



# Safeguarding Financial Inclusion During Crises

## Lessons for Policymaking

December 2025 • Camila Quevedo-Vega, Jorge M. Uribe, and Sai K. Kumaraswamy

## Acknowledgments

This working paper was prepared under the overall direction of Haocong Ren (Pillar Lead, CGAP). The authors are deeply grateful to Sophie Sirtaine (Chief Executive Officer, CGAP), Tatiana Alonso (CGAP), William Cook (CGAP), and Erik Feyen (World Bank) for their extensive input and feedback. They also are thankful to the members of the ad hoc technical advisory group for their valuable insight into the survey design and empirical findings: Antonio Dicanio (Single Resolution Board, European Union), Andrew Metrick (Yale Program on Financial Stability), Luis Ortiz (Executive Secretariat of the Central American Monetary Council (SECMCA)), Rhodora M. Brazil-De Vera (Bangko Sentral ng Pilipinas), and authorities from the Financial Stability Group of SECMCA (Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and the Dominican Republic). Special thanks go to the central banks of Colombia, Costa Rica, Greece, Honduras, Hungary, Latvia, Mexico, Mongolia, Nicaragua, Panama, Philippines, South Africa, and Thailand for their valuable participation in the survey and for facilitating a consolidated response from the financial safety net within their respective jurisdictions.

The authors appreciate the thoughtful comments and suggestions of peer reviewers Ezio Caruso (World Bank), Michal Dvorak (European Commission), Peter Mugisa (International Monetary Fund), and Arisha Salman (CGAP). They also thank Simrin Makhija and Jahda Swanborough for communications and editorial support.

## CGAP

1818 H Street, NW, MSN F3K-306  
Washington, DC 20433  
Website: [www.cgap.org](http://www.cgap.org)  
Email: [cgap@worldbank.org](mailto:cgap@worldbank.org)  
Telephone: +1 202 473 9594

Cover photo by iStock.com/goir.

© CGAP/World Bank, 2025.

## Rights and Permissions

This work is available under the Creative Commons Attribution 4.0 International Public License (<https://creativecommons.org/licenses/by/4.0/>). Under the Creative Commons Attribution license, you are free to copy, distribute, transmit, and adapt this work, including for commercial purposes, under the following conditions:

**Attribution**—Cite the work as follows: Quevedo-Vega, Camila, Jorge M. Uribe, and Sai K. Kumaraswamy. 2025. “Safeguarding Financial Inclusion During Crises: Lessons for Policymaking” Working Paper. Washington, D.C.: CGAP. <https://www.cgap.org/research/safeguarding-financial-inclusion-during-crises-lessons-for-policymaking>

**Translations**—If you create a translation of this work, add the following disclaimer along with the attribution: This translation was not created by CGAP/World Bank and should not be considered an official translation. CGAP/World Bank shall not be liable for any content or error in this translation.

**Adaptations**—If you create an adaptation of this work, please add the following disclaimer along with the attribution: This is an adaptation of an original work by CGAP/World Bank. Views and opinions expressed in the adaptation are the sole responsibility of the author or authors of the adaptation and are not endorsed by CGAP/World Bank.

All queries on rights and licenses should be addressed to: CGAP Publications, 1818 H Street, NW, MSN F3K-306, Washington, DC 20433 USA; e-mail: [cgap@worldbank.org](mailto:cgap@worldbank.org).

# Contents

<b>Executive Summary</b>	<b>1</b>
SECTION 1: <b>Introduction</b>	<b>3</b>
SECTION 2: <b>Understanding Systemic Crises: Policy Toolkit</b>	<b>4</b>
SECTION 3: <b>The Toolkit and Financial Inclusion: Three Key Insights for Authorities</b>	<b>11</b>
Insight 1: When strategically applied, some tools can help inclusion.	<b>12</b>
Insight 2: Broad-based policies often fail to reach the most excluded.	<b>20</b>
Insight 3: Targeted measures go beyond conventional responses.	<b>25</b>
SECTION 4: <b>Conclusions</b>	<b>34</b>
A. Preparedness	<b>34</b>
B. Response	<b>36</b>
C. Recovery and Mitigation	<b>36</b>
<b>Appendix</b>	<b>37</b>
A.1. Empirically Testing the Effects of the Available Toolkit on Financial Inclusion	<b>37</b>
A.2. Country Deep Dives: Comparing Similar Tools under Various Episodes	<b>64</b>
A.3. Survey Technical Note	<b>69</b>
<b>References</b>	<b>71</b>

## Abbreviations

AFC	Asian Financial Crisis, 1997–1998
FAS	Financial Access Survey, International Monetary Fund
FSNA	financial safety net authorities
GDP	gross domestic product
GFC	Global Financial Crisis, 2008–2009
IMF	International Monetary Fund
MFI	microfinance institution
MSME	micro-, small-, and medium-sized enterprises
SCM	synthetic control method

# Executive Summary

**S**YSTEMIC CRISES HAVE WELL-KNOWN impacts on financial stability and economic growth, but they can also reverse the hard-won gains of financial inclusion. The effects of crises are especially severe among vulnerable households and micro-, small-, and medium-sized enterprises (MSME) that have limited access to formal financing and few assets to fall back on, thus eroding their ability to absorb or even recover from shocks.

To mitigate impact, financial safety net authorities (FSNA) have developed a comprehensive toolkit that combines financial sector-specific interventions with broader macroeconomic stabilization measures. The tools are designed not only to support economic recovery but also to prevent emergence of future crises. Predictably, once a crisis occurs, instrument selection aims to restore financial stability, in line with authorities' core mandate, frequently overlooking financial inclusion, particularly when it is most critical.

This Working Paper challenges the prevailing notion that the trade-off between inclusion and stability is inevitable when in the throes of resolving systemic crises. In fact, financial stability and inclusion can—and should—be addressed concurrently. Such alignment, however, does not occur fortuitously. To achieve it, FSNA should deliberately integrate inclusion considerations into their crisis response and design interventions tailored to the specific needs of vulnerable populations.

This Working Paper calls for a determined calibration of the policy mix to ensure that it can support those most affected following crises events. From an

empirical analysis of 58 countries, microdata from more than 300,000 individuals, surveys of various central banks, and case studies from Indonesia, Lebanon, the Philippines, and Thailand, this Working Paper offers guidance to FSNA when integrating inclusion into crisis preparedness, response, and recovery efforts. Key insights are summarized as follows:

- **Some tools and their combinations, once strategically applied, can positively affect financial inclusion.** For example, capital injections combined with lending programs or restructuring in the post-crisis phase, can be leveraged to support financial inclusion. While these interventions may not uniformly affect financial inclusion outcomes, they nevertheless can minimize the impact of crises on the vulnerable while authorities are acting to restore stability. Some of these measures, however, may prompt moral hazard and demand increased fiscal space for their credible implementation. Moreover, determining the ideal policy mix will be challenging and will require careful assessment of country specifics.
- **Responding before a crisis unfolds will enable authorities to contain financial distress without undermining inclusion goals.** The timing of intervention, therefore, is as important as the intervention itself. For instance, there are small or even negative effects when liability and blanket guarantees are combined with rules such as bank holidays. However, when these tools are deployed proactively in the case of milder events (e.g., prior to a full-blown crisis and at a time when authorities can contain financial distress), their effects can become significantly positive.

- **Broad-based macroeconomic or sectoral policies are generally ineffective in improving financial inclusion among the most excluded populations.**

Excluded individuals are difficult to reach, even when applying the most effective interventions. It therefore emphasizes the need for purposeful policymaking, not only during the immediate crisis-response phase but also throughout the consolidation period, so that financial access for the most vulnerable is not only preserved but also actively expanded.

FSNAs have more power and more responsibility than they may realize. They have the responsibility, capability and means to apply the tools at their disposal to support inclusion, as well as the ability to adapt and innovate. As such, it is possible for them to set the course with regard to systemic crises in ways that will minimize their exclusionary impact. The following insights aim to guide their efforts:

- **Consolidation strategies must specifically account for the distributional consequences of crisis response and the need for targeted support.** The often-inevitable short-term pain of macroeconomic consolidation must be offset with interventions that will cushion impact on the vulnerable. This should include traditional cash-transfer programs, liquidity support for microfinance institutions, and credit for MSMEs.
- **Some crisis events require innovative, context-specific interventions beyond the traditional toolkit.** Responses that are delayed or narrow in scope will reverse years of progress in terms of financial inclusion. In certain cases, and in order to sustain the credit flow to those who need it most, ensuring the operational resilience of microfinance institutions can be more cost-effective than providing broad cash transfers. During the COVID-19 pandemic, for example, authorities provided innovative solutions to ensure that MSMEs and households were able to keep afloat. However, introduction of clear exit clauses, transparent timelines, and emphasis on the extraordinary nature of such measures are essential to contain fiscal costs, limit moral hazard, and encourage market discipline.
- **Granular and timely data are critical for interventions to be effective.** Access to real-time and disaggregated information on households and enterprises will generate well-targeted interventions. With such knowledge at hand, the risk of exclusionary outcomes will be reduced and crisis management efforts will be enhanced.

## SECTION 1

# Introduction

**S**YSTEMIC CRISES POSE PRESSING threats and jeopardize economic growth and prosperity. These recurrent events disproportionately affect vulnerable households as well as micro-, small-, and medium-sized enterprises (MSME), all of whose limited financial assets and restricted access to finance hinder their ability to cope with external shocks and manage uncertainty. Such events not only undermine financial stability; they also can reverse the hard-won gains of financial inclusion as well as deepen inequality.

In typical response, financial safety-net authorities (FSNA) draw on a comprehensive toolkit—one which, depending on their objectives, may include macroeconomic stabilization policies and financial sector-specific interventions. The former are introduced to smooth out the business cycle and set the stage for steady recovery, while the latter typically address issues within the financial sector and limit the spread of financial distress throughout the broader economy. These tools include recapitalizing financial institutions, providing emergency liquidity support, implementing government guarantees to enhance confidence, restructuring insolvent firms, managing distressed assets, and temporarily adjusting regulatory requirements, among others.

Although crisis response aims to restore stability and confidence, the implications on financial inclusion are not systematically assessed and continue to remain poorly understood. As such, the intention of this Working Paper is to fill an important knowledge gap;

that is, despite the fact that there is much literature on the crisis-response toolkit in terms of its impact on financial stability, its implications for financial inclusion, however, remain largely unexamined.

This Working Paper represents an early effort in this area, showcasing the fact that a crisis response to restore financial stability can be effectively aligned with efforts to maintain financial inclusion. Drawing on an empirical analysis of 58 countries, microdata from more than 300,000 individuals, surveys targeting central banks, and real-world case studies from Indonesia, Lebanon, the Philippines, and Thailand, this document provides evidence that inclusion, indeed, can be safeguarded and strengthened without compromising financial stability. This will not occur by chance; it will require authorities to act with intention and in a coordinated manner.

The rest of the document is structured as follows: Section 2 defines the meaning of systemic crises as well as discusses the tools at the disposal of authorities to mitigate them. Section 3 applies quantitative and qualitative analyses, representing three insights, to assist FSNA in their efforts to integrate inclusion into crisis response. Section 4 provides an overview of policy considerations to embed financial inclusion into crisis preparedness, response, and recovery efforts.

## SECTION 2

# Understanding Systemic Crises: Policy Toolkit

**W**HILE THERE IS NO SINGLE definition of systemic crisis, there is, however, consensus around its features, archetypes, and causes—most definitions of which highlight the contagion and interconnectedness effects. These can become sufficiently severe as to affect any number of financial institutions, endangering the stability of the financial system and thus impacting the broader economy. Systemic crises have been categorized into three archetypes: banking, debt, and currency crises, and their multiple combinations, including stand-alone, twin, or triplet crises. Such episodes often reflect concurrent and multiple triggers such as macroeconomic imbalances,<sup>1</sup> sudden stops,<sup>2</sup>

behavioral factors,<sup>3</sup> credit booms,<sup>4</sup> asset price bubbles,<sup>5</sup> and policy paralysis.<sup>6</sup>

The task of selecting the optimal tools to contain and resolve systemic crises is often dependent on the financial safety net—a term referring to a set of institutions and mechanisms that are meant to safeguard the financial system by regulating and supervising financial institutions, resolving failing firms, providing emergency liquidity to the market as lender of last resort, and protecting depositors by way of deposit insurance (BIS 2022). An optimal response is selected within the financial safety net from a broad policy arsenal, taking into consideration their mandate, the

- 
- 1 Fiscal imbalances, current account deficits, and unsustainable public debt have been identified as the critical factors behind the 2008-2009 Global Financial Crisis (Obstfeld and Rogoff 2009).
  - 2 Amplification mechanisms (e.g., shocks to input prices and the real exchange rate in countries with relatively small tradable sectors; low productivity; and large current account deficits) play an important role in exacerbating crises. Under this framework, crisis episodes in the late 1990s resulted from a reversal of capital flows triggered by increases in interest rates or changes in commodity prices (Calvo, Izquierdo, and Mejia 2008; Milesi-Ferreti and Tille 2011).
  - 3 Sovereign defaults and bank runs are common behavioral factors during systemic crises that have adverse economic consequences, including currency clashes (Reinhart and Rogoff 2009). Bank runs exemplify a coordination problem whereby a self-fulfilling prophecy encourages further cash withdrawals and increases the probability of default, both of which lead to liquidity, solvency, and reputational issues.
  - 4 Crises typically have witnessed a period of greater risk-taking through rapid credit expansion, followed by a bust in credit markets and sharp corrections in asset prices. Buoyant economic growth, a surge in financial flows, ample global liquidity, accommodative monetary policies, bank capitalization, and financial liberalization are among the drivers behind the excessive leverage of borrowers (Kaminsky and Reinhart 1999; Gourinchas, Valdes, and Landerretche 2001; Mendoza and Terrones 2008, 2012; Lansing 2008; Ioannidou, Ongena, and Peydró 2009; Ciccarelli, Maddaloni and Peydró 2010; De Nicolo et al. 2010; Dell’Ariccia, Laeven, and Marquez 2010; Magud, Reinhart, and Vesperoni 2012; Hirata et al. 2013; and Dell’Ariccia, Igan, Laeven, and Tong 2014).
  - 5 Blanchard and Watson 1982; Kindleberger 1986; Garber 2001; Evanoff, Kaufman, and Malliaris 2012; and Scherbina 2013 conclude that sharp increases in asset prices often precede a financial crisis. Microeconomic distortions, mispricing, or behavioral patterns, including asset fire sales, are underlying factors behind asset bubbles. A classic example is a flight-to-quality event in which premiums to safety lead to financial turmoil.
  - 6 Institutional weaknesses typically aggravate the crisis and complicate crisis resolution.

crisis phase, its triggers, and the overarching goals (e.g., reducing economic losses or minimizing fiscal costs).

To address systemic crises, financial safety-net authorities (FSNAs) usually respond with macroeconomic stabilization measures and financial sector-specific interventions. Broadly speaking, macroeconomic stabilization measures relate to countercyclical fiscal and monetary policies<sup>7</sup> to smooth out the business cycle and limit extreme fluctuations in aggregate demand and supply. Moreover, these measures tend to help restore trust in the economy as well as set the stage for steady recovery through fiscal and monetary actions aimed at managing price stability, exchange rate stability, and debt sustainability. In contrast, financial sector-specific measures are designed to address issues within troubled financial institutions and the financial system. In other words, authorities leverage monetary, fiscal, and financial sector policies to address balance sheet issues and stabilize financial conditions so as to, limit the spread of financial distress throughout the broader economy.

Several financial sector-specific interventions have been introduced in previous systemic crises, and to objectively identify and categorize them, Metrick and Schmelzing (2021) is considered as one of the most comprehensive taxonomies of policy responses in past systemic crises. They integrate the efforts of Reinhart and Rogoff 2009; Schularick and Taylor 2012; Jorda et al. 2017; Laeven and Valencia 2020; and Baron, Vermer, and Xiong 2021. Their dataset classifies more than 20 interventions into six broad categories, targeting specific components of a financial institution's balance sheet (Figure 1).

**(i) Guarantees** refer to government-backed assurances protecting certain liabilities or assets. The liability side includes account guarantees through new deposit insurance or changes into an existing deposit insurance,

other liability guarantees, and blanket guarantees. Asset guarantees have become more common since the 2008–2009 Global Financial Crisis (GFC) and, more recently, during the Covid-19 pandemic, despite liability or blanket guarantees having been previously used more often. Almost all interventions in this empirical exercise correspond to liability and blanket guarantees rather than asset guarantees.

**(ii) Lending** involves interventions that provide liquidity assistance to the wholesale funding market as well as to financial institutions in distress. More specifically, this category provides broad-based emergency liquidity to the entire or a major section of the banking sector, as well as ad hoc emergency liquidity and market liquidity assistance to specific intermediaries.

**(iii) Capital injections** refer to when a government directly invests in financial institutions—typically through equity ownership—targeting individual (ad hoc) or multiple institutions (broad-based). Metrick and Schmelzing (2021) include in this category broad-based and ad hoc capital injections through bailouts.

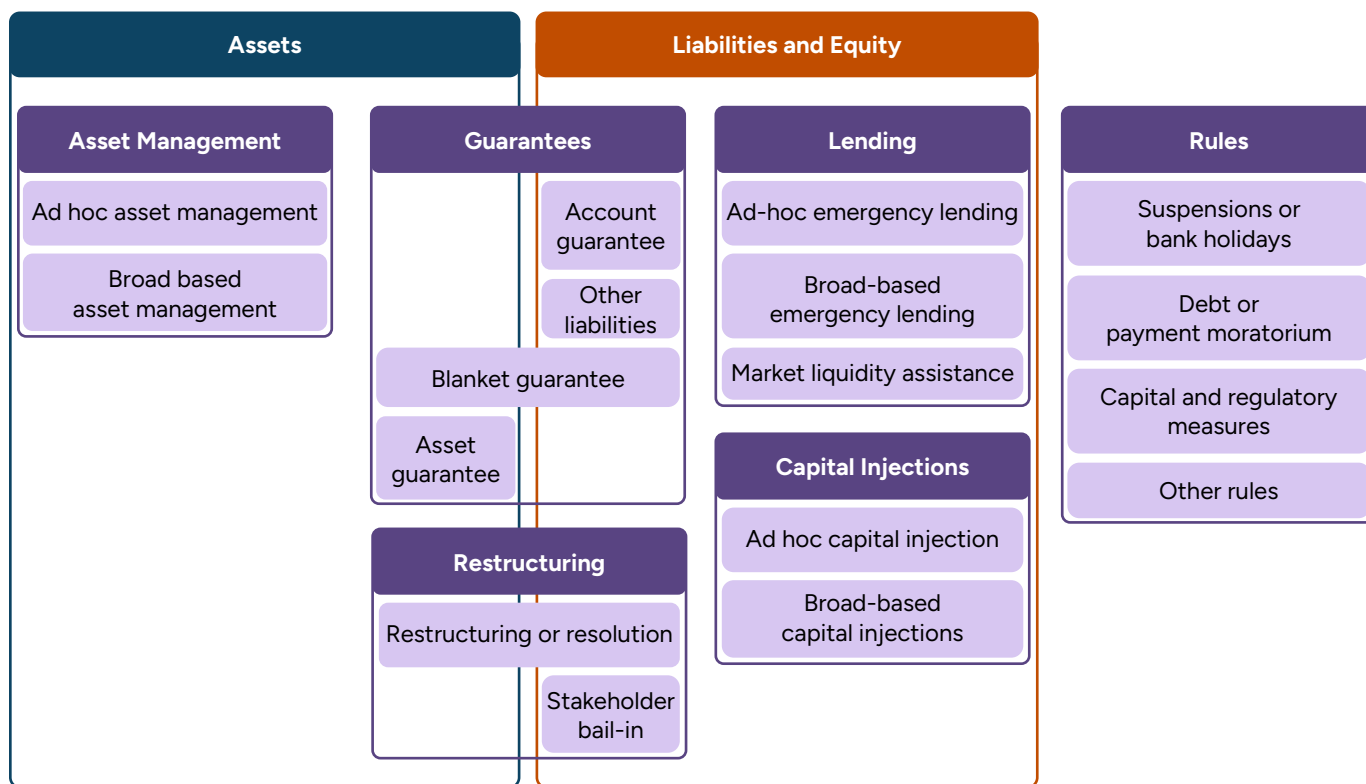
**(iv) Restructuring** encompasses strategies to reorganize, resolve, or liquidate troubled financial institutions. The process may be led by public authorities or involve private sector stakeholders to absorb losses by converting debt into equity or forfeiting assets, often in cases of insolvent institutions.

**(v) Asset management** interventions involve the authorities managing or transferring one part (ad hoc) or a major share (broad-based) of distressed financial institutions' assets to either specialized asset management vehicles or other public or private financial institutions.

---

<sup>7</sup> Countercyclical monetary and fiscal policies are implemented to provide stimulus to the economy during a recession or to cool down economic activity and inflation during a boom. While countercyclical monetary policy includes interest rate hikes and cuts, changes in reserve requirements, open market operations, and countercyclical fiscal policy comprise changes in government expenditure and tax cuts.

FIGURE 1. Overview of Financial-Specific Interventions Using a Balance Sheet View



Source: Authors, adapted from Metrick and Schmelzing (2021, p. 10).

Notes: Their dataset compiles 1,946 interventions spread over 911 crises in 143 countries from the Roman Empire to 2019. Major communication events, stress testing, and other interventions beyond these six categories are excluded from this analysis due to their comparatively low occurrence.

**(vi) Rules** refer to administrative measures and regulatory changes through market closures, bank holidays, suspension of convertibility, or relaxation of capital requirements or accounting rules. The dataset in this empirical analysis does not include forbearance and moratoria. These tools were intensively applied during the Covid-19 pandemic, an episode that is not covered in this taxonomy, and do not correspond to a systemic crisis. These, however, will be addressed separately in Section 3.

Instrument selection within these six categories often depends on the stage of the crisis. The most immediate intervention takes place during the **containment stage**, when authorities focus on keeping the system liquid, stabilizing bank liabilities, and restoring confidence in the system through three types of interventions: lending, liability guarantees, and rules (Figure 2). Examples include injecting liquidity into the wholesale

funding market, providing guarantees on deposits, and/or introducing administrative measures such as the temporary halting of depositor rights through bank holidays. At the **resolution stage**, a broad range of measures are taken to restructure the banks and reignite economic growth, leading to interventions on both sides of the balance-sheet through capital injections, restructuring, asset management, and asset guarantees (Figure 2). (Laeven and Valencia 2020, Metrick and Schmelzing 2021)

Policy choices have shifted over time. Since 2000, capital injections have been the most common tool, making up more than a quarter of all interventions. Guarantees have grown in importance over the past two decades, overtaking lending during the GFC. Apart from that peak, some measures, such as rules and asset management, have become less common since their prominence in the late 1990s. Bank holidays and

FIGURE 2. **Financial Sector-Specific Interventions by the Crisis Stage**

Category	Examples	Stage of the Crisis	
		Containment	Resolution
Guarantees	Deposit insurance Blanket guarantees	✓	✓
	Asset guarantees	✓	✓
Lending	Emergency lines to distressed institutions Liquidity assistance to wholesale-funding market	✓	
Capital Injections	Direct ownership		✓
Restructuring	Restructuring, resolution, liquidation Bail-in		✓
Asset Management	Designated Asset Management vehicles Partial or full intervention		✓
Rules	Stock market closures, bank holidays, suspension of convertibility, relaxing rules	✓	✓

Source: Authors, based on Metrick and Schmelzing (2021); Laeven and Valencia (2020).

deposit freezes have become rare, with the last major cases having taken place in Cyprus in 2011 (Figure 3).

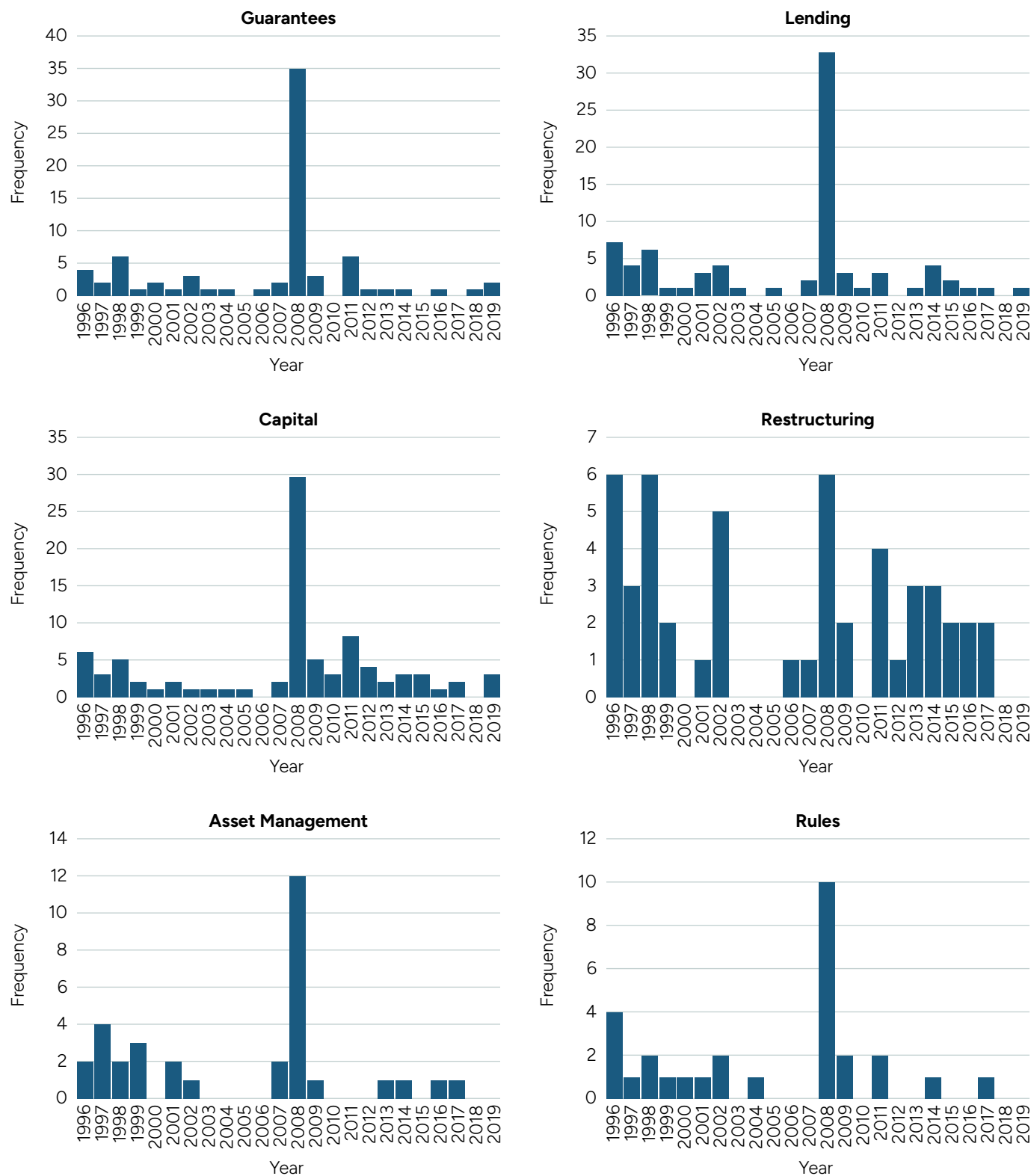
The choice of instruments is shaped by available policy space. The most common interventions entail direct fiscal costs and require close coordination across fiscal, monetary, and exchange rate policies—the reason why high-income countries often implement capital injections and guarantees, the two comprising more than half of all interventions in these countries (Metrick and Schmelzing, 2021, p. 25). In contrast, lending and rules are common in low- and middle-income countries, accounting for almost two thirds of all interventions (Laeven and Valencia 2020 and Metrick and Schmelzing 2021) (Figure 4).

Policy space<sup>8</sup> also affects the credibility and feasibility of policy choices. For example, recapitalization represents the largest portion of fiscal expenses. Laeven and Valencia (2020, p. 19) report that the average government net recapitalization cost<sup>9</sup> was 6 percent of gross domestic product (GDP) across the countries in their sample, although in countries such as Indonesia, it reached 37.3 percent of GDP during the 1997 episode. Lending interventions as well as blanket guarantees require fiscal contingencies to be credible (Honohan and Klingebiel 2003; Laeven and Valencia 2020). Furthermore, large-scale lending programs can be constrained in fixed exchange rate regimes since authorities may need to simultaneously respond to

8 While policy space is often linked to fiscal space, its broader definition encompasses a country's capacity to effectively implement monetary, exchange rate, and structural policies to achieve desired objectives (Gaspar et al. 2016).

9 The net recapitalization cost reflects the sum after deducting recovery proceeds from the sale of assets.

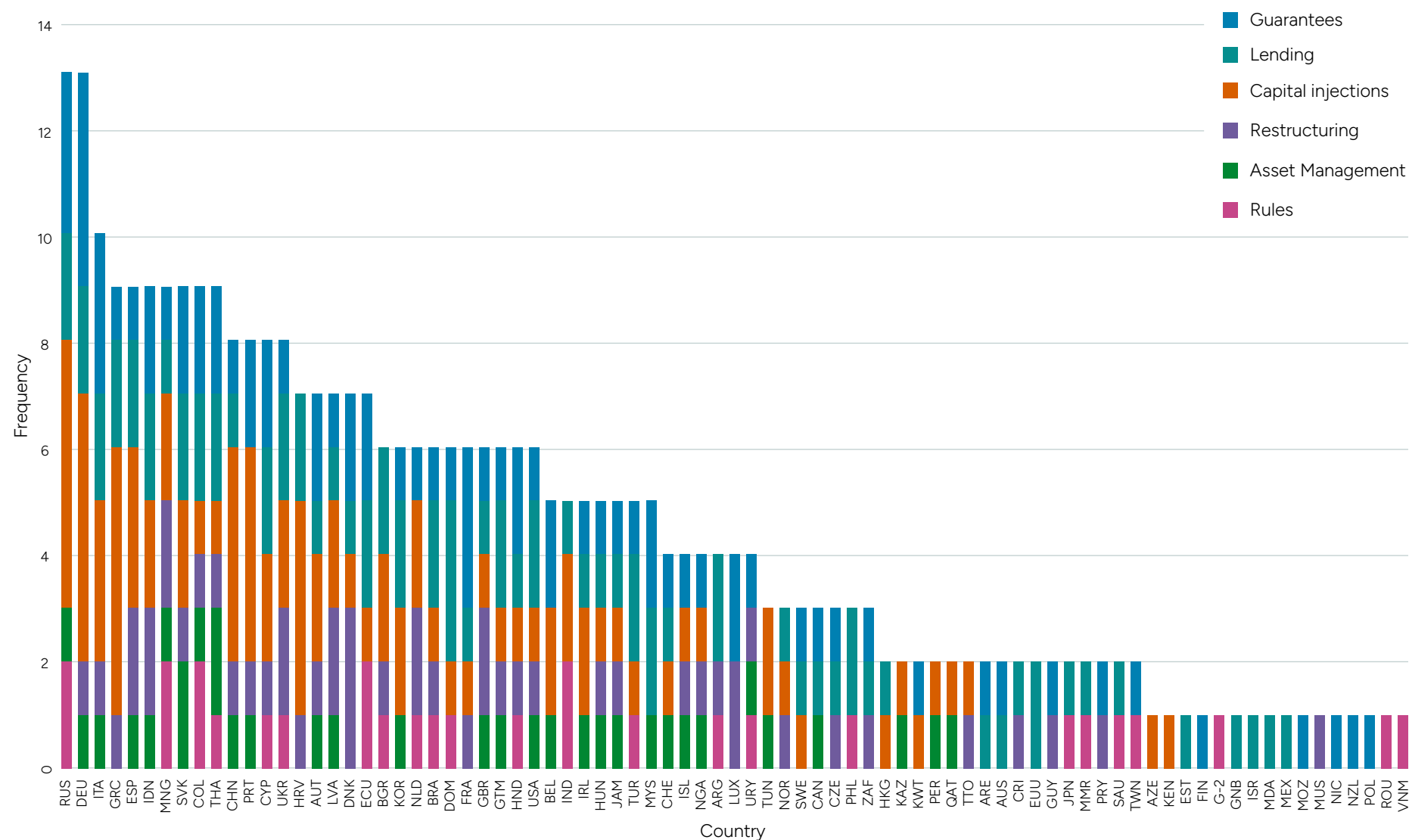
FIGURE 3. Frequency of Policy Responses, 1996–2019



Source: Authors, with data from Metrick and Schmelzing (2021).

Note: The figure presents the annual aggregate of interventions, categorized by tool, throughout the sample period.

FIGURE 4. Policy Interventions by Country, 1996–2019



Source: Authors, with data from Metrick and Schmelzing (2021).

Note: The figure reports episodes as well as interventions. For example, the Russian Federation reported frequent capital injections (green bar) equal to 6; this corresponds to not only ad hoc capital but also to broad-based capital injections that were recorded in 1999 (VTB Bank); 2001 (Sberbank); 2004 (Guta-Bank); 2008 (recapitalizations via VEB); 2014 (bank recapitalization program to counter international sanctions impact); and 2017 (PSB, Otkritie FC Bank, and B&N Bank).

currency attacks, sudden stops, and financial distress<sup>10</sup> (Metrick and Schmelzing 2021 p. 27).

Policy choices also are informed by consensus and global benchmarks in terms of the appropriateness and efficacy of specific instruments. While blanket guarantees were common in the past, deposit insurance is now the preferred mechanism, as it clearly defines the responsibilities of the authorities and helps to control the cost of resolving the failed banks (BIS 2022, IADI 2025). Following the GFC, it has been recognized, in general, that the aim of a resolution framework should be to reduce potential taxpayer costs from bank failures and to address the negative feedback loop between sovereign debt and bank exposures to public debt, thus reflecting a shift from the approach of a bailout to that of a bail-in (FSB 2024).

---

<sup>10</sup> In fixed exchange regimes, large-scale programs are limited, since monetary policy subordinates the needs of maintaining the peg and, thus, fiscal policy must be sufficiently flexible to mitigate the shock.

## SECTION 3

# The Toolkit and Financial Inclusion: Three Key Insights for Authorities

**D**URING TIMES OF CRISES, FSNAs prioritize restoring stability, sometimes overlooking financial inclusion. Their main aim is to return to the proper functioning of the financial system as mandated by legislation. While generally taken into consideration, financial inclusion, though generally practiced, falls beyond the statutory responsibilities of most FSNAs, including central banks (Figure 5 and Kirakul et al 2021<sup>11</sup>). Furthermore, it is generally considered that alleviating crises effects on the vulnerable should fall under the responsibility of the social protection agencies rather than be incorporated into financial policy responses.

The literature on crises and inclusion often focuses on the interaction of “financial stability” and “inclusion.”<sup>12</sup> It only identifies optimal interventions to restore financial stability in distressed markets rather than examines their impact on secondary goals [Honohan and Klingebiel 2003, Veronesi and Zingales 2010,

Laeven 2010, Gropp et al. 2010, Philippon and Schnabl 2013, Laeven and Valencia 2013]. Furthermore, most studies tend to explore the effects of certain tools on the credit channel, representing only one of the various dimensions that can be applied to evaluate spillovers on inclusion [Bruno et al. 2017; Gambacorta and Murcia 2017; Takats and Temesvary 2019; Altavilla et al. 2020; Kirti et al. 2023, 2024].

