Uniform Standards, Unified Risks: How the Expected Credit Loss Model homogenizes banks and amplifies systemic risk

Juejin Chen[1], Yupeng Lin[2], Ruichang Lu[3], Anand Srinivasan[2], Xiaojun Zhang[3]
[1]Jimei University;[2]National University of Singapore;[3]Peking University, Guanhua School of Management

1. Introduction

Pre GFC regulation for Credit Risk (IAS 39) - Incurred Loss Model (IL)

Only records credit losses that have been incurred (ie after default or delinquency)

- ❑ Criticized for ack of increase in capital to account for build up of systemic risk in the pre-crisis period.
- ❑ Criticized for exacerbation of crisis effects due to large defaults and consequent reduction in lending due to capital shortfall.

Post GFC regulation for Credit Risk (IFRS 9) - Expected Credit Loss Model (ECL)

- ❑ Requirement for recognition of future credit losses.
- ❑ Banks need to predict and recognize losses over a 12-month period at loan initiation.
- ❑ Any credit impairment requires prediction of lifetime ECL.

2. What effect should ECL implementation have on systemic risk?

Reduction in Systemic risk due to ECL Implementation

- ❑ Improve the timeliness of loan loss recognition, potentially reduce the likelihood of sudden, large-scale default (BIS 2015; Beatty & Liao, 2014; 2020; López-Espinosa et al., 2021).

Increase in Systemic risk due to ECL Implementation

- ❑ ECL model favors assets with short-term, predictable, and lower-risk profiles, leading to portfolio homogenization (Caballero et al, 2016).
- ❑ Similar risk assessment methodologies under the ECL framework further reinforces this homogeneity (Goldstein et al., 2024).

3. Data and Methodology

- Cross-country sample of 615 banks in 68 countries from BankFocus, CRSP and Datastream, BVD EIU Country Data.
- Data on ECL adoption from López-Espinosa et al. (2021); ECL adoption for most countries in Jan 2018.
- Systemic risk measured using ΔCoVAR (Adrien & Brunnermeier, 2016)
- Alternative Measure: Marginal Expected Shortfall (Acharya et al, 2017)
- Empirical Model

$$\Delta CoVAR_{ict} = \alpha_0 + \beta \cdot Treat_{ic} \cdot Post_t + \gamma Controls + u_i + v_t + \varepsilon_{ict}$$

DID estimation (*i*=bank, *c*=country, *t*=week, *Post*=Dummy for year≥2018, *Treat*=dummy for adopting countries)

4. Results

(1) Baseline

	$\Delta CoVAR$
Treat x Post	**0.263*** **
Observations	216,993
R-squared	0.722

(2) Impact of macroeconomic conditions

	GDP Growth		Country Return	
	High	Low	High	Low
Treat x Post	**0.037**	**0.430*** **	**-0.038**	**0.352*** **

(3) Impact of COVID

	$\Delta CoVAR$
Treat x Post	**0.173*** **
Treat x Post x COVID-19	**0.185*** **

- ➢ The implementation of ECL leads to a rise in systemic risk
- ➢ The increase is focused on countries that experienced lower growth or lower stock return.
- ➢ Increased impact during COVID

5. What mechanisms can explain this increase?

- **Loan loss provision (LLP) comovement:** When confronted with shared macroeconomic shocks, banks' loan loss provisions tends to fluctuate in a uniform direction.
- **Asset similarity:** ECL model might incentivize banks to hold more similar asset portfolios.
- **Similar credit risk model:** Similar methods for credit risk portfolios across different institutions, measured by common auditor.

Impact on ΔCoVAR	LLP comovement		Asset Similarity		Credit Model Similarity	
	High	Low	High	Low	High	Low
Treat × Post	**0.360*** **	**0.180***	**0.316*** **	**0.173***	**0.497*** **	**0.001**

- ➢ All three measures increase for countries that adopt ECL.
- ➢ Higher values of LLP comovement and asset similarity, as well as greater share of banks with common auditors result in higher increases in systemic risk.`

6. Conclusion

- Results highlight the unintended systemic risk consequences of standardized accounting practices.
- Supports prior theory on asset harmonization leading to greater systemic risk.
- Highlight additional channel of homogenization of credit risk model via common auditors leading to larger increases in systemic risk.