

# Loan Valuation and Credit Portfolio Management Post-IFRS 9, CECL

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Decorative light streaks in shades of blue and yellow, curving upwards from the bottom left towards the right side of the slide.



## **Amnon Levy**

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Balance Sheet Research  
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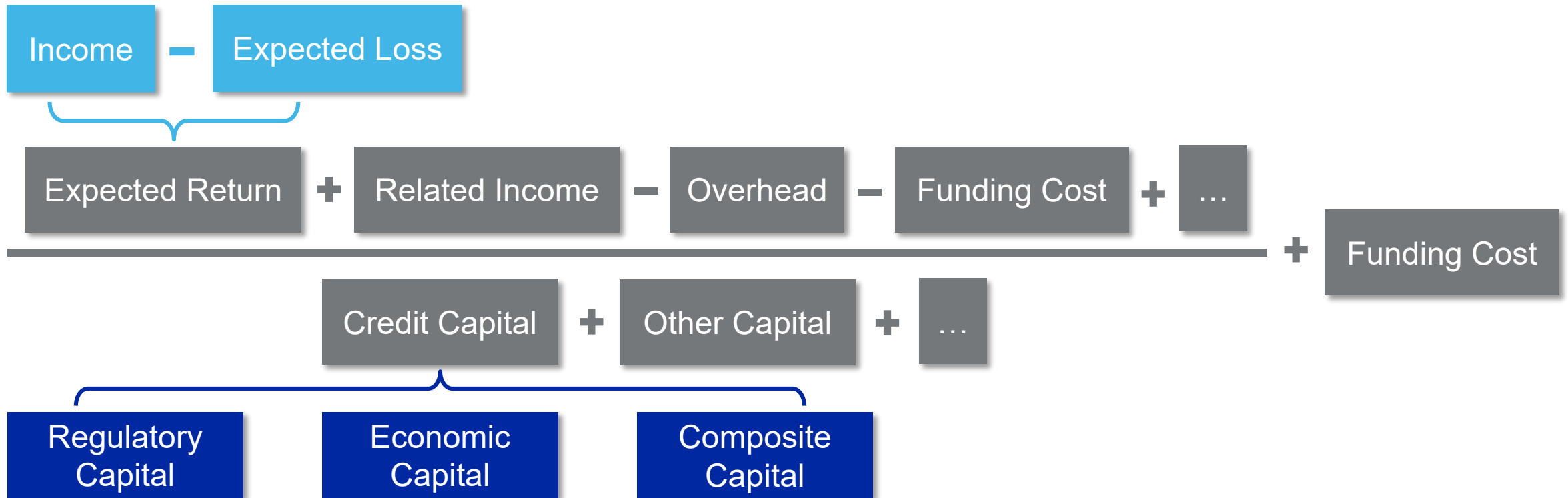


## **Pierre Xu**

Director - Research  
Moody's Analytics

# RAROC and RORAC

## Conventional Approaches to Measure Return on Capital



Question 2: Do these expressions where change provisions EV (no provisions)?

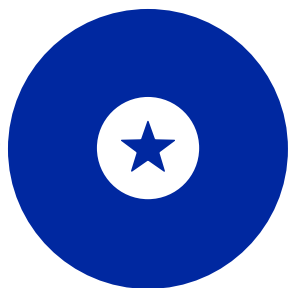
# Agenda

1. Loan Valuation Post IFRS 9 and CECL
2. Assessing Loan Pricing Models Using Benchmark Data and Tools
3. Conclusion

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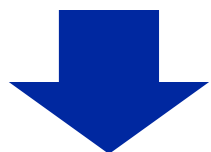
# Loan Valuation Post IFRS 9 and CECL

# Catalysts Driving Change

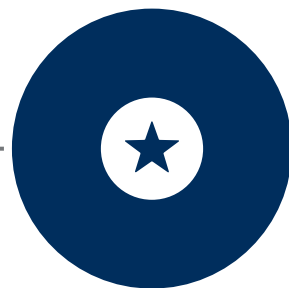


## Basel II

Slow moving TTC measures  
used in RORAC/RAROC



Incentives over-concentrated  
lending in deteriorated  
segments

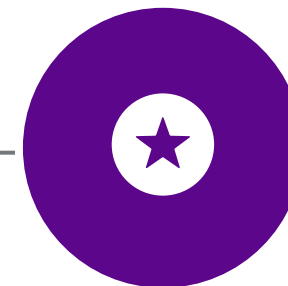


## IFRS 9 and CECL

From pooled to more granular, even instrument-level  
Pronounced manifestation of concentration risk (volatility)  
ECL feed into earnings (and market prices\*)

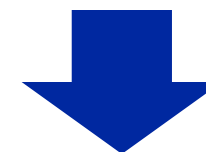


Forward looking measures forcing cultural shift  
Measures lend themselves to CPM