This working paper challenges the prevailing notion that the trade-off between inclusion and stability is inevitable when resolving systemic crises. To this end, the existing toolkit for restoring financial stability is examined to establish whether it may also have an effect on financial inclusion. It is crucial to identify the tools that have proven effective in restoring financial stability and supporting inclusion so as to mitigate the uneven effects of crises on the vulnerable.

---

11 Kirakul et al (2020, Table 1, p. 5) report that financial stability is legally mandated in 24 of the 27 respondent jurisdictions. In contrast, financial inclusion is legally mandated in only 8 jurisdictions. Additionally, 13 countries undertake this function without explicit legal mandate, while 6 do not consider inclusion an institutional goal.

12 The consensus view is that wider access to financial services contributes to financial stability, conditional on the business cycle (Becker et al. 2020) and the institutional framework (Dell’Ariccia and Marquez 2006). Theoretically, a broader penetration from the liability and the asset sides leads to stabilizing effects resulting from risk diversification (Adasme et al. 2006; Hannig and Jansen 2010; GPMI 2012; Morgan and Pontines 2014; Brei et al. 2020; Han and Melecky 2017; López and Winkler 2019) and reduced information asymmetries (Banna et al. 2021; Yang and Masron 2024). However, beyond a certain threshold, increased inclusion may exacerbate instability following an inverted U-shaped pattern (Sebai et al. 2025) that appears to be mediated by institutional features such as the soundness of prudential oversight (Sahay et al. 2015). Synergies between stability and inclusion also have been vastly documented (Hannig and Jansen 2010; GPMI 2012; Sahay et al. 2015; Čihák et al. 2016; Han and Melecky 2017; Morgan and Pontines 2018; López and Winkler 2019; Brei et al. 2020; Wang and Luo 2022; Duan and Ni 2024; Vukovic et al. 2024; Yang and Masron 2024; Sebai et al. 2025).

FIGURE 5. Core Mandates of Central Banking



Source: Authors.

Note: The figure reports aggregated responses to Question 2: "Please indicate whether the following mandates and responsibilities align with your institution's statutory goal in legislation, are non-statutory but performed, or are not your institution's responsibility. The term mandates, responsibilities, goals and objectives are used interchangeably and refer to all statutory and non-statutory objectives of financial authorities." See Appendix 3.

Three practical insights are outlined for policymakers seeking to integrate inclusion into their crisis responses. Conclusions in this Working Paper are drawn from empirical and qualitative analyses described in the Introduction and detailed in the Appendix.

## Insight 1: Some tools and their combinations, once strategically applied, can positively affect financial inclusion.

Although financial sector-specific interventions are designed specifically to address systemic crises, FSNA's can consider financial inclusion as one of the complementary pillars of financial stability other than a competing priority. Synergies between the two policy goals will vitally depend upon recognizing that there is no need to reinvent the wheel. Instead, the tools that already are in place can well serve the dual interest of inclusion and stability.

Empirical findings suggest that some of the tools described in Section 2 and their combinations can positively affect financial inclusion. For example, a pairing of **lending** with **restructuring**, or implementing **capital injections** along with **rules**, will yield positive outcomes in terms of financial inclusion (Box 1 and Appendix A.1). Historically, such combinations often have been applied to restore financial stability by providing liquidity and preventing depositor run-offs and credit crunches, ultimately impacting financial inclusion outcomes. Moreover, a broader set of government interventions, including conventional and unconventional monetary policies as well as fiscal tools, may help to prevent market gridlock and sustain credit flows. These actions can stabilize not only the real and financial sectors but also simultaneously preserve financial inclusion.

## BOX 1. Cross-Country Evidence on Financial Sector-Specific Policies and Inclusion

The first set of empirical results in this Working Paper explores how policy responses to systemic crises can influence financial inclusion across a wide range of countries. Using a large and diverse dataset covering 58 countries from 2004 to 2019, the impact of six sector-specific interventions on people's access to and use of financial services is examined (e.g., having a bank account, using debit or credit cards, or being granted a loan).

To track financial inclusion at a country level, the outcome variables are retrieved from the Financial Access Survey of the International Monetary Fund. Focus rests on two main types of indicators: (i) access (including the number of bank branches, ATMs, and insurance providers); and (ii) usage (e.g., loans, deposits, and card ownership).<sup>1</sup> Control variables cover a broad range of country characteristics, including macroeconomic indicators, institutional quality, crisis intensity, and financial system features.

For the core analysis, a two-way fixed effects panel regression model is applied, which allows for tracking changes within each country over time while controlling for general trends and idiosyncratic fixed effects. Significantly, not only are the stand-alone tools examined but also the policy packages by using the available combinations of tools deployed during systemic crises and episodes of financial distress (Appendix A.1 provides a detailed description of the data, modelling strategy, and some caveats).

The key takeaway is that crisis interventions do not affect these outcomes uniformly; however, they can be designed or calibrated to support financial inclusion while FSNA's are restoring financial stability. Among the intervention categories, **capital injections**, combined with **lending** programs or **restructuring**, stood out as the most consistently beneficial to financial inclusion. The three were linked to large increases in household loans, total bank lending, and the number of people with bank accounts, debit cards, or ATM penetration (Table B1.1.)

Liability and blanket **guarantees** were associated with less positive—sometimes even negative—impacts on financial inclusion, particularly when paired with **rules** (e.g., bank holidays). Results show, however, that **liability guarantees** have a positive effect when implemented in milder episodes, where a full-blown crisis has not yet materialized but authorities have acted proactively to contain financial distress (referred to as “candidate crisis”) (Appendix A.1, Table A.4).

In such cases, **blanket guarantees** supported an increase in deposit activity, highlighting the importance of timing and context. While guarantees on the liability side help halt depositor run-offs, they also may lead banks to favor safer or more established borrowers. This highlights the need to prioritize financial inclusion early in the crisis response process—ideally before a crisis unfolds—so that policymakers are able to manage instability without undermining inclusion goals.

<sup>1</sup> While the health/well-being dimension of financial inclusion is crucial, measuring it remains in its early stages (OECD 2024). Accordingly, the analysis focuses on access and usage indicators, for which sufficient data over time and space allow for more reliable quantitative inferences.

BOX 1. **Cross-Country Evidence on Financial Sector-Specific Policies and Inclusion** (continued)

TABLE B1.1. **Summary of the Sign and Significance of the Effects of Policies and Their Interactions**

	USE								ACCESS				
	Dep others (% GDP)	Dep Accounts	Deposits (% GDP)	Dep. of House (% GDP)	Loans (% GDP)	Loans House (% GDP)	Credit Cards	Debit Cards	Insurance Corp.	Bank Branches/km2	Bank Branches/Pop	ATMs per 100,000 km2	ATMs per 100,000 Adults
Lending		+											
Capital				+	+	+				+			
Guarantees						-		-					
Restructuring				+			-	+	+				
Asset Management													
Rules			-										
Lending*Capital								+					+
Lending*Guarantees											-		
Lending*Restructuring				-		+	+						
Lending*Asset Management							-	-					
Lending*Rules	-		+							-			
Capital*Guarantees	+			-									
Capital*Restructuring													
Capital*Asset Management													
Capital*Rules		-	+										
Guarantees*Restructuring								+	-				
Guarantees*Asset Management													
Guarantees*Rules	-			-				-		-	-		
Restructuring*Asset Management					+						+		
Restructuring*Rules			+	+				-					
Asset Management*Rules													

Source: Authors.

Note: The table summarizes the results of the models reported in Appendix 1.6. Only significant effects at the 95-percent confidence level are highlighted; positive effects are marked in blue with a cross, while negative effects are marked in orange with a minus sign.

While the empirical analysis reveals that some tools have positive spillovers on inclusion, each tool has its own caveats. While some measures can benefit stability and inclusion (e.g., capital injections), they may also prompt moral hazard if not carefully designed. Specifically, the shift from the bailout toward the bail-in approach reflects consensus around the relevance of limiting taxpayer costs from bank failures. Others, such as blanket guarantees—often implemented during episodes of severe loss of confidence—may lead to exclusionary outcomes if retained too long and not paired with early interventions and complementary measures to restore market confidence.

The feasibility of applying certain tools largely depends on available fiscal and monetary space, level of inflation, and whether or not the crisis overlaps with or stems from a deterioration in public finances. Joint sovereign and banking crises have a potentially devastating impact on populations that are financially excluded because the most effective tools demand fiscal space and may not be available if the government becomes insolvent.

Empirically, evidence in this Working Paper shows that there are, in fact, some existing tools that could bear

a positive impact on financial inclusion; nevertheless, the question remains whether or not the authorities are aware of their effect. In response, a survey of central banks was made to establish whether they track any progress relating to financial inclusion outcomes and, if so, to what extent they believe their respective toolkit could be considered intentional on inclusion. Not surprisingly, the survey illustrated that authorities believed that their toolkit could affect the credit channel as well as the payments system. Outcomes, such as account ownership and lending access for women-led businesses, are less closely tracked and are considered unlikely to be influenced by their crisis response toolkit (Box 2, Figure B2.1).

Subsequently, an evaluation was made of whether or not the analysis matched what authorities would have expected. In contrast to what was discovered, **capital injections** and **lending** interventions, including liquidity support, tend to be viewed as somewhat effective in preserving access to lending for MSMEs and households. There were also other targeted interventions not included in the taxonomy assessed; these included subsidized loans, considered as the most effective tool in supporting access to MSME and household lending (Box 2, Figure B2.3).

## BOX 2. To what Extent are Authorities Aware of the Effects of their Toolkit in Terms of Inclusion?

FSNAs were surveyed via central banks, to learn how often they monitor financial inclusion, how much they think their tools affect inclusion outcomes, and which instruments they found most effective in supporting such outcomes in past systemic crises.

Since their core responsibilities are preserving financial stability and ensuring the smooth functioning of the payments system, they mainly collect data on financial inclusion outcomes related to the credit channel and the payments system (Figure B2.1). As a result, only those outcomes that are tracked regularly are perceived as the most likely to be affected by their policy responses. This makes the perceived impact of their response to previous crises less significant for account ownership and access to lending for women-led businesses, which are less likely to be monitored (Figure B2.1).

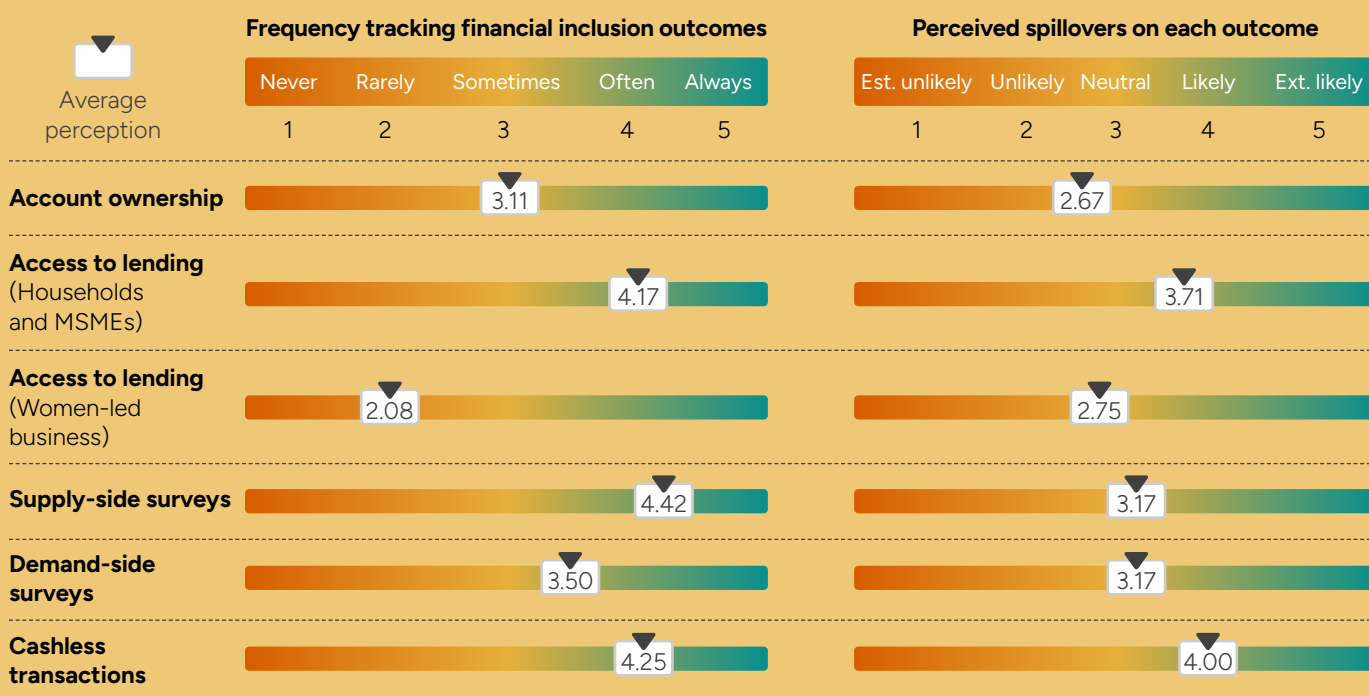
Authorities in those countries surveyed deployed a comprehensive set of instruments to address their latest systemic crisis episode. Respondent jurisdictions predominantly leveraged conventional monetary policy and financial sector-specific interventions, particularly through **lending** (e.g., collateralized lending), and **capital injections** (recapitalization using public funds and bailouts) (Figure B2.2).

The survey confirms that a large number of authorities believe that most of these tools have a relatively low impact in maintaining the flow of credit to households and micro-, small-, and medium-sized enterprises. A few measures, such as introducing **bank holidays** to prevent depositor run-offs and targeted interventions via **subsidized loans** were perceived as the most effective tools to sustain credit (Figure B2.3).

<sup>1</sup> Loan restructuring refers to changes in the terms of the loan, such as rescheduling the dates of principal and/or interest payments; granting additional grace periods; changing the collateral; and changing the interest rate and fees on the loan. While forbearance corresponds to cases whereby a restructuring is considered and where the borrower is experiencing financial difficulties, loan restructuring also comprises those cases in which the borrower is not in financial difficulty and the value of the loan is not reduced. Moratoria typically cover the suspension of the principal and interest payments for a predetermined period as well as a prohibition on banks charging penalties and fees on those loans to which the suspension applies. See Coelho and Zamil (2020) for further details.

**BOX 2. To what Extent Are Authorities Aware of the Effects of their Toolkit in Terms of Inclusion?** (continued)

**FIGURE B2.1. Tracking Financial Inclusion Outcomes and Perceived Spillovers of Their Toolkit**

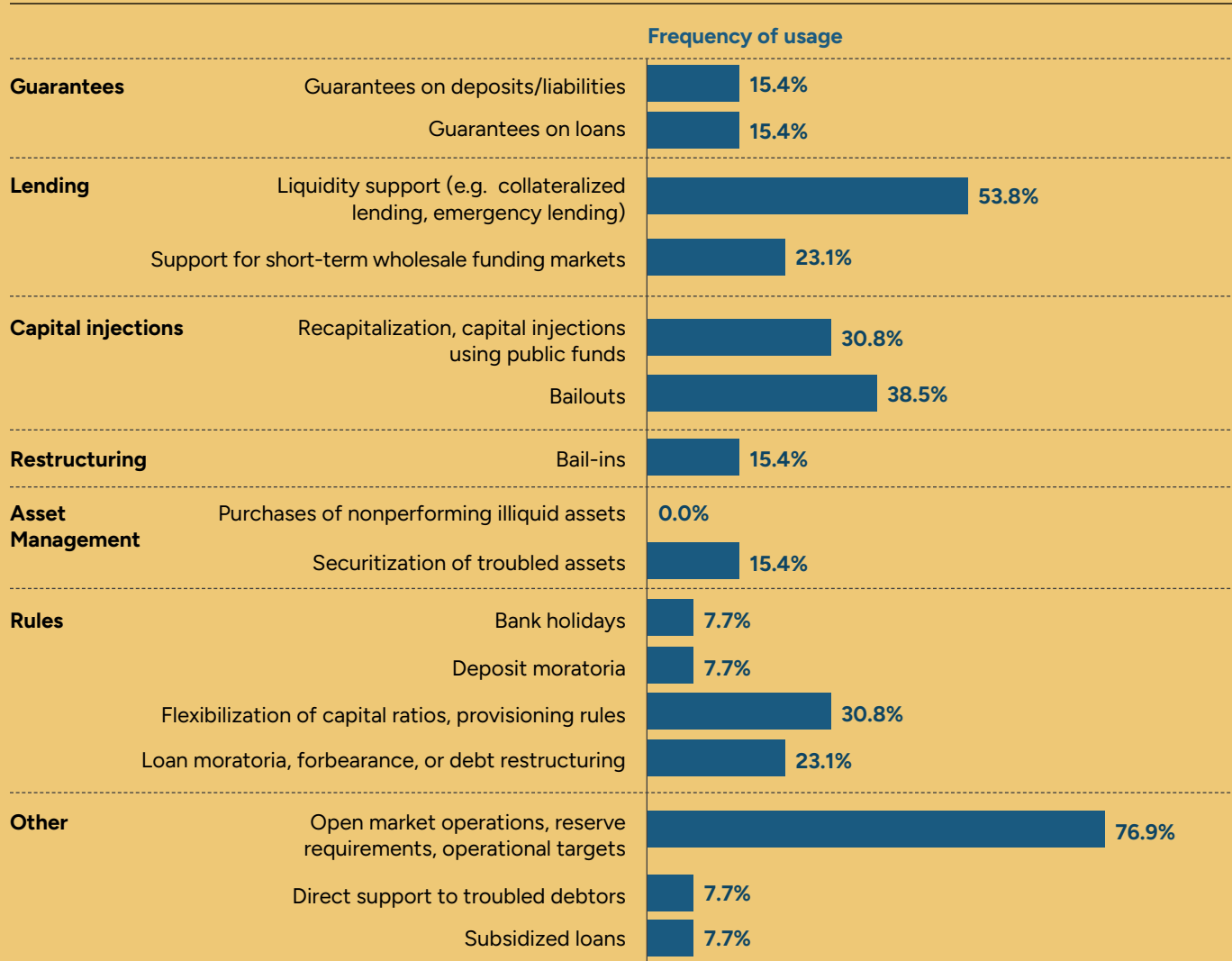


Source: Authors.

Note: The figure reports consolidated responses to two questions: (i) Question 23: “How often does your institution track the evolution of the following financial inclusion outcomes?” and (ii) Question 24: “From your institution’s perspective, how likely did the policy responses undertaken in previous crises impact the following financial inclusion outcomes?” The quantitative analysis reported in Box 1 focuses on financial inclusion outcomes for which more than 60 percent of data is available for the sample size. The survey incorporates traditional financial inclusion indicators, including account ownership and access to lending, along with recent data collected by some central banks, (e.g., expectation surveys from the supply and demand side; information on cashless transactions). Although these surveys are relatively recent, they demonstrate significant value. For example, during the Covid-19 pandemic, they provided insight into the financial conditions of firms and households as well as assisted authorities in assessing the overall effectiveness of major policy interventions.

BOX 2. To what Extent are Authorities Aware of the Effects of their Toolkit in Terms of Inclusion? (continued)

FIGURE B2.2. The Policy Toolkit Deployed in the Last Systemic Crisis Episode

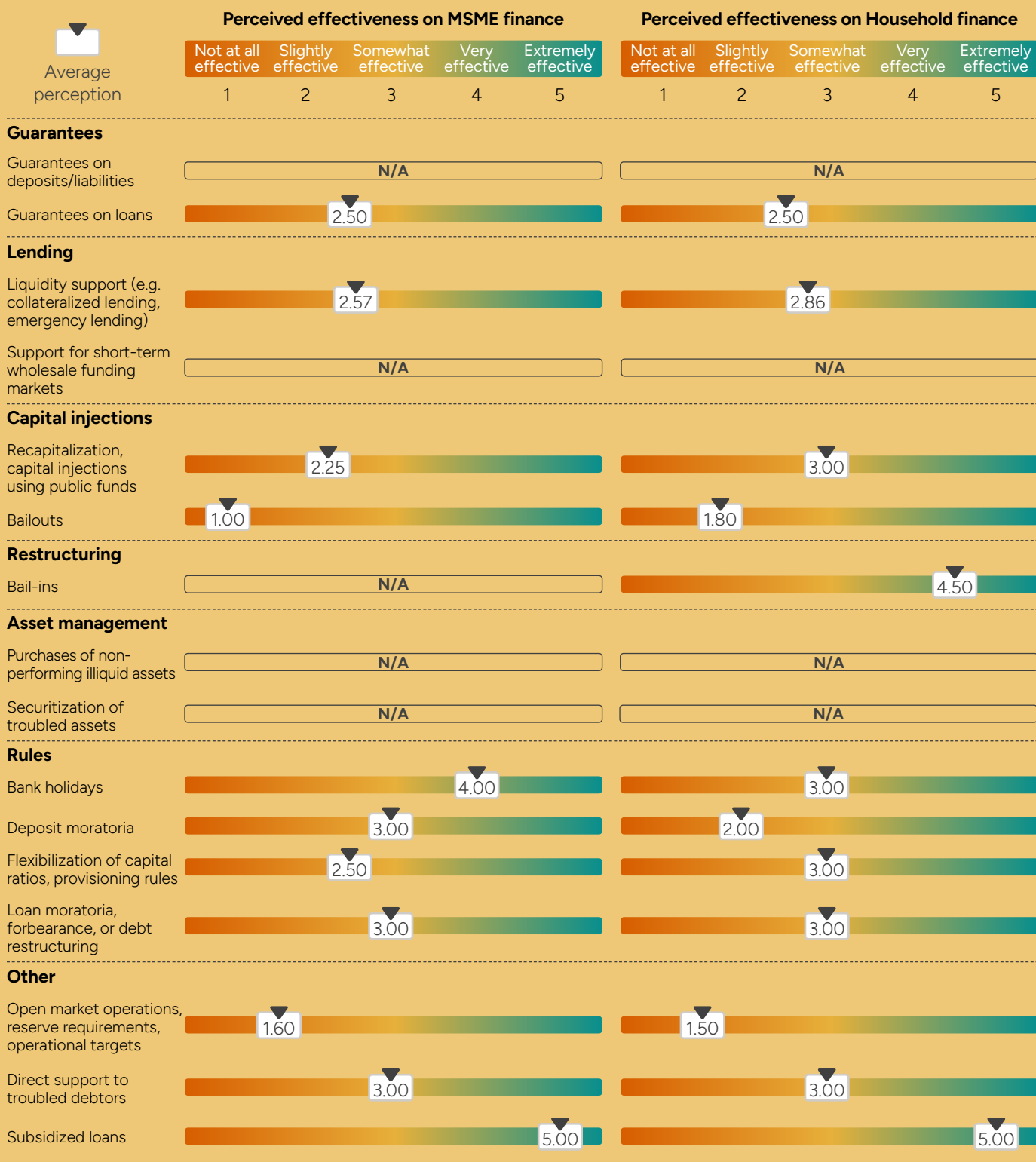


Source: Authors.

Note: The figure reports responses to Question 8. "Please select the policy toolkit that authorities deployed during the latest financial crisis confronted by your jurisdiction, excluding the Covid-19 shock (select all that apply, even if deployed by other authorities)." The tools are organized into six categories based on the framework by Metrick and Schmelzing (2021). The questionnaire incorporates additional instruments in the rules category (e.g., loan moratoria, forbearance, debt restructuring<sup>1</sup>) and collects information on other tools such as conventional monetary policy, direct support to debtors, and subsidized loans. This approach allows for a comparison with instrument choices made during the Covid-19 pandemic, as documented in Box 6.

BOX 2. To what Extent are Authorities Aware of the Effects of their Toolkit in Terms of Inclusion? (continued)

FIGURE B2.3. Perceived Effectiveness on Micro-, Small-, and Medium-Sized Enterprises and Household Financing



Source: Authors.

Note: The figure reports aggregated responses from country authorities into a Likert scale. Question 9(10): "From your authority's perspective, how effective were these policy measures in addressing the financial needs of micro-, small-, and medium-sized enterprises (households) during this crisis? Select N/A if the policy tool was not intended to address the financial needs of micro-, small-, and medium-size enterprises (households)?"

## **Insight 2: Even the most effective measures often fail to reach the most excluded; intentional policy design should account for the distributional consequences of the response.**

Systemic crises demand coordinated action across various policy domains and involve multiple stakeholders, including fiscal/monetary authorities, the financial safety net, social protection agencies, the private sector, and multilateral institutions. Beyond deciding the optimal policy mix discussed in the above first insight, policymakers must carefully calibrate instruments to manage the inherent tensions between macroeconomic consolidation and financial inclusion during and after a systemic crisis.

Monetary and fiscal authorities face the dual challenge of mitigating the immediate impact of the shock—on the broader economy and particularly on vulnerable groups—while fostering resilience to future disruptions. In the containment as well as consolidation stages, it is crucial to add financial inclusion as a lever of crisis management without jeopardizing the broader objectives of adjustment and stabilization.

Designing such a policy framework is inherently complex. During the acute phase of a crisis, macroeconomic stabilization must provide rapid countercyclical support to sustain demand and ensure the flow of credit. This prevents negative feedback loops at times when financial institutions exhibit

heightened risk aversion, lending is curtailed, and firms postpone investment due to high macroeconomic uncertainty, with negative effects on employment (Bordo et al. 2016; Baker et al. 2016; Bernanke 2023). At the same time, authorities must restore confidence among domestic stakeholders and international markets by addressing the structural vulnerabilities at the root of the crisis.

Restoring credibility often requires fiscal consolidation, adoption of fiscal rules, and a commitment to prudent monetary policy to prevent inflationary spirals and exchange rate instability.<sup>13</sup> However, fiscal consolidation can impose significant social costs, particularly on lower-income households. The 1997–1998 Asian Financial Crisis provides a conventional example. As highlighted in Box 3,<sup>14</sup> uncoordinated fiscal and financial tightening, paired with structural imbalances, actually amplified economic distress (Carrière-Swallow et al. 2021; Banerjee and Zampolli 2019; Jordà and Taylor 2016). This underscores the importance of aligning macroeconomic adjustments with micro-level safeguards.

Since then, crisis responses from multilateral institutions incorporate strategies to make consolidation politically feasible. For example, today's IMF seeks to reduce the human and economic toll of crises by providing financial support, encouraging targeted social spending as well as tailoring loan conditions to each country's circumstances (Furusawa 2017). While some short-term pain is often unavoidable, it is nevertheless necessary to protect vulnerable groups through social safety nets, cash transfers,

---

13 Recent financial turbulence in Egypt offers a reminder of the risks posed by an unbalanced policy mix, whereby a fixed exchange rate regime interacted with structural imbalances in the balance of payments, ultimately generating instability (Agarwal and Mazarej 2024).

14 The literature offers a mixed assessment of the effectiveness of International Monetary Fund (IMF) support in crisis management and, in general, the role of fiscal consolidation in long-term growth. Beginning with Stiglitz (2002), the IMF has faced criticism for promoting austerity measures during periods of demand weakness, thereby making it harder for recipient countries to emerge from crises (Jorra 2012). More recent studies suggest that IMF programs can have a net positive effect on macroeconomic stabilization (Kuruc 2022). These two perspectives converge on a key point: austerity measures, even when they contribute to overall stabilization, tend to fall disproportionately on the most vulnerable groups, undermining public trust and political support for the governments implementing them.

### BOX 3. Why Context Matters—Macroeconomics, Institutions, and Structural Factors in Shaping Effective Policy for Stabilization and Inclusion: The Case of Indonesia

Experience of Indonesia during the 1997–1998 Asian Financial Crisis was examined by applying the synthetic control method, which allows for an estimation of what might have happened in Indonesia if the crisis had not occurred as well as the related policies that were in place at the time. To do this, a “synthetic” version of the country was constructed by combining data from similar countries that did not experience the crisis in the same way. This allowed for a comparison of the real-world outcomes and a credible “counterfactual,” which offered a means to isolate the effects of crisis response on financial inclusion (Appendix A.2 offers a complete overview of the exercise and methodology used to build the counterfactual).

The impact of the toolkit described in Section 2 was analyzed on two dimensions: **depth** (e.g., how many people use financial services, such as private credit or insurance premiums, as a share of gross domestic product); and **access** (e.g., how available financial services are based on the number of bank branches and ATMs per adult population). These indicators were retrieved from the Global Financial Development dataset of the International Monetary Fund (IMF).

In 1997, the Indonesian economy went into free fall: the banking sector collapsed, the rupiah lost over 80 percent of its value, and inflation skyrocketed. The crisis not only devastated the economy but also triggered major political upheaval, culminating in the fall of President Suharto. This episode exposed deep structural weaknesses in Indonesia’s financial and corporate sectors, including poor governance and inadequate regulatory oversight. Recovery was slow

and painful, relying heavily on assistance from the IMF, bank bailouts, and broad institutional reforms.

The literature—Soesastro and Basri 1998; Hill 1999; Stiglitz 2002, 2017; IMF 2003; and Pempel and Tsunekawa 2015—interprets the Indonesian and the broader Asian crisis as cases of insufficient coordination between macroeconomic stabilization and sector-specific measures, particularly in the context of IMF conditionality programs that prioritized fiscal austerity with negative impacts on inclusion.

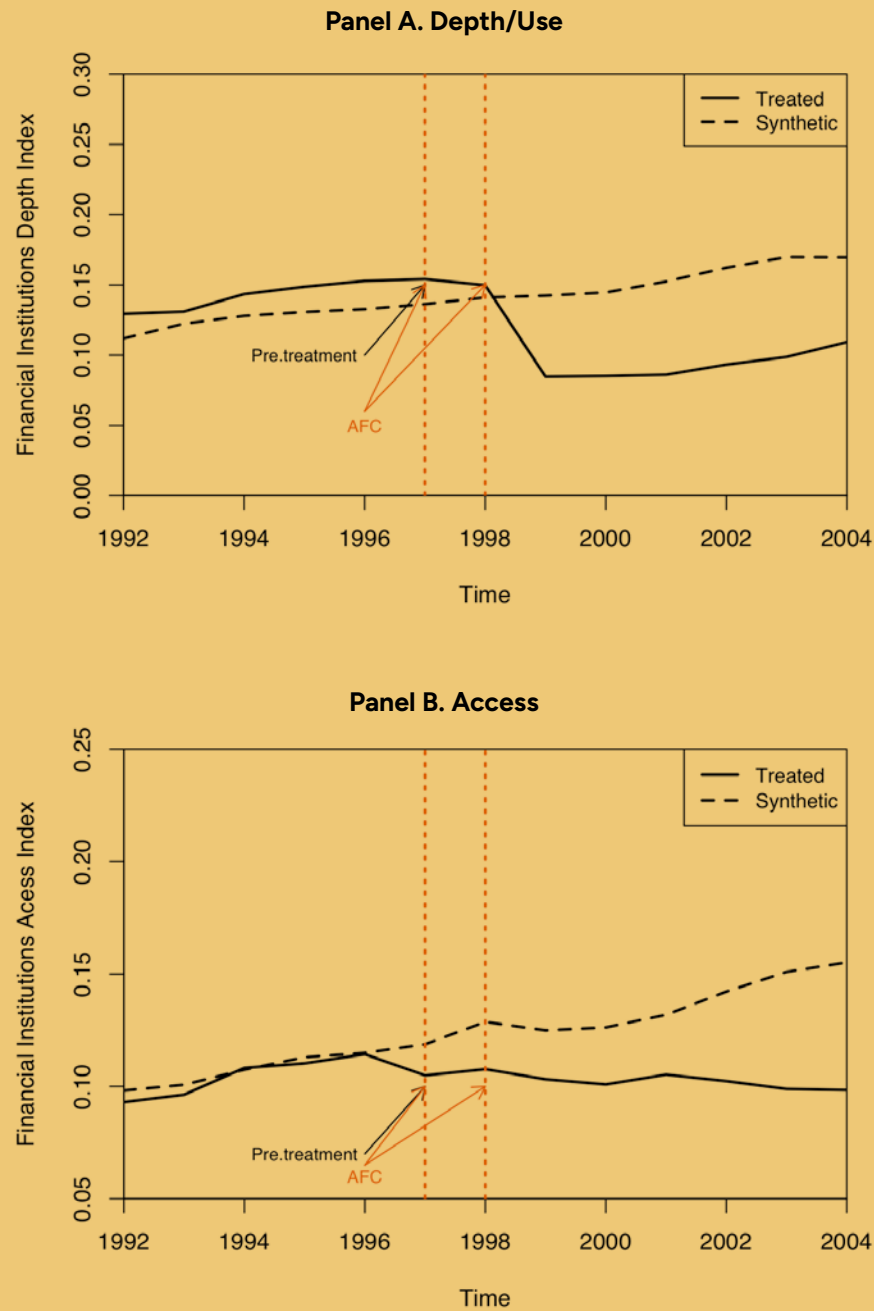
Closing 16 banks without offering a sufficient deposit guarantee resulted in bank runs and a further deterioration in financial inclusion outcomes (Figure B3.1). Panel A shows a substantial post-crisis decline in **financial depth** relative to its synthetic control, suggesting a negative impact on credit provision and the availability of financial products. The **Access Index** (Panel B) exhibits a more modest divergence in the initial years following the crisis, indicating that basic financial access was less immediately affected. However, the gap between the observed and synthetic access trajectories widens over time, suggesting a growing longer-term impact.

Since then, greater attention has been given to policy coordination and to the use of expansionary measures, as seen during the 2008–2009 Global Financial Crisis (GFC) and the COVID-19 pandemic, especially in emerging market economies.<sup>1</sup> This evolution reflects a recognition that effective crisis management requires aligning macroeconomic stabilization with supportive sectoral policies to avoid the suboptimal outcomes witnessed in Indonesia.

<sup>1</sup> Basri, M. C. (2018) shows that the GFC and the **taper tantrum** had much smaller impacts on the Indonesian economy than did the Asian Financial Crisis (AFC). According to this author, Indonesia was more successful in overcoming the GFC, which was by far bigger in scale than the AFC. Indonesia remained relatively unscathed from the GFC and taper tantrum due to a series of institutional reforms implemented since 1998, including banking (e.g., prudential regulation), fiscal (e.g., fiscal rule), and exchange rate reforms (e.g., introduction of flexible exchange rate regime). See Appendix A.2 for a detailed analysis using the synthetic control method (SCM) in the AFC and the GFC.

**BOX 3. Why Context Matters—Macroeconomics, Institutions, and Structural Factors in Shaping Effective Policy for Stabilization and Inclusion: The Case of Indonesia (continued)**

**FIGURE B3.1. Assessing Policy Impacts of the Toolkit in Indonesia during the 1997–1998 Asian Financial Crisis**



Source: Authors.

Note: Each panel displays the results of a synthetic control estimation, whereby the solid line represents the observed trajectory of financial inclusion in the treated country and the dashed line represents the counterfactual scenario constructed from a weighted combination of similar countries (the synthetic control) that did not experience the crisis in the same way. The vertical orange lines indicate the timing of the Asian Financial Crisis. Divergence between the treated and synthetic lines after the crisis signals the estimated impact of the event on financial inclusion, measured through the Financial Institution Depth Index and Financial Access Survey.

debt moratoria, debt restructuring, or forbearance.<sup>15</sup> Currently available multilateral lending tools focus on key steps needed for stabilization and recovery rather than broad or rigid requirements (IMF 2024). By allowing policy flexibility, offering gradual adjustment financing, and monitoring risks to prevent future shocks, the IMF aims to help countries restore stability and lay the groundwork for sustainable, financially inclusive growth (Moretti et al. 2020).

