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Institute of Accounting, Control
and Auditing

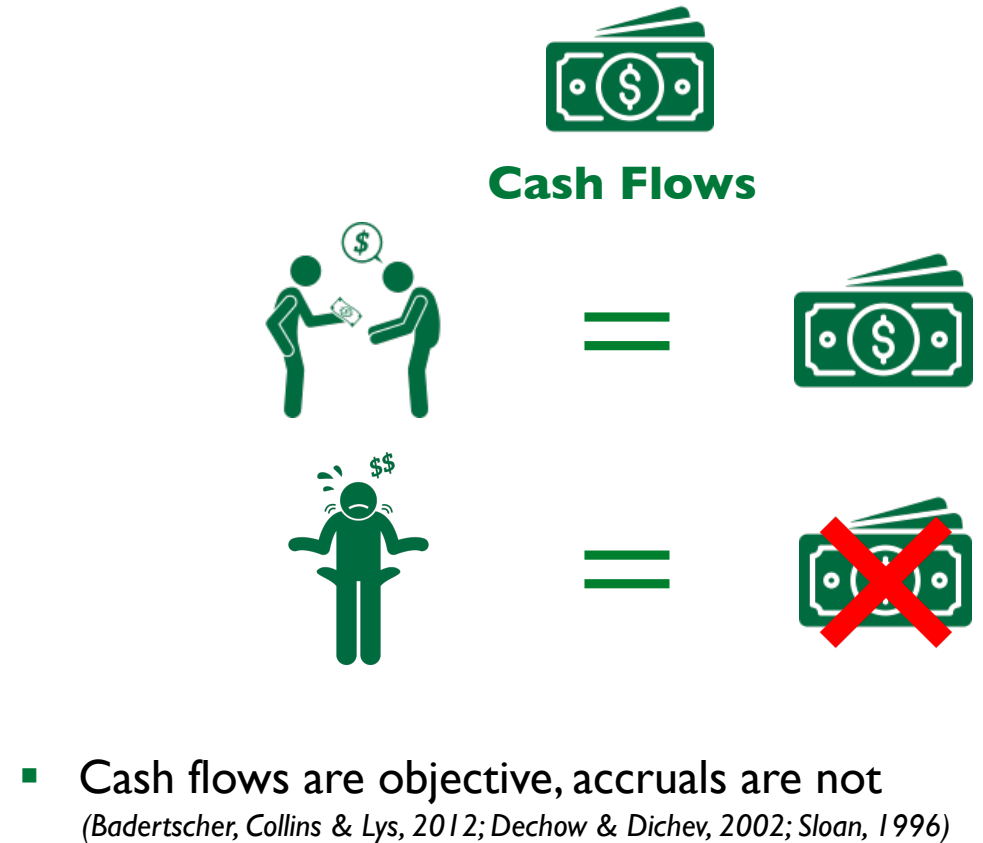
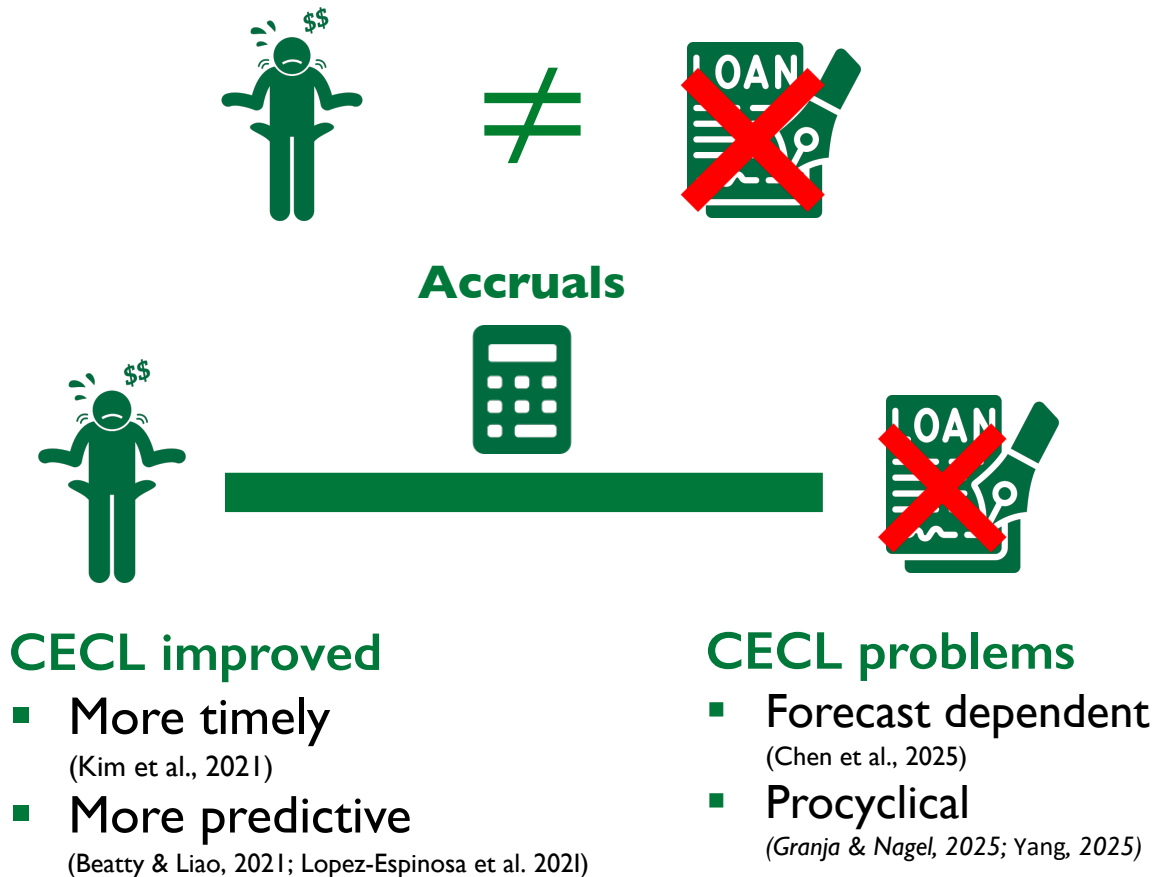
Do Cash Flows Predict Credit Losses Earlier Than Accruals?

