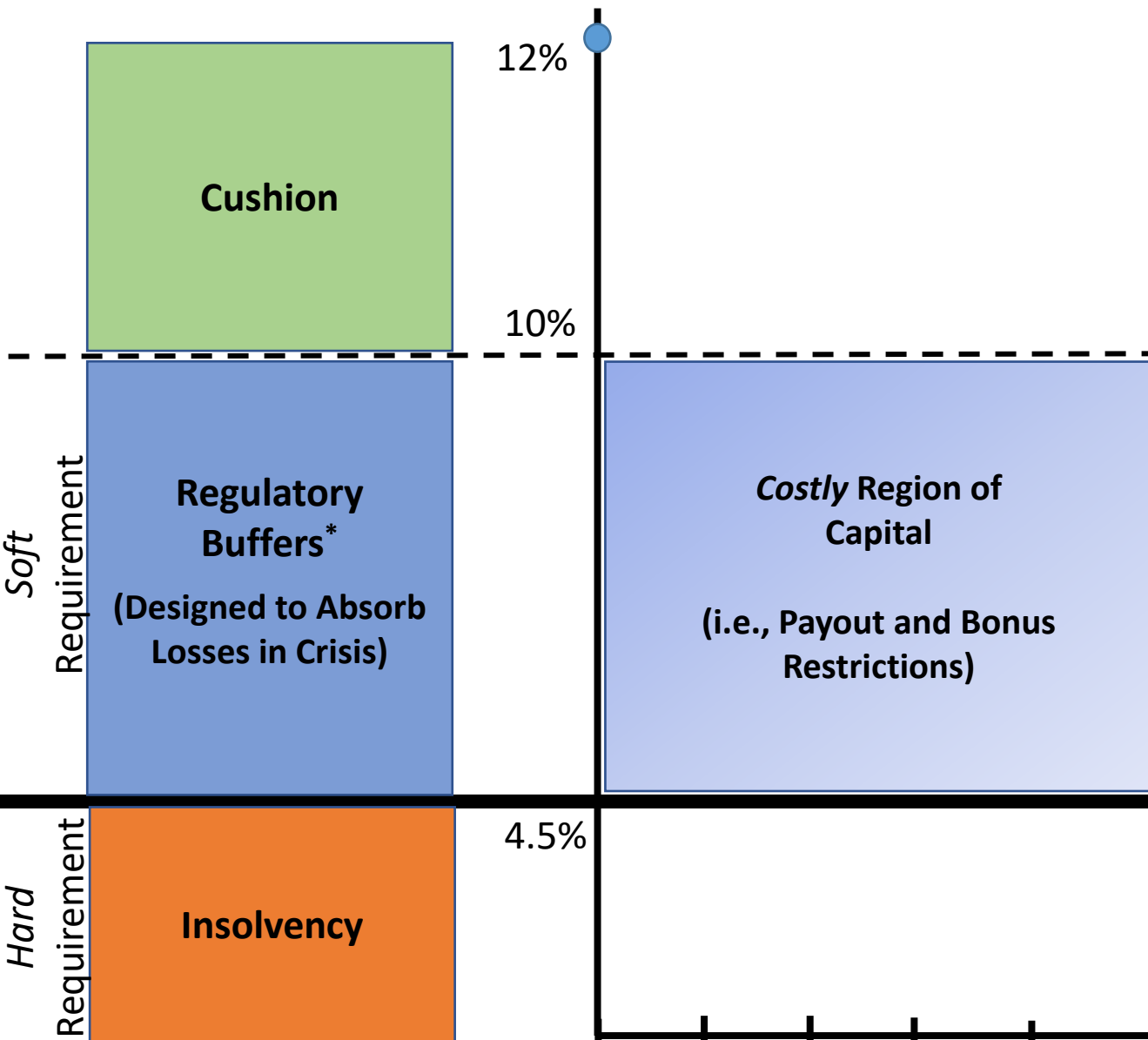
\* Regulatory Buffers comprise Stress Capital Buffer ( $\geq 2.5\%$ ) and GSIB Surcharge (1% to 3.5%), if applicable.