Beyond the reach of multilaterals and donors, the design of consolidation strategies must explicitly account for distributional consequences of crisis response and the need for targeted support. Adjustment measures can constrain microfinance institutions (MFIs), MSMEs, and vulnerable households. Effective adjustment requires complementary interventions to buffer the adverse effects of macroeconomic tightening. Targeted interventions could include cash-transfer programs, targeted liquidity support for MFIs, and credit guarantees for MSMEs (Insight 3).

Empirical evidence reinforces the need for targeted support. Econometric analysis for this study using microdata from the World Bank Global Findex database, shows that broad-based macroeconomic or sectoral policies are generally ineffective in improving financial inclusion among the most excluded populations (Box 4 and Appendix A.1.5 and A.1.7). This appears intuitive, as individuals do not uniformly respond to the same tools. The analysis suggests that the effectiveness of financial sector-specific policies depends heavily on the individuals' levels of financial inclusion; that is, those who already are well integrated into the financial system tend to benefit the most while the underserved remain largely unaffected. During the immediate crisis-response phase as well as throughout the consolidation period, policies must

ensure that financial access for the most vulnerable is not only preserved but actively expanded.

Preserving financial inclusion and restoring stability requires deliberate coordination. It does not occur by chance; intentional action is essential, including leveraging multiple stakeholders. Donors and multilateral partners can provide resources to protect the most vulnerable through social policies once fiscal consolidation is underway without undermining macroeconomic stability. Such measures may include expanding government-backed guarantee programs and invoking escape clauses to fiscal rules. This way, fiscal policy can respond to unforeseen events without jeopardizing the government's long-term commitment to fiscal discipline.

By adopting these strategies, fiscal consolidation can be made less burdensome for low-income households and MSMEs. Reducing uncertainty and ensuring the continued flow of credit to sectors and firms most in need not only cushions immediate hardship but also enhances their capacity to withstand future shocks.

---

<sup>15</sup> Coelho and Zamil (2020) and Ehrentraud and Zamil (2020) encourage supervisors to continuously monitor whether bank loan restructuring processes and loss estimates reflect macroeconomic conditions as well as the borrower's condition post-crisis, together with relevant forward-looking information that affects the expected collectability of the bank's lending expenditure.

#### **BOX 4. From Countries to Individuals: Is the Crisis Resolution Toolkit Equally Effective for the Most and Least Financially Included?**

In the micro-level analysis, a fresh look is taken into how various sector-specific interventions and macroeconomic stabilization policies, implemented at the country level, impact financial inclusion at the individual level. To do so, granular survey data from over 300,000 people across more than 144 countries, was retrieved from the World Bank Global Findex database. Data from the 2011 and 2014 waves were used, when numerous countries had implemented financial sector-specific measures in contrast to other survey waves (Appendixes A.1.5 and A.1.7 offer a complete description of the data, methodology, results, and caveats).

The impact of policy measures on financial inclusion was examined by considering individuals separately. The main aim was to establish whether the same toolkit affects everyone in the same way, ranging from those who are entirely excluded from the system to those who are highly included, this rather than focusing on the overall impact on the average individual.

It is important to characterize individuals, since certain personal traits consistently shape their likelihood of being financially included. For instance, women are generally less included than men, and this gap

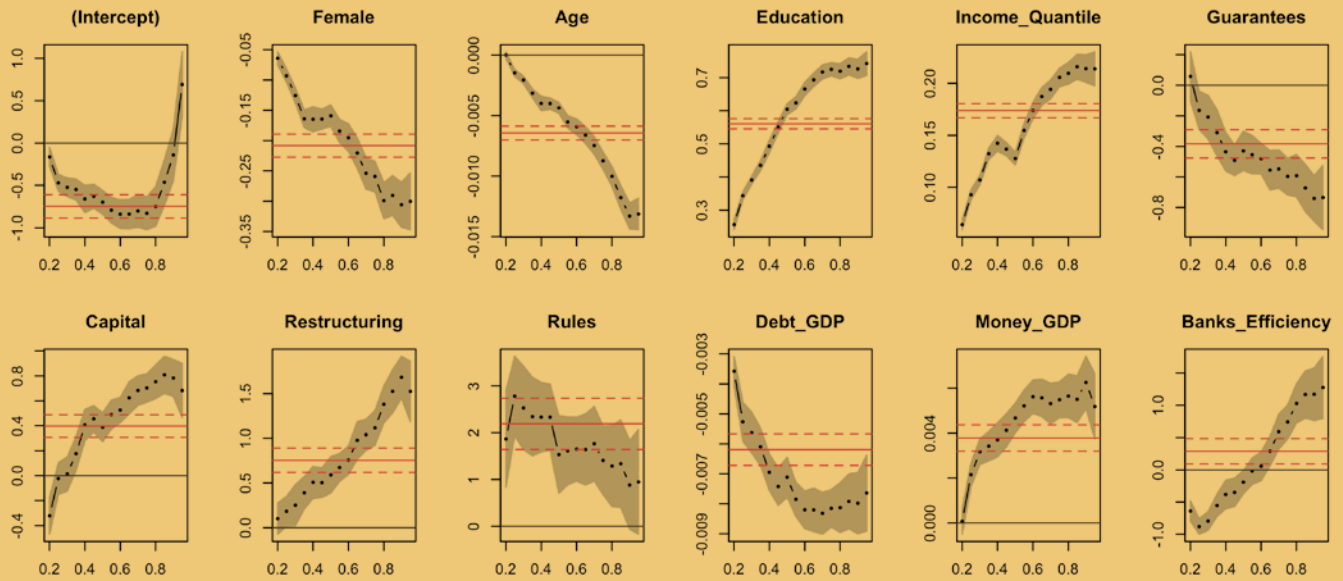
becomes even wider among people who are already financially active. Older individuals also tend to be less included than their younger counterparts. Education and income contribute to existing disparities, as individuals with higher schooling and income levels are more likely to use financial services, especially if they are already somewhat included.

Consistent with the results in Box 1, the analysis suggests that capital injections, restructuring, and rules generally had positive effects on financial inclusion. However, not all individuals are affected in the same way. Positive effects mostly went to people who were already somewhat included. Those underserved or excluded did not experience much improvement (Figure B4.1).

What emerges is a clear message: when designing interventions to stabilize the economy during a crisis, it is not only about acting fast; it also is about acting intentionally. Tailoring policies to support financial inclusion, even before the crisis hits, will prevent a widening of existing gaps and can even bring more people into the formal financial system at a time when they need it most.

**BOX 4. From Countries to Individuals: Is the Crisis Resolution Toolkit Equally Effective for the Most and Least Financially Included? (continued)**

**FIGURE B4.1. Effects on the Quantiles of the Financial Inclusion Score, 2011**



Source: Authors.

Note: The figure presents the effects on the quantiles from 0.2 to 0.95 of the financial inclusion score, considering individual-level variables, financial sector specific interventions, and macroeconomic stabilization policies. In each plot, the vertical axis represents the effect (i.e., the quantile regression slope), while the horizontal axis represents the quantiles, ranging from individuals with low levels of access to and usage of financial services (left) to those with higher levels of access and usage (right). The solid black line in each plot illustrates how these effects vary across the distribution; the shadowed areas are bootstrapping confidence intervals at 95 percent of these effects, while the OLS slopes—constant across all levels of financial inclusion—and their respective analytic confidence intervals are also presented for comparison, both in red. This method highlights the heterogeneities captured by the methodology for this study, which traditional linear regressions fail to detect.

### **Insight 3: Targeted policies go beyond conventional methods and play a critical role in preserving inclusion and protecting the vulnerable in times of crisis.**

Preserving inclusion and strengthening resilience in crises demand approaches beyond conventional methods. Recent episodes of distress offer valuable

lessons for unconventional thinking in crisis resolution. The Lebanese experience underscores the importance of adopting innovative strategies to protect the vulnerable, which can extend beyond expanding the social protection network. Specifically, strengthening the capacity of MFIs can be considered a complementary strategy that can outweigh the costs of expanding social protection programs<sup>16</sup> (Box 5).

While MFIs have a critical role in serving the vulnerable, ensuring their operational resilience in crises presents significant challenges. Unlike banks,

<sup>16</sup> CGAP (2020) suggests six key steps to be taken at the level of regulation and policy to account for the special features of microfinance and the diversity of institutions offering microfinance services.

## BOX 5. Lebanon: Delayed or Absent Crisis Policy Responses Reversed Hard-Won Financial Inclusion Gains

Between 2019 and 2025, Lebanon experienced a systemic banking crisis that sharply reversed financial inclusion gains; this was triggered by a slowdown in foreign currency inflows that had long sustained government borrowing through the banking system. By 2019, public confidence had weakened, prompting temporary bank closures and informal withdrawal limits. The government's 2020 sovereign default impaired bank assets while the COVID-19 pandemic and Beirut Port explosion deepened institutional distress.

Policy responses prioritized managing liquidity pressures over restoring bank solvency. Banque du Liban, the central bank, capped access to foreign-currency deposits, often allowing withdrawals only in local currency at below-market rates, causing significant depositor losses. Moreover, a divide emerged: individuals receiving "fresh" foreign currency, such as remittances, could freely deposit and withdraw funds while others faced strict limits on accessing legacy deposits held before the crisis. To ease pressure on the exchange rate, the central bank supplied cash dollars through its foreign exchange platform, Sayrafa; this, however, did not restart lending. Structural reforms were delayed or absent. A bank restructuring law was passed only in 2025, with decisions on loss allocation still pending. No asset-management vehicle was created to offload impaired bank assets and public recapitalization was not attempted. Deposit insurance remained in place nominally, but currency depreciation eroded value, offering little meaningful protection. The government's main crisis mitigation efforts leaned on social protection, primarily government cash transfers of nearly US\$500 million to shield more than 160,000 poor and vulnerable individuals. Although this provided some consumption smoothing, it did little to restore formal credit flows.

These delays and gaps in policy response led to sharp and sudden reversals in financial inclusion. Account ownership fell from 45 percent in 2017 to 23 percent in 2024 and digital payment usage more

than halved, as many individuals exited the formal system. Micro-, small-, and medium-sized enterprises (MSME) lost access to formal credit and increasingly relied on cash, supplier finance, or informal channels, raising costs and reducing data trails. Private sector credit flows fell by 22 percent—about US\$12.5 billion—in the first eight months of 2020 alone. The economy became increasingly cash-based, with physical dollar transactions estimated at 46 percent of gross domestic product by 2022, preserving short-term liquidity for households and firms, while expanding informality.

One notable exception came from donor-led efforts. The World Bank's B5 Fund provided nearly US\$20 million in grants to microfinance institutions (MFI) and MSMEs, sustaining a network of nearly 170,000 clients. It enabled MFIs to continue lending in "fresh" dollars and preserving last-mile credit capacity, even as commercial bank lending remained frozen. Although not part of the standard crisis-response toolkit, this support proved highly cost-effective, indicatively at a cost of US\$118 per client compared to the cost of cash transfers at approximately US\$3,500 per beneficiary. At the institutional level, leading MFI Al Majmoua scaled a new U.S. dollar portfolio from zero to over 26,000 clients in one year at an estimated US\$230 customer acquisition cost compared with US\$1,200 on its original portfolio—five times more cost-effective and 10 times faster.

Lebanon offers a clear example of the need for timely, inclusion-friendly policy responses in crisis recovery. Delayed restructuring and liquidity rationing froze formal lending, pushing MSMEs toward informal channels. The experience also highlights the potential for pairing conventional social protection measures with targeted and complementary interventions such as donor-led microfinance support, which can deliver high reach at lower cost, preserve credit access, and facilitate recovery. Without broader solvency support, financial institutions could not scale lending, thus stalling credit recovery and reversing inclusion gains.

Sources: Authors, based on Banque du Liban (2020); IMF (2022); World Bank (2022, 2023, and 2024); and Fawaz et al. (2024).

MFIs may be regulated or unregulated, can take various legal forms, and are sometimes outside the scope of prudential oversight by the financial safety net.<sup>17</sup> This fragmented landscape complicates the application of a single support strategy and the conventional thinking of crisis response.

Alternative approaches could protect regulated as well as nonregulated sections of the market. For regulated MFIs, authorities can leverage their policy arsenal and introduce regulatory flexibility to ensure operational resilience during crises, incentivize lending, and protect distressed debtors. For unregulated MFIs, authorities may encourage commercial banks to support MFI funding or even mobilize donor resources and multilateral assistance for targeted rescue packages.

The COVID-19 episode offers another practical illustration of how FSAs can think outside the box in order to protect the vulnerable in times of stress. While the pandemic's nature and triggers differed from those of a typical systemic crisis (e.g., a public health emergency of international concern<sup>18</sup>), it immediately inflicted a severe dual shock on supply and demand worldwide. The global financial system was under considerable strain and governments around the globe not only acted faster and at a much larger scale compared to prior systemic crises, but they also designed more targeted responses.

During the pandemic, policy responses supported lending to households and MSMEs by enhancing banks' balance sheet capacity and creating incentives for banks to use this capacity (Casanova et al. 2021).<sup>19</sup> To expand lending capacity, authorities relaxed capital and liquidity requirements, granted flexibility in the calculation of expected losses and the classification

of nonperforming loans, implemented capital payout restrictions, and facilitated moratoria on loan payments.

To incentivize lending, authorities designed loan guarantees, used cash transfers, and provided funding for lending. Available empirical evidence indicates that comprehensive policy packages and the relatively new measures supported the flow of credit to MSMEs and households (e.g., Acharya and Steffen 2020; Altavilla et al. 2021; Li et al. 2020; Bachas et al. 2021; Budnik et al. 2021; Casanova et al. 2021; Jiménez et al. 2022; Acosta-Henao et al. 2023; Kirti et al. 2023). This is consistent with the view of authorities on the effectiveness of their response (Box 6).

The COVID-19 experience suggests that in large, economy-wide shocks, authorities benefit from embedding an inclusion lens into their response. The pandemic proved that it is possible to preserve the stability and soundness of the financial system and mitigate unintended exclusionary effects. However, increased flexibility should avoid distorting markets, promoting balance-sheet opacity, or encouraging excessive risk-taking. Clear exit clauses and an emphasis on the extraordinary nature of such measures can limit fiscal costs, minimize moral hazard, encourage risk revelation, and safeguard market discipline (IMF and World Bank, 2020).

FSAs need not wait until the next crisis hits to use the existing tools to restore stability and preserve financial inclusion. They can start by proactively implementing a comprehensive approach that increases resilience to unforeseen shocks, improves the ability to respond to such shocks, and enables the conditions to access contingency funds (Box 7).

---

17 See CGAP (2020) for a taxonomy of Microfinance Providers.

18 A public health emergency of international concern is "an extraordinary event which is determined to constitute a public health risk to other states through the international spread of disease and to potentially require a coordinated international response" (WHO 2019).

19 Casanova et al (2021) suggest policy measures supported bank lending during the pandemic through two mechanisms. First, authorities increased bank's capacity to lend by expanding their capital and strengthening their liquidity position. Second, authorities incentivized banks to use this capacity by improving the risk-return trade-off for granting new credit.

## BOX 6. Innovative Approaches: Lessons Learned from the COVID-19 Pandemic

Although not a conventional systemic crisis, the COVID-19 pandemic was a once-in-a-generation shock that severely disrupted economies, households, and businesses. Financial authorities were surveyed for this study to understand which areas were most adversely affected, the policy tools they deployed, how effective they perceived the tools to be, and the main challenges to preserving credit flows to households and micro-, small-, and medium-sized enterprises (MSME).

Authorities reported that economic activity, loan collection, and credit demand were among the most severely affected areas, with asset quality concerns close behind. With increased liquidity support, wholesale funding was not seen as significantly impacted by the shock (Figure B6.1).

Compared to prior systemic crises, during Covid-19, sustaining credit flows proved challenging amidst operational disruptions. Not surprisingly, liquidity shortages were less burdensome and credit standards were less stringent than in past crises. Notably, during the pandemic, it became harder to differentiate viable borrowers from nonviable borrowers, highlighting the need for granular and timely data (Figure B6.2).

Policy responses reflected macroeconomic stabilization as well as financial sector-specific levers, from conventional measures such as open-market operations and reserve requirements to borrower-focused relief through loan moratoria, debt restructuring, and regulatory flexibility on capital ratios, provisioning rules, and liquidity buffers. In several cases, these were complemented by targeted programs to troubled debtors and subsidized loans,

pointing to the value of a well-sequenced mix of tools that address not only supply-side but also demand-side pressures (Figure B6.3).

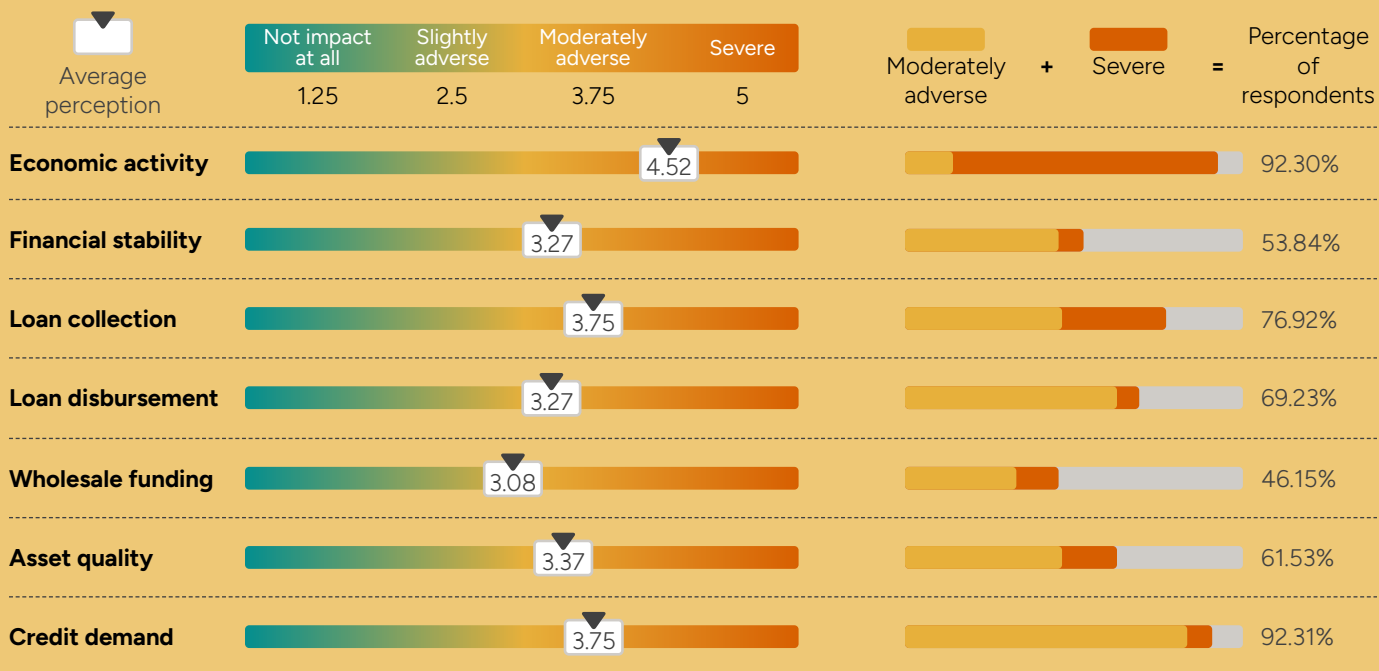
Some lending tools, such as liquidity support, were crucial for MSME finance, although less for sustaining access to credit for households. The pandemic highlighted that regulatory flexibility and loan moratoria helped maintain credit to both segments. Asset guarantees and subsidized loans mainly benefited MSMEs, with limited impact on household credit (Figure B6.4).

The COVID-19 experience suggests that in large, economy-wide shocks, authorities benefit from applying their interventions with flexibility, working in close coordination with a wider set of stakeholders and embedding an inclusion lens in crisis measures. This means not only stabilizing the supply of finance but also addressing demand-side conditions so that households and firms can continue to participate in the financial system.

Additionally, COVID-19 challenged authorities to strike a balance between immediate support and the risk of generating lasting scarring effects on the financial system and the wider economy. Clear exit clauses and an emphasis on the extraordinary nature of such measures can limit fiscal costs, minimize moral hazard, reduce balance-sheet opacity, and safeguard market discipline (IMF and World Bank, 2020). In this way, the pandemic proved that crisis policy responses can preserve stability and soundness of the financial system as well as mitigate unintended exclusionary effects.

BOX 6. Innovative Approaches: Lessons Learned from the COVID-19 Pandemic (continued)

FIGURE B6.1. Perceived Impact of Covid-19

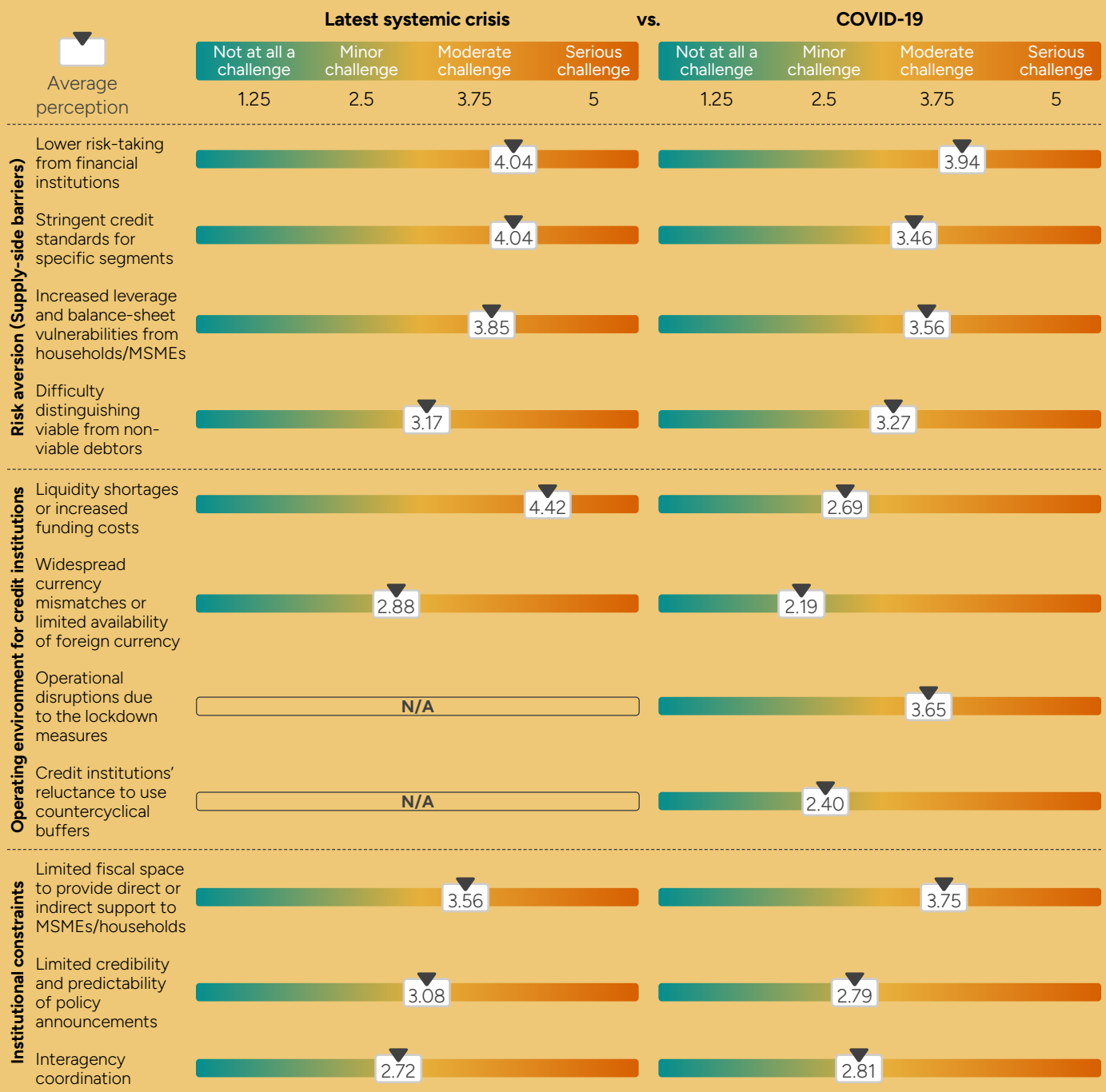


Source: Authors.

Note: The figure presents aggregated responses to Question 13: "How would you rate the impact of the Covid-19 pandemic on the following outcomes?"

BOX 6. Innovative Approaches: Lessons Learned from the COVID-19 Pandemic (continued)

FIGURE B6.2. Challenges to Sustain the Flow of Credit: Covid-19 versus Prior Systemic Crises

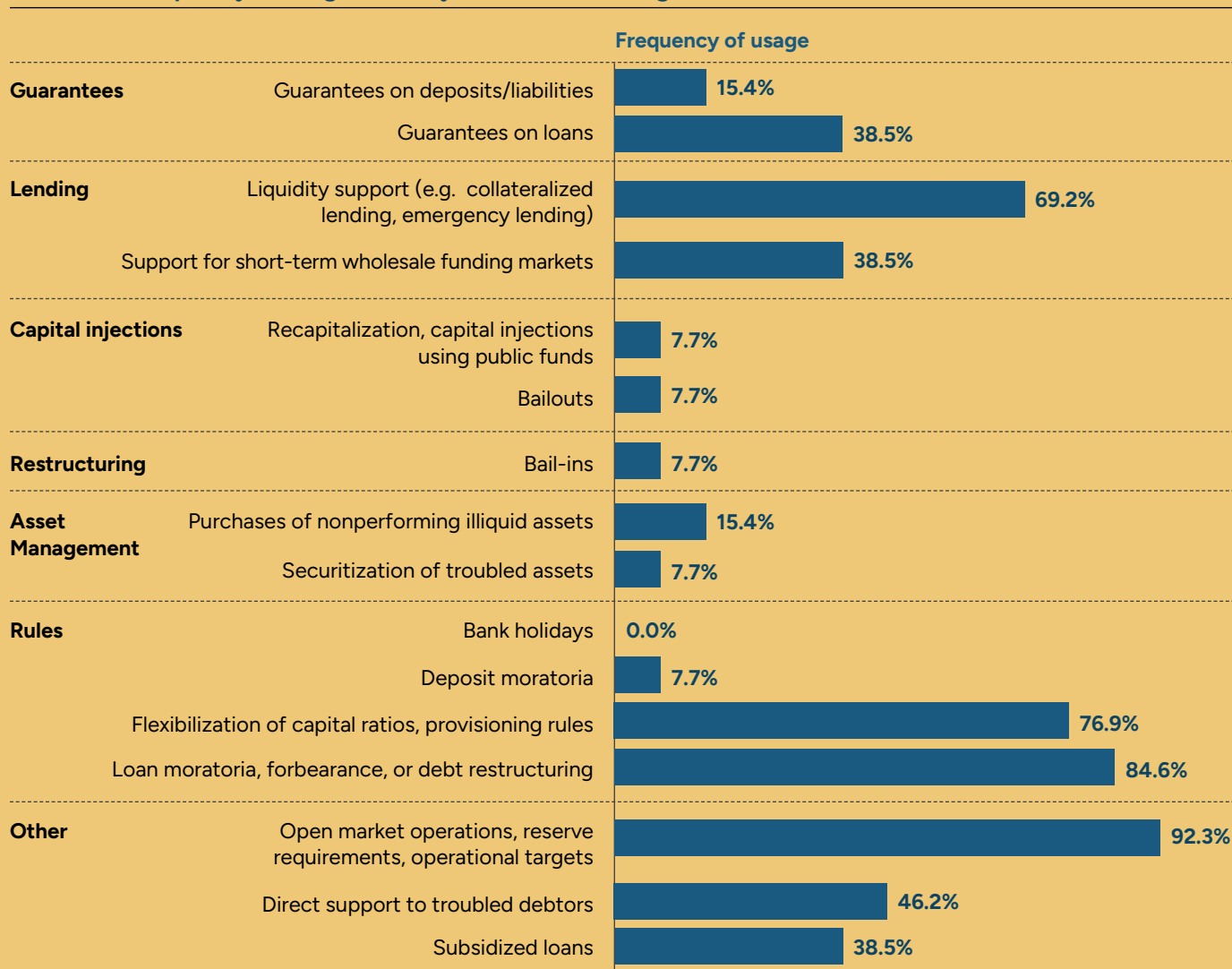


Source: Authors.

Notes: The figure reports responses to Question 11 (17): "From your authority's perspective, how important were the following challenges in preserving the flow of credit to MSMEs and households during this crisis episode (the pandemic)?" MSME = micro-, small-, and medium-sized enterprises.

BOX 6. Innovative Approaches: Lessons Learned from the COVID-19 Pandemic (continued)

FIGURE B6.3. Frequency of Usage of Policy Instruments during Covid-19

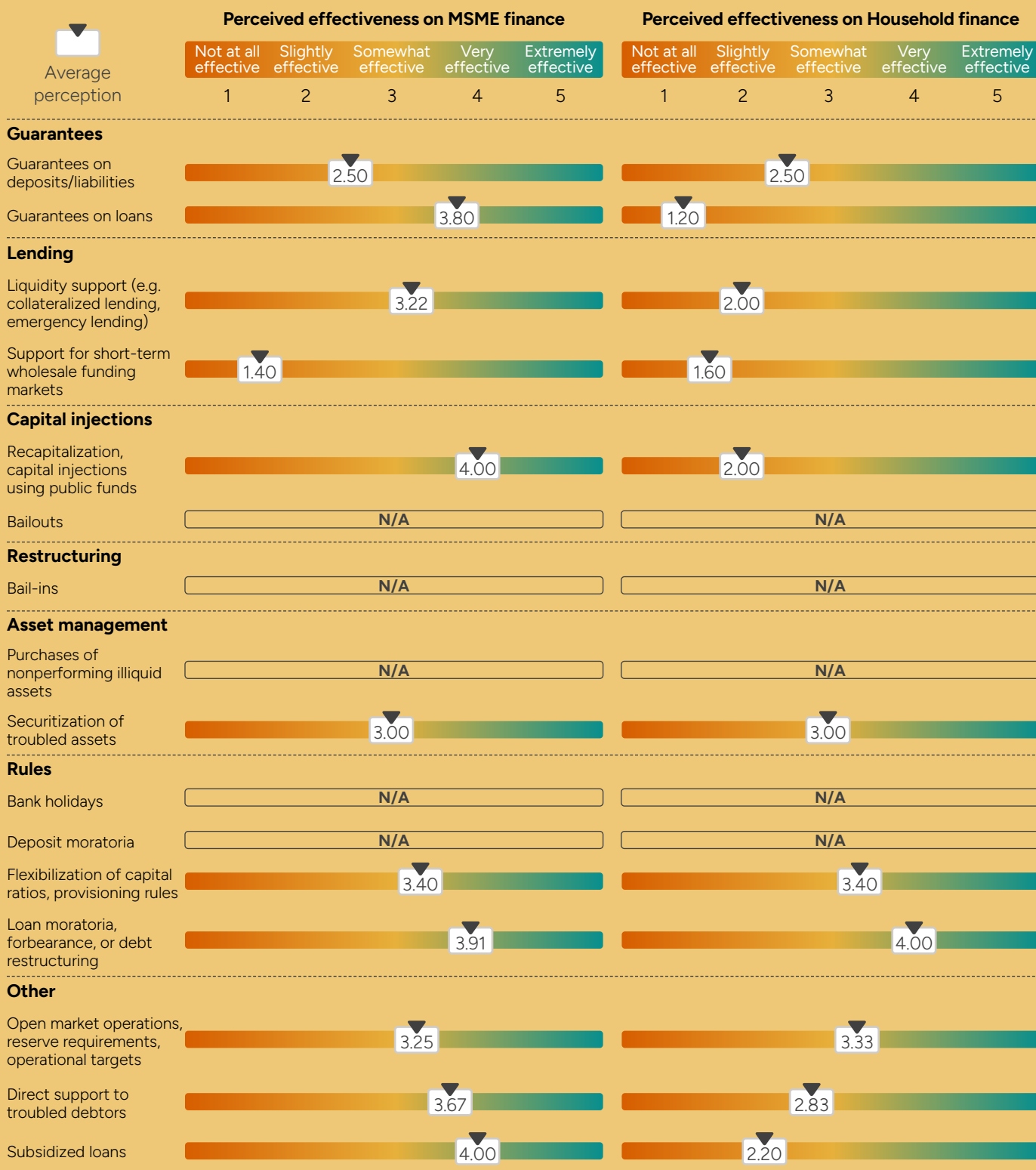


Source: Authors.

Note: The figure reports aggregate responses to Question 14: "Please select the policy toolkit authorities deployed during the Covid-19 episode (select all that apply, even if deployed by other country authorities)."

BOX 6. Innovative Approaches: Lessons Learned from the COVID-19 Pandemic (continued)

FIGURE B6.4. Perceived Effectiveness on Micro-, Small-, and Medium-Sized Enterprises and Household Financing



Source: Authors.

Notes: Responses to both questions are aggregated into a Likert scale. Question 15(16): "From your authority's perspective, how effective were these policy measures in addressing financial needs of MSMEs (households) during the Covid-19 shock? Select N/A if the policy tool was not intended to address the financial needs of MSMEs (households)." MSME = micro-, small-, and medium-sized enterprises.

### BOX 7. Three Priority Areas to Improve Resilience before the Next Crisis Hits

Three priority areas can improve the capacity of authorities to respond to the next crisis:

- (I) Strengthen individuals' capacity to cope with and recover from unforeseen shocks.
- (II) Enhance the readiness of financial safety-net authorities to detect early warning signals and calibrate scenarios that account for the impact on the vulnerable.
- (III) Create the conditions to ensure the country can access emergency response and budget support in case of crisis.

