

# Risk Management : a few challenges ahead

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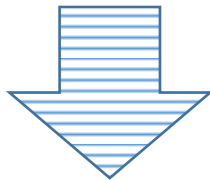
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# Granting loans: the temptation of machine learning

AI may find brand new correlations to evaluate credit risk



Believe in new correlations with a risk of black box



Unknown behavior in crisis time (risk of de-correlation).  
Deontological questions.



Expert review of the risk factors with then limited upside of the AI. But maybe a good surprise ahead.



*Not yet*

# Portfolio Management: the IFRS 9 era

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IFRS 9 is not an obvious improvement in risk management



# Portfolio Management: the IFRS 9 era

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## By chasing our own tail.....

1. PD curves through the cycle (TTC) are not sufficient

6. We then inject TTC economic conditions in our PiT models



2. Models replicating the PD curve volatility (PiT)

5. So, we need to inject several economic scenarios with their probability, based on past observations

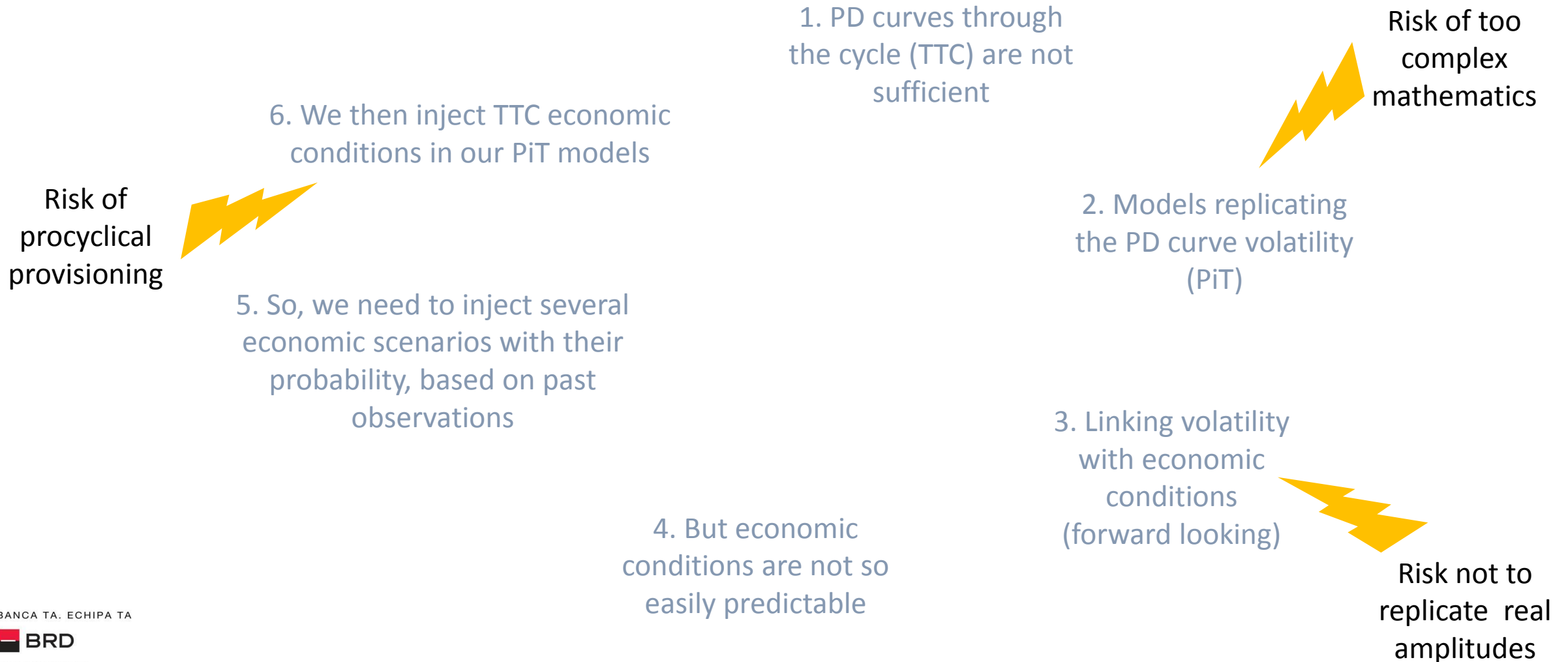
3. Linking volatility with economic conditions (forward looking)

4. But economic conditions are not so easily predictable

# Portfolio Management: the IFRS 9 era

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.....we might miss the tail risks