Alberto Halfeld

University of St. Gallen

From insight to impact.

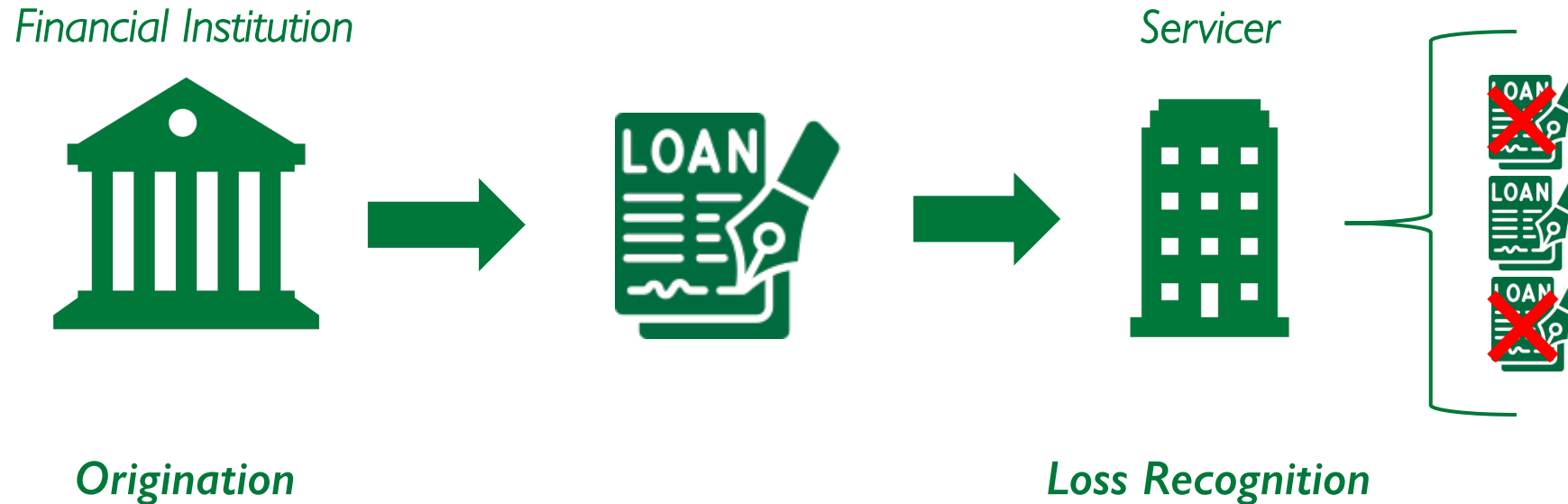
Motivation



Do borrower cash flows predict credit losses *earlier* than accruals?