Dec 19   Mar 20   Jun 20   Sep 20   Dec 20



## Capital Requirements

## Capital Ratio

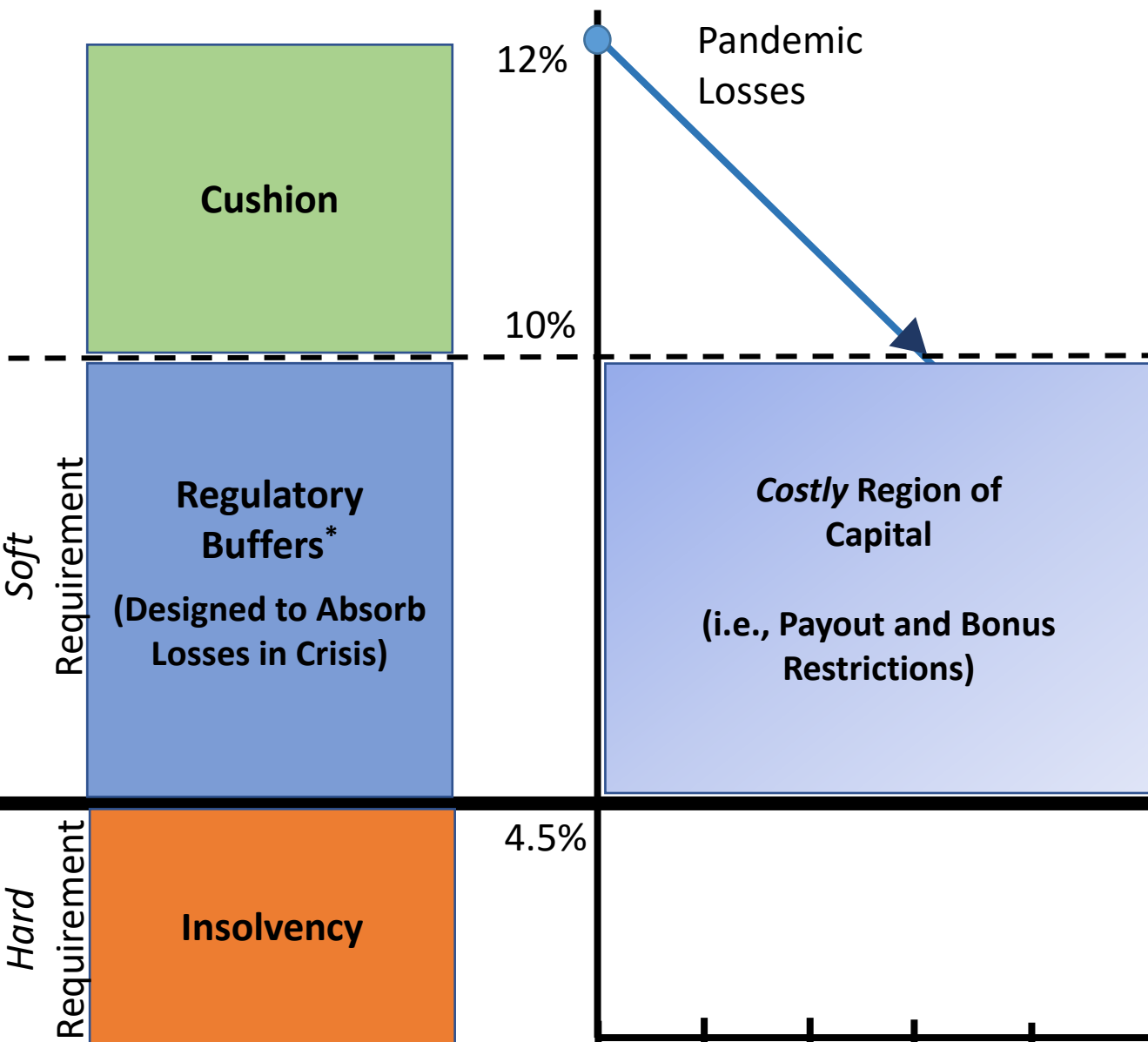


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Dec 19   Mar 20   Jun 20   Sep 20   Dec 20

## Capital Requirements

## Capital Ratio



12%

Pandemic Losses

10%

Cushion

Regulatory Buffers\*

(Designed to Absorb Losses in Crisis)

Costly Region of Capital

(i.e., Payout and Bonus Restrictions)

