Modeling loan loss provisions under IFRS 9 in the top-down solvency stress test of the Central Bank of Hungary

- a discussion of the paper by

Péter Lang and Martin Stancsics

Discussant: Monika Marcinkowska

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2019 EBA POLICY RESEARCH WORKSHOP

"The future of stress tests in the banking sector – approaches, governance and methodologies"

Paris, 27-28 November 2019

#1
Main findings

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Main findings

- „The **change in expectations** due to an **adverse shock** has an **immediate and sizable impact on loan loss provisions** in contrast to the previous incurred loss approach. This might **exacerbate the procyclical behavior of the banking sector**"

Figure 1: Loan loss provisions along the baseline and stress scenario under IFRS 9

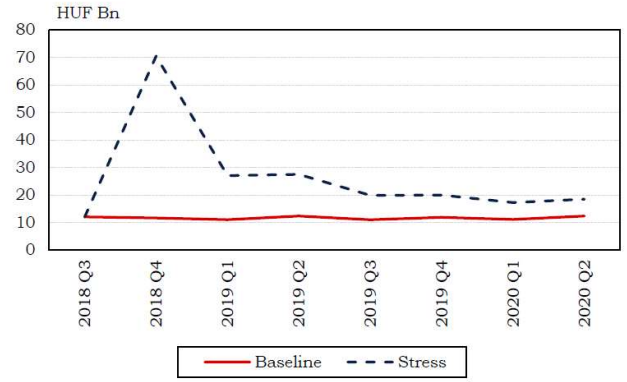
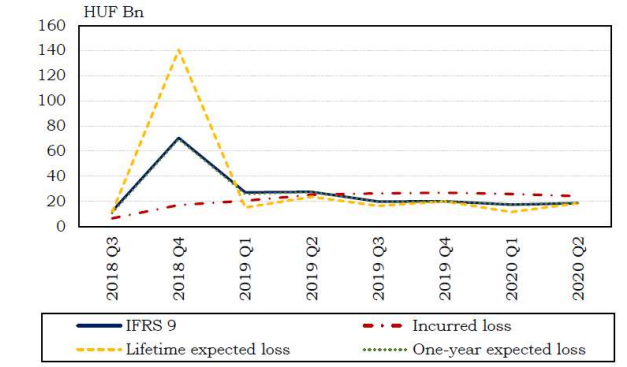


Figure 2: Loan loss provisions along the stress scenario under various provisioning rules

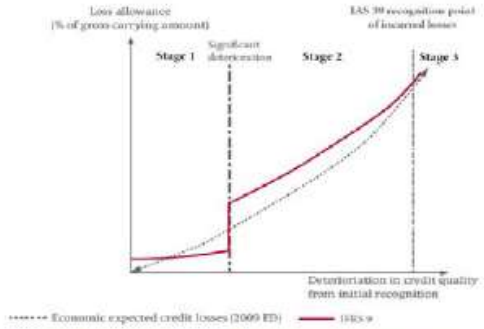


Confirmation of previous observaions/studies

- „cliff effects"
- „front-loading"

Chart 6

Expected loss model in IFRS 9 and economic expected losses



Sources: Novotny-Farkas (2015), based on International Accounting Standards Board (2013).