## ECB and EBA

ICAAP/loan origination  
forward looking guidelines

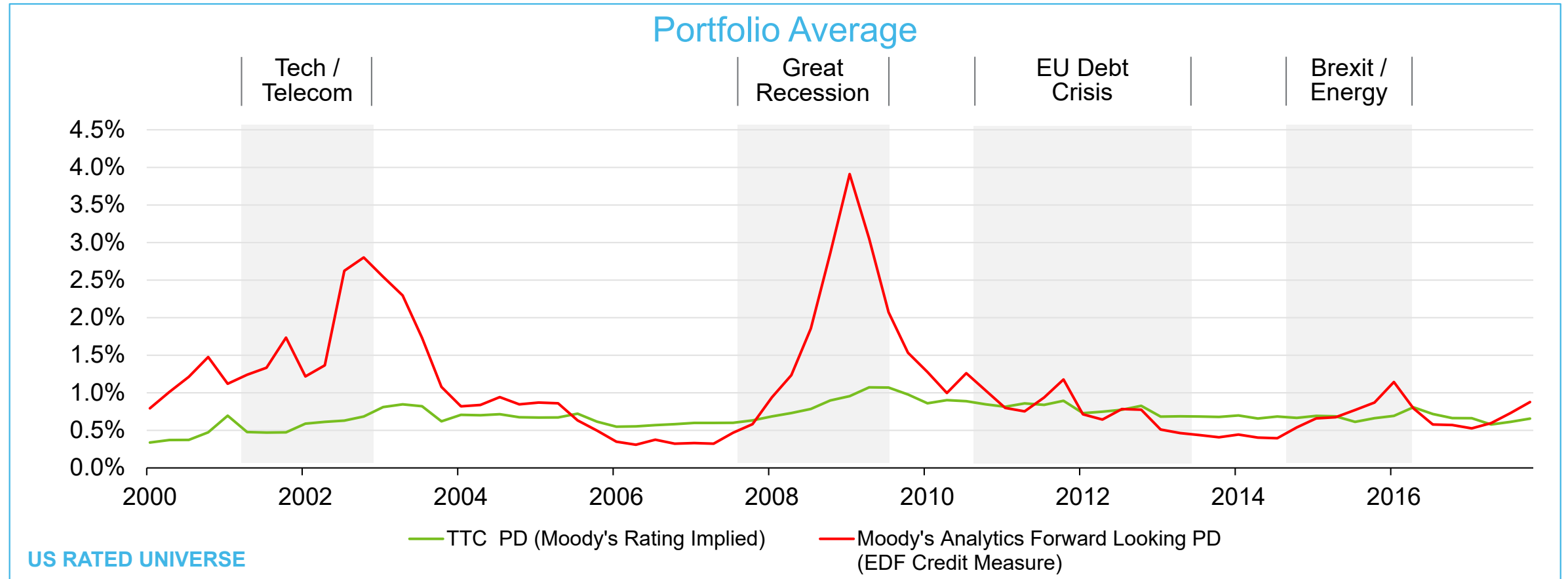


Observed (e.g., PRA) increased use of  
measures in CPM

*\*Amnon Levy, Xuan Liang, and Pierre Xu, 'Earnings Volatility, Share Price Performance, and the Benefits of Credit Risk Management,' 2019.*