Insolvency

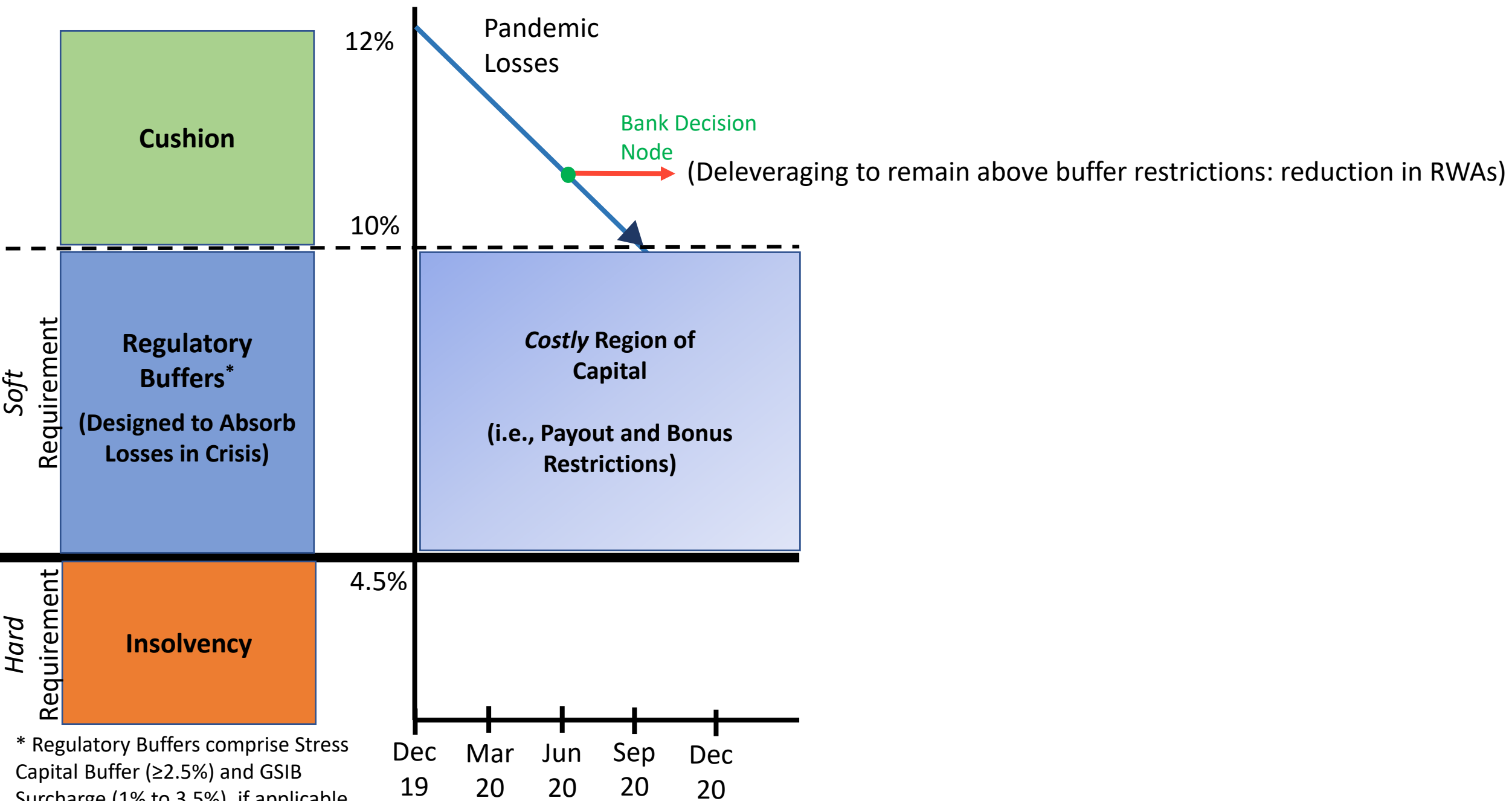
4.5%

Dec 19 Mar 20 Jun 20 Sep 20 Dec 20

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