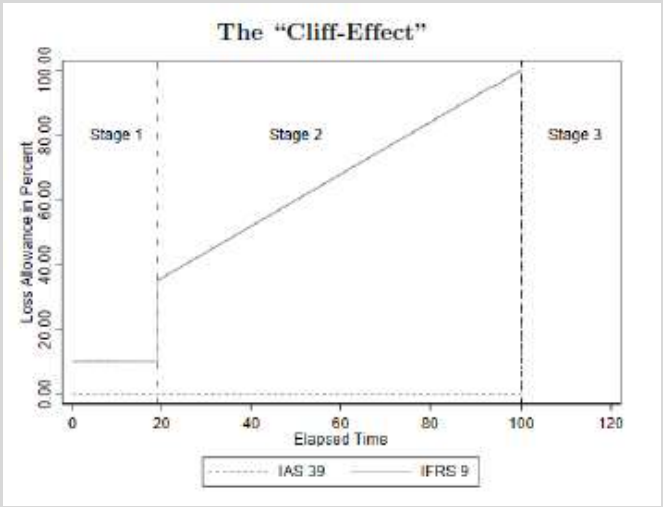


Chart 5

Stylised comparison of TTC and PIT methodologies

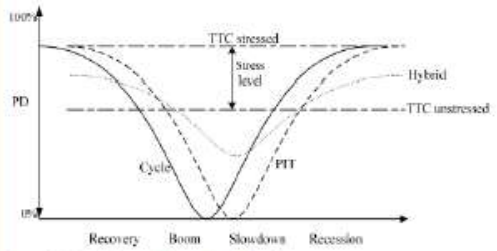
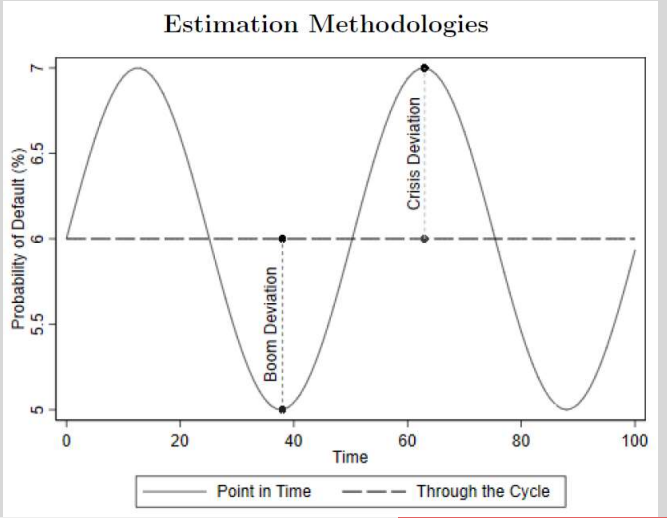


figure 3.1. The influence of the cycle on the ratings

Source: Rikkers and Thibeault (2008).



e.g.

Z. Novotny-Farkas (2016), *The Interaction of the IFRS 9 Expected Loss Approach with Supervisory Rules and Implications for Financial Stability*

A.-G. Kund, D. Rugilo (2019), *Assessing the Implications of IFRS 9 on Financial Stability using Bank Stress Tests*

Confirmation of previous observations/studies

- Pro-cyclicality

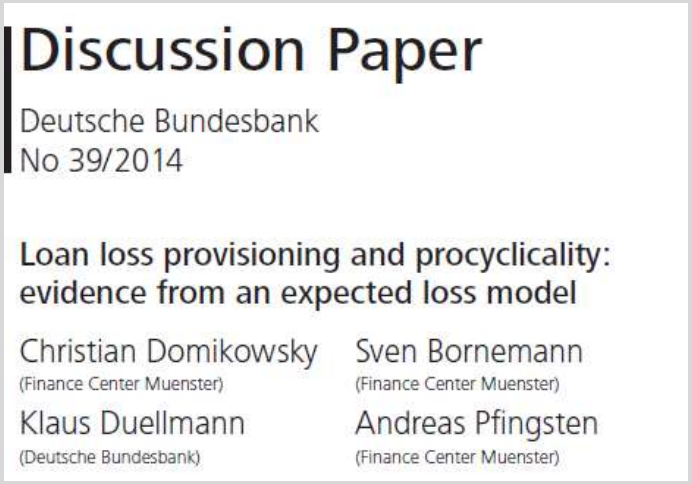

Occasional Paper Series

No 12 / July 2017

Assessing the cyclical implications of IFRS 9 – a recursive model

by
Jorge Abad
Javier Suarez

ESRB
European Systemic Risk Board
European System of Financial Supervision


Discussion Paper

Deutsche Bundesbank
No 39/2014

Loan loss provisioning and procyclicality: evidence from an expected loss model

Christian Domikowsky (Finance Center Muenster)
Sven Bornemann (Finance Center Muenster)
Klaus Duellmann (Deutsche Bundesbank)
Andreas Pfingsten (Finance Center Muenster)


Journal of Financial Stability 28 (2017) 143–162

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journal homepage: www.elsevier.com/locate/jfstabil

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Cyclically adjusted provisions and financial stability☆

Pierre-Richard Agénor[a,*], Luiz Pereira da Silva[b]


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Journal of Financial Intermediation 12 (2003) 178–197

Journal of Financial Intermediation

www.elsevier.com/locate/jfi

Loan loss provisioning and economic slowdowns: too much, too late?

