Prudential definition of assets: micro and macro prudential perspective

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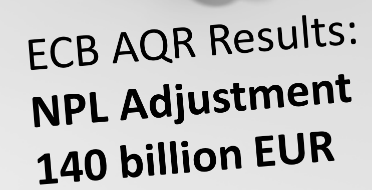
Prudential definition of assets: Current challenges

1. No uniform practice of segregating assets into risk buckets
2. Absence of common objective criteria indicating borrowers financial health, while general qualitative criteria promote different interpretations
3. Most widely used quantitative criteria – past due days (NPL >90 days); extensive restructuring practice can mask real creditworthiness;
4. Accounting perspective (IAS 39): ability for interpretation of Objective evidence of impairment: “too late, too little”

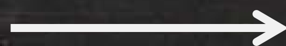


Example: Renegotiated loans

Modification of loan characteristics does not always indicated deteriorated repayment capacity

1. Working capital financing
2. Extending maturity
3. Consolidating outstanding debt
4. Renegotiating IR

Issue: renegotiation due to financial difficulties and before it goes into Arrears



- High leverage: Debt/EBITDA >5
- Weak repayment capacity: ICR<1

If asset classification system can capture financial strength of borrower, forbearance loses its relevance

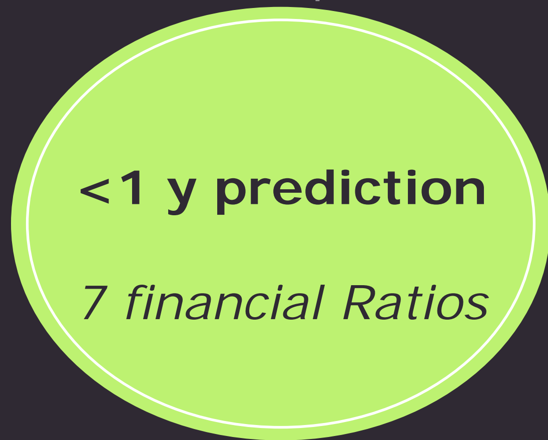
Prudential definition of assets: Current challenges

Can the financial ratios explain vast majority of risks?

Financial ratios: Micro foundation

Credit risk assessment entails complex analyses of financial and business risks, however empirical evidence shows that synthetic ratings can predict corporate distress with high accuracy rate:

National Bank of Czech Republic (2011)



Altman Z-Score (1968)

Sveriges Riskbank (2013)

Ohlson (1980)

Financial ratios: Micro foundation

Financial ratios have a prominent role in complex credit risk models, such as big3 rating agencies

Debt/EBITDA

	Low Business Risk	Medium Business Risk	High Business Risk
Highly Leveraged	6<	5.5<	5<
Aggressive	5-6	4.5-5.5	4-5
Significant	4-5	3.5-4.5	3-4
Intermediate	3-4	2.5-3.5	2-3
Modest	2-3	1.75-2.5	1.5-2
Minimal	<2.00	<1.75	<1.5

Axis: 7,00; 6,00; 5,00; 4,00; 3,00; 2,00; 1,00; -

EBITDA/Interest

	High Business Risk	Medium Business Risk	Low Business Risk
Minimal	15<	14<	13<
Modest	10-15	9-14	7-13
Intermediate	6-10	5-9	4-7
Significant	3-6	2.75 -5	2.5-4
Aggressive	2-3	1.75-2.75	1.5-2.5
Highly Leveraged	<2	<1.75	<1.5

Axis: 18,00; 16,00; 14,00; 12,00; 10,00; 8,00; 6,00; 4,00; 2,00; -

Legend: Minimal, Modest, Intermediate, Significant, Aggressive, Highly Leveraged

Thresholds of Leverage and coverage ratios by credit risk buckets, S&P

Financial ratios: Micro Prudential framework

US leveraged lending guidance (2013) incorporates financial ratios into asset classification:

Leveraged loan: **Total Debt-to-EBITDA > 4X**

‘criticized' or 'special mention‘ loan: **Debt-to-EBITDA > 6x**

BASEL capital framework (revisions to the standardized approach for the credit risk):

Senior corporate exposures: **Revenue (firm size) and debt/equity (leverage)**

Exposures secured by residential real estate: **LTV (Loan-to-value) and DSR (debt service ratio)**

Financial ratios: Macro foundation

Increased focus on micro data in macro prudential oversight and analyses.