Data

- **Neilson et al. (2022, TAR)** American CMBS data filed on SEC EDGAR

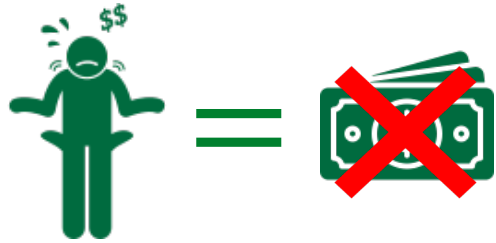


Cash flow information: Visible in CMBS but not inside financial institutions



Identification: Separates origination from loss recognition

Tools



- Borrower payment shortfall

VS

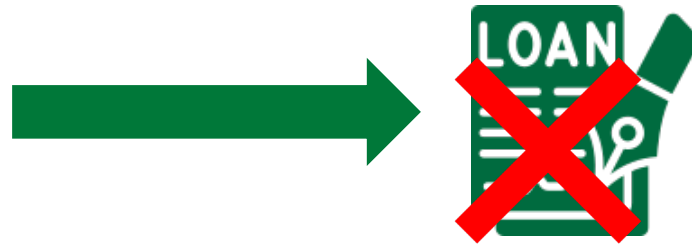


- Delinquency classification

(Beatty & Liao, 2011; Bushman & Williams, 2012; Neilson et al., 2022)

- Debt service coverage

(An & Deng, 2007; Ambrose & Sanders, 2003)



- Special Servicing

H1 Capital constraints

- Advance burden
Moyer (1990)

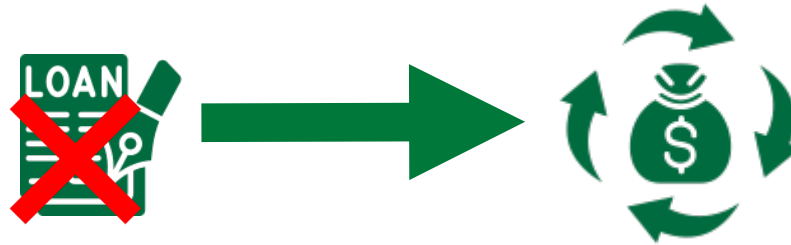
H2 Renegotiation

- Property type flexibility
Huizinga & Laeven (2012)

Why does this matter?

Economy

- Loan losses impact credit supply



Standard Setters & Investors

- The SCF for financial institutions is confusing



FASB

“We’ve stuck with a single cash flow format for 30-plus years — as if there’s no industry difference. Investors say they don’t use it for banks.” (Richard Jones, 2023)



Statement of Cash Flows to be Narrowly Reorganized for Financial Institutions, FASB Says

Denise Lugo, Checkpoint News Senior Editor

November 10, 2023 · 5 minute read

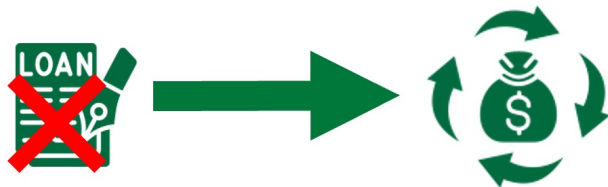


Conclusion



Do borrow cash flows predict credit losses *earlier* than accruals?

Economy



Standard Setter



Questions?

Feedback?



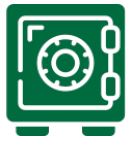
Why CMBS?



Identification: Separates origination from loss recognition



Cash flows visible in CMBS but not inside financial institutions



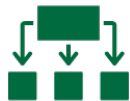
CMBS are more conservative than financial institutions

- Operate under pooling and servicing agreements



Bigger scope than “banks”: credit losses in financial institutions

- CECL and IFRS 9 are about financial assets, not just banks



More granular than banks' loan portfolio

- Monthly loan-level data for each individual borrower

Why Are These Accruals?

CASH

Servicer Advance

Did the borrower pay?

If yes → advance = \$0

If no → advance > \$0

No forecast

No threshold

No judgment

No lag

**Objective. Binary.
Immediate.**

vs.

Delinquency Status

Not a direct observation of payment.

It is a **classification** that the servicer assigns.