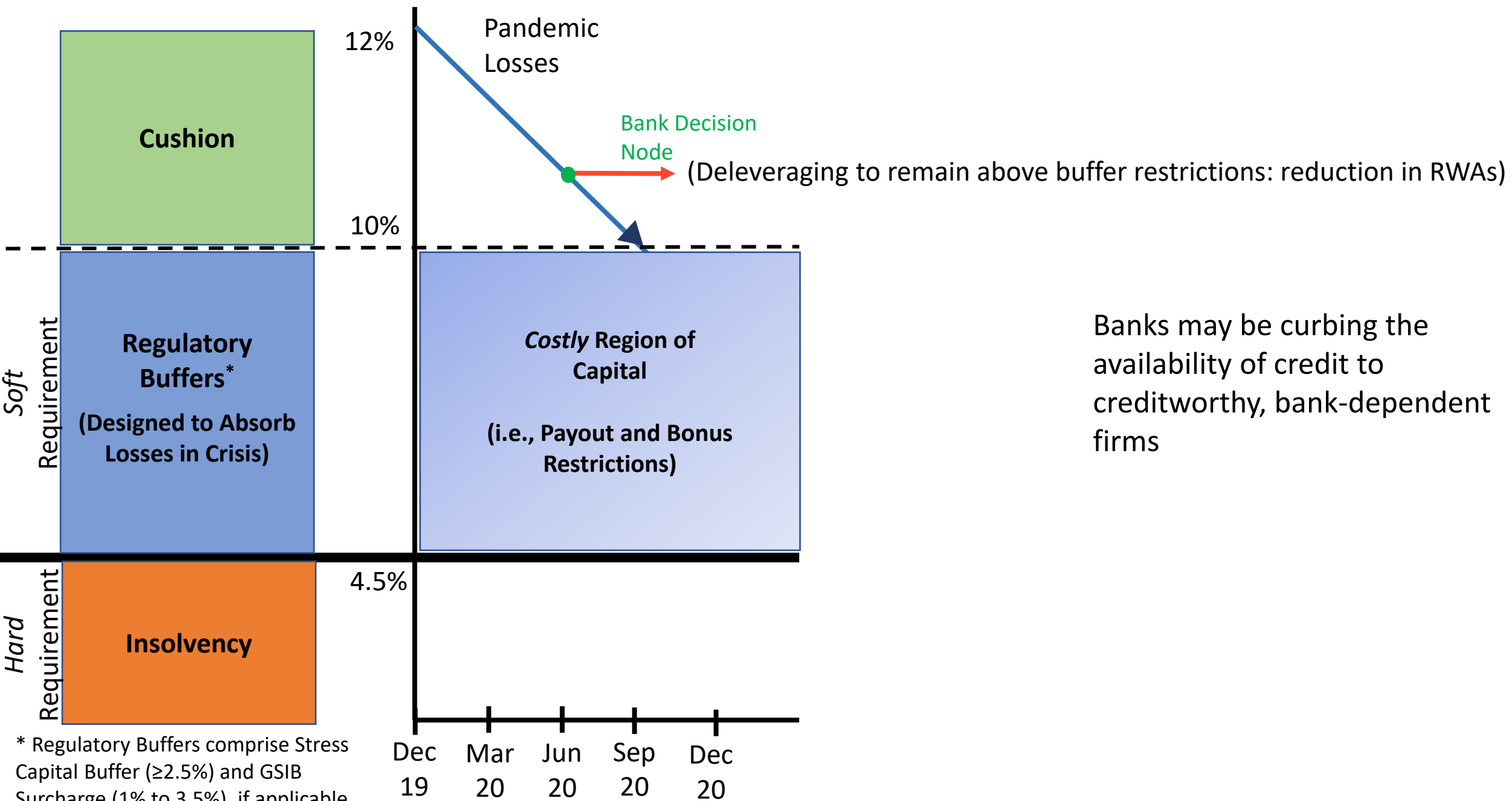
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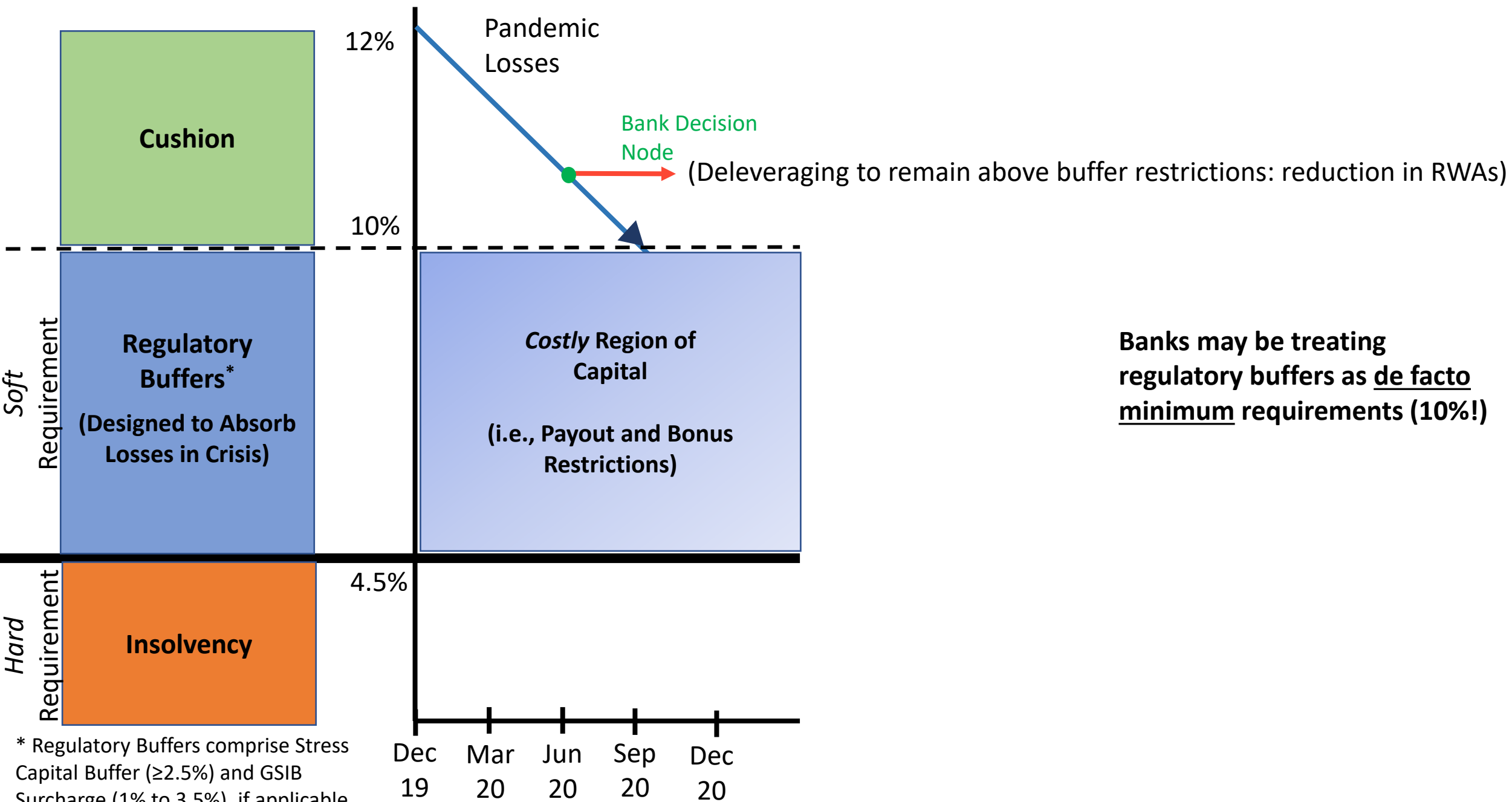
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