International Monetary Fund

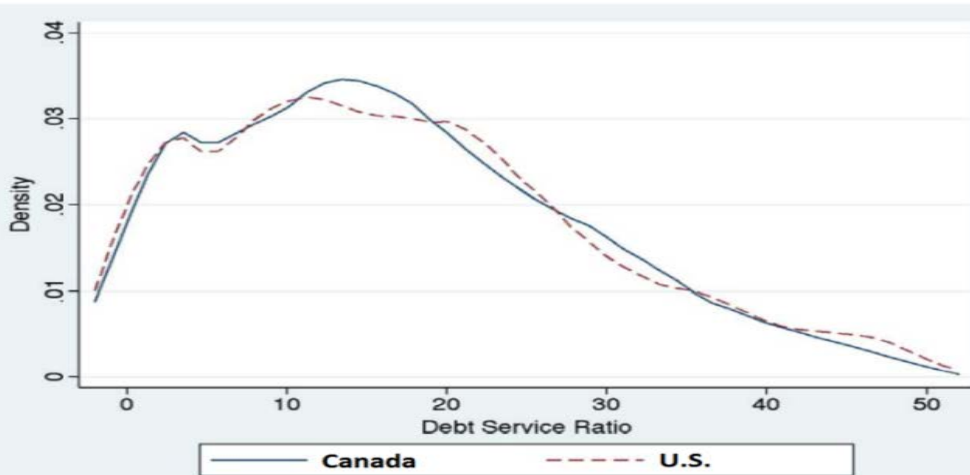
and

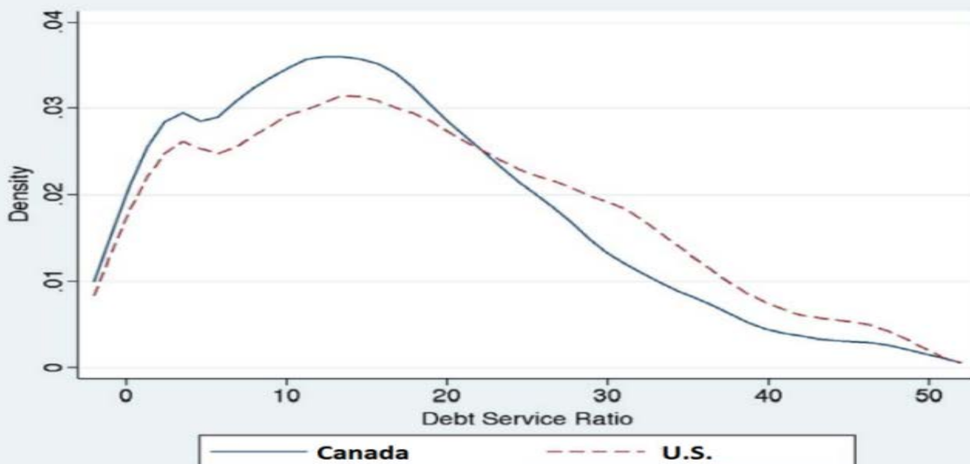
financial stability reports

What are the advantages of Micro data?

- Macro measures (DTI/Credit to GDP) may mask debt service burden distribution across borrowers;
- Micro data can provide early warning signals, since it captures changes in distribution of credit risks across sectors and industries;
- Facilitates meaningful comparison across countries (low versus high IR environment);