Grace periods → payment missed, loan stays "current"

Forbearance → not paying, but classified "current"

Modification → 90+ days resets to "current" instantly

Debt Service Coverage Ratio < 1.0

NOI

Debt Service

← **accrual**

Reported by borrower. Stale. Smoothed.

← **fixed**

Contractual. Does not change.

DSCR measures the **property**, not the **borrower**. DSCR can be 3.11 while the borrower isn't paying.

Cash: did the borrower pay? **Accruals:** what does the system say about the loan?

Variable Definitions

Variable	Definition	Type	Source
Dependent Variable			
SS Transfer	= 1 if loan is in special servicing at t+k	Binary	Beatty & Liao (2011)
Cash Flow Measure			
Advance (binary)	= 1 if servicer advance > \$0	Binary	—
Advance/Balance	Cumulative P&I advance / loan balance	Continuous	Moyer (1990)
Accrual Measures			
Delinquent	= 1 if 30+ days past due	Binary	Bushman & Williams (2012)
DSCR < 1	= 1 if debt service coverage ratio < 1.0	Binary	An & Deng (2007)
Occupancy < 80%	= 1 if physical occupancy below 80%	Binary	Ciochetti et al. (2002)
Discretion Proxies			
H1a: Advance burden	Advance-to-balance ratio (capital at risk)	Continuous	Ahmed et al. (1999)
H1b: Property flexibility	= 1 if LO, RT, OF, MF, MU	Binary	Huizinga & Laeven (2012)

Data

47 East 129th Street — Multifamily, Harlem NY — \$5.5M



Month	Cash Flow	Delinquent	SS Transfer
① BORROWER PAYING NORMALLY			
2024-04	\$0	0 — current	—
2024-05	\$0	0 — current	—
② CASH SIGNAL — servicer advances; accruals still say "current"			
2024-06	\$35,083	0 — current	—
2024-07	\$35,083	0 — current	—
2024-08	\$35,083	0 — current	—
2024-09	\$35,083	0 — current	—
2024-10	\$33,951	0 — current	—
2024-11	\$35,083	0 — current	—
2024-12	\$33,951	0 — current	—
2025-01	\$35,083	0 — current	—
2025-02	\$35,083	0 — current	—
③ ACCRUALS CATCH UP — nine months after cash signal			
2025-03	\$66,770	1 — 30 days	—
2025-05	\$100,721	2 — 60 days	—
④ SPECIAL SERVICING TRANSFER			
2025-06	\$135,804	3 — 90+ days	2025-06-07

Data



— CASH —			— ACCRUAL —			H1a	H1b	DV
Month	P&I Advance	PaidThru	Delq. status	DSCR	Occ	Adv/Bal	Mod	SS
① BORROWER PAYING NORMALLY								
2019-06	\$0	06-06-2019	0 — current	—	—	0%	N	
2019-08	\$0	08-06-2019	0 — current	—	—	0%	N	
② CASH SIGNAL — servicer advances; accruals say "current"								
2019-09	\$31,314	08-06-2019	0 — current	—	—	0.5%	N	
2020-01	\$31,315	12-06-2019	0 — current	—	—	0.5%	N	
2020-05	\$31,316	03-06-2020	0 — current	3.11	75%	0.5%	N	
③ ACCRUALS CATCH UP — 8 months after cash signal fired								
2020-06	\$62,641	03-06-2020	1 — 30 days	—	—	1.0%	N	
2020-07	\$125,283	03-06-2020	3 — 90+ days	—	—	2.1%	N	SS
④ H1a BUILDS — advance burden climbs to 13.1%								
2020-12	\$258,388	03-06-2020	3 — 90+ days	—	—	4.3%	N	SS
2021-08	\$481,348	03-06-2020	3 — 90+ days	—	—	8.0%	N	SS
2022-10	\$786,179	07-06-2020	3 — 90+ days	—	—	13.1%	N	SS
⑤ H1b FIRES — loan modified; accruals reset to "current"								
2022-12	\$144,959	11-06-2022	0 — current	—	—	2.4%	Y	SS
2022-12	\$0	12-06-2022	0 — current	—	—	0%	Y	SS
⑥ OUTCOME — "current" for 3 years; still in SS; DSCR 0.41								
2023-10	\$0	10-06-2023	0 — current	0.59	54%	0%	Y	SS
2024-03	\$0	03-06-2024	0 — current	0.71	54%	0%	Y	SS
2025-12	\$0	12-06-2025	0 — current	0.41	62%	0%	Y	SS

Capital Pressure

	SS Rate	Mean Adv/Bal	Loans
Low tercile	8%	0.4%	616
Medium tercile	9%	0.6%	615
High tercile	67%	3.9%	616

Loans in the highest advance burden tercile enter special servicing at **8× the rate** of low burden loans.