# Forward Looking V.S. Through-the-Cycle PD

Forward looking measures are more reactive to the credit environment



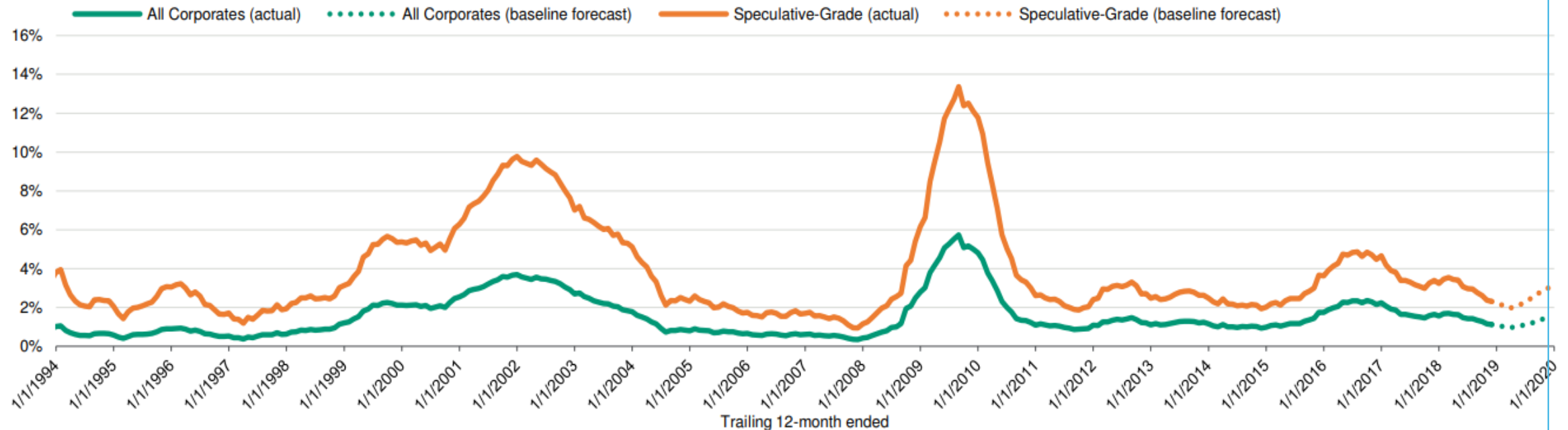
# Default Rates: A Point of Reference



Forward looking measures should reflect the credit environment

Exhibit 11

## Default rates to trend up in the second half of 2019



Source: Moody's Investors Service

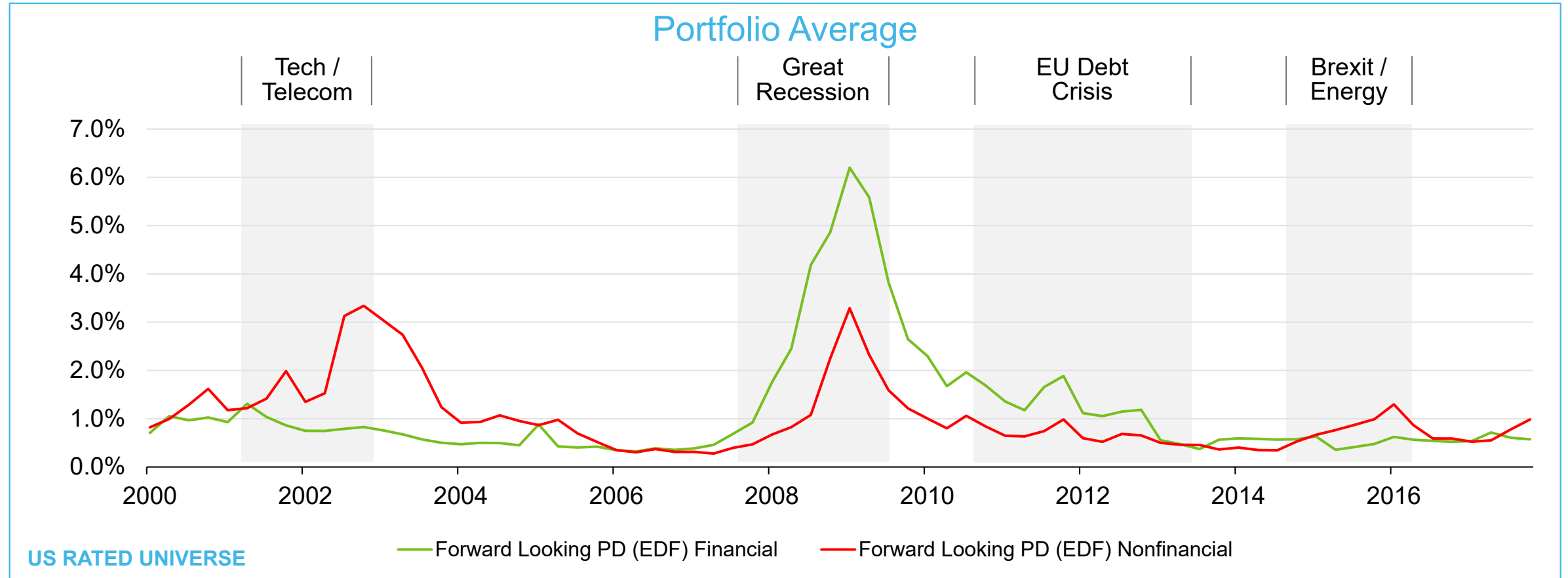
**ANNUAL DEFAULT STUDY:** Defaults will rise modestly in 2019 amid higher volatility



