# Financial inclusion, market concentration and underwriting performance: Empirical evidence from EE and FSU countries

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# Table of contents

## 01 Purpose statement

The Gap: Inclusion – (De)stability

## 02 Hypothesis

Financial inclusion, market concentration and (non-life) underwriting performance

## 03 Objectives

- To capture effects of FI on insurance industry
- To capture mediating effects of FI on the relationship between market concentration and performance
- To provide policy recommedations: trade-off or synergy

## 04 Data and Methodology

- Panel data analysis (FE IV 2SLS)
- 28 EE and FSU countries
- Period 2010-2021

## 05 Analysis

**FI measures:** Account ownership; Saving rate; Borrowing rate
**Concentration measure**: HHI
**Underwriting performance:** (Aggregate) Loss ratio

## 06 Conclusions

- Trade-off: Higher FI -> Deteriorated performance
- Synergy: Higher FI -> Improved performance
- Market concentration: Reinforcing positive or negative effects

# Introduction

- Account ownership rates in developed world are satisfactory, financial inclusion in developing countries across Europe and Central Asia is concerning
- EE and FSU countries are underdeveloped due to the low insurance culture shaped by the former state-led insurance system
- Open but noncompetitive

# What has been done

## Financial inclusion and financial stability:

- Financial inclusion provides **stabilising benefits** to the financial system by instigating deeper and more diversified financial systems, providing greater resilience in normal and crisis periods, as well as reducing bank exposures
- **Trade-off** between financial inclusion and financial stability. The trade-off would probably materialise via increasing risk-taking behavior of less sophisticated low-income individuals

## Mediating effects of competitiveness on inclusion-stability nexus:

- Greater concentration -> Greater access -> Stable financial institutions
- Lower concentration -> Greater access -> Fragile financial instituions

## The effects of market concentration on insurer stability and performance:

- Competition-fragility view
- Competition-stability view
- Non-linear relationship between market concentration and insurer stability

# Current situation & problems

## Financial inclusion affects financial stability

Trade-off vs. Synergy (depends on product type)

**01**

### Empirical question

Destabilising effects (credit inclusion)
Stabilising effects (saving, payment inclusion)

**02**

### Focus

Largely on banks

**03**

### Neglected interaction

Concentration * Inclusion
-> Performance

## Problems

# Study objectives

## Effects on insurance industry

Diversification benefits or deteriorated portfolio

## Mediating effects

Market competition reinforces/limits positive/negative effects of financial inclusion

## Policy recommendations

If synergies arise -> reduce supply and demand deficiencies
If trade-off arises -> policies aimed for more inclusive markets accompanied with careful regulatory approach

# The narrative

<table>
<tr><th colspan="2">Existing arguments</th><th>Our narrative</th></tr>
<tr><th>FI - related arguments</th><th>Relevant arguments</th><td rowspan="4"></td></tr>
<tr><td rowspan="3"><ul><li>Adverse selection and moral hazard</li><li>Greater financial inclusion -> income constrained (low-risk/high-risk) insurance customers</li><li>Self-selection mechanism</li></ul></td><th>Diversification Argument</th></tr>
<tr><td>Banks with larger pool of customers tend to be more stable in inclusive financial sector by reducing the costs and risks</td></tr>
<tr><th>Competition Argument</th></tr>
<tr><td></td><td>The SCP hypothesis</td></tr>
</table>

- If low-risk customers predominate, insurers may improve their performance via greater diversification through larger customer base.
- If high-risk customers predominate the low-income pool, the increase in financial inclusion may result in unaffected or deteriorated insurer's profitability.
- Stronger competition -> Affordable insurance -> Greater access -> Improved performance through diversification

# Two hypotheses

## Hypothesis 1

A higher level of financial inclusion improves the underwriting performance of non-life insurers through reduced loss ratios

## Hypothesis 2

The positive effect in H1 on underwriting performance is expected to be lower in more concentrated insurance markets, where insurers have the power to impose supply restrictions or raise rates

# Data and Methodology

| Data sample | Dependent vars | | | Controls |
|---|---|---|---|---|
| 28 European countries 2010-2021 | **Dependent:** Loss ratio (LR)<br>**Key vars:** Account ownership; Saving rate; Borrowing rate (FINDEX data)<br>**Interaction with HHI** | | | Economic development; Population; Financial development; Openness; Inflation; Governance |
| **Methods** | **FINDEX Data** | **Assumption on HHI** | **Interaction term** | **Instruments** |
| IV-2SLS (fixed effects) | 2011; 2014; 2017; 2021 | Exogenous | Excluded | Agriculture, forestry, and fishing, value added (% of GDP) (AGRIVA); Population per squared kilometer of land area (POPDEN) |
| | | | Included | AGRIVA, AGRIVA^2, AGRIVA*HHI, POPDEN, POPDEN^2, POPDEN*HHI, AGRIVA*POPDEN |
| **Robustness checks:** Reduced sample (excluded countries with total premium reported)<br>Yearly data from IMF Financial Access Survey (FAS) | | | | |