Renegotiation Flexibility

Property Type	SS Rate	Mod Rate	Flexibility
Lodging	7.0%	6.7%	HIGH
Mixed Use	6.9%	4.5%	HIGH
Office	4.3%	1.0%	HIGH
Multifamily	4.1%	1.8%	HIGH
Retail	2.9%	1.5%	HIGH
Co-op	1.0%	0.1%	LOW
MH Park	0.9%	0.2%	LOW
Industrial	0.6%	0.3%	LOW
Self Storage	0.5%	0.4%	LOW

High flexibility types: 4.1× more SS, 4.7× more modifications.

Is the Lead Mechanical?

Gap between first advance and first delinquency (n = 434 SS loans)

Gap	Loans	Share	Interpretation
0 months (same month)	154	35%	Mechanical
1 month	79	18%	Mechanical
2–3 months	39	9%	Discretion
4–6 months	28	6%	Discretion
7–12 months	28	6%	Discretion
13–24 months	34	8%	Discretion
25+ months	72	17%	Discretion

Median: 1 month. Mean: 10 months. **54% mechanical, 46% discretion.**

14 loans went delinquent WITHOUT any advance. **If mechanical, this could not happen.**

Identification: If the lead were purely mechanical, it would not vary with advance burden (H1a) or property type (H1b). It does.

Horizon Structure — Cash Overtakes Accruals

Pre-SS sample only. DV = SS transfer at horizon $t+k$. Year-quarter FE.

Horizon	Cash R ²	Accrual R ²	Combined R ²	Cash β	Winner
t+1	2.1%	7.5%	7.6%	0.012	Accrual
t+3	4.6%	9.4%	10.3%	0.054	Accrual
t+6	4.2%	6.3%	7.5%	0.089	Accrual
t+12	2.9%	3.5%	4.5%	0.116	Accrual
t+18	2.1%	2.3%	3.1%	0.125	≈ Tied
t+21	1.8%	1.8%	2.6%	0.131	CASH
t+24	1.7%	1.7%	2.4%	0.133	CASH

Cash coefficient **rises** from 0.01 → 0.13 across horizons. Delinquency coefficient **decays**.

Cash carries predictive content for events 18–24 months out that accruals don't yet reflect.

Contribution



Cash flows serve as an objective alternative to discretionary loan loss standards



*(Wahlen, 1994; Liu & Ryan, 2006;
Beatty & Liao, 2011;
Bushman & Williams, 2012)*



Financial institutions suffer from accrual quality issues — not just non-financials



vs



*(Dechow, 1994; Sloan, 1996;
Ball & Nikolaev, 2022)*



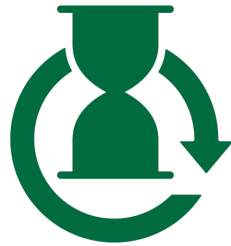
vs



Hypotheses

H1

Capital constraints



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*(Beatty & Liao, 2011;
Bushman & Williams, 2015)*

*(Gan & Mayer, 2007; Stanton
& Wallace, 2018; Vyas, 2011.)*

H2

Renegotiation

Hypotheses

H1

Capital constraints

H1: Cash flows predict credit losses better than accruals *in tight capital constraints*

H2

Renegotiation

Hypotheses

H1 Capital constraints

H1: Cash flows predict credit losses better than accruals *in tight capital constraints*

H2 Renegotiation



(Liu & Ryan, 2006)



(Huizinga & Laeven, 2012; Nichols, Wahlen & Wieland, 2009)



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Hypotheses

H1

Capital constraints

H1: *Cash flows predict credit losses better than accruals in tight capital constraints*

H2

Renegotiation

H2: *Cash flows predict credit losses better than accruals when loans are renegotiated*

Null Hypotheses: Accruals contain private info

H1

Capital constraints

NULL: Managers know more than missed payments reveal

(Wahlen, 1994; Beaver & Engel, 1996; Subramanyam, 1996)