Luc Laeven * and Giovanni Majnoni

The World Bank, Washington, DC 20433, USA

Received 25 October 2001

Confirmation of previous observaions/studies

- Conclusion: IFRS 9 alleviates the disadvantages of IAS 39, but the problems with provisionning are still significant

#2

General overview of the paper

General overview

- Impairment forecasting under stressed conditions – very important issue
- Good presentation of the stress-test framework
  - forecasting loan loss provisions and risk-weighted assets of each bank for each period of the stress test's time horizon conditional on the macroeconomic scenario
    - A versatile dynamic balance sheet framework
- Data
  - Non-financial corporate portfolio of the Hungaran banking system
    - Good granularity (1,5 mn contracts, 12,5 mn observations)
  - Transition probabilities estimated on contract-level database (Central Credit Information System + financial statement data from the National Tax and Customs Administration)
    - „the obligor-level estimation would seem more logical as the loans of a company usually default at the same time" – not always true
  - Forecasts of macroeconomic variables based on the macroeconomic forecasting model of the Central Bank of Hungary

General overview

- Stress scenario
  - Risk premium (t-1) 300 bps
  - Y-o-y dierence of log real GDP (t-1) -5 pps
  - Y-o-y dierence of log end consumption (t-1) -3 pps
  - Exchange rate depreciation since loan origination (per cent) (t-1) 15 pps

General overview

- Markov models
  - The same approach as in several other studies

e.g.

Jimmy Skoglund, Principal Product Manager, SAS and Wei Chen, Director o Stress Testing Solution, SAS Institute (2017), *Forecast of forecast: An analytical approach to stressed impairment forecasting*

Vaněk, Hampel (2017), *The probability of default under IFRS 9: multi-period estimation and macroeconomic forecas*

#3

Limits of the research

Assumptions

- Assumptions for new loans originations
  - „banks disburse the same loans, at the same time of the year, to firms with the same characteristics as last year"
    - possible change of level in time?
    - possible change of structure over time?
- Assumption of LGD level
  - „For the LGDs, we employed our expert judgement, fixing the LGD at 40 percent for the baseline, and at 50 percent for the stress scenario"
    - different levels of LGD necessary

Monika Marcinkowska, *Discussion of „Modeling loan loss provisions under IFRS 9 in the top-down solvency stress test of the Central Bank of Hungary" by Lang & Stancsics*

LGD

Chart 23. Dispersion of LGD – 2010.

(Median, interquartile range, 5th and 95th percentiles)

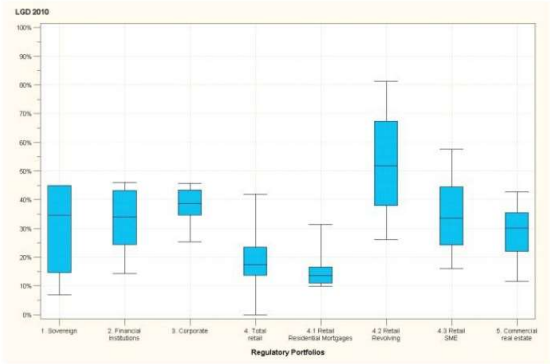
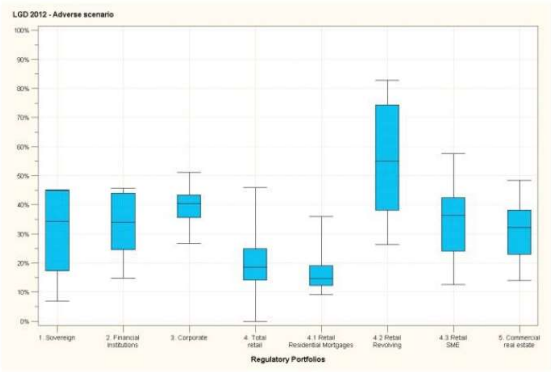


Chart 25. Dispersion of LGD under the adverse scenario – 2012

(Median, interquartile range, 5th and 95th percentiles)