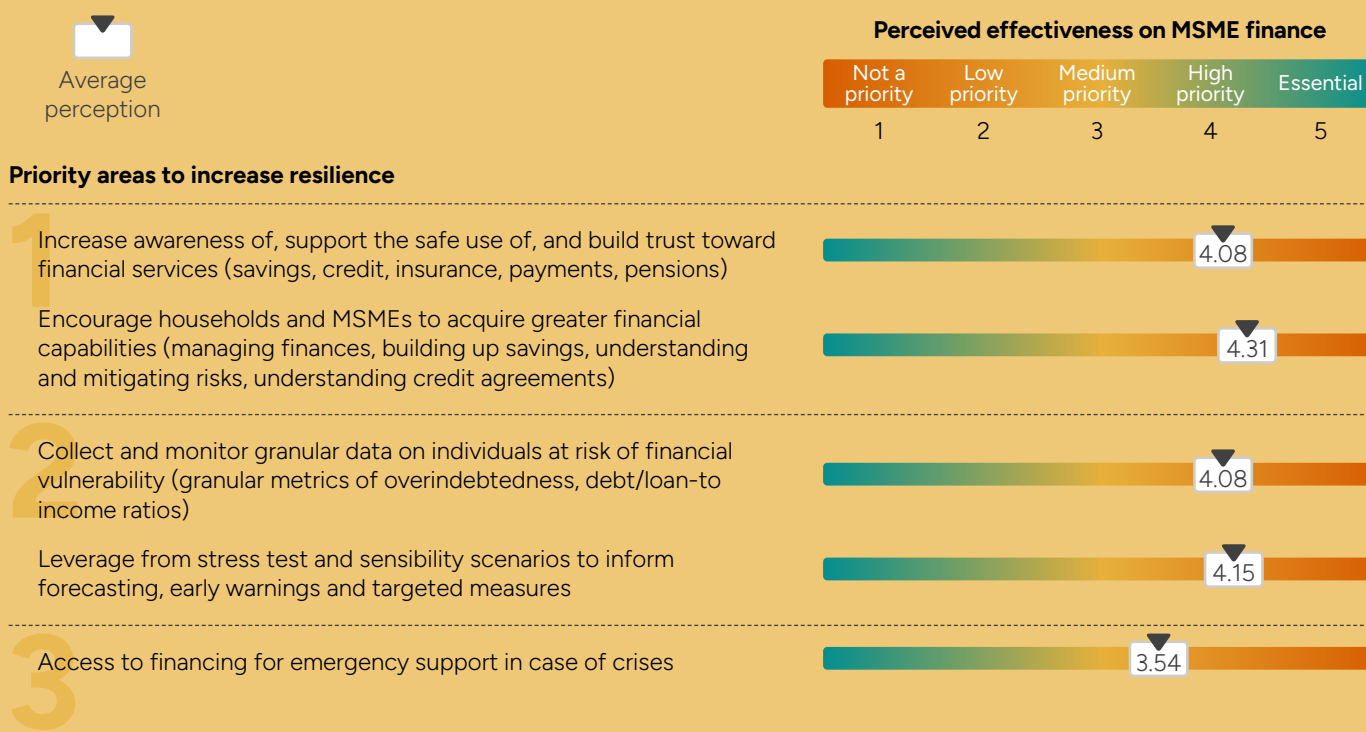
For this study, the survey asked respondents to identify the relative importance of each of these strategic actions. Regarding the first dimension, authorities are convinced of the importance of enhancing financial capabilities among households and micro-, small-, and medium-sized enterprises through informed understanding of financial services beyond credit, as well as the strategic use of insurance for effective risk

mitigation (Figure B7.1).

In terms of the second dimension, authorities agreed that collecting real-time and granular information on individuals at risk of financial vulnerability should be a top priority. They also highlighted the need to develop metrics of over-indebtedness, establishing prudential requirements on debt service to income ratios, building up countercyclical buffers in good times, and leveraging stress test and sensibility scenarios to inform policymaking (Figure B7.1).

Despite its potential to enhance flexibility by enabling countries to access contingent resources during shocks as well as to provide immediate funds for crisis response, the third dimension is not regarded as a high priority by those authorities surveyed (Figure B7.1). This result underscores the need to raise awareness about the diverse contingent resources multilateral institutions offer for rapid financing during economic shocks, disasters, and health emergencies.

FIGURE B7.1. Three Priority Areas to Increase Resilience for the Next Crisis



Source: Authors.

Notes: The figure reports responses to Question 21: "From your institution's perspective, how relevant are the following measures to improve households' and MSMEs' financial resilience against the next systemic crisis?" MSME – micro-, small-, and medium-sized enterprises.

## SECTION 4

# Conclusions

**D**ESPITE THE BEST EFFORTS OF THE authorities, there will be more systemic crises in the future. Evidence from previous crises highlights the importance of developing a deeper understanding of available tools, their interplay, and their potential impact on financial inclusion.

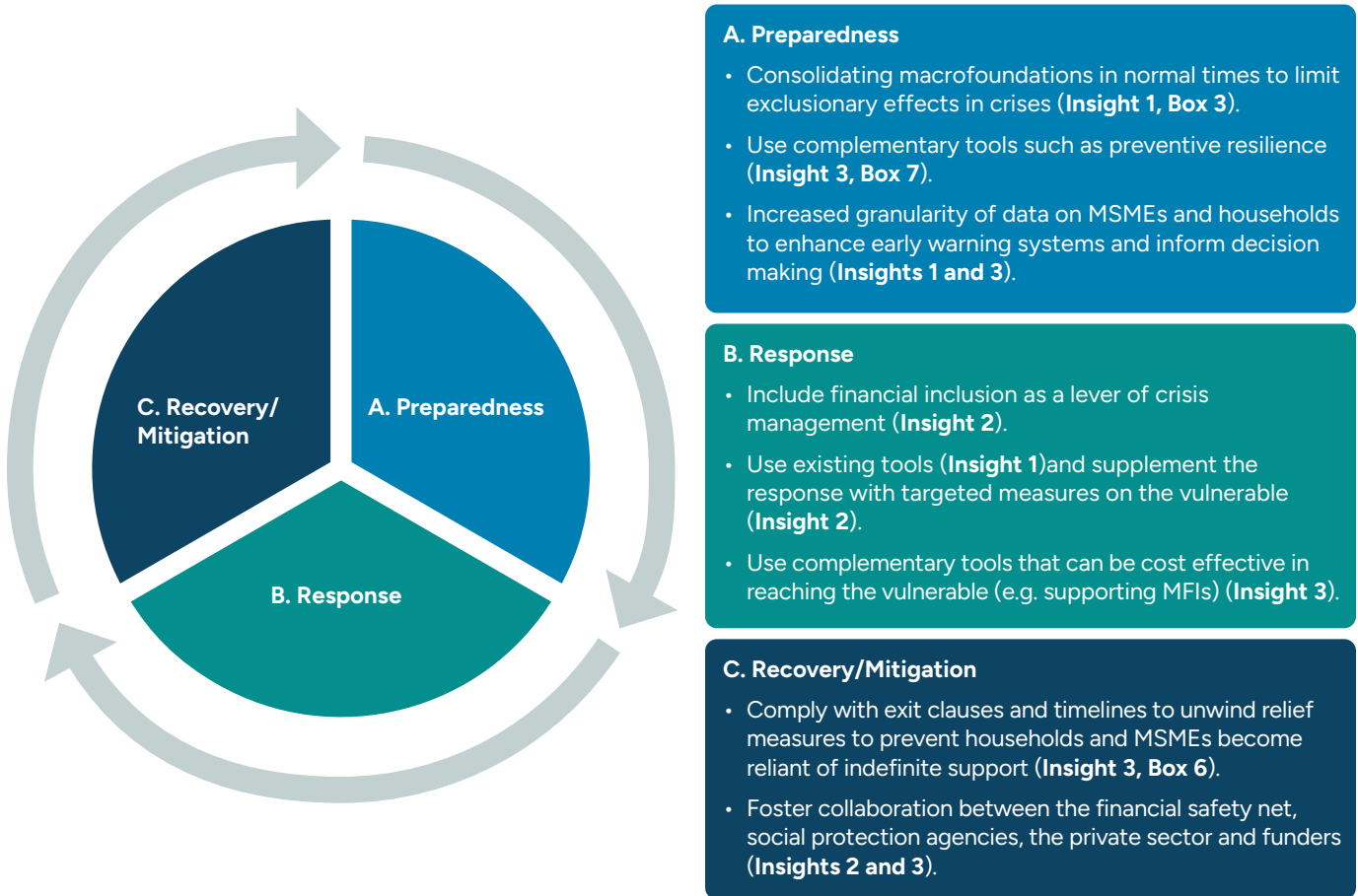
FSNAs have more power and more responsibility than they may realize. By using existing tools with an intentional focus on inclusion and being willing to adapt and innovate, it is possible to navigate financial crises in ways that minimize their exclusionary impact. The message is clear: stability and inclusion are not rivals. With the right approach, they can—and should—go hand in hand; however, this alignment does not occur by chance.

The three insights presented in Section 3 provide actionable recommendations for FSNAs during crises, supplementing best practices for effective crisis response and resolution. These practical insights can guide FSNAs seeking to integrate inclusion into crisis preparedness, response, and recovery efforts. Figure 6 summarizes key actions for each stage of the crisis.

## **A. Preparedness: Do not wait for the next crisis; prepare early warning systems and ensure access to contingent emergency funds**

The analysis in this Working Paper offers evidence that supports the widely accepted view that the effectiveness of crisis response is largely determined by the specific conditions within each country. The case studies undertaken, detailed in Box 3 and Appendix A.2, demonstrate that the same toolkit may lead to varied financial inclusion outcomes, depending on macroeconomic conditions and institutional frameworks. This is why it is important to strengthen the system before the storm begins. Consolidating “macrofoundations” in normal times will reduce the likelihood of painful and costly interventions when a crisis strikes. This finding is aligned with the prevailing consensus that credible, predictable policies in fiscal, monetary, and exchange rate management will help maintain access to contingency funds.

FIGURE 6. Integrating Inclusion in Crisis Preparedness, Response, and Recovery



Source: Authors.

Note: MFI = microfinance institution; MSME = micro-, small-, and medium-sized enterprises.

Crisis preparedness is not only a matter of macroeconomic stabilization policies and financial sector-specific responses. Authorities also should prioritize complementary policies, such as preventive resilience as well as risk mitigation mechanisms such as insurance. To encourage insurance penetration, authorities can use a mix of regulatory and market-based tools to increase affordability, availability, and understanding of insurance products.<sup>20</sup>

Crisis preparedness and timely response rely on granular and real-time data. By using information from multiple sources, including enterprise records, transactional data, and the credit repayment patterns of individuals, authorities will be able to seamlessly zoom from a highly aggregated level all the way down to that of households and MSMEs. A flexible “zoom-in” will enhance early warning systems and fuel targeted interventions on households and MSMEs, effectively reducing the risk of exclusionary outcomes.

<sup>20</sup> To this aim, authorities can consider expanding public insurance programs; establishing disaster insurance programs; simplifying regulatory frameworks for microinsurance; encouraging the development of microinsurance products tailored to the needs of low-income customers; promoting the usage of advanced tools to reduce underwriting costs; promoting financial literacy; and encouraging insurers to simplify policy documents; among others.

## **B. Response: When crisis hits, use proven tools intentionally**

The empirical analysis suggests that financial inclusion should be actively integrated as a lever of crisis response. Existing financial sector-specific interventions, when strategically applied, can yield positive outcomes for financial inclusion. The country-level analysis demonstrated that lending, capital injections, and effective restructuring in the post-crisis phase can be all leveraged to support financial inclusion.

Microdata estimates also indicated, however, that applying the same toolkit to heterogeneous groups could result in varying financial inclusion outcomes and potentially exacerbate exclusionary effects. Consequently, authorities must supplement existing tools with targeted measures focused on the vulnerable. Indeed, this in-depth, individual-level analysis of financial inclusion shows that excluded individuals are difficult to reach, even when the most effective financial sector-specific interventions are applied, thus emphasizing the need for intentional policy design.

Since sector-wide interventions often fail to reach the most excluded, financial inclusion should be treated as a key element for resolving crises and promoting long-term financial stability. To advance in this area, section 3 outlined some potential approaches. For example, in some specific crisis episodes, supporting MFIs could be more cost-effective than simply expanding social protection networks. Furthermore, donors and multilateral institutions play a key role in supporting the safety net when the crisis initially hits, establishing rescue packages to MFIs, and introducing incentives to lend during the consolidation phase.

## **C. Recovery and Mitigation: After the storm, coordinate exit strategies and work with multiple stakeholders to avoid long-term exclusionary effects**

Although Covid-19 does not qualify as a systemic crisis, it offers valuable lessons regarding the need for decisive action and clear communication on the temporary nature of relief measures. In some circumstances, temporary interventions in the financial sector are unavoidable and even optimal. However, these should be carefully calibrated to avoid distorting markets, promoting balance-sheet opacity, or encouraging excessive risk-taking in the future. Clear exit clauses, transparent timelines, and an emphasis on the extraordinary nature of such measures can limit fiscal costs, minimize moral hazard, and safeguard market discipline.

Supporting financial inclusion requires close collaboration between the financial safety net, social protection systems, and the private sector. Leveraging comprehensive registries and the geospatial mapping of MSMEs and vulnerable households can accelerate the delivery of targeted subsidies or concessional credit. Microfinance institutions—given their reach and community knowledge—are valuable partners in extending support to underserved populations. By leveraging their existing expertise, governments can potentially reduce the burden of social protection networks and improve the targeting of beneficiaries before the next crisis emerges.

# Appendix

## A.1. Empirically Testing the Effects of the Available Toolkit on Financial Inclusion

To evaluate the potential effects of the toolkit described in Section 2 on financial inclusion, the empirical exercise in this Working Paper encompasses two units of analysis: countries and individuals. Causal inference at the macro level remains challenging, as is often the case in observational studies where policy interventions occur at the national level; measuring their effects is prone to reverse causality and omitted confounders. In this playing field, to strengthen the credibility of the macro-level findings in this study and to address the identification challenges, they are complemented with a microeconomic perspective.

The **macroeconomic approach** analyzes the effects of six tools on eight financial usage and five access indicators at the country level, retrieved from the Financial Access Survey (FAS) of the International Monetary Fund (IMF) (Kendall et al. 2010). Two-way fixed effect panel regressions are applied for a dataset of 58 countries over the period 2004 to 2019. The specification deliberately excludes fiscal stimulus and

monetary easing, which are treated as control variables, due to the methodological challenges associated with isolating the aggregate effects of stabilization policies—a well-documented issue in the literature on monetary and fiscal shocks (Nakamura et al., 2017). These broader policies are, nonetheless, examined in the microeconomic analysis.

The **microeconomic approach** uses conditional quantile regressions (Koenker and Bassett, 1978; Koenker 2005) to contrast the findings at the country level and examine differential impacts of crisis-specific interventions and broader stabilization measures on individuals, conditional on their degree of financial inclusion. To this aim, an individual-level indicator is calculated, with 13 recurring questions retrieved from the World Bank Global Findex database.<sup>21</sup> Given the number of crises and interventions reported during 2011 and 2014 the analysis focuses on these two waves.

Naturally, both approaches incorporate a comprehensive set of control variables that could simultaneously influence not only the financial inclusion outcomes but also the likelihood of a given

---

21 This indicator measures the frequency of access to and usage of financial services drawing from micro-level data from the World Bank Global Findex database. A common set of questions across waves were identified and responses were normalized to a range from 0 to 10. Higher values indicate the individual responded affirmatively to a higher number of questions, reflecting a more intensive access to and usage of financial services (eg., debit cards, credit cards, loans, deposit withdrawals, mobile payments, electronic payments). The indicator was introduced in Quevedo-Vega and Uribe (2025), “The power of Microdata from Global Findex.”

policy being implemented.<sup>22</sup> The rationale behind their selection draws from existing literature and a data-driven causal search strategy of over 70 variables that could act as confounders. This approach enhances the accuracy of the estimations in this study, accounts for the multiple dynamics at play during the unfolding of a crisis as well as in the periods preceding it, including its severity, the institutional factors, and the macroeconomic environment in which policies are implemented. The estimates of this study should be interpreted as **direct** policy effects rather than **total** effects. Larger total effects might emerge if one were able to exclude all variables that potentially mediate the relationship between policies and financial inclusion outcomes. However, this conservative approach to prioritize identification of direct effects and intuitive economic interpretation has been deliberately adopted.

### A.1.1 DATA AT THE COUNTRY LEVEL

On the macroeconomic side, the FAS (Kendall et al. 2010) database provides detailed data on access to and usage of financial services spanning from 2004 to 2023. The dataset includes 121 original series and 70 standardized indicators for cross-country comparisons.

After merging the financial inclusion indicators with the policy response database, the analysis covers 58 countries from 2004 to 2019.<sup>23</sup> The sample comprises 26 advanced economies (Australia, Austria, Belgium, Canada, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Republic of Korea, Slovak Republic, Spain, Sweden, Switzerland, and the United Arab Emirates); 23 emerging markets (Argentina, Azerbaijan, Brazil, Bulgaria, China, Colombia, Croatia, Hungary, India, Indonesia, Kazakhstan, Latvia, Malaysia, Mexico, Poland,

Qatar, Romania, Russian Federation, Saudi Arabia, Thailand, Trinidad and Tobago, Turkey, and Ukraine); and 9 developing countries (Costa Rica, Dominican Republic, Guyana, Honduras, Kenya, Moldova, Mongolia, the Philippines, and Tunisia).

To mitigate the impact of missing data, the analysis was restricted to financial inclusion indicators that have at least 66 percent data availability (Figure A1). These include the following: number of commercial bank branches per 100,000 adults and per 1,000 km<sup>2</sup>; number of ATMs per 100,000 adults and per 1,000 km<sup>2</sup>; number of insurance corporations per 100,000 adults; outstanding deposits with commercial banks (as a percentage of gross domestic product (GDP)); outstanding loans from commercial banks (as a percentage of GDP); outstanding deposits of the household sector with commercial banks (as a percentage of GDP); outstanding loans from commercial banks to the household sector (as a percentage of GDP); and number of credit cards and debit cards per 1,000 adults. Regarding the other indicators included in this dataset, over one third of the data points are not available (Figure A2).

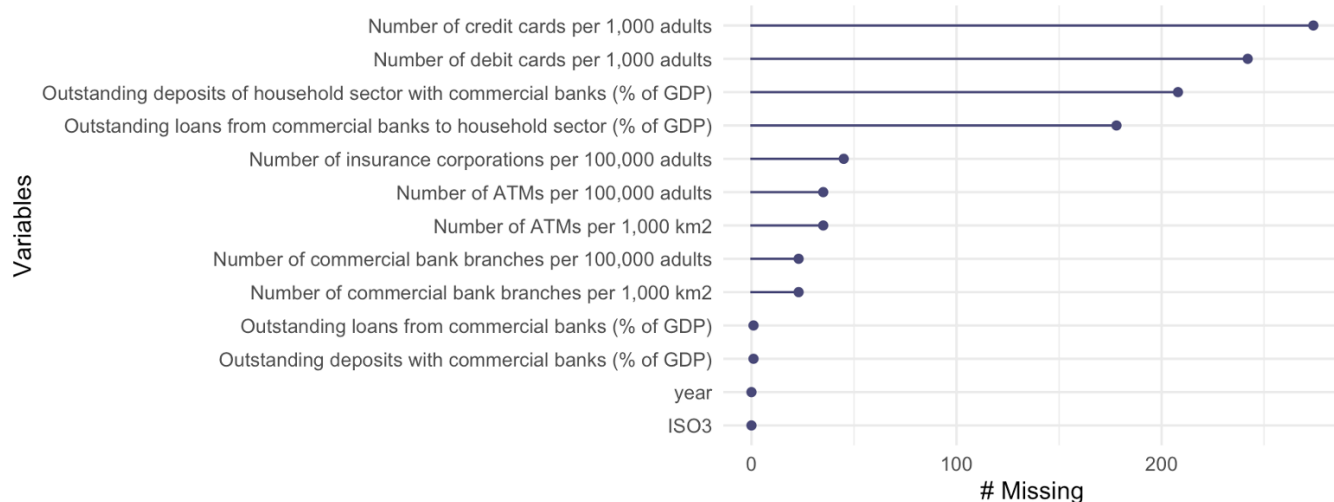
Most significant data limitations are particularly evident in the early years of the sample and there is notable heterogeneity in the missing values across countries. Some countries, such as Canada, exhibit poor information for four indicators (credit and debit cards, loans, and deposits to households). A similar issue, though to a lesser extent, is observed for countries such as the Philippines, the United Arab Emirates, and others, particularly at the beginning of the sample period. However, no country has missing data for all access or use indicators (Figure A3)

---

22 Note that isolating the impact of policies on financial inclusion does not require, nor is it recommended to fully describe, all the determinants of financial inclusion or policy implementation. Instead, focus was on the variables that, in principle, may influence not only outcomes (financial inclusion) but also treatment variables (policy implementation). This approach aligns with the causal search algorithms employed, as well as the use of potential outcomes and directed acyclic graphs in causal inference literature (Pearl 2009).

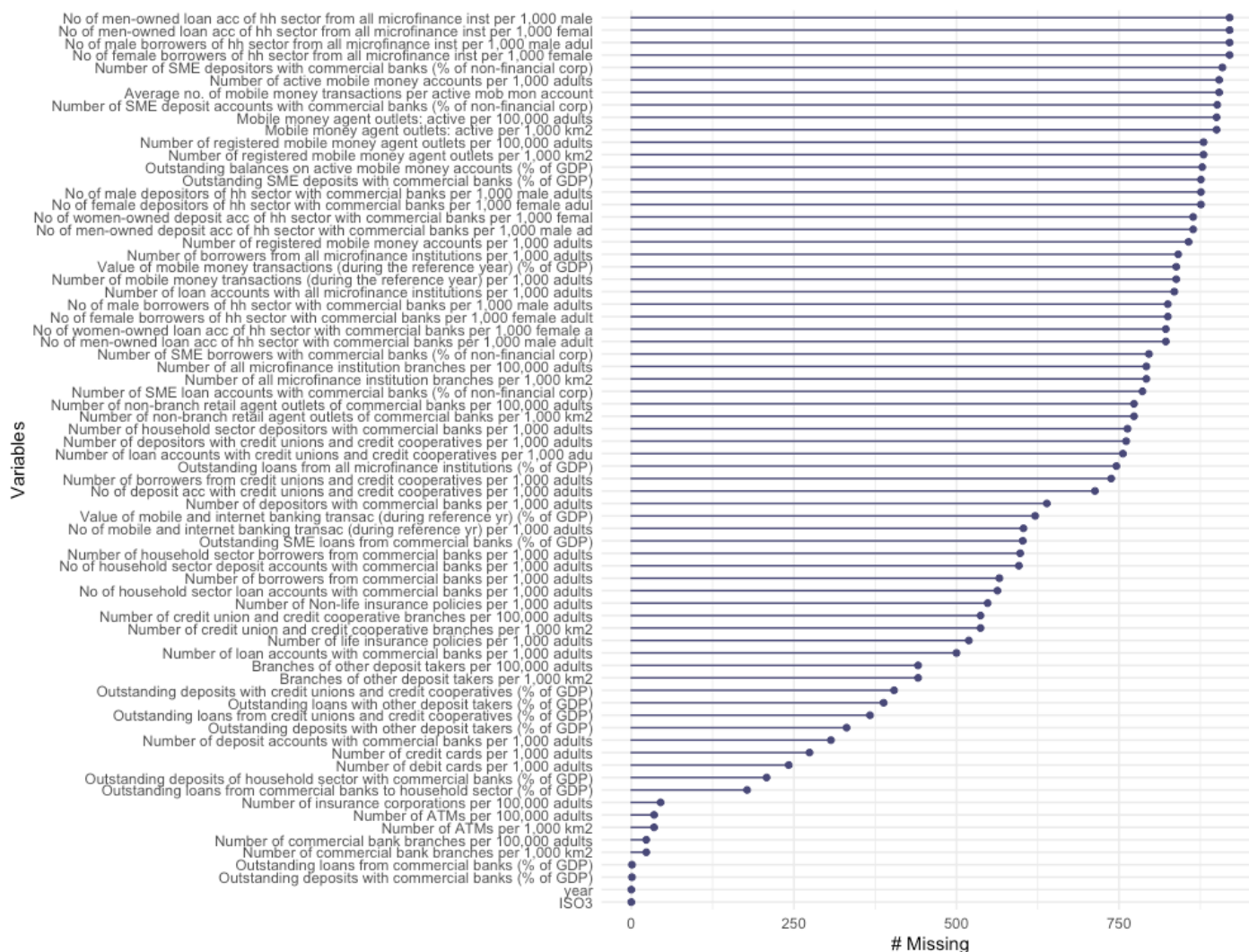
23 The sample excludes countries with limited data availability such as Guatemala, Guinea-Bissau, Kuwait, Nicaragua, Taiwan-China, the United States, the United Kingdom, and Venezuela.

FIGURE A.1. Number of Missing Observations for Selected Financial Access Survey Indicators, 2004–2019



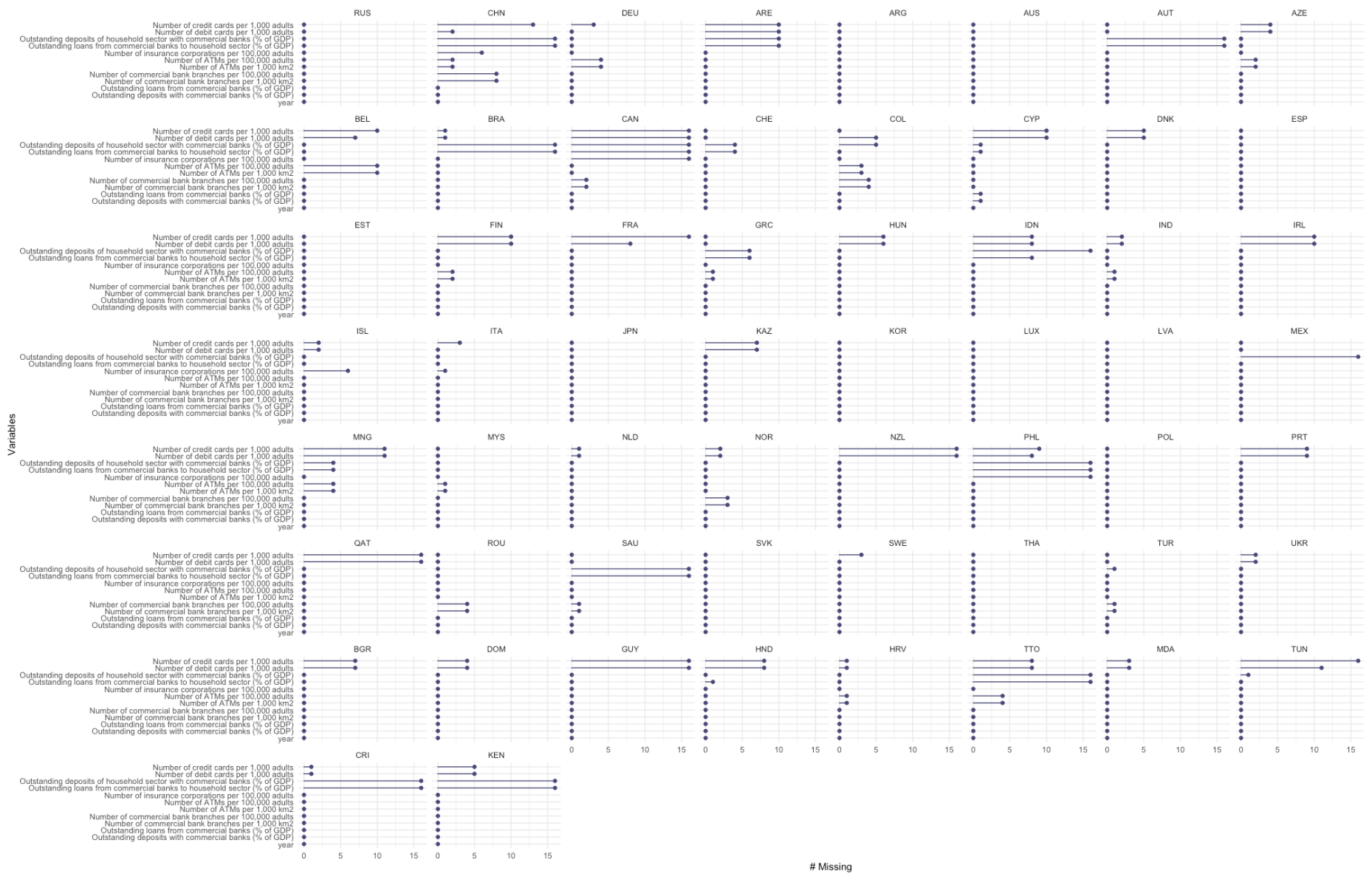
Sources: Authors and Financial Access Survey of the International Monetary Fund.

FIGURE A.2. Number of Missing Observations for Financial Access Survey Indicators, 2004-2019



Source: Authors and Financial Access Survey of the International Monetary Fund.

FIGURE A.3. Number of Missing Observations by Country



Source: Authors and Financial Access Survey of the International Monetary Fund.

## A.1.2 DATA AT THE INDIVIDUAL LEVEL

The World Bank Global Findex database (Demirgüç-Kunt et al. 2013, 2015, 2018, 2021) was used to estimate effects at the individual level. Every three years Gallup, on behalf of the World Bank, surveys individuals aged 15 and older across more than 140 countries, each wave<sup>24</sup> on how they access and use financial services, focusing on bank account ownership, credit, savings, payments, and digital financial services.

The analysis is restricted to the 2011 and 2014 waves where a sufficiently large number of crises and interventions have been recorded. The remaining waves were excluded—specifically in 2017 when there are only candidate crises and 2021 when all countries were affected simultaneously by the pandemic—, thus impeding the identification of the marginal effects of policy interventions.

An indicator was created to measure the frequency of access to and usage of financial services, drawing from individual responses to 13 recurring questions in the four waves of the Global Findex. The more questions a respondent answered affirmatively—indicating the usage of or access to a financial service (e.g., debit accounts, debit cards, credit cards, loans, deposits, withdrawals, mobile payments, electronic payments, etc.)—the higher the score assigned to that individual. The indicator is normalized to range from 0 to 10, with higher values indicating greater financial inclusion. Table A.1 lists the questions retrieved for this Working Paper and their respective code in each wave.

The score is plotted in Figure A.4. In all three cases the score exhibits a large proportion of zeros, representing individuals who answer negatively to all questions. For those with a score greater than zero, the levels of financial inclusion can vary significantly. This score is used in the cross-sectional quantile regressions.

TABLE A.1. **Questions Retrieved to Build the Financial Inclusion Score**

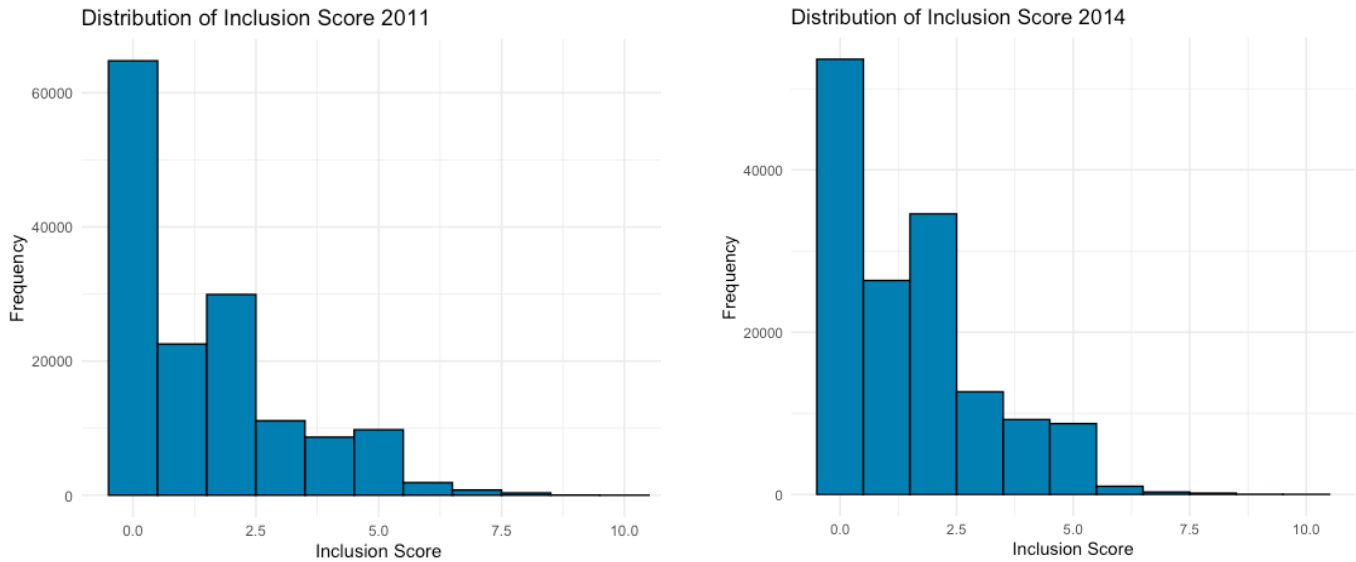
Question	Code 2011	Code 2014
Has a debit card	q3a	q2
Has a credit card	q3b	q5
Paid utility bills using an account	q8b	q31b
Received wage payments into account	q9a	q36bc
Received government transfers into account	q9b	q40bc
Received remittances	q9c	q29b
Sent remittances	q9d	q27b
Saved in a financial institution	q13a	q18a
Borrowed money from a financial institution	q14a	q21a
Has a loan for home purchase	q15a	q20
Paid utility bills using mobile phone	q15a1a	q31c
Sent money through mobile phone	q15a1b	q27c
Uses financial services for health purposes	q15d	q22b

Source: Authors.

Note: The maximum of the indicator is normalized every year to be 10 and the minimum is zero by construction.

24 The sample size varies across countries but often reaches thousands of respondents in each jurisdiction. In 2011, 149,761 people were surveyed across 148 countries, with 53 questions asked. In 2014, the survey covered 146,688 individuals in 146 countries and included 86 questions. In 2017, the survey reached 154,923 respondents across 144 countries, with 105 questions posed. Finally, in 2021, the survey was conducted with 143,887 individuals across 115 countries, featuring 125 questions. The methodology emphasizes a representative sample of the adult population, ensuring that data reflects financial aspects of individuals across various income levels and demographic groups.

FIGURE A.4. **Financial Inclusion Score 2011, 2014**



Source: Authors, with microdata from the World Bank Global Findex. To exemplify the distribution data is reported for the 2011 and 2014 waves.

### A.1.3. CONTROL VARIABLES

The analysis leverages from a comprehensive set of potential covariates, drawing from existing literature. These 79 variables encompass a broad range of country characteristics, including macroeconomic, institutional, financial, technological, and developmental frameworks, as well as external sector factors. All of these are sourced from the World Bank Group and the International Monetary Fund. In addition, the Financial Openness Index was retrieved from Chinn-Ito and the Economic Complexity Indicator from Harvard Kennedy School's Growth Lab.

Missing values in the covariate set amount to 8.69 percent of the total for the period 2004 to 2019. To maximize the available information and retain as much data as possible for the main analysis, the dataset of covariates is balanced using Machine Learning. Specifically, Random Forest is employed, a Machine Learning technique known for its robustness in handling complex and nonlinear relationships in the data. This approach follows the methodology outlined by Stekhoven and Bühlmann (2012), where missing values are treated as the target variable in a predictive modeling framework. The strength of Random Forest

lies in its ensemble nature (i.e., bagging) which reduces overfitting while also being less sensitive to noise. It outperforms other methods such as linear models or factor-based approaches like the Tall-Wide estimator (Cahan et al. 2023) and latent factor models (Xiong and Pelger 2023), which are more suited for linear data relationships and cannot capture nonlinear features.

This method was not applied to the outcome variables, as they are used as originally provided in their respective datasets.

### A.1.4. MACRO-LEVEL ESTIMATIONS: TWO-WAY-FIXED EFFECT PANEL REGRESSIONS

Given that policy interventions are often implemented in packages with multiple policies being applied simultaneously, there is significant correlation among the categorical variables that measure these interventions over time. As a result, deciding whether to include all policies and their interaction effects in the model simultaneously or whether to include only one policy at a time is not a trivial matter. Given the richness of the cross-country dataset, it is feasible and preferable to include all policies and their interactions

in the same model. This strategy enables one to isolate marginal policy effects. In contrast, including only one policy at a time fails to capture the distinct effects of individual policies and policy packages.