H2

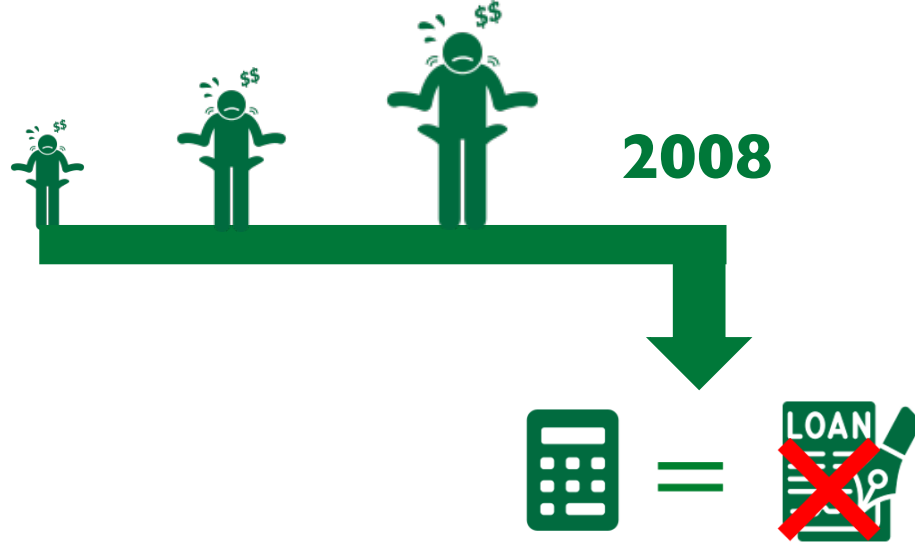
Renegotiation

NULL: Modifications reflect genuine value, not strategic delay

(Adelino, et al., 2013; Agarwal et al., 2017)

The Problem

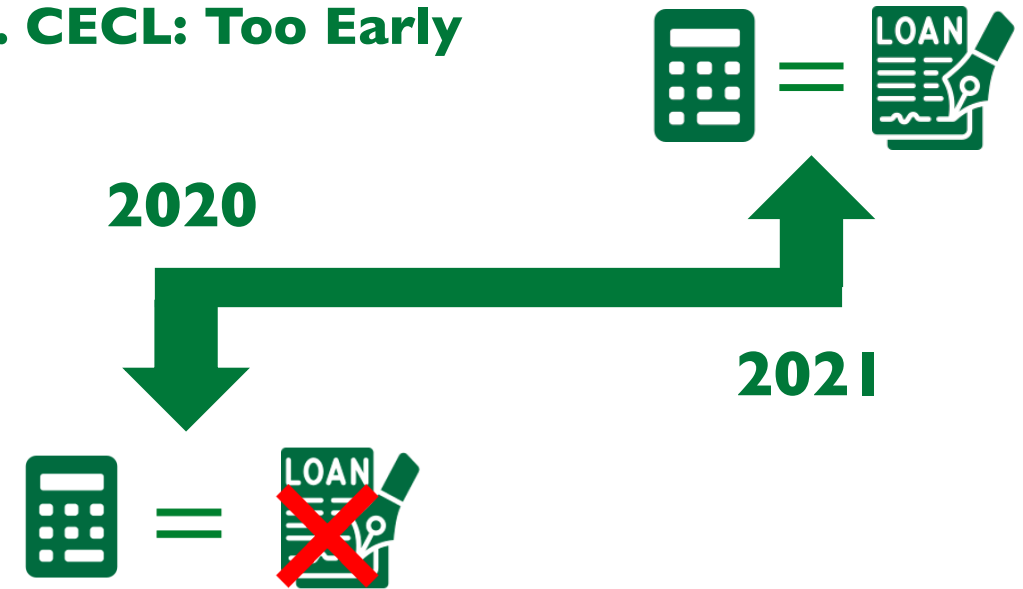
I. Incurred Loss: Too Late



Procyclical!

- Provisions lag observable deterioration
(Beaver et al., 1989; Liu & Ryan, 1995; Wahlen, 1994)
- Delayed recognition contracts lending in downturns
(Beatty & Liao, 2011; Bushman & Williams, 2012)

II. CECL: Too Early



Procyclical!

- Front-loaded provisioning amplifies capital volatility in downturns (Covas & Nelson, 2018; Loudermilk, 2021)
- Model-dependent provisions reduce cross-bank comparability (Bhat, Ryan & Vyas, 2019; Wheeler, 2021)

The debate on loan losses has only been about accruals