EUROPEAN BANKING AUTHORITY
2011 EU-WIDE STRESS TEST
AGGREGATE REPORT

ANALYSES ET SYNTHESES

Table 2
Risk parameters and RWA rates for the banks on large corporates

	Mean	St-dev	Nb of Obs.	25th perc.	Median	75th perc.
	LGD (%)					
Bank #1	44	9	2 852	40	45	48
Bank #2	34	3	1 069	34	34	34
Bank #3	39	3	381	39	39	39
Bank #4	34	5	908	36	36	36
Bank #5	36	4	2 796	35	35	35

Figure 9: Mean LGD (in %), without correction for resolution time bias

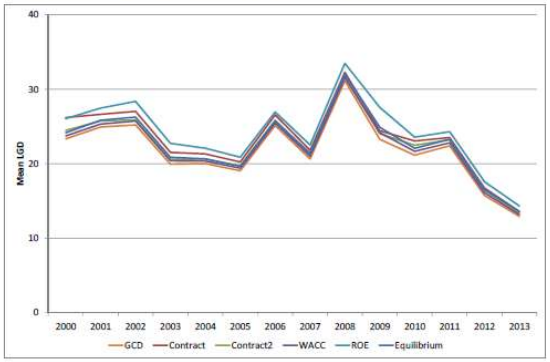


Figure 11: Mean LGD (in %), with correction for resolution time bias, by geography, EUR discount rate

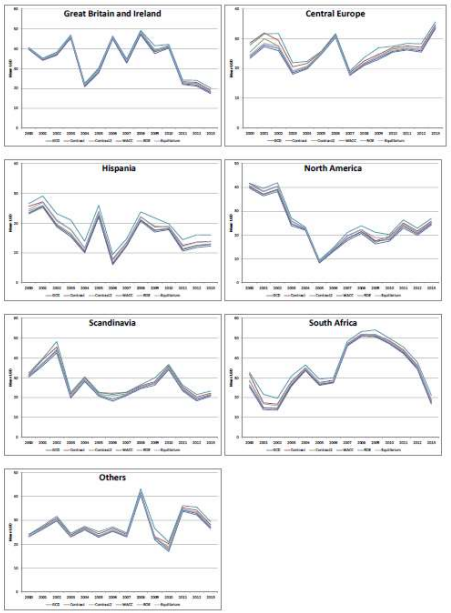
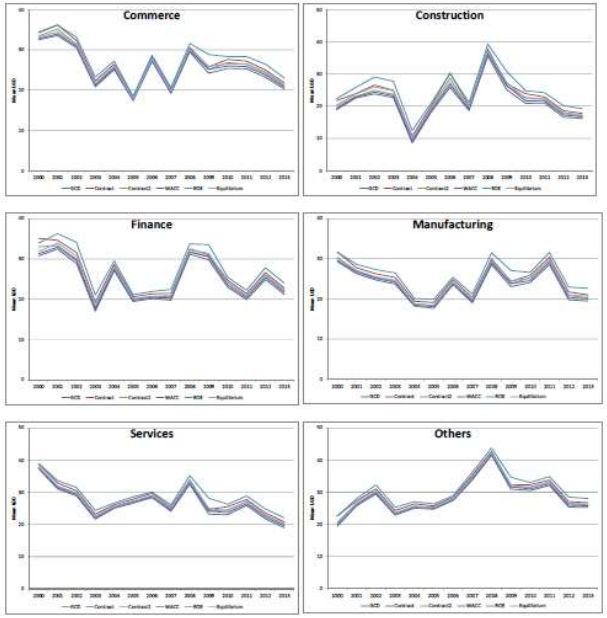


Figure 12: Mean LGD (in %), with correction for resolution time bias, by industry, EUR discount rate



Global Credit Data
by banks for banks

A Theoretical and Empirical Analysis of Alternative Discount Rate Concepts for Computing LGDs using Historical Bank Workout Data

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#4

Some questions and suggestions
Further research

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Stress test scenario

- Suggestions for other macroeconomic variables:
  - Unemployment rate
  - Interest rates
  - Loan rates
  - Inflation
  - Asset prices (esp. real estate)
  - Coverage ratio
  - Public debt
  - Credit / GDP
  - Credit growth
  - Risk-weighted assets
  - Capital market prices