# Dynamics from IFRS 9/CECL Measures

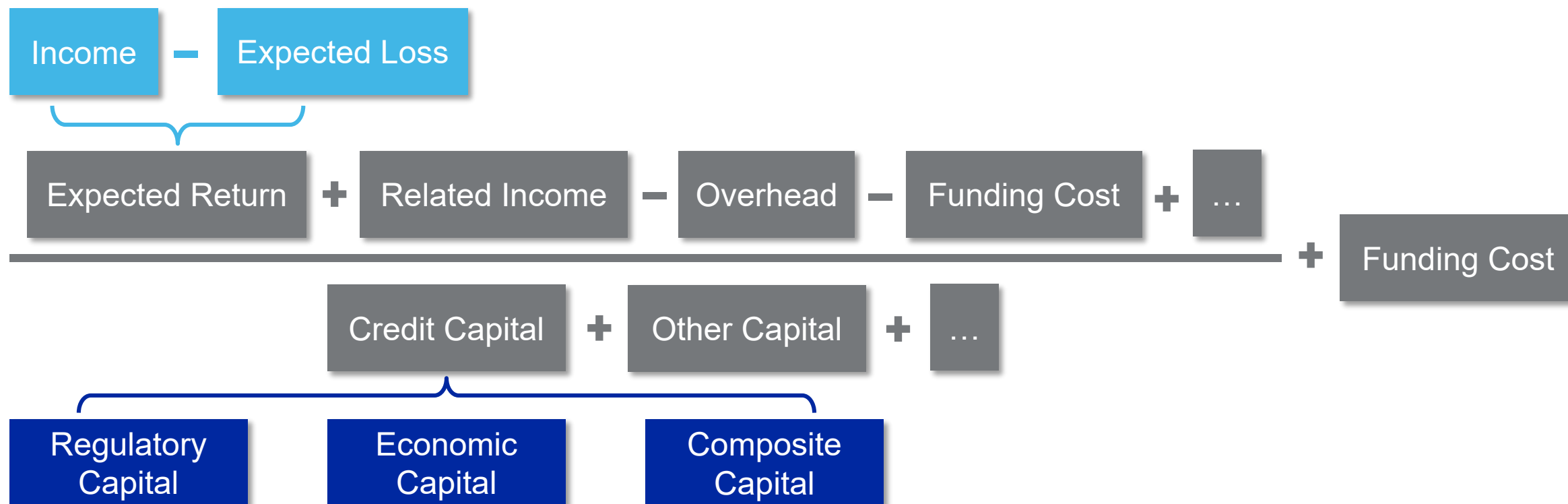


Lend themselves to better decision making



# Parameterize Return and Risk Metrics

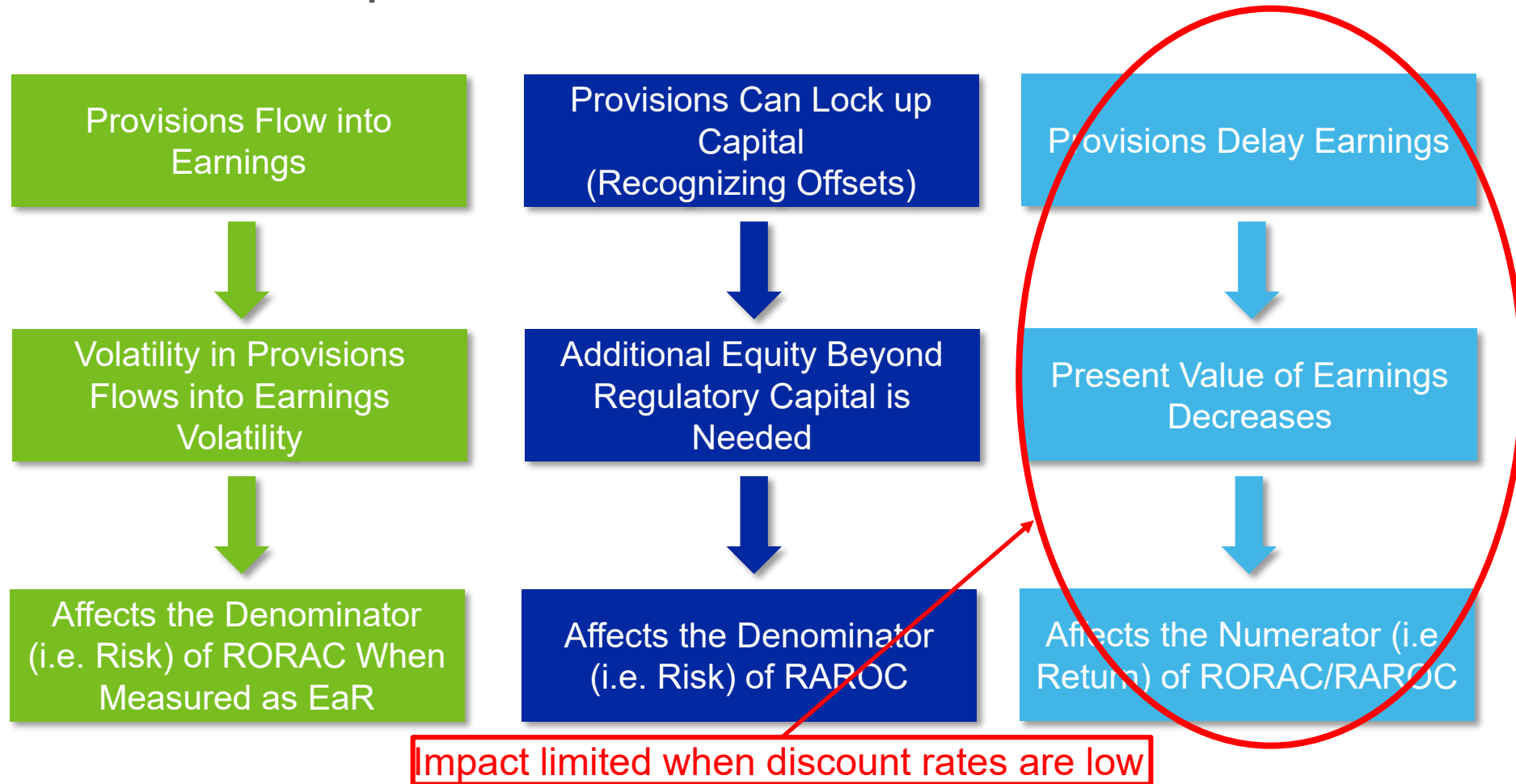
RAROC and/or RORAC Post IFRS 9 and CECL



Traditionally parameterized using TTC PDs;  
 Traditionally measuring dynamics;  
 With no offsets, provisions limit leverage in the same way as regulatory capital  
 Increased focus on earnings concentration risk under IFRS 9/CECL

