WORLD BANK GROUP
Finance, Competitiveness & Innovation
Financial Sector Advisory Center (FinSAC)

Drivers of NPL Formation & Early Warning Systems

10th IPAF Summit and Conference "Advancing NPL Resolution in Asia: Innovation, Institutions, and Market Readiness"

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FinSAC national corporate financial viability studies

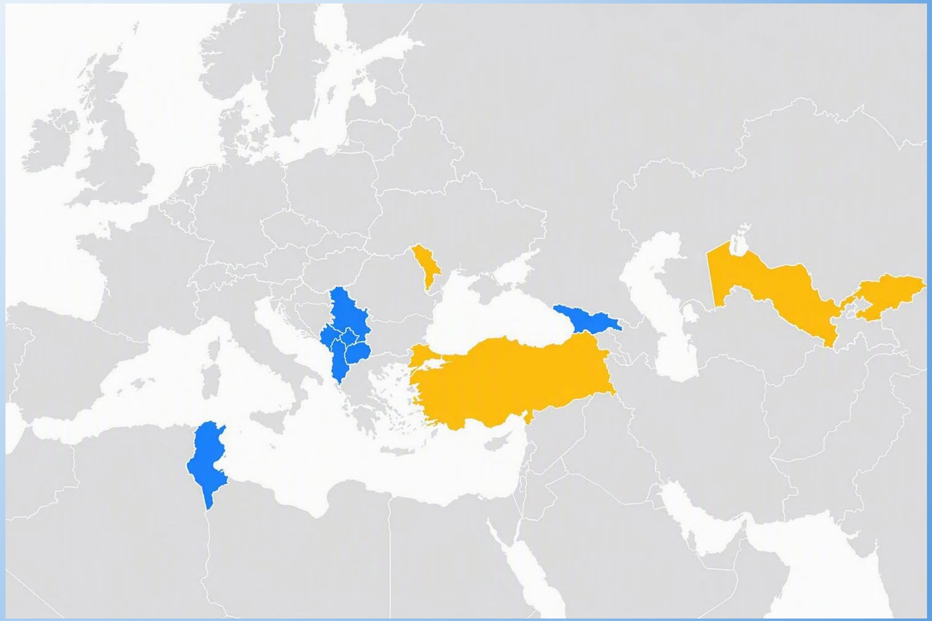
What each study delivers

Each study analyzes the financial statements of every company in a country, sorts them into **five FinSAC viability categories**, and maps the results onto individual bank loans — exposing where banks under-recognize credit risk.

Delivered as a ~90-slide report, with full handover of the tool for the client's ongoing use (knowledge transfer).

Who uses the studies

1. **Bank supervisors** — to challenge loan classification and provisioning
2. **Financial-stability experts** — to detect systemic risks across banks and sectors
3. **Resolution experts** — to identify weak banks
4. **Ministries** — to target state support at viable and semi-viable firms
5. **Banks** — as early-warning systems for distressed borrowers