Financial ratios: Macro foundation





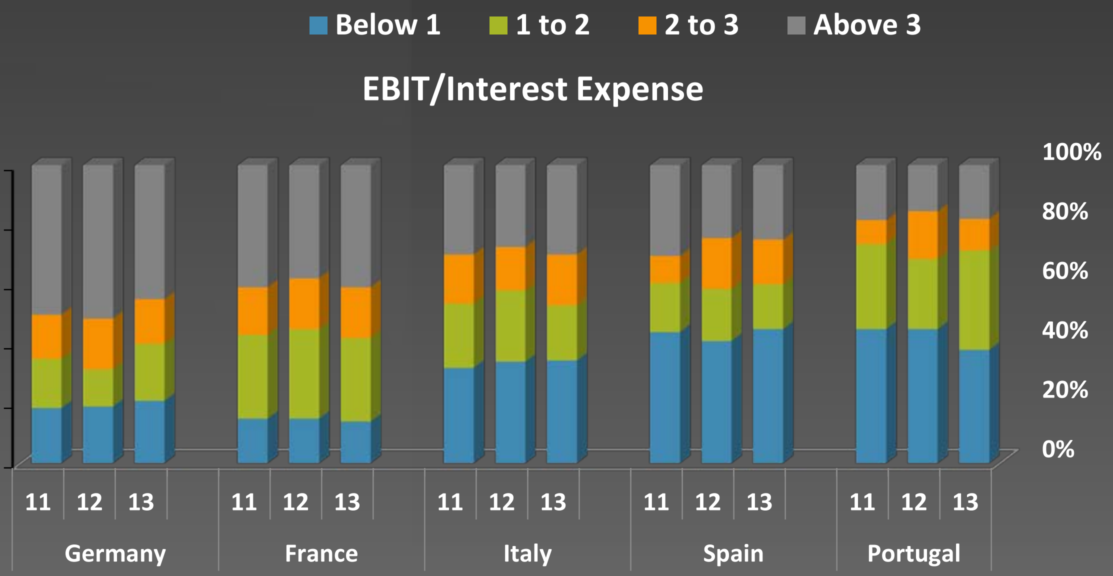
DSR distribution: Canada vs US

- Distribution of DSR was similar in 2001;
- In 2004, the household sector in Canada was less vulnerable to macro economic shocks than US
- Shifts in the shape of US DSR can be explained by increasing risk taking in mortgage lending;

Financial ratios: Macro foundation

Is EU in Debt trap?

Still there are no common standards or approaches to interpret this data



- Interpretations of corporate ratios vary among different publications of IMF (ICR set either at < 1 or <2);
- Considering low IR environment, does interest only servicing capacity suffice low risk?
- When risks identified, mitigating factors such as NPL, reserves (IFRS or regulatory) and capital buffers are not discussed;

Incorporation of financial ratios into asset classification system: NBG approach

Financial Ratios

Adjustments

Corporate

1. Leverage:
   Debt to EBITDA and Debt to Equity
2. Liquidity
3. Coverage:
   Interest Coverage Ratio

Retail

1. Leverage:
   Loan to Value or Debt to Income
2. Coverage:
   Payment to Income

Mild Stress Scenarios

- Firm Size
- Industry

Corporate

- IR
- FX un-hedged Borrower
- Maturity

Corporate & Retail

- Income Level Group

Retail

Incorporation of financial ratios into asset classification system: NBG approach

Addition to Asset Classification System:
National Bank of Georgia

<u>Other Factors considered:</u>
SME – 20% stricter
IR - Mild
FX - Mild
Maturity – Ability for restructuring

Ratios by Sector

Risk Sector	Debt/ EBITDA	EBIT/Interest Expenses
Real Estate Development	2.50	3.50
Auto dealers	2.75	3.25
Construction Companies (non-developers)	2.50	3.25
Hotels and Tourism	3.00	3.00
Restaurants	3.00	3.00
Service	3.00	3.00
Production and Trade of Clothes, Shoes and Textiles	3.25	2.75
Pharmacy	3.25	2.75
Telecommunication	3.00	2.75
Energy	3.50	2.50
Other Production	2.75	3.25
Other, including scrap metals	2.75	3.25

Incorporation of financial ratios into asset classification system: NBG aproach

IFRS Provisioning (before collateral discount)