# (Should) Provisions Impact Pricing(?)

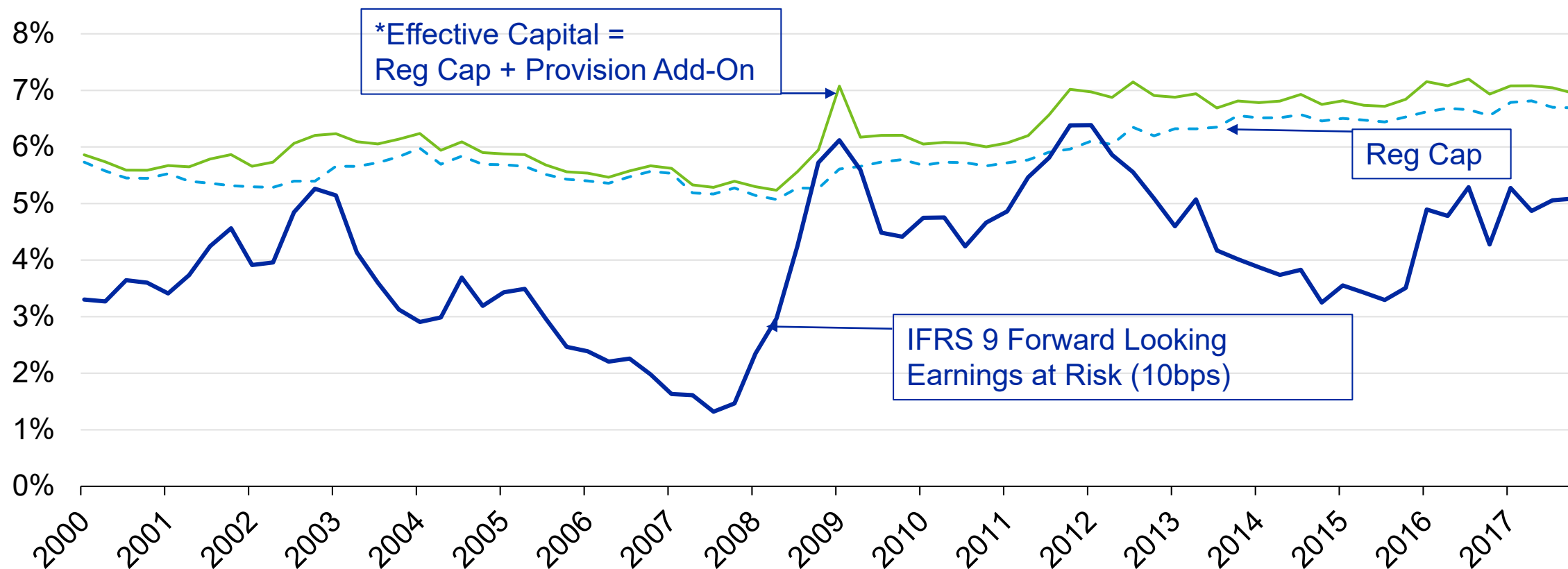
Manifestation more pronounced under CECL/IFRS 9