A panel data model for each financial inclusion indicator is employed, with two-way fixed effects and Newey-West robust standard errors described by the following equation:

$$FI_{it} = \alpha_i + \omega_t + \beta^{POL} POL_{it} + \beta X_{it} + u_{it}, (1)$$

where  $FI_{it}$  is the financial inclusion outcome of interest. This indicator can be either a financial inclusion access indicator such as **Bank Branches per 1,000 km<sup>2</sup>** or **100,000 Adults; ATMs per 1,000 km<sup>2</sup>** or **100,000 Adults** or the **Number of Insurance Corporations**; or a usage indicator such as **Number of Deposit Accounts; Deposits as a percentage of GDP; Household Deposits as a percentage of GDP; Deposits with other non-bank financial institutions as a percentage of GDP; Loans as a percentage of GDP; Loans to Households as a percentage of GDP; Number of Credit Cards per 100,000 Adults; Number of Debit Cards per 100,000 Adults.**

$\alpha_i, \omega_t$  represent the individual (country) and time (year) fixed effects that must be accounted for in the empirical specification. Meanwhile,  $\beta^{POL}$  is a vector of parameters that measures the effect of the six policy interventions: **Lending, Guarantees, Capital Injections, Restructuring, Rules** or **Asset Management**. In the policy vector ( $POL_{it}$ ), the six stand-alone intervention categories are included and all possible interactions among them.<sup>25</sup>

$u_{it}$  represents an idiosyncratic error term, while  $X_{it}$  includes the control variables, which are treated as nuisance parameters in the model specifications. This set of controls is selected based on theoretical considerations to identify country characteristics that could act as potential confounders, thereby

influencing not only the likelihood of a policy intervention but also the financial inclusion outcome. The set of control variables also includes a dummy variable indicating whether a crisis qualifies as a **candidate crisis** according to the classification by Metrick and Schmelzing (2021), along with all possible interactions between this binary classification and the various policies. This approach ensures that the estimated effects in the baseline scenario correspond to confirmed crises, while also allowing one to observe how policy impacts may differ when a crisis does not fully materialize but a policy measure is nonetheless enacted.

Regressions were conducted using two different sets of regressors: a reduced set and an enhanced set. The enhanced set includes additional variables identified through causal search algorithms applied to the full dataset (which contains approximately 79 potential confounders). The Hill-Climbing algorithm was applied, which is a popular score-based method for learning the structure of Bayesian networks (Koller and Friedman 2009). This method operates by iteratively exploring the space of possible causal network structures, starting from an initial configuration and moving toward a better model using BIC or AIC as reference. At each step, the algorithm evaluates small changes—such as adding, deleting, or reversing an edge—and selects the move that most improves the network score. Implementation in R, is available from the **bnlearn** package (Scutari 2010). Hill-Climbing is widely used because of its simplicity, computational efficiency, and good empirical performance for medium-sized networks (Koller and Friedman 2009), as is the case for this particular study.

Following the preliminary causal search, only the variables (e.g., population growth, expenditure on research and development, and the percentage of the working population that is self-employed) were retained. These can be economically linked to the financial inclusion outcome variables which

25 Excluded are cases where there is no intervention or where interventions are labeled as “Other” in the Metrick and Schmelzing’s (2021) dataset.

consistently influence several of these outcomes. Not included were the policy variables in the search; instead, variables from the “parents” set of financial inclusion indicators were selected, which also are likely to impact policy realizations. This approach appears more conservative than simply relying on the optimization of the Hill-Climbing algorithm and, indeed, it enabled identification of some variables, described in Table A.2, that were originally absent from the control set but are potentially relevant to this study.

The panel regression results reported in Box 1 correspond to the enhanced model, as specified in Equation (1). Results for the restricted model are not shown but are similar to those presented here. It is important to note that some of the variables are expressed as ratios, while others are growth rates, ensuring that this model accounts not only for cross-sectional differences between countries but also for time variations in how a crisis may develop.

#### A.1.5. MICRO-LEVEL ESTIMATIONS: QUANTILE REGRESSION MODELS

In traditional linear regression, the model is expressed as in Equation (1), with  $Ey_i = E\beta x_i = y$ , where  $y$  is the conditional mean of  $y_i$  given  $x_i$ . In contrast, quantile regression assumes the  $\theta$ -th quantile of  $y_i$  conditional on  $x_i$  as  $Q_{y_i|x_i} = x_i \beta(\theta)$  where  $Q_{y_i|x_i}$  represents the  $\theta$ -th quantile of the outcome variable  $y_i$ ;  $x_i$  denotes the policy variables and the control variables, and  $\beta(\theta)$  is the coefficient measuring the association between the explanatory variables and the  $\theta$ -th quantile of outcome.

Formally, the model in Equation (1) is expanded to explain the entire conditional distribution of financial inclusion scores  $FI_{it}$  in each wave of the Global Findex Survey. To this end, it is generalized (1) in the following way:

$$Q_{FI_{it}}^{\theta} = \alpha_t^{\theta} + \beta_{POL_t}^{\theta} POL_{it} + \beta_{X_t}^{\theta} X_{it}, \quad (2)$$

$\forall t \in \{2011, 2014\}$ , where  $\alpha_t^{\theta}$  is the intercept corresponding to year  $t$  and quantile  $\theta$  or, in other words, the  $\theta$ th conditional quantile of  $FI_i$  in year  $t$  given treatment and control variables on the

TABLE A.2. **Control Variables in a Restricted and an Expanded Model**

Indicator	Restricted Model	Enhanced Model
IMF Financial Stress Indicator	X	X
Financial Openness Indicator	X	X
Economic Complexity Indicator	X	X
Foreign Direct Investment-Net Outflows		X
Control of Corruption		X
Bank Nonperforming Loans to Total Gross Loans (%)	X	X
Bank Capital to Assets Ratio (%)		X
Bank Liquid Reserves to Bank Assets Ratio (%)		X
Broad Money (% Of GDP)	X	X
Broad Money Growth (Annual %)	X	X
Inflation	X	X
Research and Development Expenditure (% of GDP)		X
Government Effectiveness	X	X
Exports of Goods and Services (% Of GDP)		X
Gross Fixed Capital Formation (Annual % Growth)		X
Gross Domestic Product Growth (Annual %)	X	X
Rule of Law	X	X
Self-Employed (%)		X
Population Growth (Annual %)		X
Voice and Accountability	X	X
Financial Institutions Efficiency Index	X	X
Government Debt (% GDP)	X	X

Source: Authors.

Note: GDP = gross domestic product; IMF = International Monetary Fund.

right-hand side (RHS) of the equation. Note that  $Q_{FI_{it}}^\theta = \inf \{FI_t : C_i(FI|POL_{it}, X_{it}) \geq \theta\}$  where  $C_i(\cdot)$  is the cumulative distribution function of  $FI_{it}$ . Note that Equation (2) does not contain a random term because  $Q_{FI_{it}}^\theta$  is deterministic. The coefficients on the RHS have superscripts because they change for each value of  $\theta$ . Therefore, the following:

$$(\alpha_i^\theta, \beta_{POL}^\theta, R_{X_i}^\theta) = \operatorname{argmin}_{\{\alpha, \beta_{POL}, \beta_X\}} E[\rho_\theta(FI_{it} - \alpha - \beta_{POL}POL_{it} - \beta_X X_{it})], \quad (3)$$

where  $\rho_\theta(\cdot)$  is a loss function, given by  $\rho_\theta(e) = (1 - \theta)I_{\{e < 0\}}|e| + \theta I_{\{e > 0\}}|e|$ , where  $I_{\{e < 0\}}$  is an indicator function that is equal to 1 when the subscript is true and 0 otherwise. As is well known, the formulation in Equation (3) leads to the solution of a linear programming optimization problem. See Uribe and Guillen (2020) for a short introduction to the topic, while the basic structure of the problem and the counterpart algorithm solution can be found in Koenker (2005). To estimate the models in Equation (2) and Equation (3), the widely used specification for conditional quantile estimation, proposed by Koenker and Bassett (1978), is adopted. Specifically, separate cross-sectional quantile regressions for each wave of the Global Findex Survey (2011 and 2014) were conducted and the coefficients are reported for policy and control variables in the results section A.1.7. The set of regressors differs between the two survey waves, as the policy mix varied in both years. Similarly, interactions with the candidate crisis variables are subject to the same restriction.

### A.1.6. MACRO-LEVEL RESULTS

The results from the macro model of this study, outlined in Equation (1), are presented in Tables A.3–A.5 and Figure A.5. Table A.3 summarizes the main effects and their statistical significance at the 95 percent confidence level. The first column lists the individual policy interventions along with all possible interactions among the six policy measures. Column 2 through Column 14 correspond to the 13 dimensions of financial inclusion considered in this analysis: eight usage indicators (Column 2 to Column 9) and five access indicators (Column 10 to Column 14). For each

indicator, a panel regression is estimated, based on the enhanced specification of Equation (1). Statistically significant positive effects are indicated with a plus sign and highlighted in blue, while statistically significant negative effects are represented with a minus sign and highlighted in orange.

Figure A.5 also reports significant as well as nonsignificant effects of all policy interventions with their corresponding 95-percent confidence intervals across each financial inclusion indicator in individual subplots. Panel A focuses on the **usage** dimension, while Panel B shows the **access** indicators.

Table A.4 provides an overview of the interaction effects between the candidate crisis variables and policy interventions, illustrating how the estimated effects change when a crisis does not materialize but the policies are implemented. Finally, Table A.5 includes point estimates for statistically significant effects.

A general observation from Table A3 is that financial access indicators are, overall, less sensitive than usage indicators, particularly when policies are implemented alone. This may reflect that access indicators exhibit greater responsiveness to demographic factors, broader structural transformations in the economy, and technological variables—as noted by Espinosa-Vega et al. (2020)—than stand-alone responses to systemic crises.

By integrating the general patterns observed in Table A.3 and Figure A.5 with the numerical estimates in Table A.5, several insights emerge regarding the impact of financial crisis interventions on financial inclusion outcomes. **Capital injections** stand out as the most consistently positive policy, increasing household bank deposits by 3.86 percent of GDP, boosting household-sector lending by 6.06 percent of GDP, and raising total loans by 11.13 percent of GDP.

While combining **capital injections** with other interventions mostly generate additional benefits, these interactions might involve trade-offs. For example, pairing **capital injections** with **guarantees**

increases nonbank deposits by 5.87 percent of GDP but reduces household deposits by 3.77 percent of GDP. Similarly, combining **capital injections** with rules raises bank deposits by 9.91 percent of GDP while decreasing nonbank deposits by 4.29 percent of GDP.

One particularly favorable combination is **capital** and **lending**, which expands debit card penetration by 431 cards per 100,000 adults and significantly increases ATM availability. Overall, implementing capital injections alone or alongside other interventions yields positive effects across 9 of the 13 financial inclusion dimensions analyzed, with exceptions being the number of credit cards, insurance corporations, bank branches per 100,000 adults, and ATMs per 1,000 km<sup>2</sup>, which are not impacted by capital injections in a significant way.

These findings align with prior studies showing that capital injections can positively affect welfare—in this case, through financial inclusion—outweighing their cost to taxpayers. For example, Veronesi and Zingales (2010) find that the large-scale U.S. government recapitalization following the 2008 subprime crisis significantly reduced the probability of bankruptcy among major financial institutions and generated billions of dollars in value, exceeding the costs borne by the government and taxpayers.

In contrast to capital injections, liability and blanket guarantees are consistently associated with negative outcomes for financial inclusion, even after controlling for variables that capture the crisis severity, as demonstrated in this study. Guarantees reduce household loans by 8.41 percent of GDP and debit card adoption by 737 cards per 1,000 adults, with these adverse effects worsening when guarantees are combined with other policy measures, particularly rules-based approaches. For example, combining guarantees with lending policies leads to a decline in the number of bank branches per 1,000 km<sup>2</sup>. When paired with capital injections, guarantees increase deposit accounts with nonbank intermediaries by 5.87 percent of GDP but simultaneously decrease household bank deposits by 3.77 percent of GDP with respect to the base category.

The combination of guarantees with rules-based policies is associated to the most negative outcomes for financial inclusion, a reduction of deposits with nonbank intermediaries by 4.18 percent of GDP, household bank deposits by 4.56 percent, and debit card issuance by 1,090 cards per 1,000 adults. It also adds a significant decrease in the number of bank branches per 1,000 km<sup>2</sup> (-6.52) and per 100,000 adults (-4.96).

Demirgüç-Kunt et al. (2015) highlight the role of deposit guarantees as an effective tool for preventing banking runs, noting that insured deposits remained largely stable during the global financial crisis, with few exceptions worldwide. However, they caution against the unintended consequences of increasing reliance on liability guarantees—specifically due to the potential strain on government finances, questioning whether governments can adequately support existing commitments while minimizing moral hazard risks. The first concern is especially relevant today, as the health of financial institutions and public finance has become increasingly interconnected—a phenomenon known as the “doom loop” in the literature, which underscores the nexus between banking and sovereign risk. This dynamic is particularly acute in contexts of high public debt, as seen currently in many emerging market economies.

Laeven and Valencia (2012) find that while blanket guarantees are generally effective in restoring domestic depositor confidence, they have little impact on limiting capital outflows by foreign creditors. Similarly, Honohan and Klingebiel (2003) report that such guarantees often carry significant fiscal costs, largely because they are typically deployed during periods of particularly severe financial crises.

A similar argument could be made for combinations involving capital injections and rules, as both interventions are typically deployed in deep financial crises. Moreover, capital injections often occur in later stages of a crisis, once liquidity support measures have been exhausted (Laeven 2011).

Lending interventions are positively associated with an increase in the number of deposit accounts per 1,000 adults (by 512 accounts). When combined with capital injections, lending is also positively linked to an increase in the number of debit cards (430.77 per 1,000 adults) and in ATM density (14.14 additional ATMs per 100,000 km<sup>2</sup>). The combination of lending with restructuring produces positive net effects, notably boosting household loans (by 6.89 percent of GDP) and increasing the number of credit cards (by 343.92 per 1,000 adults), although it also results in a decline in household deposits (-6.55 percent of GDP). In contrast, combinations of lending with asset management and with rules-based policies yield mostly negative outcomes. Lending combined with asset management significantly reduces the number of credit (-510.27) and debit cards (-440.83). Meanwhile, lending combined with rules decreases deposits with nonbank intermediaries (-3.75 percent) and the number of bank branches per 100,000 km<sup>2</sup> (-6.05), although it does lead to an increase in total deposits as a share of GDP (by 7.67 percent).

The effects of restructuring programs are mixed but generally positive. When implemented on their own, restructuring measures are associated with increases in household deposits as a share of GDP (6.09 percent), the number of debit cards (1,108.87 per 1,000 adults), and the number of insurance corporations (1.01 per 100,000 adults), while negatively affecting only the number of credit cards per 1,000 adults (-840.24). When combined with other policies, restructuring continues to show a generally positive impact on financial inclusion. For example, the combination of restructuring and asset management increases loans as a percentage of GDP (13.13 percent) and raises the number of bank branches per 100,000 adults (7.31). Similarly, when combined with rules-based policies, restructuring positively affects total deposits as a share of GDP (9.42 percent) and household deposits (4.05 percent), with the only negative effect being a decline in the number of debit cards (-794.54 per 1,000 adults). Even in combination with guarantees, the effects are balanced—negative for the number of insurance corporations (-0.55 per 100,000 adults) but positive

for debit card issuance (487.12 per 1,000 adults). When paired with capital injections, however, restructuring does not seem to provide additional benefits beyond those already associated with capital injections alone.

Rules are statistically associated with a negative effect on deposits as a percentage of GDP, which is consistent with their purpose: to delay rather than prevent the risk of depositor run-offs. The interactions of rules with lending and capital injections, previously discussed, also appear balanced—showing one positive and one negative effect in the case of lending, and two positive and two negative effects in the case of capital injections. The only remaining combination, between rules and asset management, shows no significant effects on either access or usage indicators of financial inclusion.

Among all the policies analyzed, asset management interventions show the fewest significant effects on financial inclusion. On their own, these measures are not significantly associated with any dimension of financial inclusion. However, as discussed earlier, asset management positively complements restructuring efforts and negatively interacts with lending policies. All other combinations are also nonsignificant.

Overall, the results complement previous literature by highlighting the generally positive effects of certain interventions, such as capital injections, restructuring, and lending, while drawing attention to the less favorable outcomes associated with liability guarantees. Rules-based policies tend to produce more balanced effects, while asset management interventions mostly show no significant impact on financial inclusion.

Turning attention to the results reported in Table A.4, the analysis reveals significant variation in how policy interventions affect financial inclusion, depending on whether the episode is classified as an actual crisis or a candidate crisis. This distinction proves analytically valuable, as systematic differences in policy effectiveness are observed across these scenarios (Table A.4 and Figure A.5). Notably, financial

inclusion metrics related to usage (e.g., deposits and loans) are more sensitive to the candidate/actual crisis distinction than access indicators (e.g., branch networks). Guarantee-based policies perform relatively better during candidate episodes, showing improved outcomes for household deposits and lending.

This suggests that blanket guarantees are not inherently harmful but tend to become more detrimental when deployed during severe crises. Nevertheless, the positive interactions observed during candidate crises only partially offset the negative effects on household loans (–8.41 percent of GDP versus +7.35 percent of GDP) and do not reverse the negative impact on the number of credit cards. Positive effects associated with guarantees, instead, are found in broader financial inclusion dimensions, such as loans to all sectors and deposits as a percentage of GDP.

Overall, these findings offer a more nuanced understanding of guarantee-based interventions: their negative effects are most pronounced when market disruptions, such as increased moral hazard and adverse selection between consumer segments, undermine financial inclusion. Conversely, interventions such as capital injections and asset management tend to weaken or even turn negative when implemented beyond the crisis context, while restructuring and lending policies display a more even effect across indicators during candidate episodes. The findings in Table A.4 highlight how crisis timing and identification fundamentally shape the financial inclusion impacts of stabilization policies.

TABLE A.3. Summary of the Sign and Significance of the Effects of Policies and Their Interactions

	USE								ACCESS				
	Dep others (% GDP)	Dep Accounts	Deposits (% GDP)	Dep. of House (% GDP)	Loans (% GDP)	Loans House (% GDP)	Credit Cards	Debit Cards	Insurance Corp.	Bank Branches/km2	Bank Branches/Pop	ATMs per 100,000 km2	ATMs per 100,000 Adults
Lending		+											
Capital				+	+	+				+			
Guarantees						-		-					
Restructuring				+			-	+	+				
Asset Management													
Rules			-										
Lending*Capital								+					+
Lending*Guarantees											-		
Lending*Restructuring				-		+	+						
Lending*Asset Management							-	-					
Lending*Rules	-		+							-			
Capital*Guarantees	+			-									
Capital*Restructuring													
Capital*Asset Management													
Capital*Rules		-	+										
Guarantees*Restructuring								+	-				
Guarantees*Asset Management													
Guarantees*Rules	-			-				-		-			
Restructuring*Asset Management					+						+		
Restructuring*Rules			+	+									-
Asset Management*Rules													

Source: Authors.

Note: The table summarizes the results of the models presented in Box 1. Only significant effects at the 95-percent confidence level are highlighted: positive effects are marked in blue with a cross while negative effects are marked in orange with a minus sign.

FIGURE A.5. Responses to Policies and Policy Packages (Enhanced Model)

Panel A. Financial Access Survey-Use Indicators

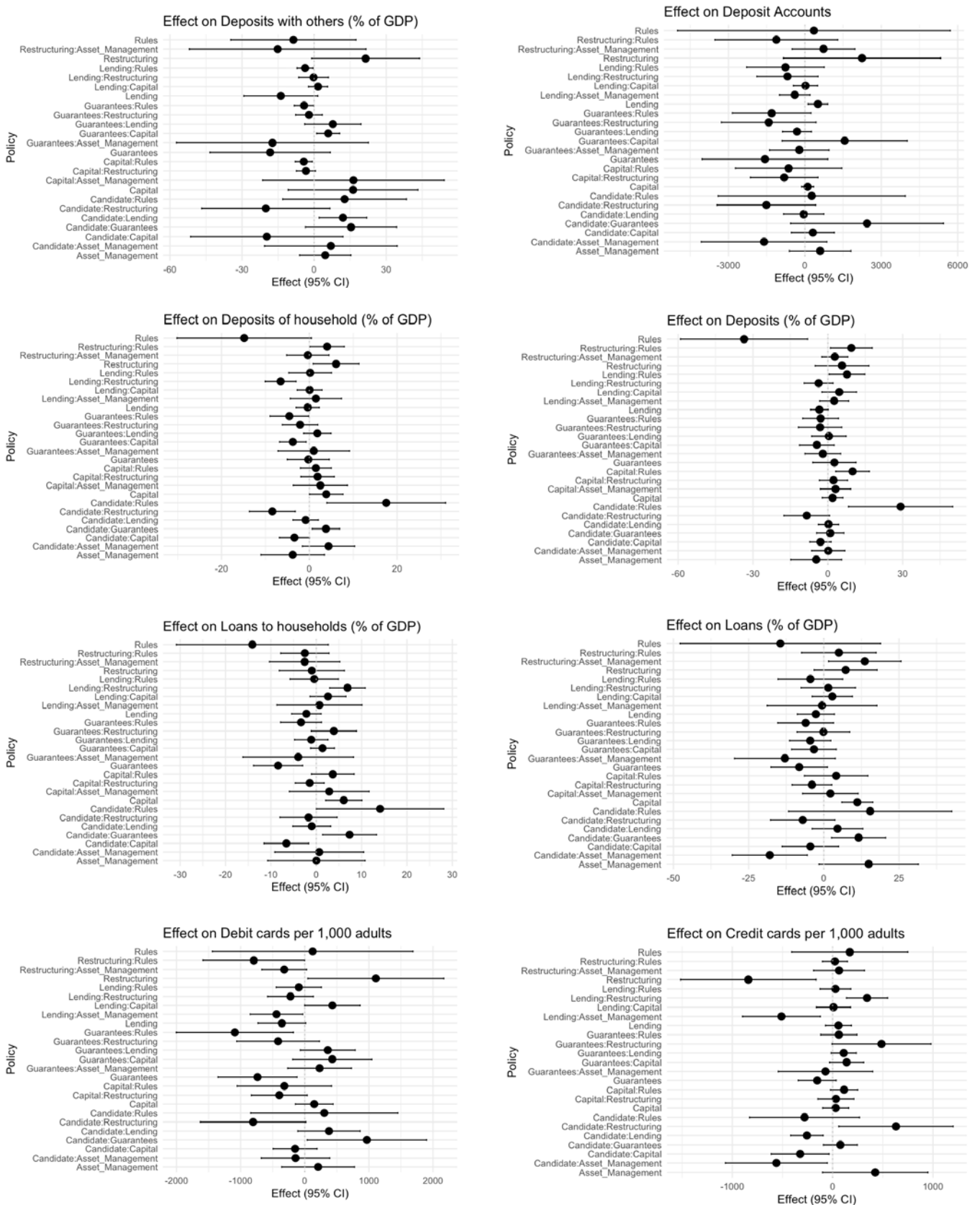
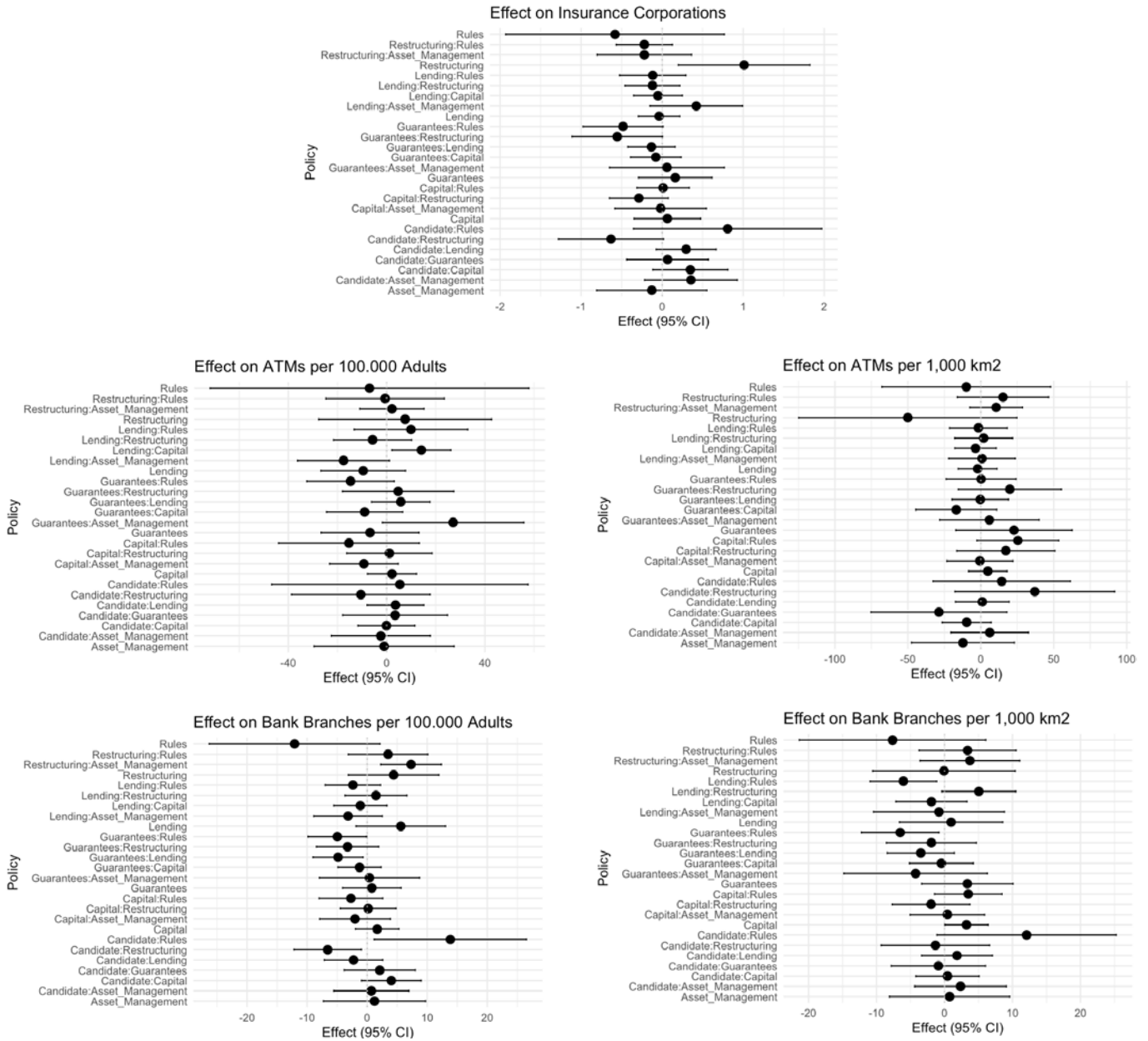


FIGURE A.5. Responses to Policies and Policy Packages (Enhanced Model) (continued)

Panel B. Financial Access Survey- Access Indicators



Source: Authors.

Note: The figure shows the results of the model presented in Equation (1) for different financial inclusion outcomes. Only policy variables are included. CI = Confidence Interval; GDP = gross domestic product.

TABLE A.4. Summary of the Sign and Significance of the Effects of Policies Interactions with Candidate Crises

	USE								ACCESS				
	Dep others (% GDP)	Dep Accounts	Deposits (% GDP)	Dep. of House (% GDP)	Loans (% GDP)	Loans House (% GDP)	Credit Cards	Debit Cards	Insurance Corp.	Bank Branches/km2	Bank Branches/Pop	ATMs per 100,000 km2	ATMs per 100,000 Adults
Candidate*Lending	+						-						
Candidate*Capital						-	-						
Candidate*Guarantees				+	+	+							
Candidate*Restructuring				-			+				-		
Candidate*Asset Management					-		-						
Candidate*Rules				+									

Source: Authors.

Note: The table summarizes the results of the models presented in Box 1 regarding interactions with the candidate crisis variable. Only significant effects at the 95-percent confidence level are highlighted: positive effects are marked in blue with a cross while negative effects are marked in orange with a minus.

TABLE A.5. **Summary of Significant Effects**

Dependent Variable	Independent Variable	Coefficient	Std_Error	P_Value	Observations	R2
Number of commercial bank branches per 1,000 km2	Capital	3.23	1.62	0.05	905	0.28
Number of commercial bank branches per 1,000 km2	Guarantees:Rules	-6.52	2.91	0.03	905	0.28
Number of commercial bank branches per 1,000 km2	Lending:Rules	-6.05	2.5	0.02	905	0.28
Number of commercial bank branches per 100,000 adults	Candidate:Restructuring	-6.57	2.86	0.02	905	0.34
Number of commercial bank branches per 100,000 adults	Candidate:Rules	13.86	6.47	0.03	905	0.34
Number of commercial bank branches per 100,000 adults	Guarantees:Lending	-4.85	2.12	0.02	905	0.34
Number of commercial bank branches per 100,000 adults	Guarantees:Rules	-4.96	2.49	0.05	905	0.34
Number of commercial bank branches per 100,000 adults	Restructuring:Asset_Management	7.31	2.57	0	905	0.34
Number of ATMs per 100,000 adults	Lending:Capital	14.14	6.12	0.02	893	0.24
Number of insurance corporations per 100,000 adults	Restructuring	1.01	0.41	0.01	883	0.26
Number of insurance corporations per 100,000 adults	Guarantees:Restructuring	-0.55	0.28	0.05	883	0.26
Number of deposit accounts with commercial banks per 1,000 adults	Lending	512.41	197.19	0.01	621	0.28
Outstanding deposits with commercial banks (% of GDP)	Rules	-33.57	12.99	0.01	927	0.49
Outstanding deposits with commercial banks (% of GDP)	Candidate:Rules	29.17	10.65	0.01	927	0.49
Outstanding deposits with commercial banks (% of GDP)	Lending:Rules	7.67	3.64	0.04	927	0.49
Outstanding deposits with commercial banks (% of GDP)	Capital:Rules	9.91	3.44	0	927	0.49
Outstanding deposits with commercial banks (% of GDP)	Restructuring:Rules	9.42	4.27	0.03	927	0.49
Outstanding deposits of household sector with commercial banks (% of GDP)	Capital	3.86	1.94	0.05	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Restructuring	6.09	2.66	0.02	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Candidate:Guarantees	3.79	1.6	0.02	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Candidate:Capital	-3.41	1.75	0.05	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Candidate:Restructuring	-8.44	2.67	0	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Candidate:Rules	17.53	6.9	0.01	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Guarantees:Capital	-3.77	1.54	0.01	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Guarantees:Rules	-4.56	2.24	0.04	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Lending:Restructuring	-6.55	1.79	0	720	0.43
Outstanding deposits of household sector with commercial banks (% of GDP)	Restructuring:Rules	4.05	2	0.04	720	0.43
Outstanding deposits with other deposit takers (% of GDP)	Candidate:Lending	12.02	5.05	0.02	597	0.25
Outstanding deposits with other deposit takers (% of GDP)	Guarantees:Capital	5.87	2.44	0.02	597	0.25

TABLE A.5. **Summary of Significant Effects** (continued)

Dependent Variable	Independent Variable	Coefficient	Std_Error	P_Value	Observations	R2
Outstanding deposits with other deposit takers (% of GDP)	Guarantees:Rules	-4.18	2.07	0.04	597	0.25
Outstanding deposits with other deposit takers (% of GDP)	Lending:Rules	-3.75	1.7	0.03	597	0.25
Outstanding deposits with other deposit takers (% of GDP)	Capital:Rules	-4.29	1.81	0.02	597	0.25
Outstanding loans from commercial banks (% of GDP)	Capital	11.13	2.63	0	927	0.54
Outstanding loans from commercial banks (% of GDP)	Candidate:Guarantees	11.57	4.58	0.01	927	0.54
Outstanding loans from commercial banks (% of GDP)	Candidate:Asset_Management	-17.97	6.36	0	927	0.54
Outstanding loans from commercial banks (% of GDP)	Restructuring:Asset_Management	13.63	6.13	0.03	927	0.54
Outstanding loans from commercial banks to household sector (% of GDP)	Guarantees	-8.41	2.76	0	750	0.41
Outstanding loans from commercial banks to household sector (% of GDP)	Capital	6.06	2.04	0	750	0.41
Outstanding loans from commercial banks to household sector (% of GDP)	Candidate:Guarantees	7.35	3.03	0.02	750	0.41
Outstanding loans from commercial banks to household sector (% of GDP)	Candidate:Capital	-6.59	2.51	0.01	750	0.41
Outstanding loans from commercial banks to household sector (% of GDP)	Candidate:Rules	14.07	7.17	0.05	750	0.41
Outstanding loans from commercial banks to household sector (% of GDP)	Lending:Restructuring	6.89	2	0	750	0.41
Number of credit cards per 1,000 adults	Restructuring	-840.24	344.41	0.02	654	0.33
Number of credit cards per 1,000 adults	Candidate:Lending	-256.64	82.51	0	654	0.33
Number of credit cards per 1,000 adults	Candidate:Capital	-323.97	146.9	0.03	654	0.33
Number of credit cards per 1,000 adults	Candidate:Restructuring	631.18	290.55	0.03	654	0.33
Number of credit cards per 1,000 adults	Candidate:Asset_Management	-560.74	258.89	0.03	654	0.33
Number of credit cards per 1,000 adults	Guarantees:Restructuring	487.12	251.64	0.05	654	0.33
Number of credit cards per 1,000 adults	Lending:Restructuring	342.92	104.63	0	654	0.33
Number of credit cards per 1,000 adults	Lending:Asset_Management	-510.27	197.88	0.01	654	0.33
Number of debit cards per 1,000 adults	Guarantees	-736.82	314.23	0.02	686	0.27
Number of debit cards per 1,000 adults	Restructuring	1108.87	540.68	0.04	686	0.27
Number of debit cards per 1,000 adults	Candidate:Guarantees	968.84	474.65	0.04	686	0.27
Number of debit cards per 1,000 adults	Guarantees:Rules	-1090.08	465.77	0.02	686	0.27
Number of debit cards per 1,000 adults	Lending:Capital	430.77	220.37	0.05	686	0.27
Number of debit cards per 1,000 adults	Lending:Asset_Management	-440.83	209.18	0.04	686	0.27
Number of debit cards per 1,000 adults	Restructuring:Rules	-794.54	404.21	0.05	686	0.27

Source: Authors

Note: The table shows the significant effects for all Financial Access Survey (International Monetary Fund) indicators considered. Standard errors and p-values were calculated using a robust error matrix. Adjusted R2 is reported in the last column.

### A.1.7. MICRO-LEVEL RESULTS

The individual-level estimations are designed to complement the panel regression findings at the country level. Following Equation (2), the financial inclusion score is used as the dependent variable in a series of quantile regressions, with the policy variables as treatments and the controls outlined in the previous section.

Figures A.6 and A.7 report the main outputs. Each figure has three panels and several subplots. In each subplot, the vertical axis represents the effect (i.e., the quantile regression slope), while the horizontal axis reports the quantiles, ranging from individuals with lower financial inclusion (left) to those with higher financial inclusion (right). The solid black line in each plot illustrates how these effects vary across the distribution, the shadowed areas are bootstrapping confidence intervals of these effects at 95 percent. For comparison purposes, the OLS slopes are reported in red, constant across all levels of financial inclusion, as well as their respective confidence intervals. This highlights the heterogeneities captured by the methodology, which traditional linear regressions fail to detect.