70%
60%
50%
40%
30%
20%
10%
0%

0 1 2 3 4 5 6 7 8 9 10

Interest Coverage Ratio

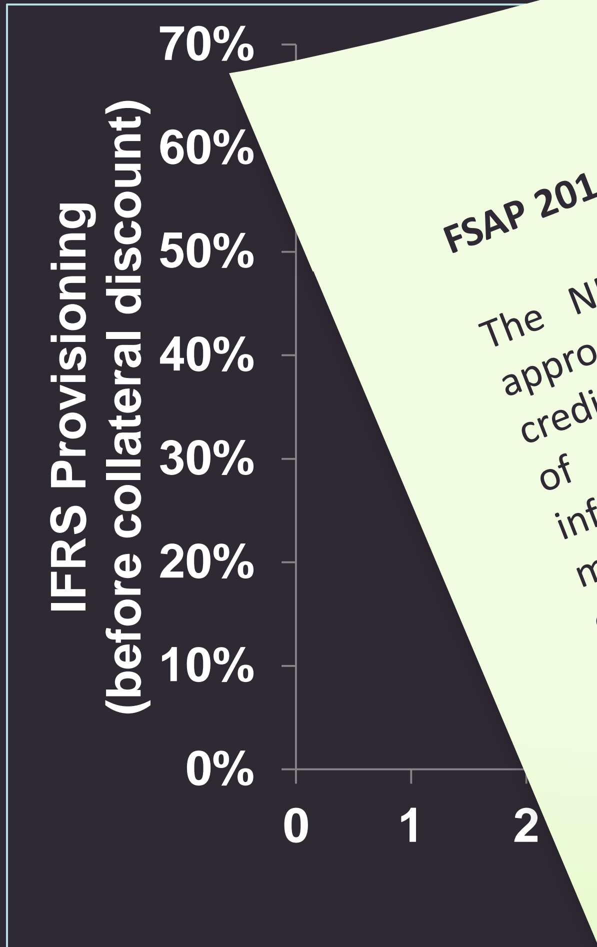
QIS

The study is performed based not on historical data, but rather on the testing of current classification of exposures, using synthetic rating approach.

The initial results are promising.

Source: NBG calculation based on a sample of corporate borrowers, 2012

Incorporation of financial r... to asset classification system: NBG aproac...



FSAP 2014 Assessment: National Bank of Georgia

The NBG has developed a very advanced risk-based approach to determine whether banks have an adequate credit risk management system. This includes assessment of credit risk policy and procedures, management information, and loan reviews. Together with the detailed monthly return, the NBG has the opportunity to do cross-checks and rigorous credit risk analysis. **This analysis is (for the corporate and SME portfolio) based mostly on key ratio analysis (derived from Moody's and S&P) and valuation of collateral.**

...dy is performed based not on ...data, but rather on the testing ... classification of exposures, ...etic rating approach.

...results are promising.

Source: NBG calculation bas... ...012

Incorporation of financial ratios into asset classification system

Advantages

1. Comparability, risk sensitivity and simplicity
2. Limited possibility to misinterpret credit risk; reduced reliance on banks estimates; Forbearance – Mitigated
3. Limited possibility to misinterpret impairment triggers under IAS 39
4. Timely supervisory attention once the ratios are deteriorated
5. Powerful tool for preventing macro systemic imbalances – bottom up approach

Incorporation of financial ratios into asset classification system

Advantages

Credit risk disclosures are vital for understanding the institution-specific risk profile and relevant credit risk mitigation techniques for managing these risks.

1. **Portfolio distribution by ratios will boost general market understanding about the risks inherent in portfolios; enhanced market discipline**
2. **It will facilitate meaningful comparison of risk profiles among institutions and countries**
3. **The banks will provide explanations on the role of financial ratios in credit risk management**

Areas for further research

Predictability

1. Micro (borrower) level;
2. Macro Level – ratios versus conventional macro measures*;

QIS

1. Statistical analyses based on historical data;
2. Expert analyses – testing current exposures;

Cyclicality

1. Mild versus severe stress scenarios;
2. Address via provision versus capital charges;

***Macro level analyses:** it is important to analyze financial ratios with regard to country-specific factors, such as the level of economic development, average interest rates, term structure, country risk and volatility in earnings across economies