Foglia (2009), *Stress Testing Credit Risk: A Survey of Authorities' Approaches*

Louzis, Vouldis, Metaxas (2012), *Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios*

Abid, Ouertani, Zouari-Ghorbel (2014), *Macroeconomic and Bank-Specific Determinants of Household's Non-Performing Loans in Tunisia: a Dynamic Panel Data*

Procyclicality of provisions vs. capital buffers

- Does the countercyclical buffer mitigate the negative pro-cyclical consequences of IFRS 9 provisions?
- Which provisioning model works best with the CCyB?
- Necessary changes in credit risk models? (CRD/CRR vs. IFRS)

Jiménez, Ongena, Peydró, Saurina (2013), *Macroprudential Policy, Countercyclical Bank Capital Buffers and Credit Supply: Evidence from the Spanish Dynamic Provisioning Experiments*

Agénor, Zilberman (2015), *Loan Loss Provisioning Rules, Procyclicality, and Financial Volatility*

Agénor, da Silva (2017), *Cyclically adjusted provisions and financial stability*

Abad, Suarez (2017), *Assessing the cyclical implications of IFRS 9 – a recursive model*

ESRB (2017), *Financial stability imlications of IFRS 9*

Prorokowski (2018), *IFRS 9 in credit risk modelling*

Tax treatment

- The tax treatment of provisions

WP/00/195

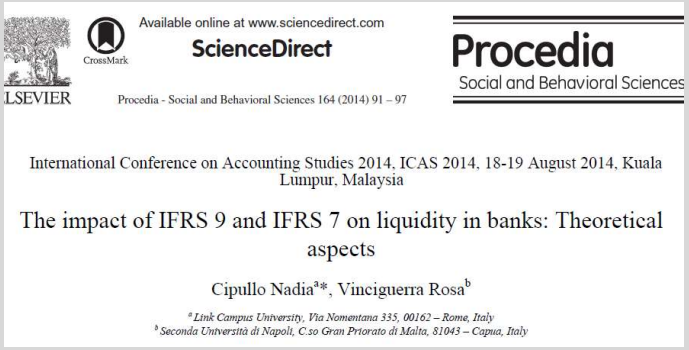
IMF Working Paper

Loan Review, Provisioning, and Macroeconomic Linkages

Luis Cortavarria, Claudia Dziobek, Akihiro Kanaya, Inwon Song

Liquidity

- Provisioning rules – impact on capital and liquidity


Available online at www.sciencedirect.com
ScienceDirect
Procedia - Social and Behavioral Sciences 164 (2014) 91 – 97
Procedia
Social and Behavioral Sciences
International Conference on Accounting Studies 2014, ICAS 2014, 18-19 August 2014, Kuala Lumpur, Malaysia

The impact of IFRS 9 and IFRS 7 on liquidity in banks: Theoretical aspects

Cipullo Nadia[a]*, Vinciguerra Rosa[b]

[a] Link Campus University, Via Nomentana 335, 00162 – Rome, Italy
[b] Seconda Università di Napoli, C.so Gran Priorato di Malta, 81043 – Capua, Italy

Other issues

- Bank-specific characteristisc
  - Different impact on different banks?
    - e.g. bank size, level of capitalisation…

Loan Loss Provisioning and the Business Cycle: Does Capital Matter?

Evidence from Philippine Banks

Danvee Floro[1]

This version: 15 March 2010

Abstract

Using a comprehensive and unique database of Philippine financial intermediaries from 2001-2009, we examine how the bank capital position influences the management of loan-loss provisioning. The results show evidence of capital management through loan-loss provisioning. We also find a procyclical behavior of banks in loan loss provisioning but such a link is influenced in a non-linear way by bank capitalization: both low-capitalized and well-capitalized banks provision by less (more) during an economic expansion (downturn).

Other issues

- Could this tool be used
  - to assess (verify) adequacy of banking provisioning models?
  - to investigate potential earnings management?
  - to monitor the alignment of IRB capial adequacy and ECL accounting?