# IFRS 9 procyclicality

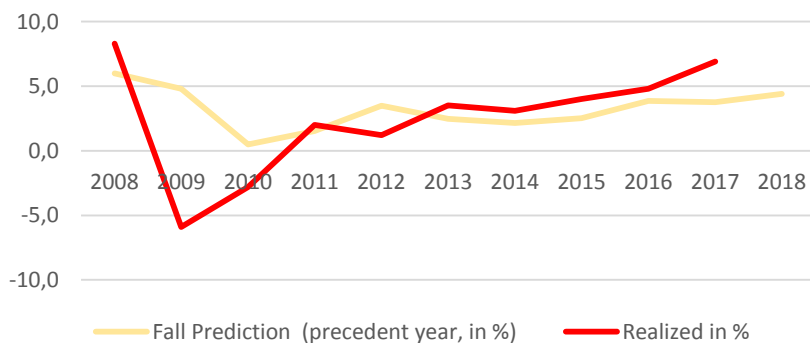
Correlations between observed GDP growth and predicted on might result into pro-cyclical provisioning

**GDP growth in Romania: IMF prediction versus realization**

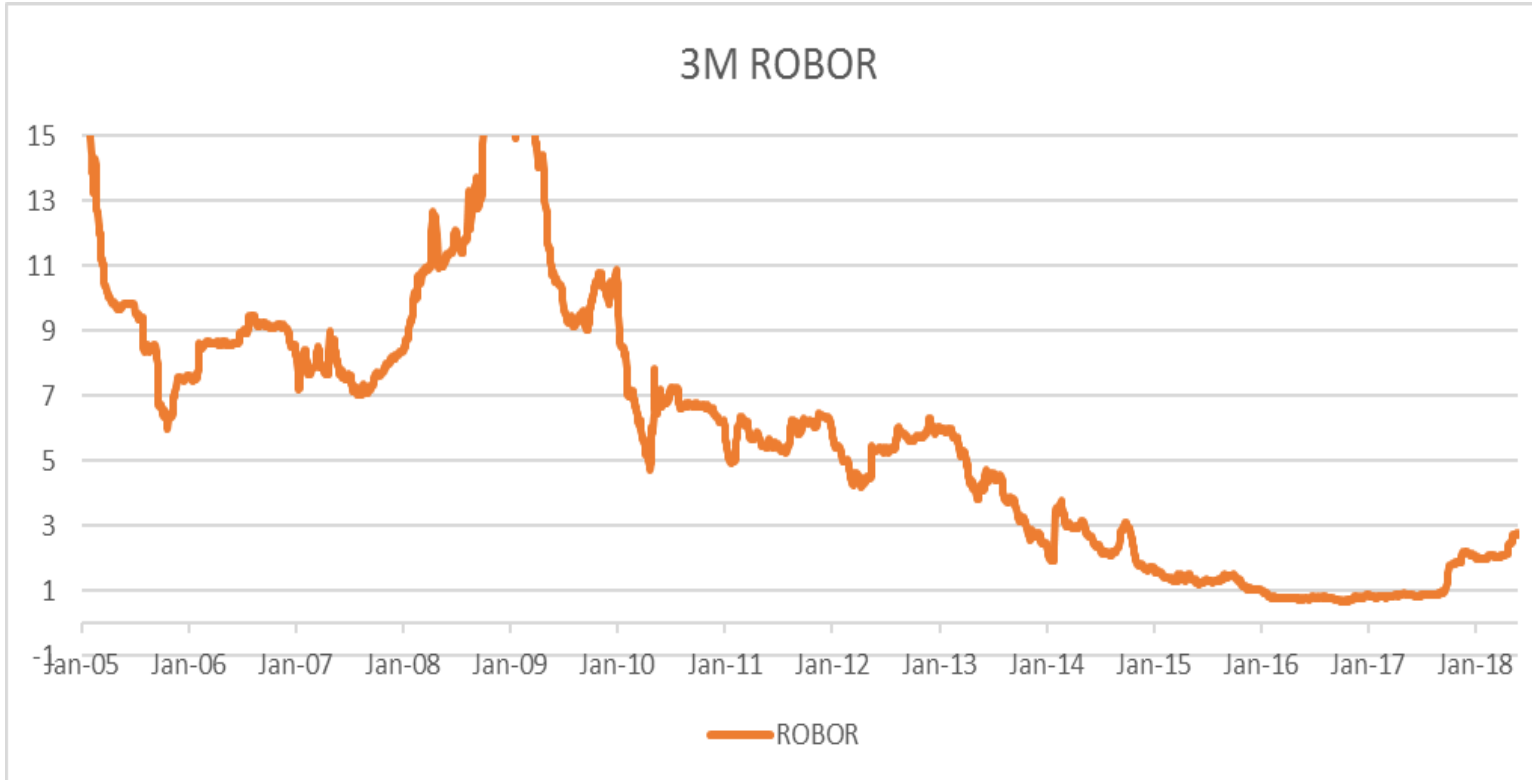
Year	Spring Prediction (precedent year, in %)	Fall Prediction (precedent year, in %)	Realized in %
2008	4.8	6.0	8.3
2009	4.7	4.8	-5.9
2010	0.0	0.5	-2.8
2011	5.1	1.5	2.0
2012	4.4	3.5	1.2
2013	3.0	2.5	3.5
2014	2.0	2.2	3.1
2015	2.5	2.5	4.0
2016	2.9	3.9	4.8
2017	3.6	3.8	6.9
2018	3.4	4.4	