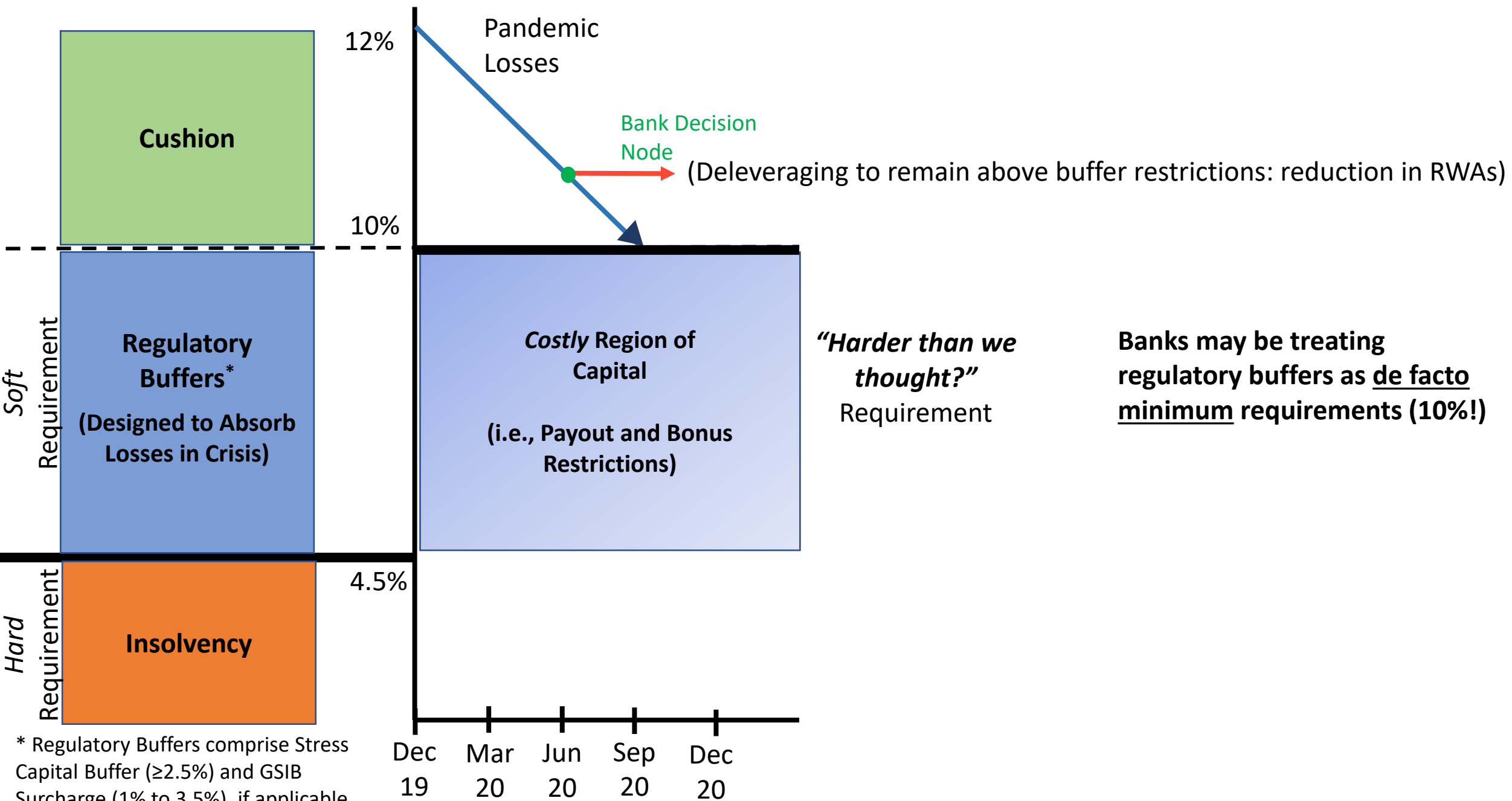
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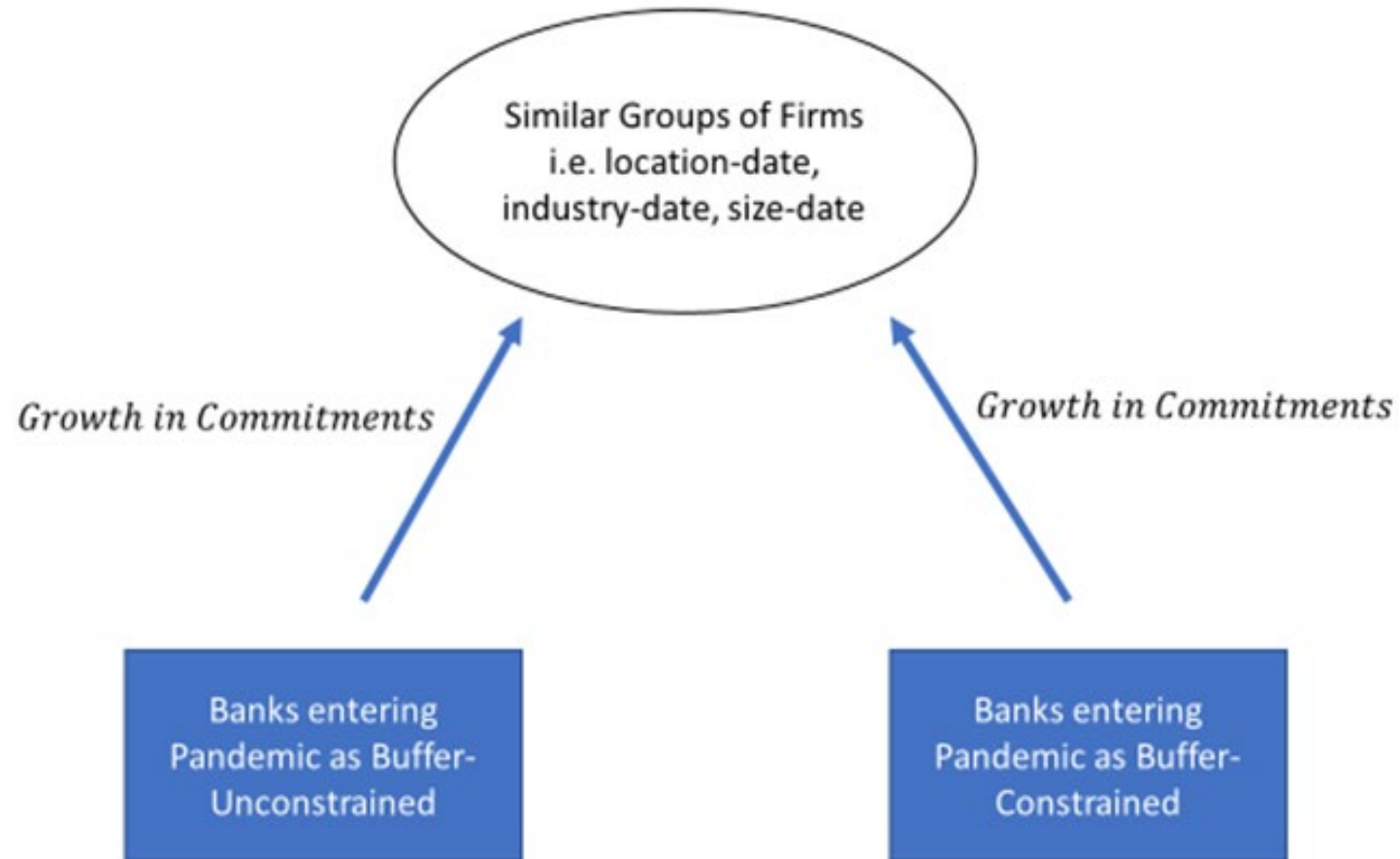


