



WP/21/28

IMF Working Paper

Cyclical Patterns of Systemic Risk Metrics: Cross-Country Analysis

by Plamen Iossifov and Tomas Dutra Schmidt

***IMF Working Papers* describe research in progress by the author(s) and are published to elicit comments and to encourage debate.** The views expressed in IMF Working Papers are those of the author(s) and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

I N T E R N A T I O N A L M O N E T A R Y F U N D

IMF Working Paper

Strategy, Policy, and Review Department

Cyclical Patterns of Systemic Risk Metrics: Cross-Country Analysis ¹**Prepared by Plamen Iossifov and Tomas Dutra Schmidt**

Authorized for distribution by Martin Čihák

February 2021

IMF Working Papers describe research in progress by the author(s) and are published to elicit comments and to encourage debate. The views expressed in IMF Working Papers are those of the author(s) and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

Abstract

We analyze a range of macrofinancial indicators to extract signals about cyclical systemic risk across 107 economies over 1995–2020. We construct composite indices of underlying liquidity, solvency and mispricing risks and analyze their patterns over the financial cycle. We find that liquidity and solvency risk indicators tend to be counter-cyclical, whereas mispricing risk ones are procyclical, and they all lead the credit cycle. Our results lend support to high-level accounts that risks were underestimated by stress indicators in the run-up to the 2008 global financial crisis. The policy implications of conflicting risk signals would depend on the phase of the credit cycle.

JEL Classification Numbers: E44; E51.

Keywords: systemic risk; credit cycle.

Author's E-Mail Address: pioissifov@imf.org.

¹ The work on this project was overseen by Vikram Haksar, Martin Čihák and Fabián Valencia, who provided valuable guidance and comments. The paper also benefited from feedback from participants in internal Fund seminars. Tomas Dutra Schmidt worked at the IMF when the work on the project was carried out. Harry Zhao and Yao Weijia were instrumental in the data gathering and organization phase of the project. All remaining errors are our own.

TABLE OF CONTENTS

I. Overview	4
II. Analytical Framework	6
III. Data Description and Index Construction	9
IV. Empirical Analysis	17
V. Interpretation of Findings	21
VI. Conclusion	22
References	24

APPENDICES

I. Definitions of Macrofinancial Indicators used in Analysis	31
II. Definitions of Macrofinancial Indicators Derived from Sectoral Accounts	33
III. Literature Review of Empirical Studies of Financial Crises	35
IV. Additional Statistical Output	36

FIGURES

1. Sample Distribution of Cross-Correlograms of Preferred Economy-Wide Risk Indices and Real Growth of Private Debt	18
2. Evolution of Preferred Economy-Wide Risk Indices around Systemic Banking Crises	20

TABLES

1. Initial Set of Indicators for Construction of Aggregate Risk Metrics	11
2. Cronbach's Alpha Analysis of Narrowed-Down Set of Risk Indicators	14
3. Preferred Set of Indicators for Construction of Aggregate Risk Metrics	16

BOXES

1. Denmark: Systemic Risk Patterns over a Full Credit Cycle	19
---	--------------------

APPENDIX FIGURES

1. Sample Distribution of Cross-Correlograms of Risk Metrics from Narrowed-Down List and Real Growth of Private Debt	36
2. Evolution of Real Growth of Private Debt around Systemic Banking Crises	40

APPENDIX TABLES

1. Cronbach's Alpha Analysis of Initial Set of Indicators of Economy-Wide Risks	39
---	--------------------