● **Completed · 7**

Albania, Georgia, Kosovo, Montenegro, North Macedonia, Serbia, Tunisia

● **In progress · 4**

Kyrgyzstan, Moldova, Türkiye, Uzbekistan

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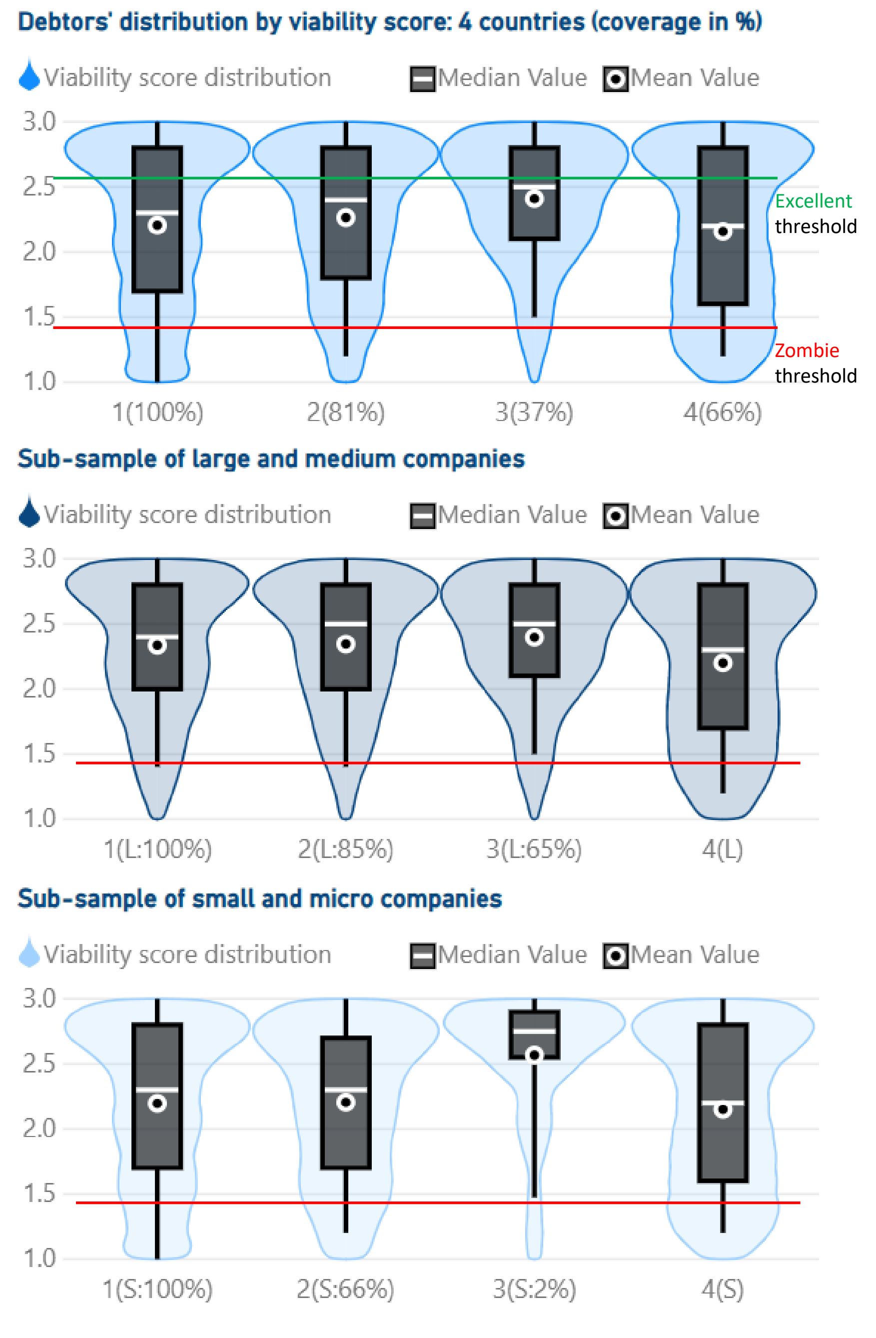
Corporate viability studies in 4 countries

Main findings

- The sample sizes varied, ranging from 100% to 37% of all companies in each country.
- Large and medium companies were much better covered in terms of financial statements and analysis in all countries.
- In two countries, however, the coverage of small companies was poor.
- Overall, the **financial viability** of **small companies** is **not as good** as that of large and medium companies — the viability score distribution is upward-directed in the case of the latter.