# Capital Dynamics



## Regulatory (Basel III AIRB), Effective and Economic Capital

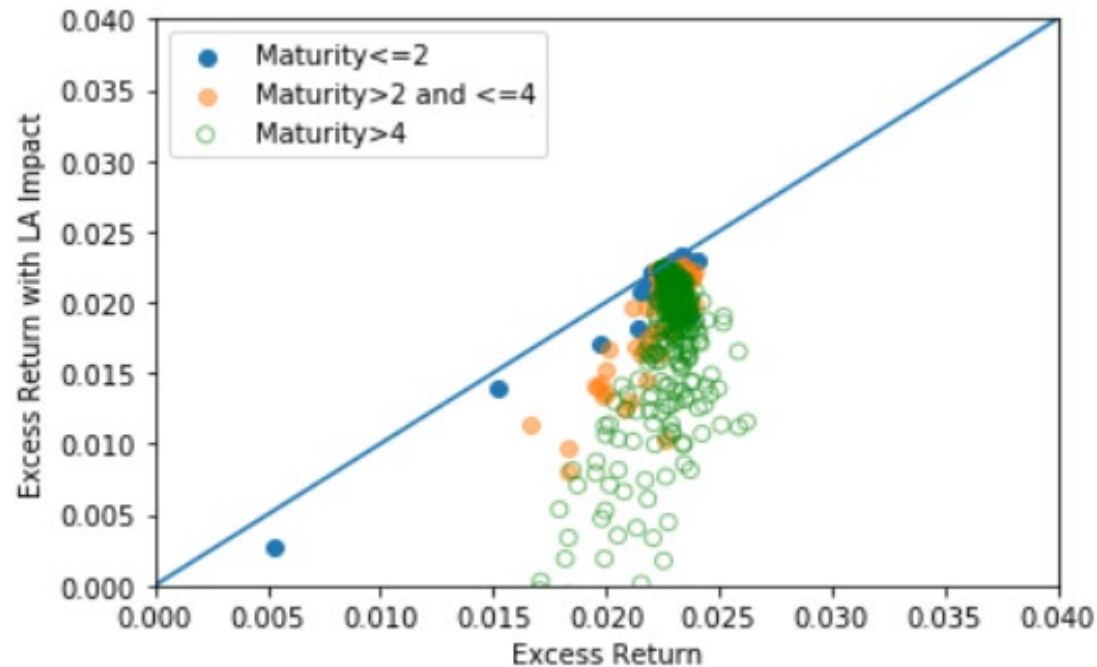


\*Adjusted for provision offsets

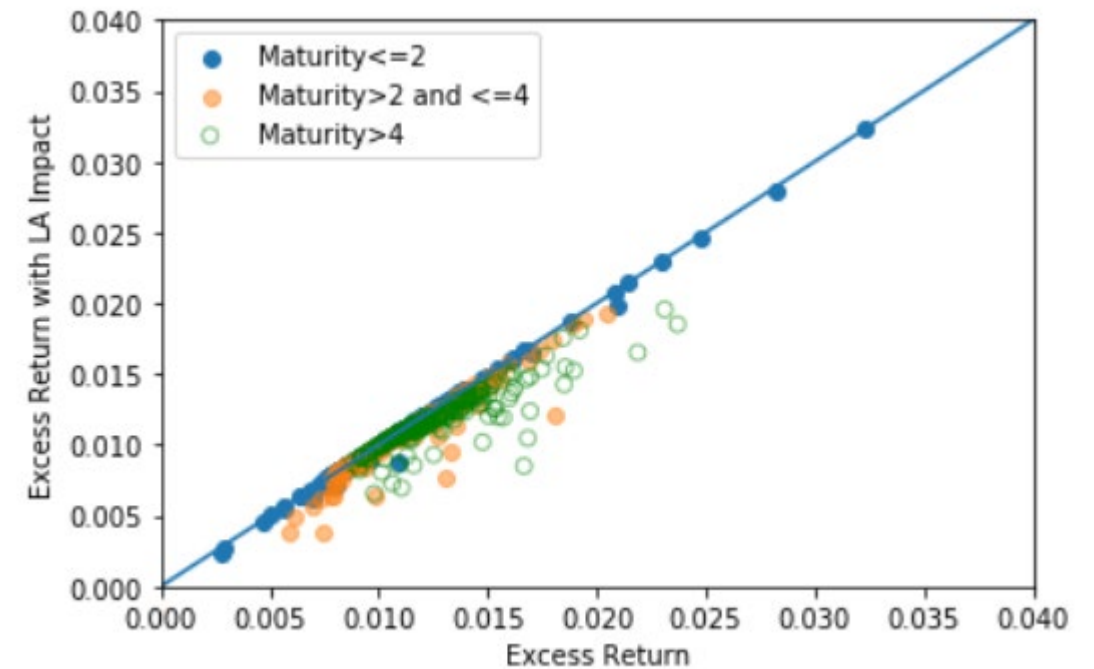
# Impact of The Time Value

Impact is higher when interest rate is higher

Early 2000 when interest rates were high



Late 2017 when interest rates were low



# 2

## Assessing Loan Pricing Models Using Benchmark Data and Tools

# Assessing Four Loan Pricing Models

Allocate new funds to maximize portfolio RAROC/RORAC



## TTC RAROC

- » Expected loss in RAROC computed using TTC PD.



## Forward Looking RAROC

- » Expected loss in RAROC computed using Forward Looking PD.



## TTC RORAC

- » Risk and return statistics computed using TTC PD.



## Forward Looking RORAC

- » Risk and return statistics computed using Forward Looking PD.

\*All allocation are done across sector and country segmentation along with 10% limits.

# Portfolio Modelling Toolbox



## Counterparty

Counterparty characteristics such as PD, industry, country, etc.

## Maturity/Stage

Long-dated instruments have higher life-time expected loss and potentially higher provision volatility.

## Coupon

Affects expected return.



## Concentration

High exposure to names or segments are more susceptible to large losses

## Optimal Origination

In each period new origination is targeted for optimal overall portfolio performance.

## Recovery

LGD affects provision and its volatility.



# Benchmark Data and Method



## Exploring the benefits using historic loan-level data

Starting with the same initial portfolio we **assess credit portfolio strategies** that **optimally** allocate available funds from interest income, recovery and matured assets to **minimize portfolio earnings volatility** while maintaining the same expected profitability level as the benchmark.

Historic Portfolio Data (Moody's CreditEdge Data)

### NEW ORIGINATION

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**LOAN MARKET** All US publicly traded firms with Moody's rating from 2000 to 2017.