# Analysis of the results

Baseline estimation (Account ownership)

| VARIABLES | (1) Model | (2) Model | (3) Model | (4) Model | (5) Model | (6) Model | (7) Model | (8) Model |
|---|---|---|---|---|---|---|---|---|
| AO | -0.045 | -0.845* | -0.233 | -0.835** | -0.612* | -1.240*** | -0.752* | -1.328*** |
| | (-0.099) | (-1.649) | (-0.562) | (-2.324) | (-1.715) | (-3.155) | (-1.951) | (-3.164) |
| AO*HHI | | 0.001 | | 0.001 | | 0.001** | | 0.001*** |
| | | (1.190) | | (1.470) | | (2.554) | | (2.637) |
| HHI | -0.005 | -0.019 | -0.004 | -0.018 | -0.002 | -0.024** | -0.001 | -0.025** |
| | (-0.920) | (-1.203) | (-0.685) | (-1.435) | (-0.420) | (-2.305) | (-0.226) | (-2.442) |
| EDEV | -1.125 | -16.842 | -5.739 | -14.976 | -11.626 | -21.830 | -12.898 | -23.153 |
| | (-0.055) | (-0.667) | (-0.320) | (-0.777) | (-0.622) | (-0.916) | (-0.551) | (-0.891) |
| POP | -13.205 | -60.895 | -26.264 | -52.003 | -50.332* | -80.200* | -59.695 | -87.346* |
| | (-0.375) | (-1.079) | (-1.142) | (-1.340) | (-1.784) | (-1.646) | (-1.534) | (-1.767) |
| FDEV | -0.033 | 0.004 | -0.013 | 0.001 | 0.022 | 0.017 | 0.024 | 0.014 |
| | (-0.409) | (0.076) | (-0.179) | (0.029) | (0.333) | (0.371) | (0.379) | (0.241) |
| OPEN | | | 0.001 | -0.079 | -0.059 | -0.145 | -0.078 | -0.155 |
| | | | (0.011) | (-0.610) | (-0.496) | (-0.973) | (-0.542) | (-0.989) |
| INFL | | | | | -0.101 | 0.105 | -0.070 | 0.143 |
| | | | | | (-1.586) | (0.900) | (-1.127) | (0.881) |
| GOV | | | | | | | 0.494 | 0.417 |
| | | | | | | | (0.732) | (0.479) |
| Observations | 89 | 89 | 89 | 89 | 87 | 87 | 83 | 83 |
| Centered R-squared | 0.249 | 0.268 | 0.331 | 0.283 | 0.282 | 0.085 | 0.234 | 0.054 |
| # of Countries | 27 | 27 | 27 | 27 | 26 | 26 | 25 | 25 |
| F-statistic | 3.802 | 3.406 | 3.405 | 3.921 | 7.874 | 4.106 | 4.049 | 3.708 |
| Hansen J-statistics (p-value) | 0.147 | 0.609 | 0.0629 | 0.585 | 0.145 | 0.909 | 0.0990 | 0.890 |
| SW Chi-sq (p-value) (end. term) | 0.2731 | 0.3079 | 0.1440 | 0.0683 | 0.1854 | 0.5066 | 0.1843 | 0.0508 |
| SW Chi-sq (p-value) (end. inter. term) | | 0.0036 | | 0 | | 0.0222 | | 0.0017 |
| KP LM stat. (p-value) | 0.4366 | 0.6846 | 0.4181 | 0.5546 | 0.5330 | 0.3751 | 0.5167 | 0.1758 |

# Discussion

1. Stabilising effects of financial inclusion
2. Competition reinforces positive effects of financial inclusion on performance
3. Support to the structure-conduct-performance (SCP) hypothesis

# Conclusions

## Effects on insurance industry

financial inclusion enlarges insurers' customer base and **diversification** capacity

## Mediating effects

stronger competition causes price reductions and affordable insurance products **encouraging greater access** of low-income customers

## Policy recommendations

**reduce demand-side deficiencies**: insurance education and insurance culture

**reduce supply-side deficiencies**: adapted insurance contracts, insurance trust, careful consolidation

# THANK YOU!