Regarding the effects of individual-level variables, such as age, education, gender, and income on financial inclusion, asymmetric impacts are observed across the distribution of financial inclusion scores. For example, consider the variable **Female**, coded as 1 if the respondent is female. Its coefficient is consistently negative across all quantiles, indicating that women—consistent with the existing literature (e.g., Attanasio et al. 2015; Allen et al. 2016; Angelucci et al. 2023; Chen et al. 2023)—are systematically more financially excluded than are men. Moreover, the negative effect is significantly stronger for higher quantiles, suggesting that the gender gap becomes more pronounced among individuals with higher levels of financial inclusion. A similar pattern emerges for age: although the overall impact of age is negative across the full conditional distribution of financial inclusion scores, the magnitude of the effect varies substantially, ranging from near zero to -0.015. This indicates that

the negative effect of age on financial inclusion also intensifies at higher levels of financial inclusion.

Conversely, the variables Education and Income quantile show consistently positive effects, meaning that higher education and better financial resources are always associated with greater financial inclusion. However, these effects become more pronounced at higher levels of inclusion, particularly for individuals with financial inclusion scores above 60<sup>th</sup> percentile, where the effect plateaus, underscoring nonlinear relationships.

The 2011 wave provides the best opportunity for estimating the effects of policies on financial inclusion, as a wider range of interventions were implemented. This allows one to focus on the cross-sectional variation in policy implementation across countries. In contrast, for 2014, the analysis is more restricted, as there are few combinations, whereby interactions can only be considered for Lending.

Focusing on 2011, the effects of Capital, Restructuring, and Rules are consistently positive, while the effect of Guarantees is negative, consistent with the macro-level results in this study. Notably, all these effects exhibit strong asymmetries, as they are more pronounced for individuals with higher levels of financial inclusion. In contrast, financial inclusion among the least included individuals shows little to no reaction to policy interventions. The asymmetry in the effect of Rules is less pronounced than that of Capital or Restructuring, as the former plateaus after the 30<sup>th</sup> percentile, whereas the latter continues to increase across the entire distribution of financial inclusion scores. Additionally, a more accommodative fiscal stance—measured by the Debt-to-GDP ratio—is negatively associated with financial inclusion. Meanwhile, an accommodative monetary policy—measured by the Broad Money-to-GDP ratio—has a positive effect on financial inclusion, particularly for individuals who are already more financially included.

The model once again accounts for whether the observed effects are driven by a Candidate Crisis episode (see Panel C of the figure) and it also considers

interactions between this variable and all policy interventions. However, some policy interventions, such as Lending and Asset Management, cannot be identified using data from 2011. Notably, when Guarantees are implemented in the absence of a crisis, their effect is positive, contrasting with the previously detected negative effect but in agreement with the macro-level results here. Additionally, the effect of Restructuring becomes even more positive in these instances and more linear. However, when Capital Injections and Rules are implemented during Candidate Crisis episodes, their effects are less pronounced—remaining positive but with a smaller magnitude, as the interaction coefficients are negative.

Similar patterns are observed in the 2014 wave of the survey (Figure A.7), particularly for capital injections and rule-based interventions. Guarantees could not be identified in this wave, while lending—which was absent in the first wave—now appears with a negative effect. Restructuring interventions, which previously showed mixed effects, are predominantly negative this time. However, the effects of Capital and Restructuring are more homogeneous across financial inclusion quantiles in 2014 than in 2011, whereas the asymmetries previously discussed are more pronounced for Rules and Lending. Regarding fiscal and monetary policy stances—proxied by the public debt-to-GDP ratio and the broad money-to-GDP ratio, respectively—public debt is found to generally exert a negative effect while broad money has a positive effect, confirming this research findings from 2011. These effects are again nonlinear across the quantiles, with both reaching a peak toward the right, near the middle of the distribution.

Overall, the general patterns observed in 2011 and 2014 reinforce the macro-level findings in this study: capital injections have an overall positive impact; blanket guarantees tend to be associated with a negative effect; and restructuring and rules display a more balanced mix of positive and negative effects. Asset management interventions, being less frequently employed than the other policy tools, could not be properly analyzed in either wave. It is

important to recall that estimating the impact of asset management and other policies requires actual crises events within the dataset, not only candidate crises. Interestingly, the micro-level approach allows detection of a general pattern.

Among the broad set of additional covariates—which are not the primary focus of this study—several patterns stand out. Overall, variables such as bank efficiency, the ratio of nonperforming loans to total loans, financial openness, rule of law, inflation, investment, economic complexity, and share of exports tend to have positive effects on financial inclusion. There are some exceptions, such as bank efficiency in 2011, which shows mixed effects across quantiles. Other variables, such as FDI outflows and the bank capital-to-assets ratio, generally exhibit a negative impact on financial inclusion.

Some variables do not display consistent effects across the two waves of the Global Findex analyzed; their effects shift from positive to negative depending on the year. These include government effectiveness, control of corruption, voice and accountability, R&D investment, GDP growth, population growth, and the share of self-employed individuals.

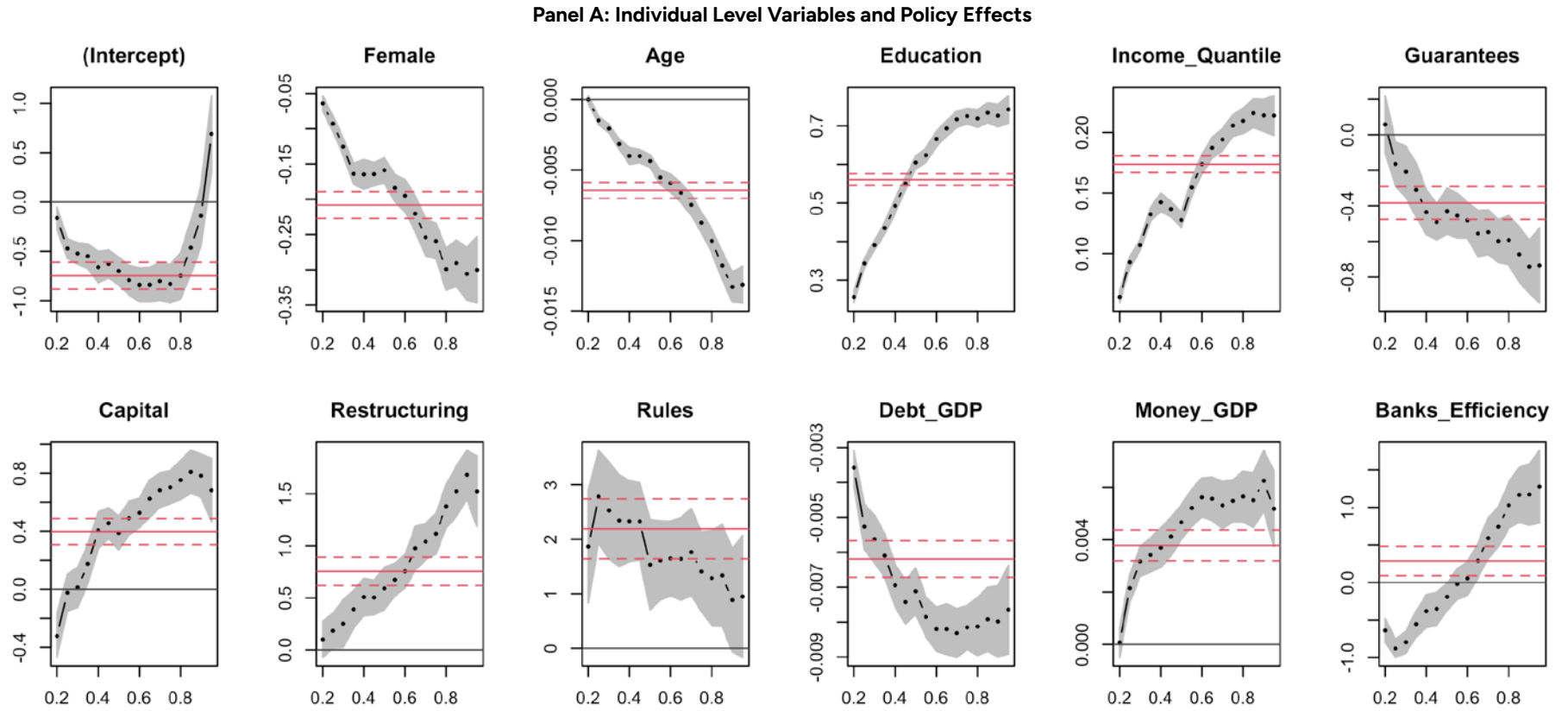
Broadly speaking, for most variables, the effects are highly nonlinear across the distribution, with a few exceptions, such as government effectiveness and foreign direct investment outflows in 2011 and money growth in 2014. This nonlinearity typically manifests as stronger effects for individuals with higher levels of financial inclusion compared to those who are more excluded. However, there are important exceptions to this pattern, for example, government effectiveness and control of corruption in 2011, voice and accountability in 2014, and investment in 2011, where the opposite dynamics are observed.

It is important to note that there is caution in interpreting the causal effects of these covariates, as they were included primarily as control variables to better isolate the effects of policies. Thus, the possibility of collider bias cannot be entirely ruled out.

Nevertheless, the general direction of the estimated effects aligns with prior expectations, particularly for the 2011 results.

The magnitudes of the effects also vary considerably, as some variables are binary or semicategorical while others are continuous. Additionally, some variables are expressed as ratios, others as growth rates, and others in their original units. Therefore, interpreting the policy variables and emphasizing the general patterns discussed earlier are prioritized rather than focusing on the specific point estimates.

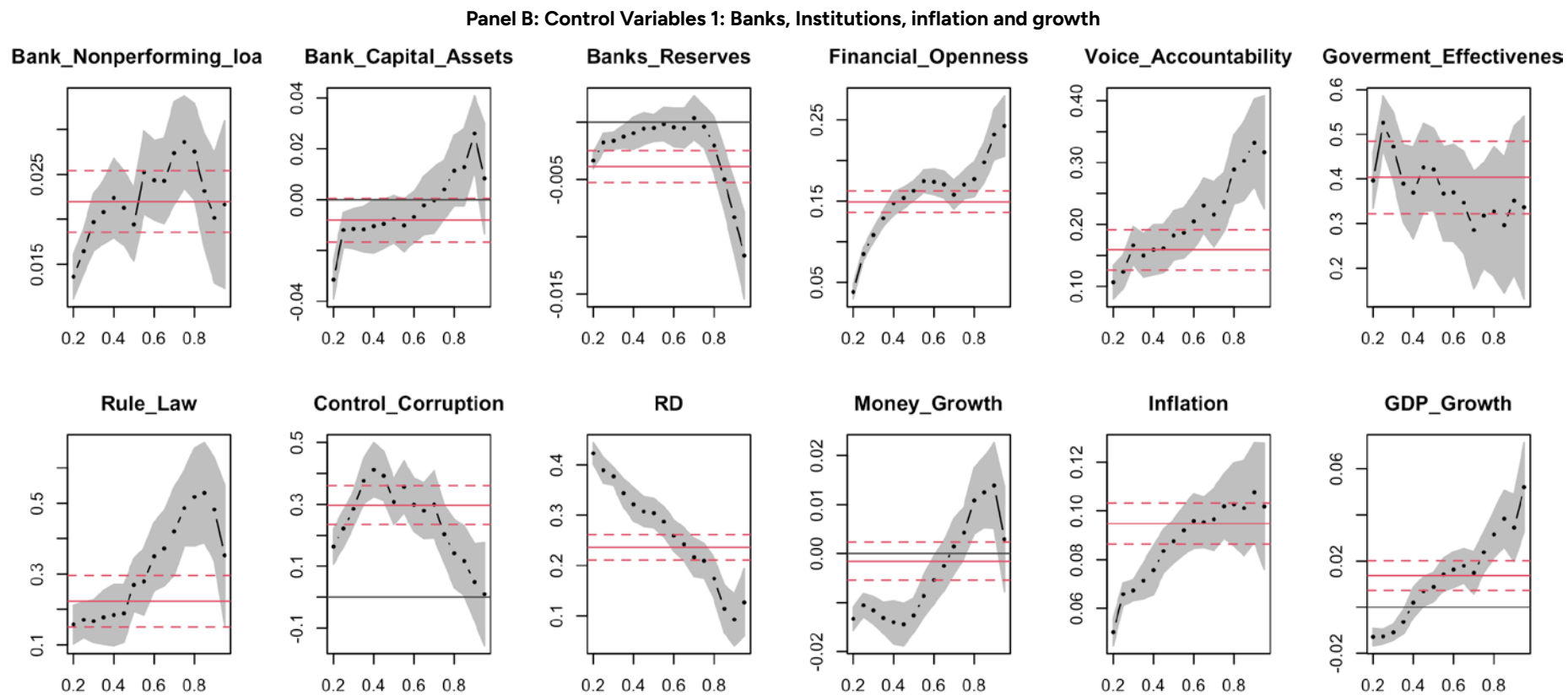
FIGURE A.6. **Effects on the Quantiles of the Financial Inclusion Score 2011**



Source: Authors

Note: Effects on the quantiles from 0.2 to 0.95 of the financial inclusion score, considering individual-level variables, crisis policies, and stabilization policy stances.

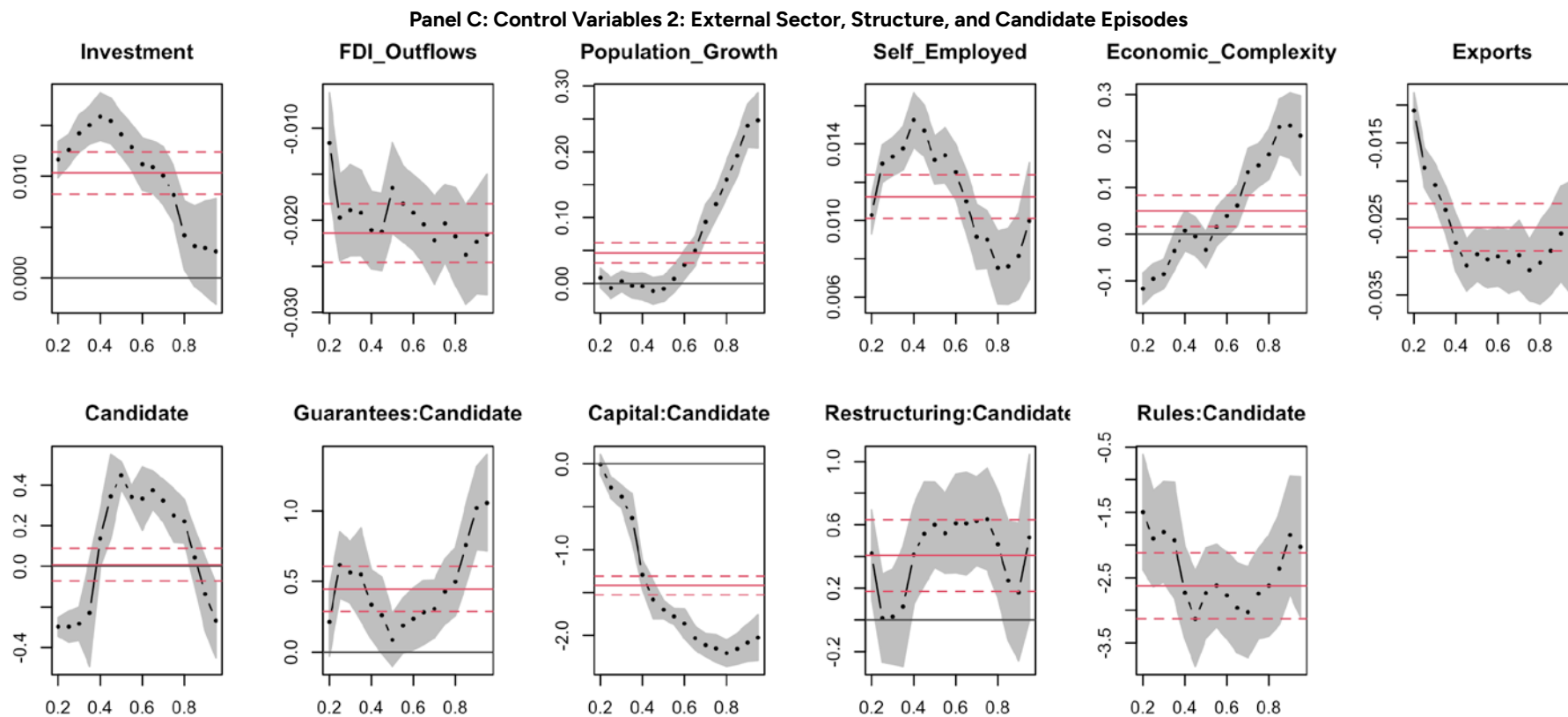
FIGURE A.6. **Effects on the Quantiles of the Financial Inclusion Score 2011** (continued)



Source: Authors

Note: Effects on the quantiles from 0.2 to 0.95 of the financial inclusion score, considering banking sector-, institutional-, and money-related variables.

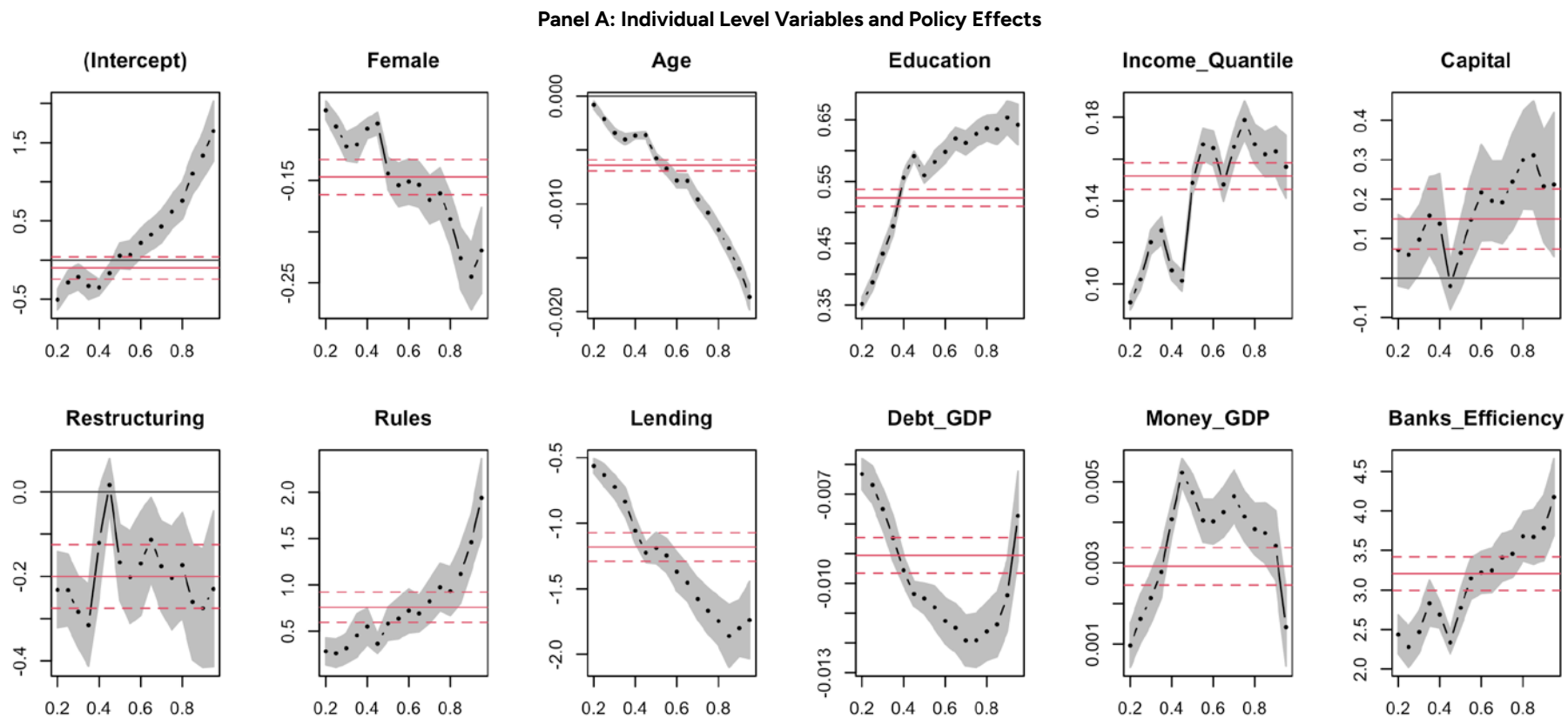
FIGURE A.6. **Effects on the Quantiles of the Financial Inclusion Score 2011** (continued)



Source: Authors

Note: Effects on the quantiles from 0.2 to 0.95 of the financial inclusion score, considering economic-, population- and labor-related variables.

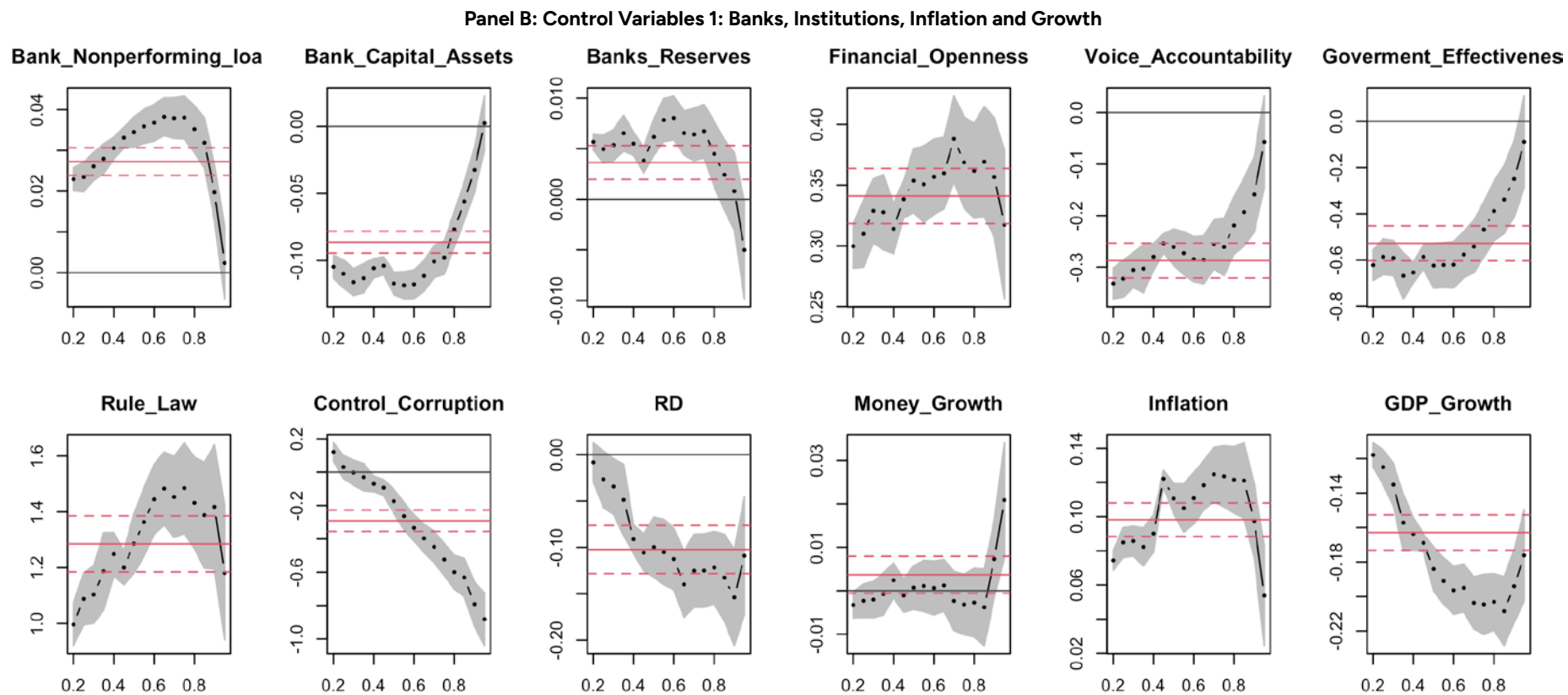
FIGURE A.7. **Effects on the Quantiles of the Financial Inclusion Score 2014**



Source: Authors

Note: Effects on the quantiles from 0.2 to 0.95 of the financial inclusion score, considering individual-level variables, crisis policies, and stabilization policy stances.

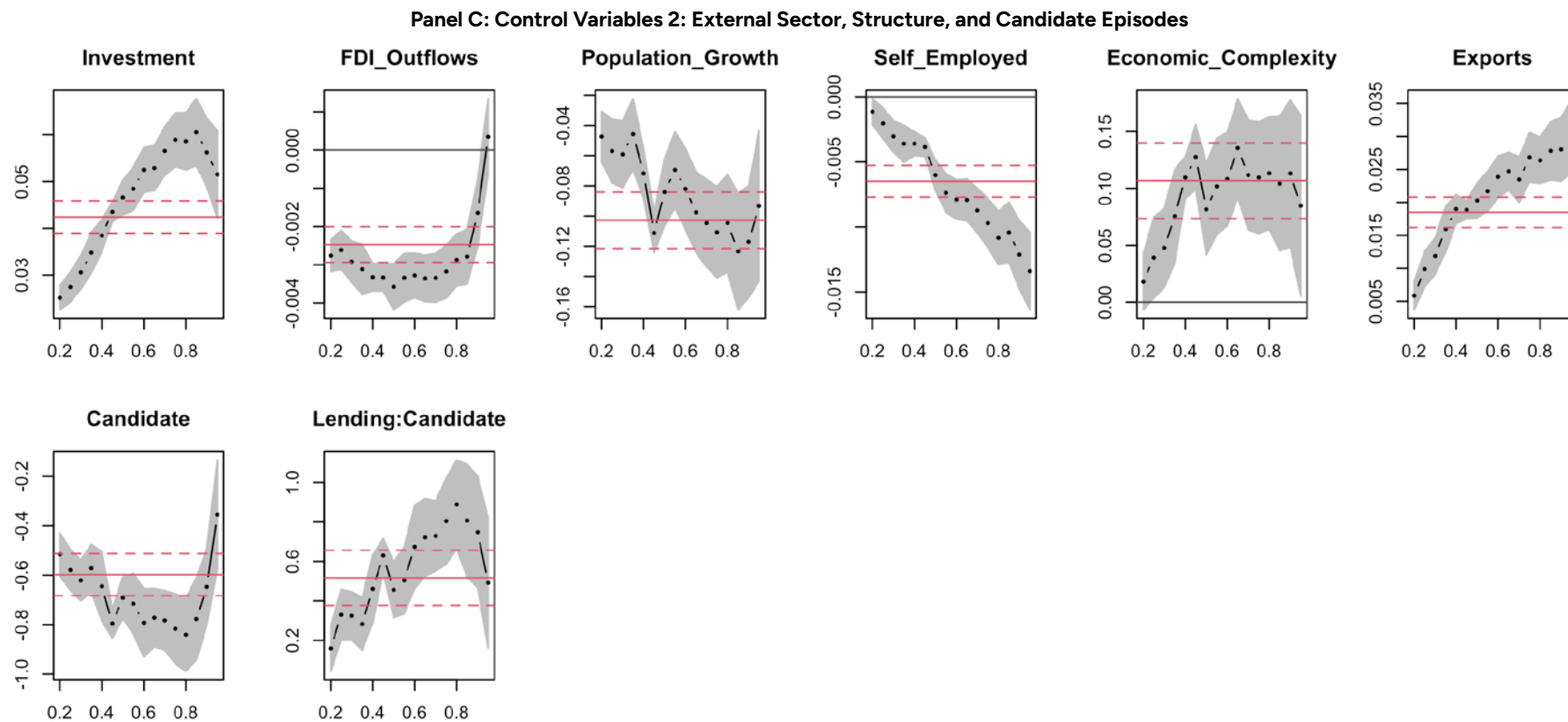
FIGURE A.7. **Effects on the Quantiles of the Financial Inclusion Score 2014** (continued)



Source: Authors

Note: Effects on the quantiles from 0.2 to 0.95 of the financial inclusion score, considering banking sector -, institutional-, and money-related variables.

FIGURE A.7. **Effects on the Quantiles of the Financial Inclusion Score 2014** (continued)



Source: Authors

Note: Effects on the quantiles from 0.2 to 0.95 of the financial inclusion score, considering economic-, population-, and labor-related variables.

## A.2. Country Deep Dives: Comparing Similar Tools under Various Episodes

Policy interventions during crises are best understood within the institutional framework and economic structure in which countries operate. These macro-level factors shape how the banking sector and financial inclusion indicators respond to crises and to the policies implemented to address them.

The study focuses on three countries: Indonesia, the Philippines, and Thailand, all of which were affected by two major crises: the 1997–1998 Asian Financial Crisis (AFC) and the 2008–2009 Global Financial Crisis (GFC).

Indonesia presents a particularly compelling case. The country experienced a sharp and negative impact on financial access and usage indicators during the AFC, yet responded more positively and resiliently during the GFC, despite employing a similar set of policy tools in both instances regarding banking crisis resolution. The Philippines and Thailand also offer valuable insights for comparative analysis.

This exercise hypothesizes that the contrasting responses to the two crises can be attributed to improvements in institutional frameworks and/or economic structures. This hypothesis has been documented in existing literature (Basri 2018). In Indonesia, enhanced regulatory quality, rule of law, political stability, and control of corruption may have contributed to its stronger performance during the GFC. In the Philippines and Thailand, advancements in macroeconomic fundamentals and economic structure—as reflected by indices such as economic complexity and export quality—played a key role. The study identifies certain challenges in the access indicators of the Philippines following the GFC. Among the three, Indonesia offers the clearest example for understanding crisis resolution and its implications for financial inclusion.

### A.2.1. DATA

The financial development indicators introduced by Svirydzienka (2016) are gathered from publicly available information regularly updated by the IMF. This dataset measures the multifaceted nature of financial development across countries through two broad components (e.g., financial institutions and financial markets) and three key dimensions (e.g., depth, access, and efficiency). This framework aims to capture the multifaceted nature of financial development, offering a detailed view of how financial systems operate. The underlying dataset covers 183 countries annually, from 1980 to 2021, according to the latest update available on the IMF data portal.

Focus is placed on the financial institutions category, which encompasses banks, insurance companies, and other financial intermediaries that play a central role in economic activity. Within this category, the depth dimension refers to the size and liquidity of these institutions. Depth is measured using variables such as private sector credit, pension fund assets, mutual fund assets, and insurance premiums, all expressed as a percentage of GDP. These indicators reveal the extent to which financial services permeate the broader economy and the scale of financial intermediation.

The access dimension, in contrast, focuses on the availability and outreach of financial services to the population. It is quantified by the number of commercial bank branches and ATMs per 100,000 adults, serving as proxies for the physical and geographic accessibility of the financial system.

Missing data are addressed by the original authors through interpolation or extrapolation techniques to maintain the index's continuity and comprehensiveness. Higher index values reflect more developed financial systems.

In constructing the donor pool for the synthetic control analysis, the following countries are included: Colombia, Costa Rica, Ecuador, Guatemala, India, Kazakhstan, Kenya, Malaysia, Mexico, Moldova, Mongolia, Myanmar,

Nigeria, Paraguay, Peru, Tunisia, Ukraine, Uruguay, and Vietnam. For each case study (the Philippines, Thailand, and Indonesia), the country of interest is excluded from the donor pool while retaining the others. This approach ensures that the donor pool consists of countries with comparable levels of economic development, financial sector characteristics, and productive structures to those of the treated units. Including a broad set of potential donor countries will also enhance the ability to replicate the pre-treatment trajectories of the treated countries as closely as possible, which is essential for the credibility and accuracy of the synthetic control method.

## A.2.2 METHODOLOGY

The primary empirical tool for the case studies is the synthetic control method (SCM), originally introduced by Abadie and Gardeazabal (2003) and later expanded by Abadie et al. (2010) to evaluate the causal impact of policies on macroeconomic aggregates, using observational data. While the aim of the study is not purely causal, it is sought to isolate the combined effects of financial crises and policy interventions as implemented by three East Asian countries, namely, Indonesia, the Philippines, and Thailand, during the 1997–1998 AFC and the 2008–2009 GFC. This approach allows for a comparison of the relative post-crisis performance of these countries and identification of policy-relevant mediating factors that may underlie changes in financial inclusion—specifically, access and usage indicators.

The key strength of SCM lies in its capacity to introduce a counterfactual scenario—a synthetic version of the treated unit—by creating a weighted combination of untreated units. This synthetic control serves as a credible approximation of the trajectory that would have occurred in the absence of the crisis-policy combination, thereby enhancing the robustness of the analysis.

One of the key challenges in observational research is finding a suitable comparison group. SCM addresses this by ensuring that the treated unit and its synthetic counterpart closely match pre-intervention trends, which reduce bias and strengthen credibility. Additionally, SCM is well-suited to small-sample applications and can draw on a large donor pool to improve estimation precision. By synthesizing information from multiple control units, the method enhances generalizability while minimizing bias. Finally, the clear visual output generated by SCM supports effective communication of these findings to policymakers.

Formally, let  $Y_{it}^N$  represent a financial inclusion indicator for country  $i$  at time  $t$  in the absence of the crisis and the policy interventions, for countries  $i = 1, \dots, J + 1$ , and time periods  $t = 1, \dots, T$ . Let  $T_0$  denote the number of periods before the crisis and the interventions, which satisfies  $1 \leq T_0 < T$ . Let  $Y_{it}^I$  be the outcome (financial inclusion) that would be observed from country  $i$  at time  $t$  if country  $i$  is exposed to the treatment from  $T_0 + 1$  to  $T$ .<sup>26</sup> It is assumed that the crisis/intervention pair had no effects before 1997 in the case of the AFC nor in 2008 in the case of GFC. In other words, it is assumed there were no “anticipation effects” prior to these years.

Define the treatment effect as  $\alpha_{it} = Y_{it}^I - Y_{it}^N$  and let  $D_{it}$  be an indicator that equals 1 if country  $i$  observed to crisis at time  $t$ , and 0 otherwise. The observed outcome is then given by:

$$Y_{it} = Y_{it}^N + \alpha_{it}D_{it}. \quad (1)$$

If only country (1) receives the treatment starting after period  $T_0$ , then:

$$D_{it} = \begin{cases} 1 & \text{if } i = 1 \text{ and } t > T_0 \\ 0 & \text{otherwise} \end{cases}. \quad (2)$$

26 Since the focus is on comparing post-crisis trajectories, it is assumed that the treatment persists over time. This assumption is essential for interpretation, as the treatment variable does not represent a conventional, discrete policy action, but rather a sustained combination of policy effects and interventions.

The objective is to estimate  $(\alpha_{it_0+1}, \dots, \alpha_{iT})$ . For  $t > T_0$ , this can be expressed as:

$$\alpha_{it} = Y_{it}^I - Y_{it}^N = Y_{it} - Y_{it}^N. \quad (3)$$

As  $Y_{it}^I$  is observed, estimating  $\alpha_{it}$  requires only an estimate of  $Y_{it}^N$ . Following Abadie et al. (2010), it is assumed that the untreated potential outcome follows a factor model:

$$Y_{it}^N = \delta_t + \theta_t \mathbf{Z}_i + \lambda_t \boldsymbol{\mu}_i + \varepsilon_{it}, \quad (4)$$

Here,  $\delta_t$  is a time-varying common factor with constant loadings,  $\mathbf{Z}_i$  is a  $(r \times 1)$  vector of covariates which, in this case, consist only of one lag of the outcome financial inclusion indicator,  $\theta_t$  is a  $(r \times 1)$  vector of parameters to be estimated,  $\lambda_t$  is a  $(F \times 1)$  vector of unobserved common factors,  $\boldsymbol{\mu}_i$  are unit-specific factor loadings, and  $\varepsilon_{it}$  are idiosyncratic disturbances.