# FR Y-14 Loan-level Data

- Closest thing the US has to a credit registry
- 16 of the largest US Bank Holding Companies
- ~50,000 borrowing firms (public and private)
- We look at growth in loan **commitments**, rather than outstanding loans. (Commitments are immune to credit line drawdowns and repayments)

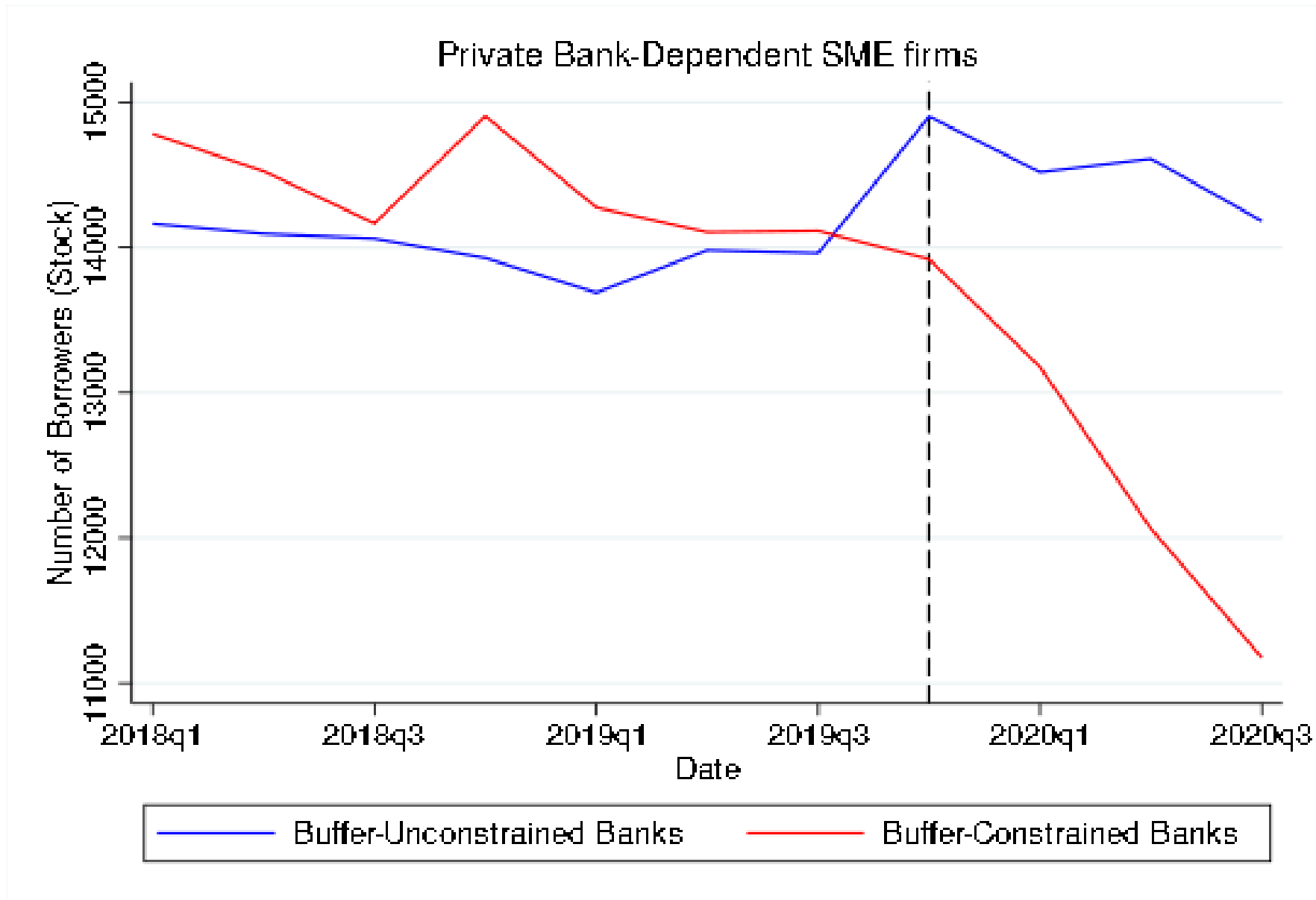
Date	Bank	Borrower	Total Commitments
2020Q1	Bank A	XYZ Clothing Co.	N Million USD
2020Q1	Bank A	ABC Energy Ltd.	P Million USD
2020Q1	Bank A	DEF Automobile Co.	Q Billion USD
2020Q1	Bank B	GHI Construction Co.	R Million USD
2020Q1	Bank B	JKL Software Co.	S Billion USD