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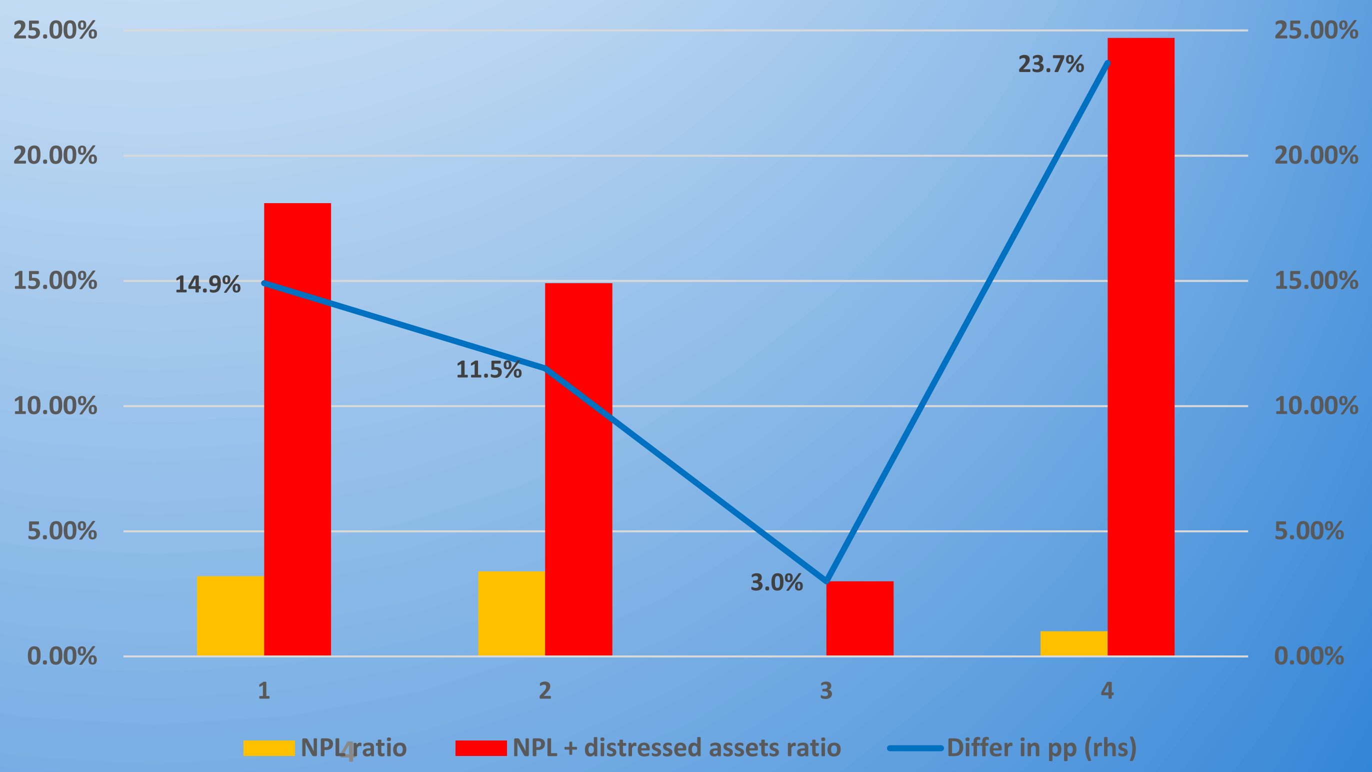
Differences in NPLs and problem assets

What the study finds

- Loans to non-viable borrowers are potential problem assets of banks
- In all cases, there are differences between official NPLs and distressed assets identified by the study
- **Main reasons for differences:**
  - Insufficient regulatory and supervisory rigor
  - Poor loan origination standards
  - Impact of informal economy
  - Quality of financial statements

Difference: NPLs and distressed assets



1,2,3,4 - countries

Viability categories and IFRS 9 staging – surprising findings (by exposure)

By exposure: credit quality (1-3) vs. viability (1-5)

Country	1	2	3	4	5	Total
1(100%)	**16%**	**28%**	**24%**	**19%**	**14%**	**100%**
1	15%	26%	23%	18%	14%	**96%**
2	0%	0%	0%	0%	0%	**1%**
3	1%	1%	1%	0%	0%	**3%**
2(81%)	**13%**	**29%**	**21%**	**16%**	**22%**	**100%**
1	11%	27%	20%	16%	21%	**95%**
2	1%	1%	0%	0%	0%	**2%**
3	1%	1%	0%	0%	0%	**3%**
3(37%)	**3%**	**8%**	**24%**	**37%**	**28%**	**100%**
1	3%	8%	24%	37%	28%	**100%**
2				0%	0%	**0%**
3					0%	**0%**
4(66%)	**24%**	**26%**	**20%**	**13%**	**17%**	**100%**
1	22%	23%	19%	13%	17%	**94%**
2	1%	2%	1%	0%	0%	**5%**
3	0%	0%	0%	0%	0%	**1%**

Country	1	2	3	4	5	Total
1(L:100%)	**11%**	**27%**	**25%**	**21%**	**16%**	**100%**
1	10%	26%	24%	21%	16%	**97%**
2	0%	0%	0%	0%	0%	**1%**
3	0%	1%	1%	0%	0%	**2%**
2(L:85%)	**9%**	**29%**	**22%**	**17%**	**22%**	**100%**
1	8%	27%	22%	17%	22%	**96%**
2	0%	1%	0%	0%	0%	**1%**
3	1%	1%	0%	0%	0%	**3%**
3(L:65%)	**3%**	**8%**	**24%**	**37%**	**28%**	**100%**
1	3%	8%	24%	37%	27%	**100%**
2				0%	0%	**0%**
3					0%	**0%**
4(L)	**22%**	**23%**	**22%**	**14%**	**20%**	**100%**
1	20%	20%	20%	14%	20%	**94%**
2	1%	3%	1%	0%	0%	**5%**
3	0%					**0%**