Following the same framework, consider a  $(J \times 1)$  weight vector  $\mathbf{W} = (w_2, \dots, w_{J+1})'$ , where  $w_j \geq 0$  for all  $j = 1, \dots, J+1$  and  $\sum w_j = 1$ . Each possible  $\mathbf{W}$  defines a synthetic control as a weighted average of untreated units. In the context of this study, the synthetic financial inclusion indicator path follows:

$$\sum_{j=2}^{J+1} w_j Y_{jt} = \delta_t + \theta_t \sum_{j=2}^{J+1} w_j \mathbf{Z}_j + \lambda_t \sum_{j=2}^{J+1} w_j \boldsymbol{\mu}_j + \sum_{j=2}^{J+1} w_j \varepsilon_{jt}. \quad (5)$$

Let  $(w_2^*, \dots, w_{J+1}^*)$  denote the optimal weight vector that minimizes the discrepancy between the treated unit and the synthetic control in the pre-intervention period. When the number of pre-treatment periods is sufficiently large relative to the magnitude of disturbances, one can estimate the treatment effect as:

$$\widehat{\alpha}_{it} = Y_{it} - \sum_{j=2}^{J+1} w_j^* Y_{jt} \quad (6)$$

for  $t \in \{T_0 + 1, \dots, T\}$ . In practice, these relationships hold approximately, as no combination of donor units can perfectly replicate the treated unit's pretreatment dynamics. Accordingly, the optimal weights for the control units, as well as the predictors (lags of the

outcome in this case), are selected to approximate this match as closely as possible. For implementation, the "synth" package in R is applied to compute the required weights and carry out the estimation.

In the case studies, the pretreatment periods for model training are defined as 1986–1996 for the AFC and 2004–2007 for the GFC. These periods were selected to closely replicate the trajectories of financial inclusion outcomes. This approach, however, should be understood primarily as a descriptive tool for comparative purposes rather than a method for causal inference, given the unique trajectories of some indicators during specific periods of the sample.

### A.2.3. RESULTS

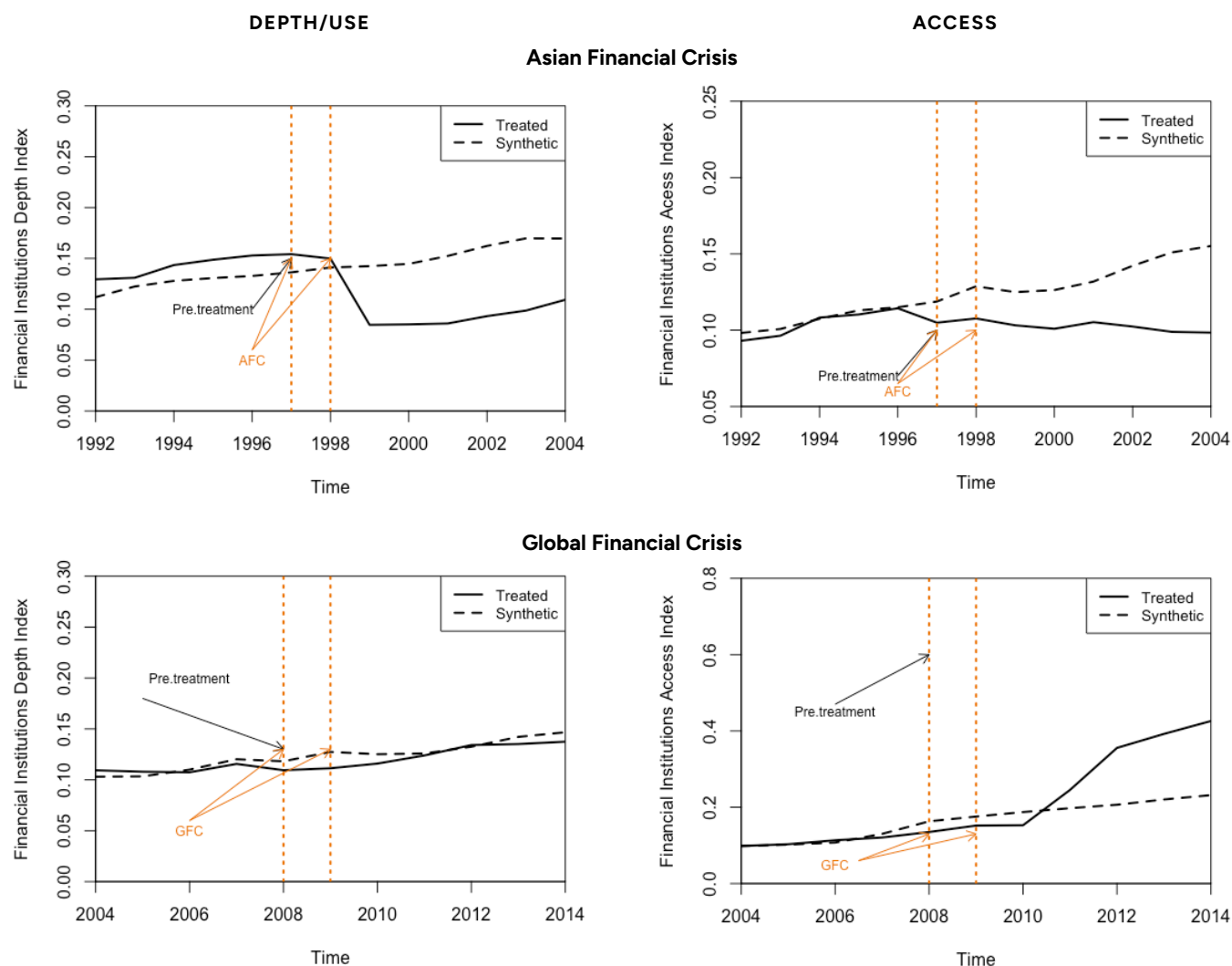
The first case study is Indonesia. Figure A.8 presents synthetic control estimates of the impact of two major financial crises and the accompanying policy responses on financial inclusion in Indonesia. In each panel, the solid line represents the observed trajectory for Indonesia, while the dashed line corresponds to the estimated counterfactual path from a synthetic control. The top two panels focus on the AFC. The left panel shows a substantial post-crisis decline in financial depth relative to its synthetic control, suggesting a negative impact on credit provision and the availability of financial products. The Access Index (top right) exhibits a more modest divergence in the initial years following the crisis, indicating that basic financial access was less immediately affected. However, the gap between the observed and synthetic access trajectories widens over time, suggesting a growing longer-term impact.

The bottom panels assess the effects of the GFC. In contrast to the AFC, the Depth Index (bottom left) remains closely aligned with its synthetic counterpart, showing no significant post-crisis deterioration. Similarly, the Access Index (bottom right) displays limited divergence after 2008. In fact, financial access in Indonesia appears to improve more steeply than its synthetic control. According to Metrick and

Schmelzing (2021), Indonesia employed a consistent policy toolkit in response to both crises, including guarantees, liquidity provision, capital injections, and restructuring. Despite using a similar policy mix, the outcomes differed markedly. While the AFC had a clearly negative impact on not only financial depth but also on access relative to the counterfactual, the GFC appears to have had a much smaller effect—or even a positive one—especially in the access dimension, where Indonesia outperformed its synthetic counterpart in the years following the crisis.

However, according to Basri (2018), Indonesia’s responses to the AFC and the GFC, varied significantly in significant ways. During the AFC, IMF-advised interest rate hikes worsened nonperforming loans and triggered the banking crisis, exacerbated by missteps such as closing banks without adequate deposit guarantees—leading to financial panic and capital flight. In contrast, the response to the GFC was more proactive and stabilizing. The Bank of Indonesia lowered interest rates, ensured liquidity, and implemented strong financial sector safeguards,

FIGURE A.8. **Indonesia: Response to the 1997–1998 Asian Financial Crisis and 2008–2009 Global Financial Crisis**



Source: Authors.

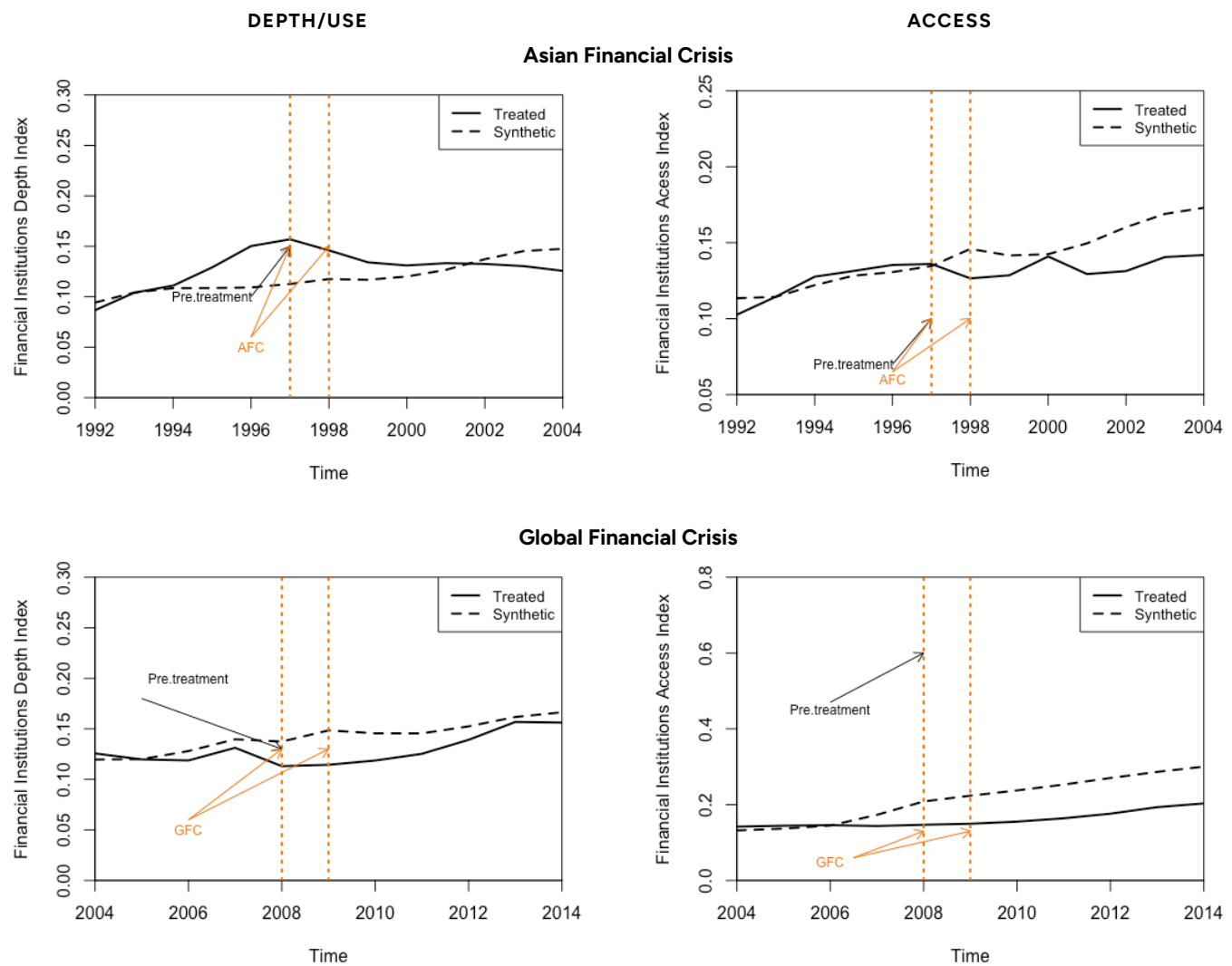
Note: Each panel displays the results of a synthetic control estimation, where the solid line represents the observed trajectory of financial inclusion in the treated country, and the dashed line represents the counterfactual scenario constructed from a weighted combination of similar countries (the synthetic control) that did not experience the crisis in the same way. The vertical lines indicate the timing of the respective financial crises: the Asian Financial Crisis (AFC) in 1997 and the Global Financial Crisis (GFC) in 2008. Divergence between the treated and synthetic lines following the crisis signals the estimated impact of the event on financial inclusion, measured through the Depth Index and Access Index.

including a deposit guarantee increase and the bailout of Bank Century to maintain market confidence. A substantial fiscal stimulus in 2009 further cushioned the poor from the downturn. Unlike 1998, political stability in 2008 also helped avoid compounding economic turmoil, underscoring the critical role of governance and public trust in crisis management.

Figure A.9 presents synthetic control estimates of the impact of the AFC and the GFC on financial inclusion

in the Philippines, using again the Financial Institution Depth Index and the Financial Institution Access Index as outcome measures. In the top left panel, the Depth Index diverges from the synthetic control following the AFC, indicating a deterioration in financial depth relative to the expected path in the absence of the crisis. The top right panel, which tracks Access, shows a similar post-crisis divergence, although the treated trajectory partially recovers over time, suggesting a more limited or transitory effect on financial access.

FIGURE A.9. **Philippines: Response to the 1997–1998 Asian Financial Crisis and 2008–2009 Global Financial Crisis**



Source: Authors.

Note: Each panel displays the results of a synthetic control estimation, where the solid line represents the observed trajectory of financial inclusion in the treated country, and the dashed line represents the counterfactual scenario, constructed from a weighted combination of similar countries (the synthetic control) that did not experience the crisis in the same way. The vertical lines indicate the timing of the respective financial crises: the Asian Financial Crisis (AFC) in 1997 and the Global Financial Crisis (GFC) in 2008. Divergence between the treated and synthetic lines after the crisis signals the estimated impact of the event on financial inclusion, measured through the Depth Index and Access Index.

In contrast, the bottom panels, which focus on the GFC, reveal a different pattern. The Depth Index (bottom left) remains consistently below the synthetic trajectory in the post-crisis period, indicating a persistent negative effect. The Access Index (bottom right) also lies below the synthetic path; however, the divergence appears to begin before the crisis, complicating causal interpretation. These results suggest that while both crises adversely affected financial depth in the Philippines, the AFC had a more concentrated and short-lived impact, whereas the effects of the GFC were more persistent, although potentially influenced by pre-existing trends.

According to Metrick and Schmelzing (2021), the Philippines implemented liquidity support measures in response to both crises. Notably during the GFC, the policy response included more targeted, rule-based interventions, which were absent during the AFC. This differing policy approach may partially explain the variation in outcomes across the two episodes as rule-based policies are generally linked to more severe episodes.

Figure A.10 presents the case of Thailand. Following the AFC, there is a noticeable decline in both the Financial Depth Index and the Financial Access Index, although the gap between the treated and synthetic units remains relatively modest. In contrast, the post-GFC period shows stronger performance in the observed data relative to its synthetic control.

According to Metrick and Schmelzing (2021), Thailand deployed a broad policy toolkit in 1996, prior to the formal onset of the crisis in 1997, including guarantees, liquidity provision, capital injections, restructuring, asset management initiatives, and rules-based policies. By contrast, the response to the GFC in 2008 was more limited, involving primarily guarantees and liquidity provision. Interestingly, despite a more constrained policy response, Thailand's financial inclusion outcomes performed comparatively better after the GFC than following the AFC. This suggests that a smaller, possibly more targeted intervention during the GFC may have

been more effective in supporting financial inclusion than the earlier, broader efforts.

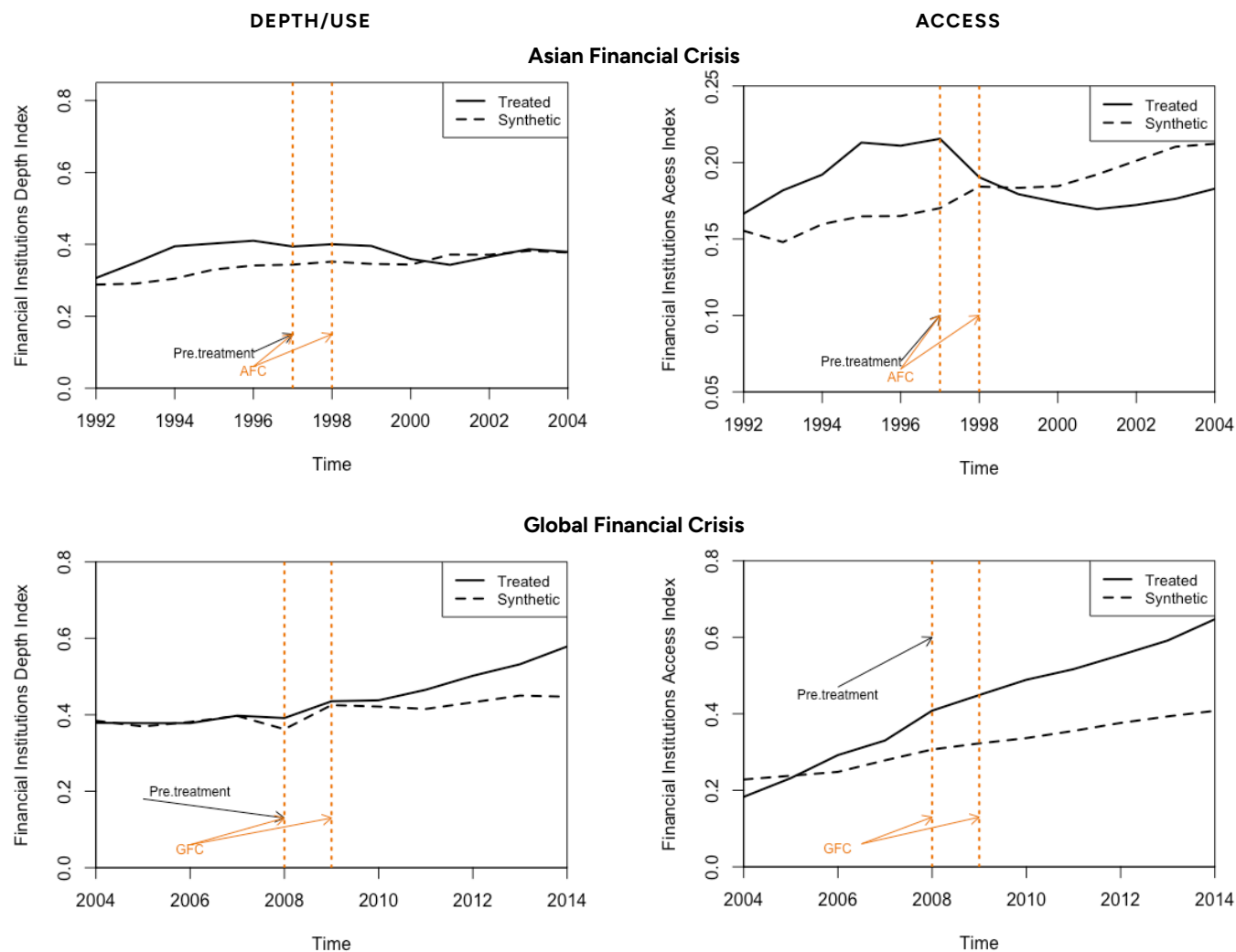
### A.3. Survey Technical Note

CGAP conducted the survey, "Inclusive Finance in Times of Crises," which examines the impact of policy responses to past systemic crises on inclusive finance outcomes. The exercise targeted the financial stability net and channeled the survey through the financial stability departments of central banks. Out of 58 countries included in the empirical study, 38 central banks received invitations to participate. The following 13 countries submitted responses: Colombia, Costa Rica, Greece, Honduras, Hungary, Latvia, Mexico, Mongolia, Nicaragua, Panama, the Philippines, South Africa, and Thailand. Results were anonymized, ensuring that no specific attributions to country authorities were made.

The 28 questions posed were designed to gather information on the concrete actions and policy instruments that financial authorities had selected to address past systemic crises in their jurisdictions. The survey collected views on the effectiveness of the policy toolkit in sustaining the flow of credit to households and micro-, small-, and medium-sized enterprises. Specifically, the following was carried out:

- Creation of sentiment indicators on the effectiveness of policy responses in sustaining credit flows.
- Identification of the institutional constraints that may have hindered a speedier resolution of the crisis.
- Development of a scale assessing authorities' views on how their actions impacted inclusive finance outcomes in past systemic crises.
- Collection of authorities' views on how they might manage future crises differently.

FIGURE A.10. **Thailand: Response to the 1997–1998 Asian Financial Crisis and 2008–2009 Global Financial Crisis**



Source: Authors.

Note: Each panel displays the results of a synthetic control estimation, where the solid line represents the observed trajectory of financial inclusion in the treated country, and the dashed line represents the counterfactual scenario constructed from a weighted combination of similar countries (the synthetic control) that did not experience the crisis in the same way. The vertical lines indicate the timing of the respective financial crises: the Asian Financial Crisis (AFC) in 1997 and the Global Financial Crisis (GFC) in 2008. Divergence between the treated and synthetic lines after the crisis signals the estimated impact of the event on financial inclusion, measured through the Depth Index and Access Index.

# References

- Abad, José, and Antonio García Pascual. "Usability of Bank Capital Buffers: The Role of Market Expectations." IMF Working Paper WP/22/21. International Monetary Fund, 2022. <https://www.imf.org/-/media/Files/Publications/WP/2022/English/wpiea2022021-print-pdf.ashx/1000>.
- Abadie, Alberto, and Javier Gardeazabal. 2003. "The Economic Costs of Conflict: A Case Study of the Basque Country." *American Economic Review* 93 (1): 113–132. <https://www.aeaweb.org/articles?id=10.1257/000282803321455188>
- Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. 2010. "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program." *Journal of the American Statistical Association* 105.490: 493-505. <https://doi.org/10.1198/jasa.2009.ap08746>
- Ackah, Charles, and Johnson P. Asiamah. "Financial regulation in Ghana: Balancing inclusive growth with financial stability." Working Paper 410. London: Overseas Development Institute, 2014. <https://assets.publishing.service.gov.uk/media/57a09dd3ed915d3cfd001c34/9287.pdf>
- Acharya, Viral V., and Sascha Steffen. "The risk of being a fallen angel and the corporate dash for cash in the midst of COVID." *The Review of Corporate Finance Studies* 9, no. 3 (2020): 430-471. <https://academic.oup.com/rcfs/article/9/3/430/5879284>
- Acosta-Henao, Miguel, Andrés Fernández, Patricia Gomez-Gonzalez, and Sebnem Kalemli-Özcan. "The COVID-19 Shock and Firm Financing: Government or Market? Or Both?" SSRN Working Paper, 2023. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4507578](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4507578)
- Adasme, Osvaldo, Giovanni Majnoni, and Myriam Uribe. Access and risk: friends or foes? lessons from Chile. Vol. 4003. World Bank Publications, 2006. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/519511468216004095/access-and-risk-friends-or-foes-lessons-from-chile>
- Agarwal, Ruchir, and Adnan Mazarei. "Egypt's 2023-24 Economic Crisis: Will This Time Be Different?" Policy Brief PB24-6. Peterson Institute for International Economics, August 2024. <https://ideas.repec.org/p/iie/pbrief/pb24-6.html>
- Ahamed, M. Mostak, and Sushanta K. Mallick. "Is financial inclusion good for bank stability? International evidence." *Journal of economic behavior & organization* 157 (2019): 403-427. <https://doi.org/10.1016/j.jebo.2017.07.027>
- Aikman, David, Andreas Lehnert, Nellie Liang, and Michele Modugno. "Credit, Financial Conditions, and Monetary Policy Transmission." Hutchins Center on Fiscal and Monetary Policy Working Paper 39, 2017. <https://www.brookings.edu/wp-content/uploads/2017/11/wp39-3.pdf>
- Alfaro, Laura, Manuel García-Santana, and Enrique Moral-Benito. "On the direct and indirect real effects of credit supply shocks." *Journal of Financial Economics* 139, no. 3 (2021): 895-921. <https://doi.org/10.1016/j.jfineco.2020.09.004>
- Allen, Franklin, Ana Babus, and Elena Carletti. "Financial crises: theory and evidence." *Annual Review of Financial Economics*. 1, no. 1 (2009): 97-116. <https://doi.org/10.1146/annurev.financial.050808.114321>
- Allen, Franklin, Asli Demirgüç-Kunt, Leora Klapper, and Maria Soledad Martinez Peria. "The foundations of financial inclusion: Understanding ownership and use of formal accounts." *Journal of Financial Intermediation* 27 (2016): 1-30. <https://doi.org/10.1016/j.jfi.2015.12.003>
- Allen, Franklin, and Douglas Gale. "Understanding Financial Crises." (2007). <https://academic.oup.com/book/51928>
- Altavilla, Carlo, Francesca Barbiero, Miguel Boucinha, and Lorenzo Burlon. "The great lockdown: pandemic response policies and bank lending conditions." ECB Working Paper 2465. September 2020 <https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2465-c0502b9e88.cs.pdf>

- Altavilla, Carlo, Luc Laeven, and José-Luis Peydró. "Monetary and Macroprudential Policy Complementarities: Evidence from European Credit Registers." ECB Working Paper 2504, 2020 [https://www.ecb.europa.eu/pub/pdf/scpwps/ecb\\_wp2504~2ea8ce96ed.en.pdf](https://www.ecb.europa.eu/pub/pdf/scpwps/ecb_wp2504~2ea8ce96ed.en.pdf)
- Angelucci, Manuela, Rachel Heath, and Eva Noble. "Multifaceted programs targeting women in fragile settings: Evidence from the Democratic Republic of Congo." *Journal of Development Economics* 164 (2023): 103146. <https://doi.org/10.1016/j.jdeveco.2023.103146>
- Arykov, Ruslan, Sai Krishna Kumaraswamy, and Ivo Jeník. "Financial Inclusion and Stability: A Balancing Act." CGAP Blog, March 22, 2024. <https://www.cgap.org/blog/financial-inclusion-and-stability-balancing-act>.
- Athanasoglou, Panayiotis P., and Ioannis Daniilidis. "Procyclicality in the Banking Industry: Causes, Consequences and Response." Bank of Greece Working Paper No. 139, October 2011. <https://www.bankofgreece.gr/Publications/Paper2011139.pdf>
- Atanasio, Orazio, Britta Augsburg, Ralph De Haas, Emla Fitzsimons, and Heike Harmgart. "The impacts of microfinance: Evidence from joint-liability lending in Mongolia." *American Economic Journal: Applied Economics* 7, no. 1 (2015): 90-122. <https://www.aeaweb.org/articles?id=10.1257/app.20130489>
- Babilla, Thierry U. Kame. "Digital Innovation and Financial Access for Small and Medium-Sized Enterprises in a Currency Union." *Economic Modelling* 120 (2023): 106182. <https://doi.org/10.1016/j.econmod.2022.106182>
- Bachas, Natalie, Olivia S. Kim, and Constantine Yannelis. "Loan guarantees and credit supply." *Journal of Financial Economics* 139, no. 3 (2021): 872-894. <https://doi.org/10.1016/j.jfineco.2020.08.008>
- Baker, Scott R., Nicholas Bloom, and Steven J. Davis. "Measuring Economic Policy Uncertainty." *The Quarterly Journal of Economics* 131, no. 4 (2016): 1593-1636. <https://academic.oup.com/qje/article/131/4/1593/2468873>
- Banerjee, Ryan, and Fabrizio Zampolli. "What Drives the Short-Run Costs of Fiscal Consolidation? Evidence from OECD Countries." *Economic Modelling* 82 (2019): 420-436. <https://doi.org/10.1016/j.econmod.2019.01.023>
- Bangia, Anil, Francis X. Diebold, André Kronimus, Christian Schagen, and Til Schuermann. "Ratings Migration and the Business Cycle, with Application to Credit Portfolio Stress Testing." *Journal of Banking & Finance* 26, no. 2-3 (2002): 445-474. [https://doi.org/10.1016/S0378-4266\(01\)00229-1](https://doi.org/10.1016/S0378-4266(01)00229-1)
- Bank for International Settlements (BIS). 2019. *Unconventional Monetary Policy Tools: A Cross-Country Analysis*. Report prepared by a Working Group chaired by Simon M. Potter (Federal Reserve Bank of New York) and Frank Smets (European Central Bank). CGFS Papers No. 63, October 7, 2019. <https://www.bis.org/publ/cgfs63.htm>.
- Bank for International Settlements (BIS). 2022. "Core Principles for Effective Deposit Insurance Systems. Executive Summary." [https://www.bis.org/fsi/fsisummaries/iadi\\_core\\_principles.htm](https://www.bis.org/fsi/fsisummaries/iadi_core_principles.htm)
- Banna, Hasanul, M. Kabir Hassan, and Mamunur Rashid. "Fintech-Based Financial Inclusion and Bank Risk-Taking: Evidence from OIC Countries." *Journal of International Financial Markets, Institutions and Money* 75 (2021): 101447. <https://doi.org/10.1016/j.intfin.2021.101447>
- Banque du Liban. "Circular No. 151 (FX Withdrawals in LBP at Set Rates); Circular No. 158 (USD/LBP Withdrawal Scheme); and Circular No. 161 (Sayrafa USD Banknote Operations)." 2020-2021. Beirut: BdL. <https://www.bankofbeirut.com/en/Newsroom/475/trees>
- Baron, Matthew, Emil Verner, and Wei Xiong. 2021. "Banking Crises without Panics." *The Quarterly Journal of Economics* 136 (1): 51-113. <https://academic.oup.com/qje/article/136/1/51/5919461>.
- Basri, M. Chatib. "Chapter 2: Twenty Years after the Asian Financial Crisis". In *Realizing Indonesia's Economic Potential*, International Monetary Fund, 2018 <https://www.elibrary.imf.org/display/book/9781484337141/ch002.xml>
- Bayliss, Tom, and Chris Leaney. "The Relationship between Financial Inclusion and Financial Stability." In *Financial Stability Report*, May 2023. Reserve Bank of New Zealand, 2023. <https://www.rbnz.govt.nz/hub/publications/financial-stability-report/2023/may-2023/fsr-may-23-box-b>
- Beck, Thorsten, Samuel Da-Rocha-Lopes, and André F. Silva. "Sharing the pain? Credit supply and real effects of bank bail-ins." *The Review of Financial Studies* 34, no. 4 (2021): 1747-1788. <https://academic.oup.com/rfs/article/34/4/1747/5855685>
- Becker, Bo, Marieke Bos, and Kasper Roszbach. "Bad times, good credit." *Journal of Money, Credit and Banking* 52, no. S1 (2020): 107-142. <https://onlinelibrary.wiley.com/doi/full/10.1111/jmcb.12736>
- Bernanke, Ben S. "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression." *The American Economic Review* 73, no. 3 (1983): 257-276. <https://www.jstor.org/stable/1808111?seq=1>

- Bernanke, Ben S. "Nobel lecture: Banking, credit, and economic fluctuations." *American Economic Review* 113, no. 5 (2023): 1143-1169. <https://www.aeaweb.org/articles?id=10.1257/aer.113.5.1143>
- Bernardini, Marco, and Lorenzo Forni. "Private and public debt interlinkages in bad times." *Journal of International Money and Finance* 109 (2020): 102239. <https://doi.org/10.1016/j.jimonfin.2020.102239>
- Blanchard, Olivier J., and Mark W. Watson. 1982. "Bubbles, Rational Expectations and Financial Markets." NBER Working Paper No. 945. <https://doi.org/10.3386/w0945>.
- Bordo, Michael D., John V. Duca, and Christoffer Koch. "Economic policy uncertainty and the credit channel: Aggregate and bank level US evidence over several decades." *Journal of Financial Stability* 26 (2016): 90-106. <https://doi.org/10.1016/j.jfs.2016.07.002>
- Claudio, Borio, and Philip Lowe. "Assessing the risk of banking crises." *BIS Quarterly Review* 5 (2002). [https://www.bis.org/publ/qtrpdf/r\\_qt0212e.pdf](https://www.bis.org/publ/qtrpdf/r_qt0212e.pdf)
- Brei, Michael, Blaise Gadanecz, and Aaron Mehrotra. "SME lending and banking system stability: Some mechanisms at work." *Emerging Markets Review* 43 (2020): 100676. <https://doi.org/10.1016/j.ememar.2020.100676>
- Breiman, Leo. "Random forests." *Machine learning* 45, no. 1 (2001): 5-32. <https://link.springer.com/article/10.1023/a:1010933404324>
- Brown, Martin, Benjamin Guin, and Karolin Kirschenmann. "Microfinance banks and financial inclusion." *Review of Finance* 20, no. 3 (2016): 907-946. <https://academic.oup.com/rof/article/20/3/907/2461274>
- Bruno, Valentina, Ilhyock Shim, and Hyun Song Shin. "Comparative assessment of macroprudential policies." *Journal of Financial Stability* 28 (2017): 183-202. <https://doi.org/10.1016/j.jfs.2016.04.001>
- Budnik, Katarzyna Barbara, Ivan Dimitrov, Johannes Groß, Martina Jancokova, Max Lampe, Bianca Sorvillo, Anze Stular, and Matjaz Volk. "Policies in support of lending following the coronavirus (COVID-19) pandemic." *ECB Occasional Paper* 2021/257 (2021). [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3851028](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3851028)
- Cahan, Ercument, Jushan Bai, and Serena Ng. "Factor-based imputation of missing values and covariances in panel data of large dimensions." *Journal of Econometrics* 233, no. 1 (2023): 113-131. <https://doi.org/10.1016/j.jeconom.2022.01.006>
- Caldara, Dario, Etienne Gagnon, Enrique Martínez García, and Christopher J. Neely. "Monetary Policy and Economic Performance since the Financial Crisis." *Finance and Economics Discussion Series* No. 2020-065. Board of Governors of the Federal Reserve System (US), 2020 <https://fedinprint.org/item/fedgfe/88651/original>
- Calvo, Guillermo A., Alejandro Izquierdo, and Luis-Fernando Mejía. 2008. "Systemic Sudden Stops: The Relevance of Balance-Sheet Effects and Financial Integration." NBER Working Paper No. 14026. National Bureau of Economic Research. <https://www.nber.org/papers/w14026>.
- Carrière-Swallow, Yan, Antonio C. David, and Daniel Leigh. "Macroeconomic effects of fiscal consolidation in emerging economies: New Narrative evidence from Latin America and the Caribbean." *Journal of Money, Credit and Banking* 53, no. 6 (2021): 1313-1335. <https://onlinelibrary.wiley.com/doi/full/10.1111/jmcb.12784>
- Casanova, Catherine, Bryan Hardy, and Mert Onen. "Covid-19 policy measures to support bank lending." *BIS Quarterly Review* 20 (2021). [https://www.bis.org/publ/qtrpdf/r\\_qt2109d.htm](https://www.bis.org/publ/qtrpdf/r_qt2109d.htm)
- Cascarino, Giuseppe, Raffaele Gallo, Francesco Palazzo, and Enrico Sette. "Public guarantees and credit additionality during the Covid-19 pandemic." *Bank of Italy Temi di Discussione (Working Paper) No 1369* (2022). [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4110071](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4110071)
- Cavallo, Michele, Juan M. Morelli, and Rebecca Zarutskie. 2024. "Unpacking the Effects of Bank Credit Supply Shocks on Economic Activity." *FEDS Notes*. Board of Governors of the Federal Reserve System. May 24, 2024. <https://www.federalreserve.gov/econres/notes/feds-notes/unpacking-the-effects-of-bank-credit-supply-shocks-on-economic-activity-20240524.html>
- Célerier, Claire, and Adrien Matray. "Bank-branch supply, financial inclusion, and wealth accumulation." *The Review of Financial Studies* 32, no. 12 (2019): 4767-4809. <https://academic.oup.com/rfs/article/32/12/4767/5477425>
- Chen, Sharon, Sebastian Doerr, Jon Frost, Leonardo Gambacorta, and Hyun Song Shin. "The fintech gender gap." *Journal of Financial Intermediation* 54 (2023): 101026. <https://doi.org/10.1016/j.jfi.2023.101026>
- Cicarelli, Matteo, Angela Maddaloni, José-Luis Peydró. 2010. "Trusting the Bankers: A New Look at the Credit Channel of Monetary Policy" [https://www.federalreserve.gov/events/conferences/irfmp2010/papers/cicarelli\\_maddaloni\\_peydró\\_20100212.pdf](https://www.federalreserve.gov/events/conferences/irfmp2010/papers/cicarelli_maddaloni_peydró_20100212.pdf)