# Empirical Strategy

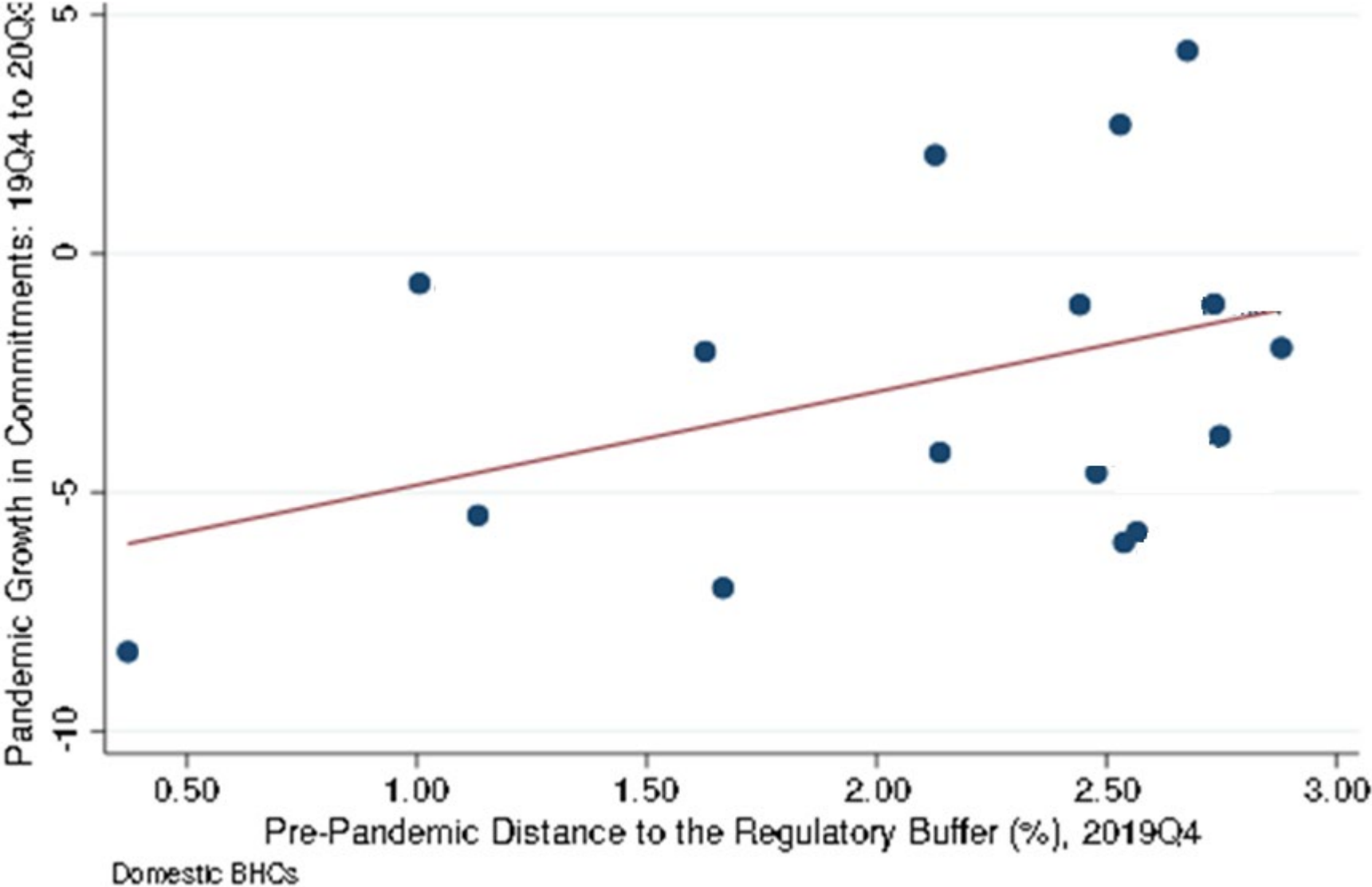




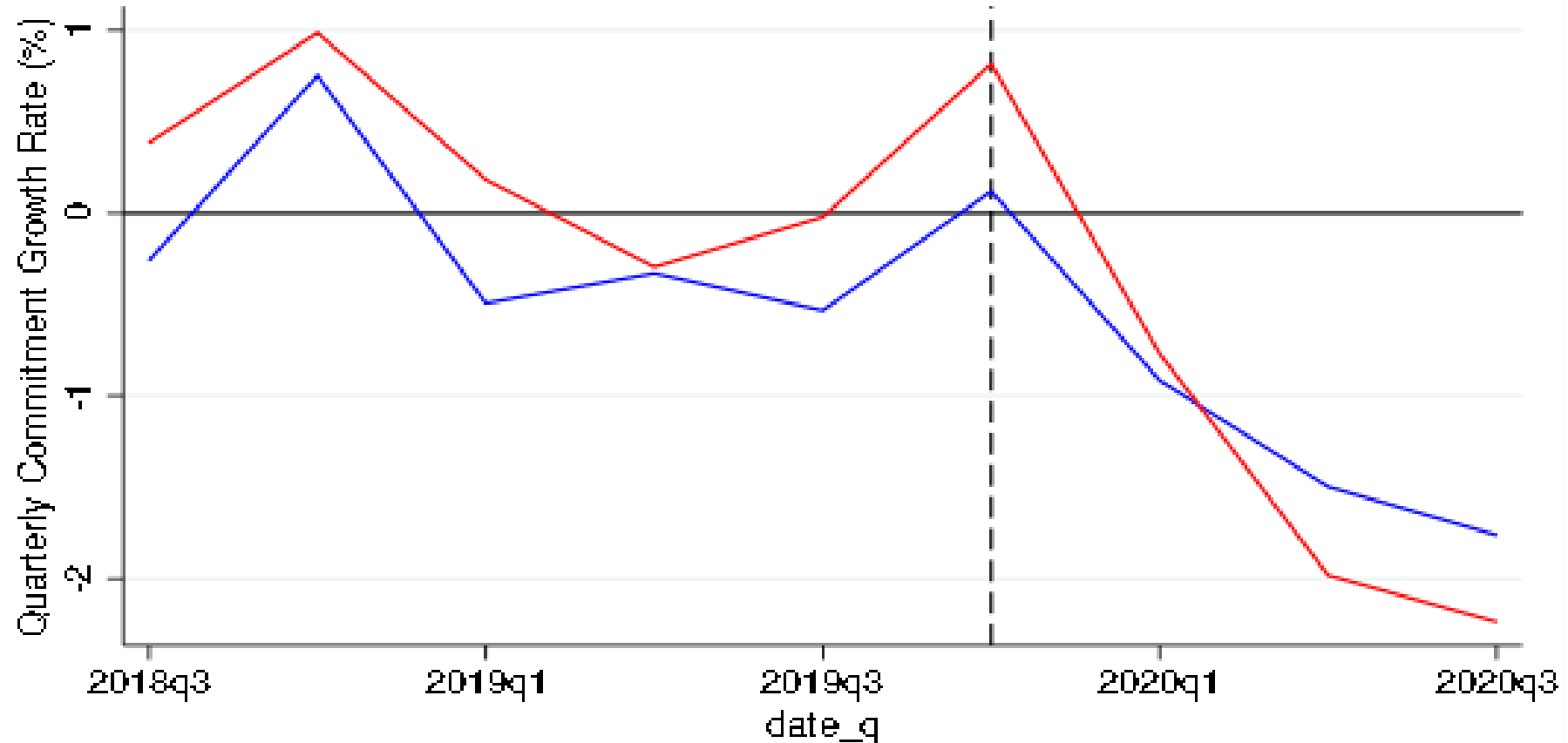
# Extensive Margin: Buffer-constrained Banks and Number of Borrowers