Country	1	2	3	4	5	Total
1(S:100%)	**26%**	**29%**	**21%**	**14%**	**11%**	**100%**
1	22%	27%	20%	13%	11%	**93%**
2	1%	0%	0%	0%	0%	**2%**
3	3%	1%	1%	0%	0%	**5%**
2(S:66%)	**28%**	**29%**	**14%**	**11%**	**18%**	**100%**
1	22%	26%	13%	11%	18%	**90%**
2	2%	0%	0%	0%	0%	**3%**
3	4%	2%	0%	0%	0%	**7%**
3(S:2%)	**1%**	**19%**	**14%**	**23%**	**43%**	**100%**
1	1%	19%	14%	23%	43%	**100%**
3					0%	**0%**
4(S)	**26%**	**28%**	**18%**	**12%**	**15%**	**100%**
1	24%	26%	17%	12%	15%	**94%**
2	1%	1%	1%	0%	0%	**4%**
3	0%	1%	0%	0%	0%	**2%**

What the data shows

- There is a high share of misclassification by exposure. The range is from 3% to 22%. This is due to larger loans being issued to financially non-viable companies.
- Small companies have a higher percentage of such misclassifications than large companies.

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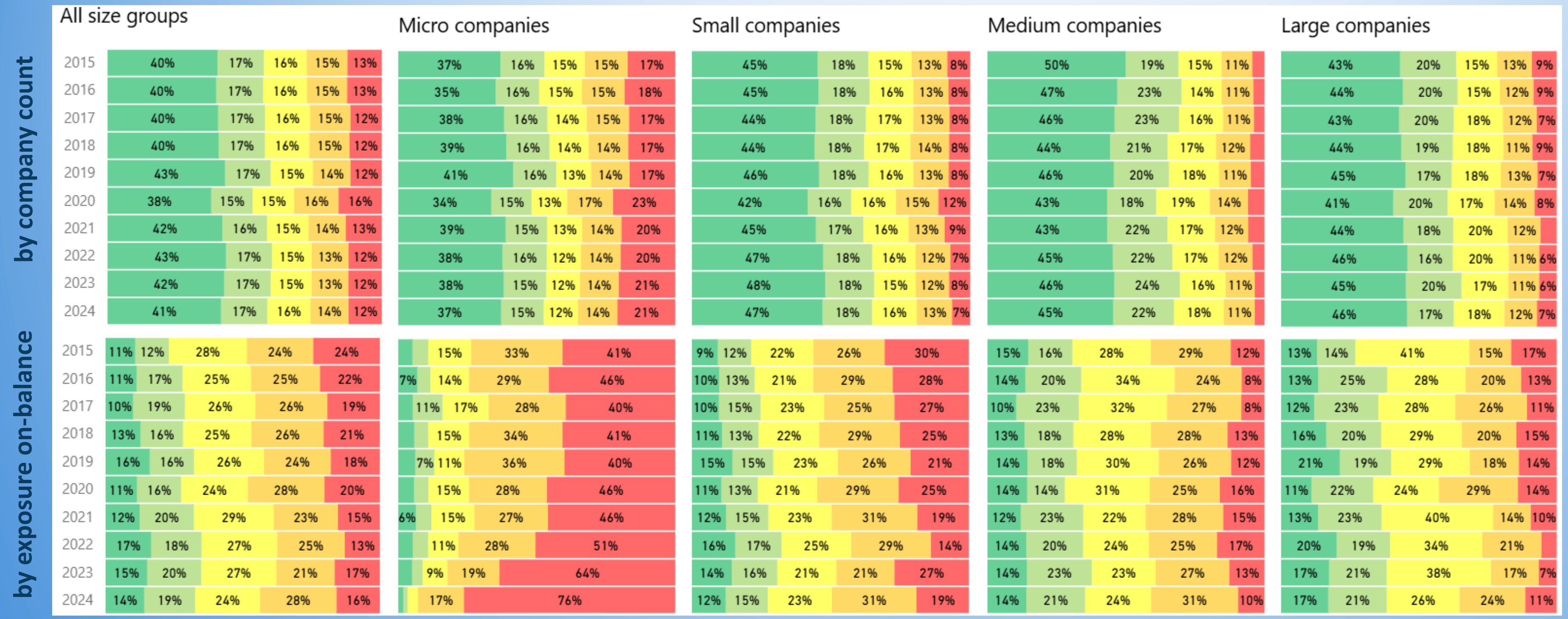
Viability categories: 1 poor ; 5 excellent
IFRS 9 staging (or prudential classification): Stage 1, 2, 3
L- large and medium; S – small and micro companies

Viability structure: debtors with exposure to banks



Key takeaways

- Example from country M.
- Viability structure by company count and by exposure differs significantly due to differences in average exposure amount.
- Overall, companies in **lower viability categories** tend to have **higher average exposure** amount.
- In 2024, micro companies had the biggest relative difference between average exposure amount in non-viable category and in other categories and the average for the size group (4.8 vs. 1.5).