**DATA** The agency rating, PD, and default status associated with each borrower during each quarter.

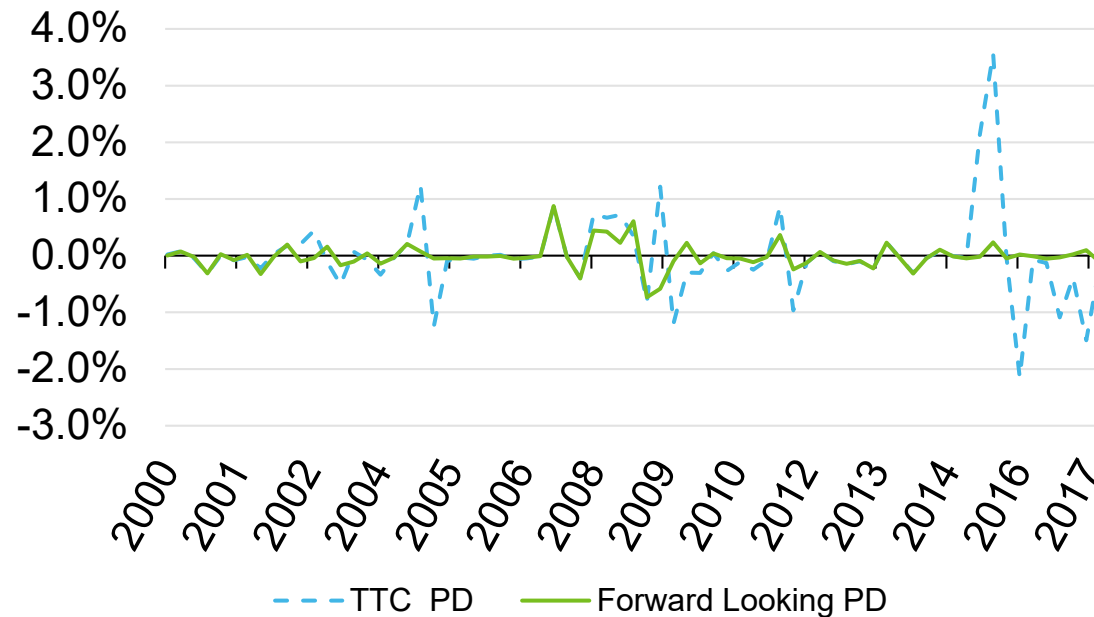
**CREDIT RISK** Moody's Analytics EDF



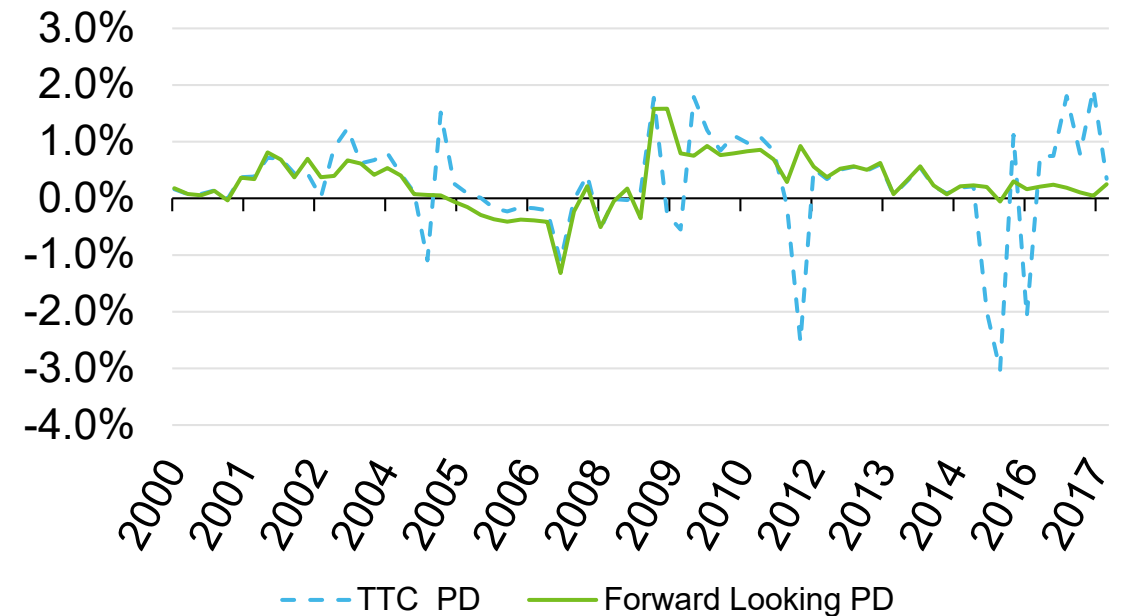
# TTC and Forward Looking RAROC Strategies