- Correlation realized - realized year before: 8%
- Correlation Fall prediction – realized: 31%
- Correlation Fall predication – realized year before: 91%

**GDP Prediction vs Realized**

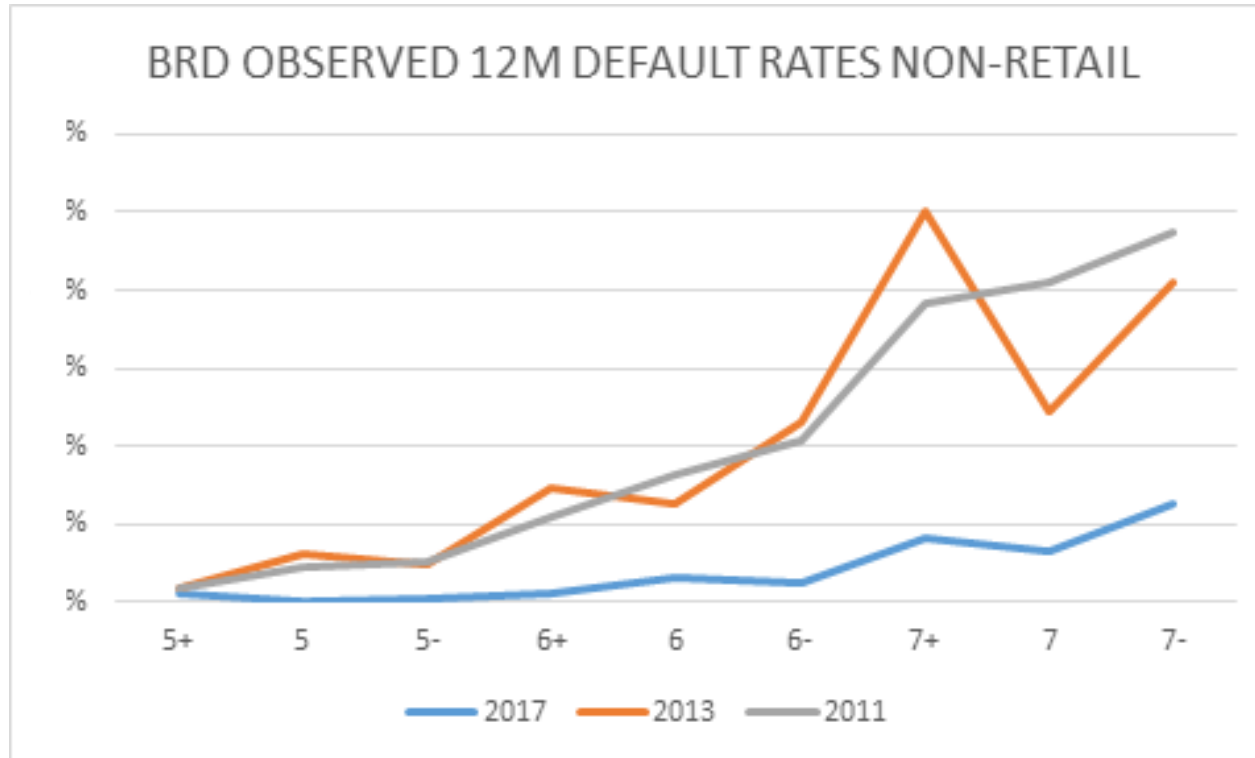


## Example of model risk: interest rate increases



- Low chance to find correlations between individual default rates and ROBOR to predict impact of rates increases
- Simple model based on DSTI to on-board top management and anchor results of stress scenario

# Making more complexity and more simplicity co-exist



- IFRS 9 computing gives a black-box type of feedback
- This is compared with simple historical stress scenarios
- The simpler the method, the more powerful the message



# Wrap-up

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- AI showing-up but prudent approach to implement for credit granting
- More space to test AI on other fields than credit origination (recovery,..)
- IFRS 9 brings back the challenge to keep control over complex mathematics. Pro-cyclicality with unknown impacts yet.
- Systemic risks still have limited chances to be anticipated by complex models
- The more we get into complexity, the more we need counterweight from simple methods