Average debtor exposure amount by viability category, ... million

Year	all companies						micro						small						medium						large					
	5	4	3	2	1	all	5	4	3	2	1	all	5	4	3	2	1	all	5	4	3	2	1	all	5	4	3	2	1	all
2015	2.3	6.0	15.0	13.3	15.8	**8.4**	0.5	1.2	3.1	5.9	6.9	**3.1**	1.3	3.7	8.0	11.0	20.8	**5.8**	9.8	26.0	55.7	79.7	86.9	**32.1**	34.4	70.8	304.6	128.9	190.4	**109.3**
2019	3.3	8.3	14.2	15.1	13.3	**8.6**	0.3	0.9	1.4	4.4	4.1	**1.8**	1.8	4.4	7.6	10.9	14.5	**5.5**	14.8	38.9	71.1	98.1	110.3	**45.0**	57.2	124.6	186.4	157.5	241.5	**118.4**
2023	4.1	12.7	20.0	17.4	14.7	**11.1**	0.1	0.3	0.6	1.1	2.7	**0.9**	1.9	5.6	8.3	10.2	21.2	**6.1**	21.0	63.1	87.9	163.7	232.7	**65.4**	63.0	163.7	337.7	259.0	174.3	**161.1**
2024	4.3	13.4	18.4	24.2	15.7	**12.3**	0.1	0.2	0.4	1.5	4.8	**1.5**	1.8	5.4	9.1	15.2	18.0	**6.5**	23.4	69.8	93.0	200.4	188.7	**73.2**	72.0	224.4	254.4	368.6	295.3	**185.4**

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Viability categories: Excellent Good Medium Poor Non-viable

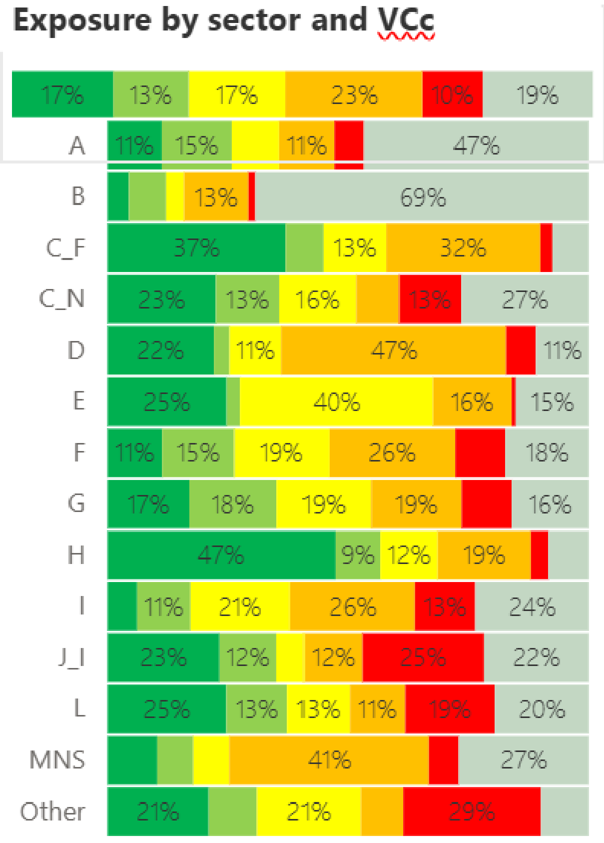
Viability of economic sectors

Borrower viability varies by economic sector

- In some countries, real estate and construction sectors are mainly financed by private equity
- Many project loans in energy sector
- Agriculture is a relatively small sector and dominated by small and micro companies
- Trade is the biggest sector in almost all countries
- Jobs are at risk in sectors with a high ratio of non-viable companies