PD

Global Credit Data
by banks for banks

8 August 2019

IFRS 9 Benchmarking Report 2019

Expected Credit Loss estimates of banks vary at least by a factor 4

EXHIBIT 5
VARIABILITY OF THE 12-MONTH ECL (IN BP) FOR A LARGE CORPORATE BORROWER (PD = 75BP, UNSECURED) IN VARIOUS COUNTRIES – COMMON SCENARIO

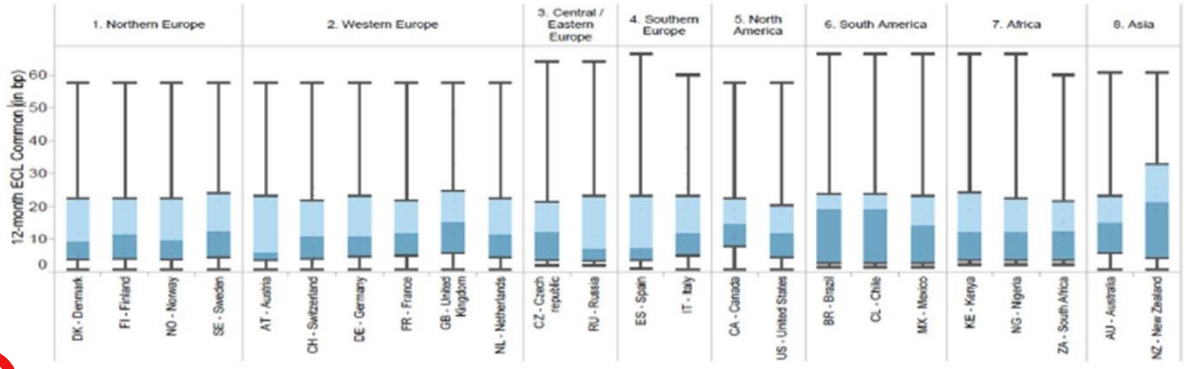
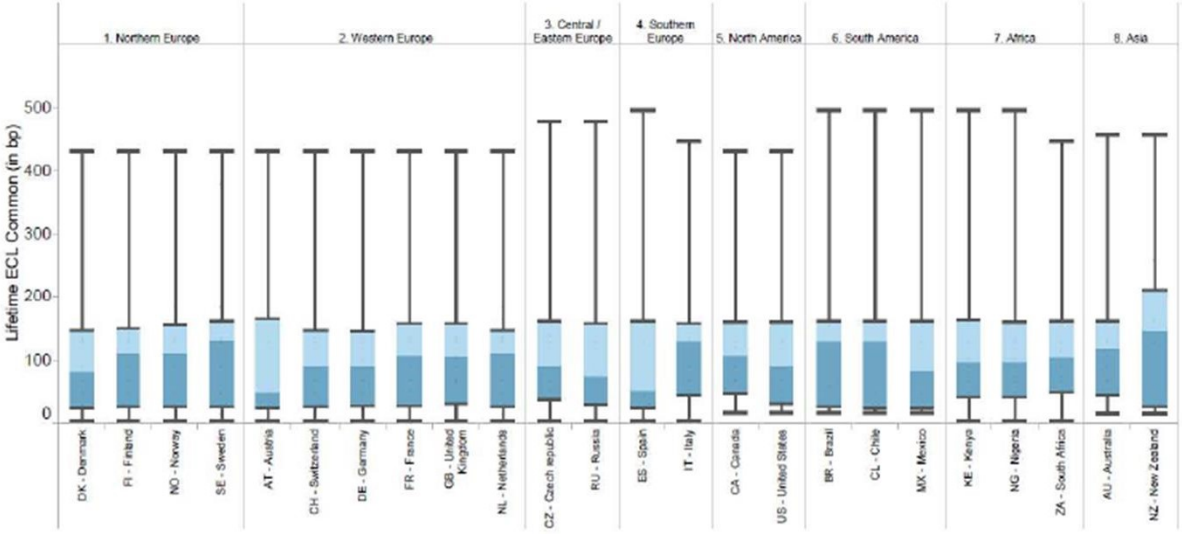


EXHIBIT 6
VARIABILITY OF THE LIFETIME ECL (IN BP) FOR A LARGE CORPORATE BORROWER (PD = 75BP, UNSECURED) IN VARIOUS COUNTRIES – COMMON SCENARIO



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#5
Policy implications

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Policy implications

- Change of accounting standards?
- Convergence of accounting principles and capital adequacy rules?
- Convergence of micro- and macroprudential tools?

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