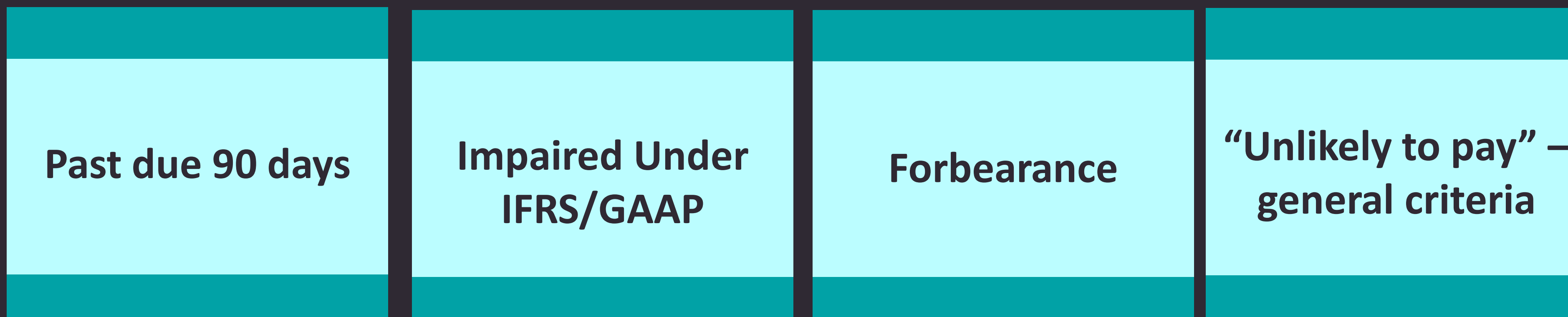
QUESTIONS

Draft Paper Can be Found:

https://www.nbg.gov.ge/uploads/publications/on/paper_incorporation_of_financial_ratios_into_prudential_definition_of_assets_micro_and_macro_prudential_perspective.pdf

In 2014 ECB initiated asset quality review among largest EU Banks

Among others, the NPL adjustments amounted to **140 billion EUR** based on simplified criteria:



Can the incorporation of financial ratios into asset classification system provide permanent solution to underestimated credit risks?

Will it enhance our understanding on real credit risk inherent in banks loan portfolios?

Financial ratios?

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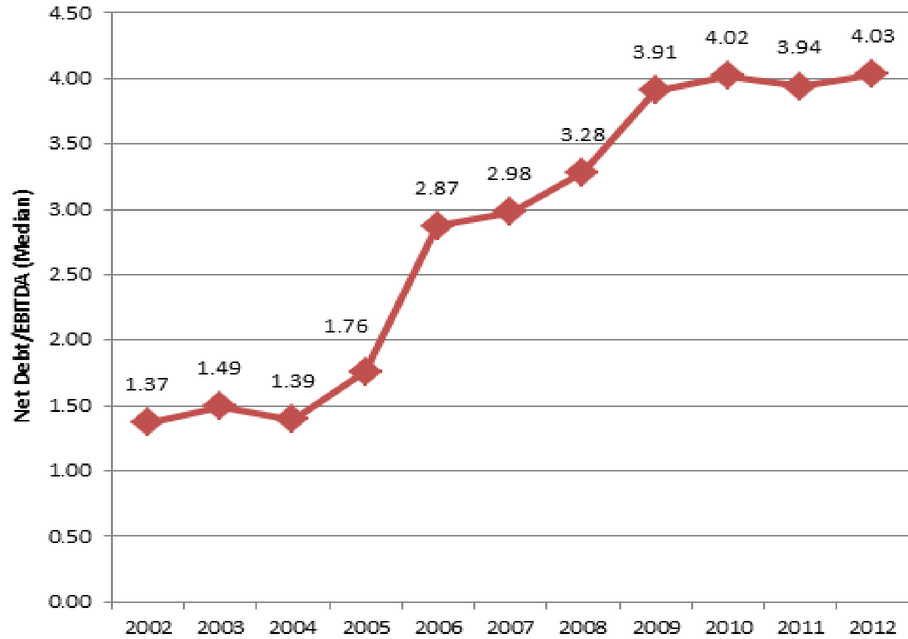
Slovenia Case



Source: EBRD, 2014

- From 2004, the corporate sector leverage more than doubled;
- Major investments: into overheated construction industry;
- In 2012, about 46% of corporate debt had debt/EBITDA above 10x.