Sectoral information - country Z

Sector	% Expos.	% Count	% Debtors
A_Agriculture	1%	3%	5%
B_Mining	3%	1%	1%
C_Food Manufact...	4%	3%	4%
C_Non-food Man...	8%	8%	10%
D_Energy	10%	1%	1%
E_Water, waste	1%	0%	0%
F_Construction	20%	10%	8%
G_Trade	31%	36%	37%
H_Logistics	3%	4%	4%
I_Hospitality	8%	10%	12%
J_IT, telecom	2%	4%	2%
L_Real estate	3%	1%	1%
MNS_Consulting, ...	4%	13%	9%
Other	3%	5%	5%
Total	**100%**	**100%**	**100%**



Viability categories: Excellent Good Medium Poor Non-viable Unrated

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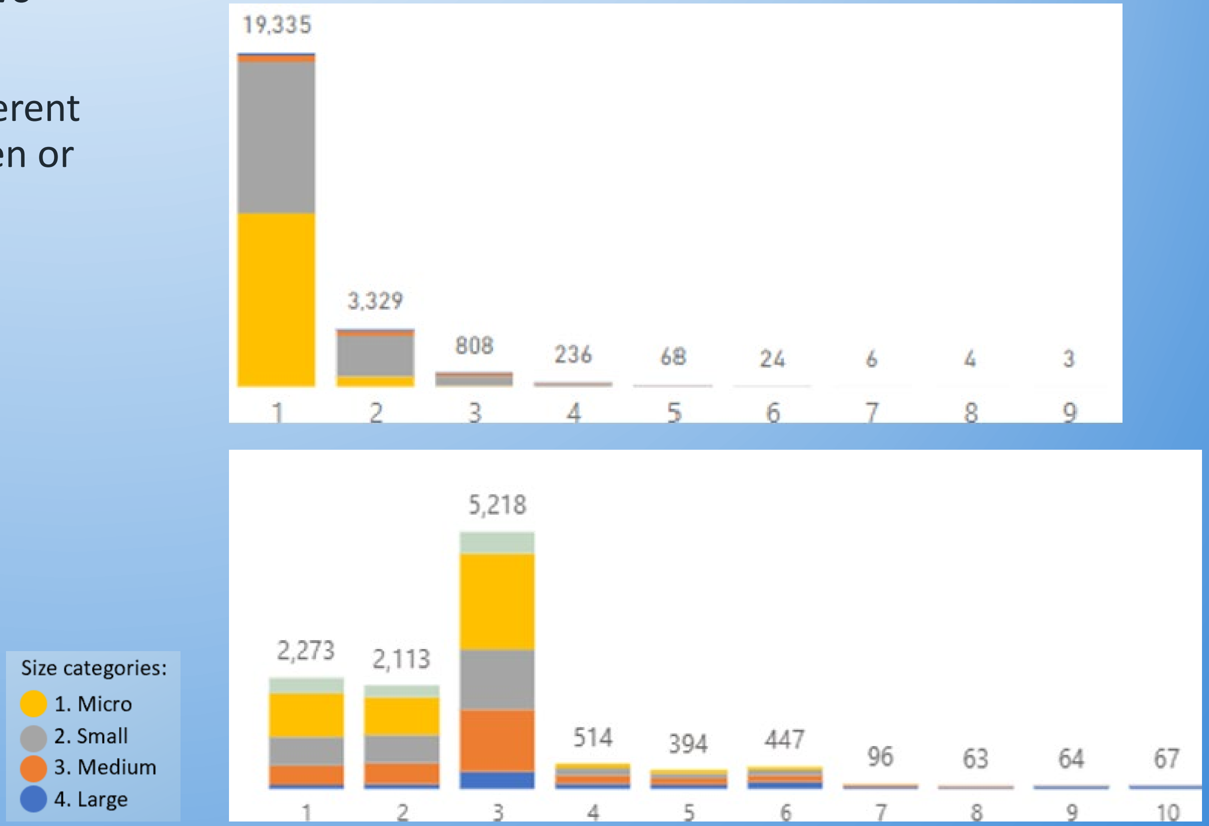
Borrowers and banks

Borrowers' relationship with banks

- In most cases, borrowers have relationship with one or two banks
- In one case, 47% of borrowers have loans from three different banks. Furthermore, 67 borrowers maintain loans from ten or more banks
- **Main reasons for differences:**
  - National habits
  - Influence from neighbor countries
- **Consequences:**
  - Multiple bank lending can increase systemic risks
  - These cases are more difficult to analyze – need good credit registry

Two different borrowing patterns – country X and Y
(number of borrowers (vertical) and banks (horizontal))



Many thanks for your attention!

FinSAC's web site: http://www.worldbank.org/en/programs/financial-sector-advisory-center#1

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