# Intensive Margin: Cross-Sectional Evidence



# Intensive Margin: Time Series Evidence



— Buffer-Unconstrained Banks (as of 19Q4)  
— Buffer-Constrained Banks (as of 19Q4)

Note: Adjusted for bank size

# Difference in Difference Specification

$$\frac{\Delta \text{Commitments}_{bft}}{\text{Commitments}_{bf,t-1}} = \beta_0 \text{POST}_t + \beta_1 \text{BufferConstrainedBank}_{b,2019q4} + \beta_2 \theta + \dots$$

$$+ \beta_3 \text{POST}_t * \text{BufferConstrainedBank}_{b,2019q4} * \theta$$

$$+ \beta_B \text{BankControls}_{b,t-1}$$

$$+ \beta_F \text{FirmControls}_{f,t-1}$$

$$+ \text{InternalRiskRating}_{b,f,t-1}$$

$$+ \varepsilon_{bft}$$

$\theta$ : Different types of firms: (1) *Private, bank dependent SMEs,*  
(2) *firms with young relationships,*  
(3) *firms with CL maturing at onset of pandemic*

# I. Results: Intensive Margin

VARIABLES	C&I Loan Commitment Growth Rate (Annualized)		
	(1)	(2)	(3)
POST * BufferConstrainedBank	0.0524		
<b>POST * BufferConstrainedBank * PrivateSME</b>	<b>-5.556***</b>		
POST * BufferConstrainedBank		0.84	
<b>POST * BufferConstrainedBank * YoungLendingRelationshipFirm</b>		<b>-4.8***</b>	
POST * BufferConstrainedBank			-1.16*
<b>POST * BufferConstrainedBank * FirmCreditLineMaturinginPandemic</b>			<b>-9.28***</b>
Bank Controls	Y	Y	Y
Firm Controls	Y	Y	Y
Bank-Firm FE	Y	Y	Y
Industry-Date FE	Y	Y	Y
Zip-Date FE	Y	Y	Y
Size-Date FE	Y	Y	Y
Observations	525,208	525,208	486,114
R-squared	0.261	0.261	0.268
No. of Banks	16	16	16
No. of Firms	46971	46971	44342

# II. Results: Termination of Relationship

VARIABLES	Pr (End Lending Relationship)		
	(1)	(2)	(3)
POST * BufferConstrainedBank	-0.003*		
<b>POST * BufferConstrainedBank * PrivateSME</b>	<b>0.046***</b>		
POST * BufferConstrainedBank		0.01***	
<b>POST * BufferConstrainedBank * YoungLendingRelationship</b>		<b>0.0085**</b>	
POST * BufferConstrainedBank			0.0095***
<b>POST * BufferConstrainedBank * FirmCreditLineMaturinginPandemic</b>			<b>0.033***</b>
BankControls	Y	Y	Y
FirmControls	Y	Y	Y
Bank-Firm FE	Y	Y	Y
Industry-Date FE	Y	Y	Y
Zip-Date FE	Y	Y	Y
Size-Date FE	Y	Y	Y
Observations	516,982	570,369	502,187
R-squared	0.376	0.399	0.374

# Why would banks view buffer use as costly?

- Pre-pandemic, the costliness of regulatory buffers helped incentivize banks to raise CET1 ratios to historic highs
- During the pandemic, these same costs may have made buffers *difficult to use*:
  - (1) Credit Ratings Agency Pressure
  - (2) Payout Restrictions
  - (3) Regulatory Uncertainty
- Use bank equity returns in an event-study type of analysis (calculate cumulative abnormal returns):

$$R_{it} = \beta_i + \gamma_{it}(Mkt - Rf)_t + \alpha_2 HML_t + \tau_3 SMB_t + \varepsilon_{it}$$

# Results: Cost of using capital buffers

	Ratings Downgrade Events	(-1,1) CAR percent
All	122	-1.29 percent***
Normal Times	73	-0.43 percent
GFC Crisis	48	-2.65 percent***

	Dividend Cuts	(-1,1) CAR percent
ALL	42	-2.34 percent**
Normal Times	12	-1.07 percent
GFC Crisis	28	-2.88 percent**

- We look at two types of events between 1990 and 2020:
  - Rating Downgrades
  - Dividend cuts
- In both cases, costs are relatively similar and close to 300 basis points during the 3-day event window during the GFC.
- Adds to the cost estimates provided by the IMF's GFSR associated with the need to rebuild the buffers if they were to be used in the first place.



# Buffers may be a double-edged regulatory sword

- We find evidence that U.S. large banks seem reluctant to use their capital buffers and as a result end up cutting their credit supply to SMEs during the pandemic
- Pre-pandemic, the costliness of regulatory buffers helped incentivize banks to raise CET1 ratios to historic highs
- During the pandemic, these same costs may have made buffers *difficult to use*.
- Even though banks held historically high levels of CET1 capital, this un-usability may have led banks to treat buffers as de facto minimum requirements (~10%)

Thank You