Forward looking measures improve realized CECL earnings

Portfolio Quarterly Provision Changes



Portfolio Earnings



**TTC RAROC**

**Forward Looking RAROC**

Realized Sharpe Ratio

0.48

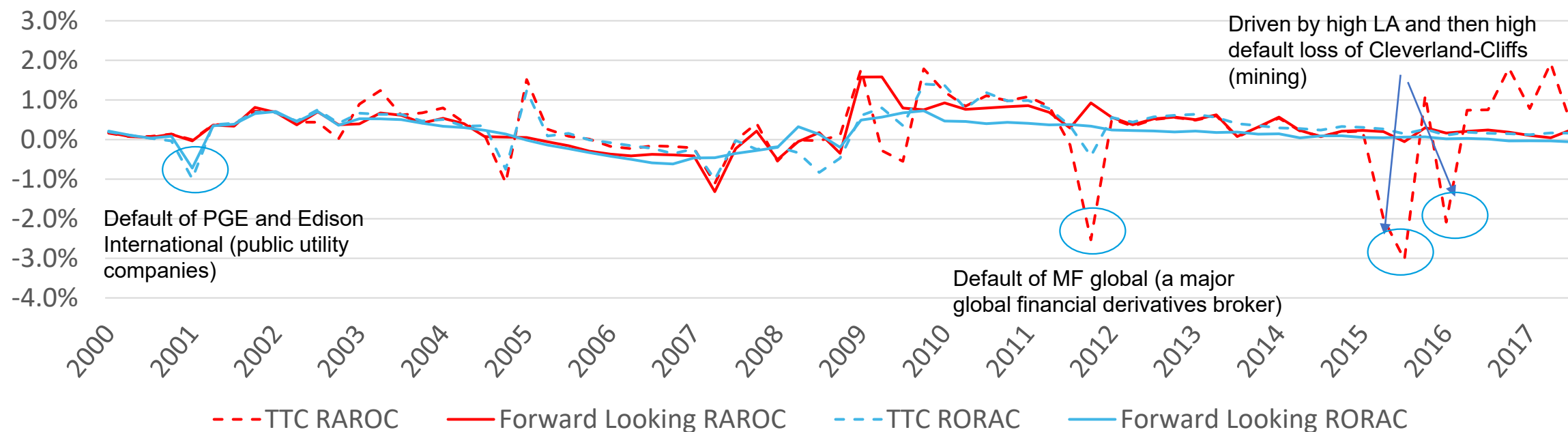
0.93

# RAROC and RORAC Strategies



RORAC strategies improve realized CECL earnings

Portfolio Earnings

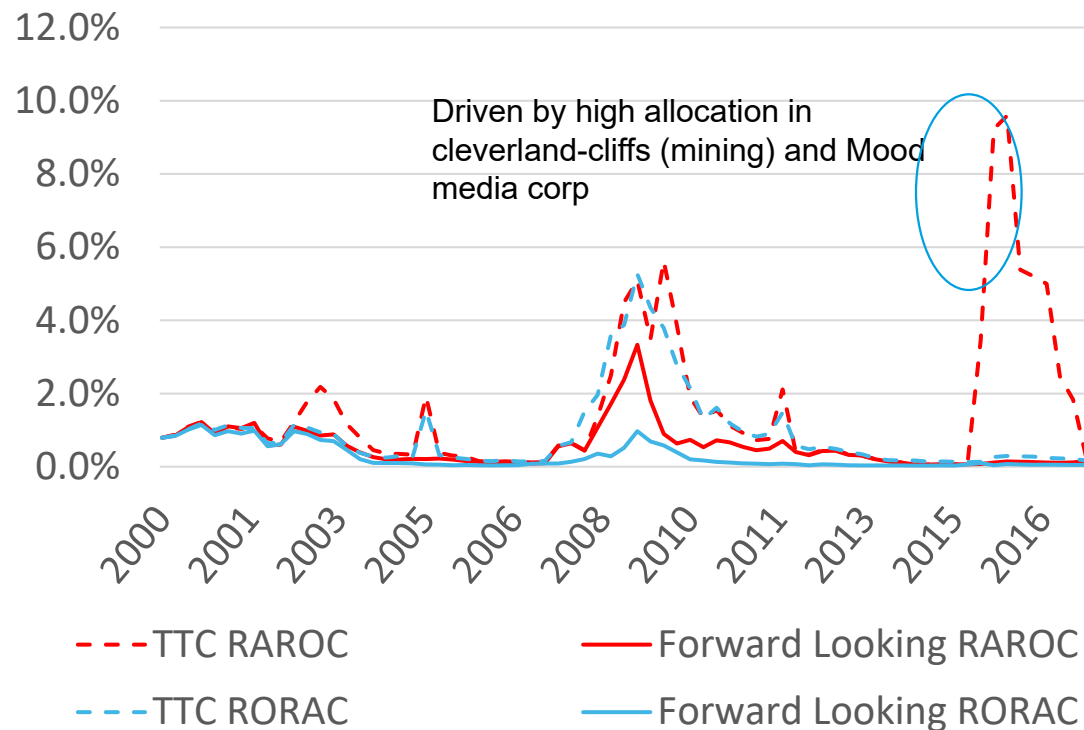


	TTC RAROC	Forward Looking RAROC	TTC RORAC	Forward Looking RORAC
Realized Sharpe Ratio	0.48	0.93	0.88	1.12

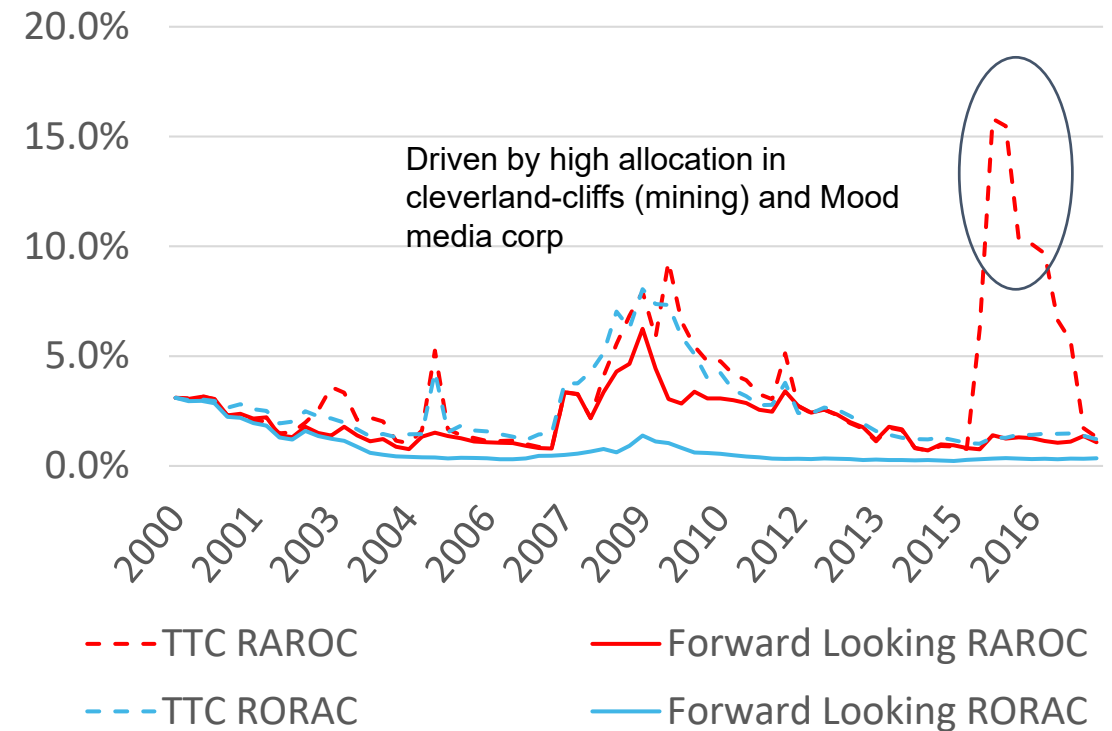
# RAROC and RORAC: Portfolio Credit Quality

Strategies with forward looking measures favor higher credit quality

Portfolio Average One-Year ECL



Portfolio Average Lifetime ECL



3

Conclusion

# A Post Mortem



IFRS 9 and CECL resulting in more pronounced manifestation of concentration risks

- Implications for earnings and CPM
- Forcing re-evaluation and CPM metrics and pricing models



Forward looking measures lend themselves toward robust credit portfolio management

- Organizations adopting forward looking CECL/IFRS 9 measures (that the market judges them against) in RORAC and RAROC

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