- CGAP (Consultative Group to Assist the Poor). "The typology of Microfinance providers", August 2020 [https://www.cgap.org/sites/default/files/research\\_documents/2020\\_06\\_Typology\\_Microfinance\\_Providers.pdf](https://www.cgap.org/sites/default/files/research_documents/2020_06_Typology_Microfinance_Providers.pdf)
- CGAP. "Microfinance in the Covid-19 Crisis: A framework for Regulatory Responses" Covid-19 Briefing Insights for Inclusive Finance. June 2020 [https://www.cgap.org/sites/default/files/publications/2020\\_06\\_COVID\\_Briefing\\_Framework\\_Regulatory\\_Response.pdf](https://www.cgap.org/sites/default/files/publications/2020_06_COVID_Briefing_Framework_Regulatory_Response.pdf)
- Čihák, Martin, Davide Salvatore Mare, and Martin Melecký. «The nexus of financial inclusion and financial stability: A study of trade-offs and synergies.» World Bank Policy Research Working Paper 7722 (2016). [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2811371](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2811371)
- Claessens, Stijn, and M. Ayhan Kose. 2013. "Financial Crises: Explanations, Types, and Implications." IMF Working Paper 13/28. International Monetary Fund <https://www.imf.org/~media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2013/wp1328.ashx>
- Coelho, Rodrigo, and Raihan Zamil. 2020. "Payment Holidays in the Age of Covid: Implications for Loan Valuations, Market Trust and Financial Stability." FSI Briefs No. 8. Bank for International Settlements. <https://www.bis.org/fsi/fsibriefs8.htm>
- Cole, Harold L., and Timothy J. Kehoe. "Self-fulfilling debt crises." *The Review of Economic Studies* 67, no. 1 (2000): 91-116. <https://academic.oup.com/restud/article/67/1/91/1576276>
- Danisman, Gamze Ozturk, and Amine Tarazi. "Financial inclusion and bank stability: Evidence from Europe." *The European Journal of Finance* 26, no. 18 (2020): 1842-1855. <https://www.tandfonline.com/doi/abs/10.1080/1351847X.2020.1782958>
- De la Torre, Augusto, Erik Feyen, and Alain Ize. "Financial development: structure and dynamics." *The World Bank Economic Review* 27, no. 3 (2013): 514-541. <https://academic.oup.com/wber/article/27/3/514/1634249>
- Dell'Ariccia, Giovanni, and Robert Marquez. "Lending booms and lending standards." *The journal of finance* 61, no. 5 (2006): 2511-2546. <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1540-6261.2006.01065.x>
- Dell'Ariccia, Giovanni, Deniz Igan, Luc Laeven, and Hui Tong. 2014. "Policies for Macro-Financial Stability: Dealing with Credit Booms and Busts." In *Financial Crises: Causes, Consequences, and Policy Responses*, edited by Stijn Claessens, M. Ayhan Kose, Luc Laeven, and Fabián Valencia, 267–294. Washington, DC: International Monetary Fund <https://www.elibrary.imf.org/display/book/9781498382656/ch011.xml>
- Dell'Ariccia, Giovanni, Luc Laeven, and Robert Marquez. 2010. "Monetary Policy, Leverage, and Bank Risk-Taking." IMF Working Paper No. 10/276. Washington, DC: International Monetary Fund. <https://www.elibrary.imf.org/downloadpdf/view/journals/001/2010/276/article-A000-en.pdf>
- De Nicolò, Gianni, Giovanni Dell'Ariccia, Luc Laeven, and Fabian Valencia. 2010. "Monetary Policy and Bank Risk Taking." IMF Staff Position Note SPN/10/09, July 27. Washington, DC: International Monetary Fund. [https://www.imf.org/-/media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/spn/2010/\\_spn1009.ashx](https://www.imf.org/-/media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/spn/2010/_spn1009.ashx)
- Demir, Ayse, Vanesa Pesqué-Cela, Yener Altunbas, and Victor Murinde. "Fintech, financial inclusion and income inequality: a quantile regression approach." *The European Journal of Finance* 28, no. 1 (2022): 86-107. <https://www.tandfonline.com/doi/full/10.1080/1351847X.2020.1772335>
- Demirgüç-Kunt, Asli. "Presidential address: Financial inclusion." *Atlantic Economic Journal* 42, no. 4 (2014): 349-356. <https://link.springer.com/article/10.1007/s11293-014-9429-z>
- Demirgüç-Kunt, Asli, and Leora Klapper. "Measuring financial inclusion: Explaining variation in use of financial services across and within countries." *Brookings papers on economic activity* 2013, no. 1 (2013): 279-340. [https://muse.jhu.edu/pub/11/article/524137/summary?casa\\_token=p0NuJiMPL5cAAAAA:fNAYXSEgJEL0COOd8XEw1lfT2a5672xoXHuawqB56wtotKKHgOve4xVDFDfNx-tQI2Cbt3ywErRQ](https://muse.jhu.edu/pub/11/article/524137/summary?casa_token=p0NuJiMPL5cAAAAA:fNAYXSEgJEL0COOd8XEw1lfT2a5672xoXHuawqB56wtotKKHgOve4xVDFDfNx-tQI2Cbt3ywErRQ)
- Demirgüç-Kunt, Asli, Edward Kane, and Luc Laeven. "Deposit insurance around the world: A comprehensive analysis and database." *Journal of financial stability* 20 (2015): 155-183. <https://www.sciencedirect.com/science/article/pii/S1572308915000893>
- Demirgüç-Kunt, Asli, Leora F. Klapper, Dorothe Singer, and Peter Van Oudheusden. "The Global Findex database 2014: Measuring financial inclusion around the world." World Bank Policy Research Working Paper 7255 (2015). [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2594973](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2594973)
- Demirguc-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. World Bank Publications, 2018. <https://econpapers.repec.org/bookchap/wbkwbpubs/29510.htm>

Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. World Bank Publications. <https://thedocs.worldbank.org/en/doc/651311527022104694-0050022018/original/FindexPolicyResearchTalkMay2018.pdf>

Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. "The Global Findex Database 2017: Measuring financial inclusion and opportunities to expand access to and use of financial services." The World Bank Economic Review 34, no. Supplement\_1 (2020): S2-S8. [https://academic.oup.com/wber/article/34/Supplement\\_1/S2/5700461](https://academic.oup.com/wber/article/34/Supplement_1/S2/5700461)

Juselius, Mikael, and Mathias Drehmann. 2015. "Leverage Dynamics and the Real Burden of Debt." BIS Working Papers No. 501. Bank for International Settlements <https://www.bis.org/publ/work501.htm>

Duan, Chengyonghui, and Soh Wei Ni. "Impact of fiscal spending, financial inclusion on financial stability." Finance Research Letters 69 (2024): 106238. <https://doi.org/10.1016/j.frl.2024.106238>

Eichengreen, Barry. Financial crises and what to do about them. Oxford University Press, 2002. <https://academic.oup.com/book/7026>

Ehrentraud, Johannes, and Raihan Zamil. 2020. "Prudential Response to Debt under Covid-19: The Supervisory Challenges." FSI Briefs No. 10. Basel: Financial Stability Institute, Bank for International Settlements. <https://www.bis.org/fsi/fsibriefs10.pdf>

Espinosa-Vega, Marco A., Kazuko Shirono, Hector Carcel Villanova, Esha Chhabra, Bidisha Das, and Yingjie Fan. Measuring financial access: 10 years of the IMF financial access survey. International Monetary Fund, 2020. <https://www.bookstore.imf.org/books/measuring-financial-access>

Evanoff, Douglas D., George G. Kaufman, and Anastasios Malliaris. 2012. "New Perspectives on Asset Price Bubbles." Oxford University Press, 2012. <https://econpapers.repec.org/bookchap/oxpobooks/9780199844401.htm>.

Financial Stability Board (FSB). "Key attributes of Effective Resolution Regimes for Financial Institutions". Revised version, 25 April 2024. <https://www.fsb.org/2024/04/key-attributes-of-effective-resolution-regimes-for-financial-institutions-revised-version-2024/>

Furusawa, Mitsuhiro. "What We Have Seen and Learned 20 Years after the Asian Financial Crisis." IMF Blog, Financial Crisis Management, July 13, 2017. <https://www.imf.org/en/Blogs/Articles/2017/07/13/what-we-have-seen-and-learned-20-years-after-the-asian-financial-crisis>

Gambacorta, Leonardo, and Andrés Murcia. "The impact of macroprudential policies and their interaction with monetary policy: an empirical analysis using credit registry data." (2017). BIS Working Paper No. 636. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2967307](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2967307)

Garber, Peter M. 2001. Famous First Bubbles: The Fundamentals of Early Manias. MIT Press. <https://mitpress.mit.edu/9780262571531/famous-first-bubbles/>

Gaspar, Vitor, Maurice Obstfeld, Ratna Sahay, Douglas Laxton, Dennis P. Botman, Kevin Clinton, Romain A. Duval, Kotaro Iishi, Zoltan Jakab, Laura Jaramillo Mayor, Constant Lonkeng Ngouana, Tommaso Mancini Griffoli, Joannes Mongardini, Susanna Mursula, Erlend Nier, Yulia Ustyugova, Hou Wang, and Oliver Wuensch. Macroeconomic management when policy space is constrained: A comprehensive, consistent and coordinated approach to economic policy. International Monetary Fund, 2016. <https://www.imf.org/external/pubs/ft/sdn/2016/sdn1609.pdf>

Georgantas, Georgios, Maria Kasselaki, and Athanasios Tagkalakis. "The effects of fiscal consolidation in OECD countries." Economic Modelling 118 (2023): 106099. <https://doi.org/10.1016/j.econmod.2022.106099>

Ghosh, Saibal, and Dharmarajan Vinod. "What constrains financial inclusion for women? Evidence from Indian micro data." World development 92 (2017): 60-81. <https://doi.org/10.1016/j.worlddev.2016.11.011>

Global Partnership for Financial Inclusion (GPFI). "Financial Inclusion – a Pathway to Financial Stability? Understanding the Linkages – Issues Paper." 2012. <https://www.gpfi.org/print/258>

Gorton, Gary. Misunderstanding financial crises: Why we don't see them coming. Oxford University Press, 2012. <https://global.oup.com/academic/product/misunderstanding-financial-crises-9780199922901?cc=us&lang=en&>

Gourinchas, Pierre-Olivier, Rodrigo Valdés, Oscar Landerretche, and Ernesto Talvi. 2001. "Lending Booms: Latin America and the World." Economía 1 (2): 47-99. <https://econpapers.repec.org/article/col000425/008707.htm>.

- Goyal, Sameer. "Financial Safety Nets: Key Design Considerations." The 1st IADI APRC Study Visit. Seoul Centre for Financial Sector Development, The World Bank Group, 2019. <https://documents1.worldbank.org/curated/en/099346001292216472/pdf/P169414032e0db0b20a8d00ac6d4018fb3c.pdf>
- Gropp, Reint, Hendrik Hakenes, and Isabel Schnabel. "Competition, risk-shifting, and public bail-out policies." *The Review of Financial Studies* 24, no. 6 (2011): 2084–2120. <https://academic.oup.com/rfs/article/24/6/2084/1585099>
- Gros, Daniel, and Farzaneh Shamsfakhr. "Adjusting Support in a K-Shaped Recovery." In *Path to Recovery: Dangers of Cliff Effects*. Compilation of Papers, 30–43. Study requested by the ECON Committee, Monetary Dialogue, European Parliament, March 2021. <https://www.europarl.europa.eu/cmsdata/230723/Topic%202%20binder.pdf>
- Han, Rui, and Martin Melecky. "Broader use of saving products among people can make deposit funding of the banking system more resilient." *Journal of International Financial Markets, Institutions and Money* 47 (2017): 89–102. <https://doi.org/10.1016/j.intfin.2016.11.005>
- Hannig, Alfred, and Stefan Jansen. Financial inclusion and financial stability: Current policy issues. No. 259. ADBI working paper, 2010. <https://www.econstor.eu/handle/10419/53699>
- Hill, Hal. The Indonesian economy in crisis: causes, consequences and lessons. Vol. 218, no. 2114. Institute of Southeast Asian Studies, 1999. <https://bookshop.iseas.edu.sg/publication/718>
- Hippler, William J., and M. Kabir Hassan. "The impact of macroeconomic and financial stress on the US financial sector." *Journal of Financial Stability* 21 (2015): 61–80. <https://doi.org/10.1016/j.jfs.2015.09.008>
- Hirata, Hideaki, M. Ayhan Kose, Christopher Otrok, and Marco E. Terrones. 2013. "Global House Price Fluctuations: Synchronization and Determinants." *NBER International Seminar on Macroeconomics*, Vol. 9 (1): 119–166. Chicago: University of Chicago Press. <https://www.journals.uchicago.edu/doi/full/10.1086/669585>
- Holton, Sarah, Martina Lawless, and Fergal McCann. "Credit demand, supply and conditions: A tale of three crises." Central Bank of Ireland, Research Technical Paper 4/RT/12 (2012). [https://www.centralbank.ie/docs/default-source/publications/research-technical-papers/research-technical-paper-04rt12.pdf?sfvrsn=9199d41d\\_8](https://www.centralbank.ie/docs/default-source/publications/research-technical-papers/research-technical-paper-04rt12.pdf?sfvrsn=9199d41d_8)
- Honohan, Patrick, and Daniela Klingebiel. "The fiscal cost implications of an accommodating approach to banking crises." *Journal of Banking & Finance* 27, no. 8 (2003): 1539–1560. [https://doi.org/10.1016/S0378-4266\(02\)00276-5](https://doi.org/10.1016/S0378-4266(02)00276-5)
- International Association of Deposit Insurers (IADI). "IADI Core Principles for Effective Deposit Insurance Systems. Draft for public consultation." May 2025. <https://www.iadi.org/uploads/IADI-Core-Principles-For-Public-Consultation-May-2025.pdf>
- International Monetary Fund (IMF). Evaluation Report: The IMF and Recent Capital Account Crises: Indonesia, Korea and Brazil. Independent Evaluation Office. Washington, DC, 2003. <https://www.imf.org/external/np/ieo/2003/cac/pdf/all.pdf>
- International Monetary Fund. Research Department. "Chapter 3 From Recession to Recovery: How Soon and How Strong?". In *World Economic Outlook*, April 2009 <https://www.elibrary.imf.org/display/book/9781589068063/ch003.xml>
- International Monetary Fund, Financial Stability Board, and Bank for International Settlements. Elements of Effective Macroprudential Policies: Lessons from International Experience. 2016. <https://www.imf.org/external/np/g20/pdf/2016/083116.pdf>
- International Monetary Fund. Lebanon: 2022 Article IV Consultation—Staff Report. IMF Country Report. Washington, DC: International Monetary Fund, 2022. <https://www.elibrary.imf.org/view/journals/002/2023/038/article-A002-en.xml>
- International Monetary Fund (IMF). Annual Report 2024. Lending and Debt Revisited. In *Focus*. 2024. <https://www.imf.org/external/pubs/ft/ar/2024/in-focus/lending-and-debt-revisited/>.
- International Monetary Fund. Monetary and Capital Markets Department, and World Bank. "COVID-19: The Regulatory and Supervisory Implications for the Banking Sector: A Joint IMF-World Bank Staff Position Note", IMF Staff Position Notes 2020, 001 (2020). <https://doi.org/10.5089/9781513545059.004>
- Ilzetzki, Ethan, Enrique G. Mendoza, and Carlos A. Végh. "How big (small?) are fiscal multipliers?" *Journal of monetary economics* 60, no. 2 (2013): 239–254. <https://doi.org/10.1016/j.jmoneco.2012.10.011>
- Ioannidou, Vasso, Steven Ongena, and José Luis Peydró. 2009. "Monetary Policy, Risk-Taking, and Pricing: Evidence from a Quasi-Natural Experiment." *CentER Discussion Paper Vol. 2009–31 S*. Center for Economic Research, Tilburg University. <https://research.tilburguniversity.edu/en/publications/monetary-policy-risk-taking-and-pricing-evidence-from-a-quasi-nat/>.

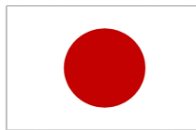
- Jannsen, Nils, Galina Potjagailo, and Maik H. Wolters. "Monetary Policy during Financial Crises: Is the Transmission Mechanism Impaired?" 60th issue (October 2019) of the International Journal of Central Banking (2019). <https://www.ijcb.org/journal/ijcb19q4a3.pdf>
- Jiménez, Gabriel, Luc Laeven, David Martínez Miera, and José-Luis Peydró. "Public guarantees, relationship lending and bank credit: Evidence from the covid-19 crisis." (2022). [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4069918](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4069918).
- Jordà, Òscar, Moritz Schularick, and Alan M. Taylor. "When credit bites back." *Journal of money, credit and banking* 45, no. s2 (2013): 3-28. <https://onlinelibrary.wiley.com/doi/full/10.1111/jmcb.12069>
- Jordà, Òscar, and Alan M. Taylor. "The time for austerity: estimating the average treatment effect of fiscal policy." *The Economic Journal* 126, no. 590 (2016): 219-255. <https://academic.oup.com/ej/article/126/590/219/5077421>
- Jordà, Òscar, Moritz Schularick, and Alan M. Taylor. "Sovereigns versus banks: credit, crises, and consequences." *Journal of the European Economic Association* 14, no. 1 (2016): 45-79. <https://academic.oup.com/jeea/article/14/1/45/2319810>
- Jordà, Òscar, Moritz Schularick, and Alan M. Taylor. "Macrofinancial history and the new business cycle facts." *NBER macroeconomics annual* 31, no. 1 (2017): 213-263. <https://www.journals.uchicago.edu/doi/full/10.1086/690241>.
- Jorra, Markus. "The effect of IMF lending on the probability of sovereign debt crises." *Journal of International Money and Finance* 31, no. 4 (2012): 709-725. <https://doi.org/10.1016/j.jimonfin.2012.01.010>
- Kaminsky, Graciela L., and Carmen M. Reinhart. 1999. "The Twin Crises: The Causes of Banking and Balance-of-Payments Problems." *American Economic Review* 89 ( 3): 473—500. <https://www.aeaweb.org/articles?id=10.1257/aer.89.3.473>
- Kannan, P., Scott, A., & Terrones, M. E. (2014). "Chapter 8. From Recession to Recovery: How Soon and How Strong?". In *Financial Crises. USA: International Monetary Fund*. <https://www.elibrary.imf.org/display/book/9781498382656/ch008.xml>
- Kapan, Tümer, and Camelia Minoiu. "Balance Sheet Strength and Bank Lending during the Global Financial Crisis." *IMF Working Paper 2013/102*. International Monetary Fund, 2013. <https://www.bookstore.imf.org/books/balance-sheet-strength-and-bank-lending-during-the-global-financial-crisis>
- Kendall, Jake, Nataliya Mylenko, and Alejandro Ponce. "Measuring financial access around the world." *World Bank Policy Research Working Paper 5253* (2010). [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1585032](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1585032)
- Khan, Shri H.R. "Financial Inclusion and Financial Stability: Are They Two Sides of the Same Coin?" Speech, BANCON 2011, organized by the Indian Bankers Association and Indian Overseas Bank, Chennai, November 4, 2011. Deputy Governor of the Reserve Bank of India. <https://www.bis.org/review/r111229f.pdf>
- Kindleberger, Charles P. *The world in depression, 1929-1939*. University of California Press, 1986. <https://worldbank.on.worldcat.org/oclc/1023903292>
- Kindleberger, Charles P., 1996. "Panics Manias, and Crashes. History of Financial Crises." London: Macmillan.
- Kirakul, Sasin, Jeffery Yong, and Raihan Zamil. "The Universe of Supervisory Mandates—Total Eclipse of the Core?" *FSI Insights No. 30*. Bank for International Settlements, Financial Stability Institute, 2021. <https://www.bis.org/fsi/publ/insights30.htm>
- Kirti, Divya, Maria Soledad Peria Martínez, Prachi Mishra, and Jan Strasky. "What Policy Combinations Worked? The Effect of Policy Packages on Bank Lending during COVID-19." *IMF Working Paper 23/25*. International Monetary Fund, 2023. <https://www.elibrary.imf.org/downloadpdf/view/journals/001/2023/025/001.2023.issue-025-en.pdf>
- Koenker, Roger. *Quantile regression*. Vol. 38. Cambridge university press, 2005. <https://www.cambridge.org/us/universitypress/subjects/economics/econometrics-statistics-and-mathematical-economics/quantile-regression?format=HB&isbn=9780521845731>
- Koenker, Roger, and Gilbert Bassett Jr. "Regression quantiles." *Econometrica: journal of the Econometric Society* (1978): 33-50. <https://www.jstor.org/stable/1913643?seq=1>
- Kwan, Simon H. "Financial Crisis and Bank Lending." *Federal Reserve Bank of San Francisco Working Paper Series 2010-11*, 2010. <https://www.frbsf.org/wp-content/uploads/sites/4/wp10-11bk.pdf>
- Kuruc, Kevin. "Are IMF rescue packages effective? A synthetic control analysis of macroeconomic crises." *Journal of Monetary Economics* 127 (2022): 38-53. <https://www.sciencedirect.com/science/article/pii/S0304393222000198>

- Laeven, Luc. "Banking Crises: A Review." *Annual Review of Financial Economics* 3, no. 1 (2011): 17–40. <https://www.annualreviews.org/content/journals/10.1146/annurev-financial-102710-144816>
- Laeven, Luc, and Fabian Valencia. "The use of blanket guarantees in banking crises." *Journal of International Money and Finance* 31, no. 5 (2012): 1220-1248. <https://www.sciencedirect.com/science/article/pii/S0261560612000307>
- Laeven, Luc, and Fabian Valencia. "Systemic banking crises database." *IMF Economic Review* 61, no. 2 (2013): 225-270. <https://link.springer.com/article/10.1057/imfer.2013.12>
- Laeven, Luc, and Fabian Valencia. "Systemic banking crises Revisited". IMF Working Paper 18/206. International Monetary Fund. <https://worldbank.on.worldcat.org/oclc/1056898436>
- Laeven, Luc, and Fabian Valencia. 2020. "Systemic Banking Crises Database II." *IMF Economic Review* 68: 307–361. Washington, DC: International Monetary Fund. <https://link.springer.com/article/10.1057/s41308-020-00107-3>.
- Lansing, Kevin J. 2008. "Speculative Growth and Overreaction to Technology Shocks." Federal Reserve Bank of San Francisco, Working Paper Series 2008-08. <https://www.frbsf.org/wp-content/uploads/wp08-08bk.pdf>.
- Lashitew, Addisu A., Rob Van Tulder, and Yann Liasse. "Mobile phones for financial inclusion: What explains the diffusion of mobile money innovations?" *Research Policy* 48, no. 5 (2019): 1201-1215. <https://doi.org/10.1016/j.respol.2018.12.010>
- Li, Lei, Philip E. Strahan, and Song Zhang. "Banks as lenders of first resort: Evidence from the COVID-19 crisis." *The Review of Corporate Finance Studies* 9, no. 3 (2020): 472-500. <https://academic.oup.com/rcfs/article/9/3/472/5867923>
- López, Tania, and Adalbert Winkler. "Does financial inclusion mitigate credit boom-bust cycles?" *Journal of Financial Stability* 43 (2019): 116-129. <https://doi.org/10.1016/j.jfs.2019.06.001>
- Lopez-Salido, David, and Edward Nelson. *Postwar Financial Crises and Economic Recoveries in the United States*. University Library of Munich, Germany, 2010. <https://econpapers.repec.org/paper/pramprapa/98502.htm>
- Ma, Yechi, Yibing Ding, Ziwen Bu, and Suyang Li. "Political freedom and financial inclusion: Unraveling social trust and political rent-seeking." *Journal of Economic Behavior & Organization* 220 (2024): 46-65. <https://doi.org/10.1016/j.jebo.2024.01.024>.
- Magud, Nicolas E., Carmen M. Reinhart, and Esteban R. Vesperoni. 2012. "Capital Inflows, Exchange Rate Flexibility, and Credit Booms.", IMF Working Paper No. 12/41. Washington, DC: International Monetary Fund. [https://www.imf.org/-/media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2012/\\_wp1241.ashx](https://www.imf.org/-/media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2012/_wp1241.ashx).
- Mbutor, Mbutor O., and Ibrahim A. Uba. "The impact of financial inclusion on monetary policy in Nigeria." *Journal of Economics and International Finance* 5, no. 8 (2013): 318-326. [https://academicjournals.org/article/article1383581296\\_Mbutor%20and%20Uba.pdf](https://academicjournals.org/article/article1383581296_Mbutor%20and%20Uba.pdf)
- Mehrotra, Aaron, and James Yetman. "Financial inclusion-issues for central banks." *BIS Quarterly Review* March (2015). [https://www.bis.org/publ/qtrpdf/r\\_qt1503h.htm](https://www.bis.org/publ/qtrpdf/r_qt1503h.htm)
- Mendoza, Enrique G., and Marco E. Terrones. 2008. "An Anatomy of Credit Booms: Evidence from Macro Aggregates and Micro Data." No. 14049. National Bureau of Economic Research. <https://www.nber.org/papers/w14049>.
- Mendoza, Enrique G., and Marco E. Terrones. 2012. "An Anatomy of Credit Booms and their Demise" No. 18379. National Bureau of Economic Research. [https://www.nber.org/system/files/working\\_papers/w18379/w18379.pdf](https://www.nber.org/system/files/working_papers/w18379/w18379.pdf)
- Metrick, Andrew, and Paul Schmelzing. 2021. "Banking-Crisis Interventions across Time and Space." NBER Working Paper Series 29281. Last updated February 20, 2024. <https://elischolar.library.yale.edu/cgi/viewcontent.cgi?article=5251&context=yfbs-documents2>.
- Milesi-Ferretti, Gian-Maria, and Cédric Tille. 2011. "The Great Retrenchment: International Capital Flows during the Global Financial Crisis." *Economic Policy* 26 (66): 289—346. <https://academic.oup.com/economicpolicy/article/26/66/289/2918382>.
- Minsky, Hyman P. 1976. *John Maynard Keynes*. London: Palgrave Macmillan Limited. <https://search.worldcat.org/title/1085162908>
- Moretti, Marina, Marc Dobler, and Alvaro Piris Chavarri. "Managing Systemic Banking Crises: New Lessons and Lessons Relearned." International Monetary Fund, Monetary and Capital Markets Department 20/05, (2020). <https://www.imf.org/-/media/Files/Publications/DP/2020/English/MSFCEA.ashx>
- Morgan, Peter J., and Victor Pontines. "Financial Stability and Financial Inclusion: The Case of SME Lending." *The Singapore Economic Review* 63, no. 1 (March 2018): 111–124. World Scientific Publishing Co. Pte. Ltd. <https://ideas.repec.org/a/wsi/serxxx/v63y2018i01ns0217590818410035.html>

- Nakamura, Emi, and Jón Steinsson. "Identification in macroeconomics." *Journal of Economic Perspectives* 32, no. 3 (2018): 59-86. <https://www.aeaweb.org/articles?id=10.1257/jep.32.3.59>
- Nguyen, Thanh Cong, Vitor Castro, and Justine Wood. "A new comprehensive database of financial crises: Identification, frequency, and duration." *Economic Modelling* 108 (2022): 105770. <https://doi.org/10.1016/j.econmod.2022.105770>
- Nijathaworn, Bandid. "Rethinking Procyclicality – What Is It Now and Can Be Done?" Presentation at the Bank for International Settlements/Financial Stability Institute–Executives’ Meeting of East Asia-Pacific Central Banks (BIS/FSI-EMEAP) High Level Meeting on "Lessons Learned from the Financial Crisis – An International and Asian Perspective," Tokyo, November 30, 2009. <https://www.bis.org/review/r091210d.pdf>
- Obstfeld, Maurice, and Kenneth S. Rogoff. 2009. "Global Imbalances and the Financial Crisis: Products of Common Causes." *Proceedings* 131—172. San Francisco: Federal Reserve Bank of San Francisco. <https://ideas.repec.org/a/fip/fedfpr/y2009p131-172.html>.
- Organization for Economic Co-operation and Development (OECD). *G20 Policy Note on Financial Well-Being*. Paris: OECD, 2024. [https://www.oecd.org/en/publications/g20-policy-note-on-financial-well-being\\_7332c99d-en.html](https://www.oecd.org/en/publications/g20-policy-note-on-financial-well-being_7332c99d-en.html).
- Ozili, Peterson K. "Impact of digital finance on financial inclusion and stability." *Borsa Istanbul Review* 18, no. 4 (2018): 329-340. <https://www.sciencedirect.com/science/article/pii/S2214845017301503>
- Ozili, Peterson K. "Financial inclusion and business cycles." *Journal of Financial Economic Policy* 13, no. 2 (2021): 180-199. <https://doi.org/10.1108/JFEP-02-2020-0021>
- Pearl, Judea. 2009. *Causality: Models, Reasoning and Inference*. 2nd ed. Cambridge: Cambridge University Press. <https://search.worldcat.org/title/1005653753>
- Pempel, T. John, and Keiichi Tsunekawa, eds. *Two crises, different outcomes: East Asia and global finance*. Cornell University Press, 2015. <https://search.worldcat.org/title/1080549755>
- Philippon, Thomas, and Philipp Schnabl. "Efficient recapitalization." *The Journal of Finance* 68, no. 1 (2013): 1-42. <https://doi.org/10.1111/j.1540-6261.2012.01793.x>
- Quevedo-Vega, Camila, and Jorge Mario Uribe. "The Power of Microdata from Global Findex." *CGAP Blog*, September 17, 2025. <https://www.cgap.org/blog/power-of-microdata-global-findex>.
- Reinhart, Carmen M., and Kenneth S. Rogoff. "Is the 2007 US sub-prime financial crisis so different? An international historical comparison." *American Economic Review* 98, no. 2 (2008): 339-344. <https://www.aeaweb.org/articles?id=10.1257/aer.98.2.339>
- Reinhart, Carmen M., and Kenneth S. Rogoff. *This time is different: Eight Centuries of Financial Folly -Data*. Princeton University Press, 2009 <https://rogoff.scholars.harvard.edu/time-different%E2%80%9494data-files>
- Reinhart, Carmen M., and Kenneth S. Rogoff. "From financial crash to debt crisis." *American economic review* 101, no. 5 (2011): 1676-1706. <https://www.aeaweb.org/articles?id=10.1257/aer.101.5.1676>
- Romer, Christina D., and David H. Romer. "Phillips lecture—why some times are different: Macroeconomic policy and the aftermath of financial crises." *Economica* 85, no. 337 (2018): 1-40. <https://doi.org/10.1111/ecca.12258>
- Sahay, Ratna, Martin Cihak, Papa N'Diaye, Adolfo Barajas, Srobona Mitra, Annette Kyobe, Yen Mooi, and Reza Yousefi. *Financial inclusion: can it meet multiple macroeconomic goals?* International Monetary Fund, 2015. <https://www.bookstore.imf.org/books/financial-inclusion-can-it-meet-multiple-macroeconomic-goals>
- Salamaliki, Paraskevi K., and Ioannis A. Venetis. "Fiscal space and policy response to financial crises: market access and deficit concerns." *Open Economies Review* 35, no. 2 (2024): 323-361. <https://link.springer.com/article/10.1007/s11079-023-09724-7>
- Scherbina, Anna. 2013. *Asset Price Bubbles: A Selective Survey*. IMF Working Paper No 13/45. Washington, DC: International Monetary Fund. <https://www.bookstore.imf.org/books/Asset-Price-Bubbles-A-Selective-Survey>.
- Schularick, Moritz, and Alan M. Taylor. 2012. "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870–2008." *American Economic Review* 102 (2): 1029–1061. <https://www.aeaweb.org/articles?id=10.1257/aer.102.2.1029>.
- Sebai, Meriem, Omar Talbi, and Hella Guerchi-Mehri. "Optimal financial inclusion for financial stability: Empirical insight from developing countries." *Finance Research Letters* 71 (2025): 106467. <https://doi.org/10.1016/j.frl.2024.106467>
- Soesastro, Hadi, and M. Chatib Basri. "Survey of recent developments." *Bulletin of Indonesian Economic Studies* 34, no. 1 (1998): 3-54. <https://doi.org/10.1080/00074919812331337270>

- Stein, Luke CD, and Constantine Yannelis. "Financial inclusion, human capital, and wealth accumulation: Evidence from the freedman's savings bank." *The Review of Financial Studies* 33, no. 11 (2020): 5333-5377. <https://academic.oup.com/rfs/article/33/11/5333/5732662>
- Stekhoven, Daniel J., and Peter Bühlmann. "MissForest—non-parametric missing value imputation for mixed-type data." *Bioinformatics* 28, no. 1 (2012): 112-118. <https://academic.oup.com/bioinformatics/article/28/1/112/219101>
- Stiglitz, Joseph E. *Globalization and its discontents revisited: Anti-globalization in the era of Trump*. WW Norton & Company, 2017. <https://search.worldcat.org/title/1013542305>
- Svirydenka, Katsiaryna. *Introducing a new broad-based index of financial development*. International Monetary Fund, 2016. <https://www.bookstore.imf.org/books/Introducing-a-New-Broad-based-Index-of-Financial-Development>
- Takáts, Előd, and Judit Temesvary. "How does the interaction of macroprudential and monetary policies affect cross-border bank lending?." BIS Working Papers No. 782, Bank for International Settlements, 2019. <https://www.bis.org/publ/work782.pdf>
- Tintchev, Kalin, Kalin I. Tintchev, and Kady Keita. *A Confidence-Financial Inclusion Nexus in the Caucasus and Central Asia?* IMF Working Papers 2024/257, International Monetary Fund, 2024. [https://econpapers.repec.org/paper/imfimfwpa/2024\\_2f257.htm](https://econpapers.repec.org/paper/imfimfwpa/2024_2f257.htm)
- Tirole, Jean. "Financial crises, liquidity, and the international monetary system." (2002): 1-168. <https://www.torrossa.com/en/resources/an/5573865>
- Uribe, Jorge M., and Montserrat Guillen. *Quantile regression for cross-sectional and time series data: Applications in energy markets using R*. Vol. 1. Cham: Springer, 2020. <https://link.springer.com/content/pdf/10.1007/978-3-030-44504-1.pdf>
- Veronesi, Pietro, and Luigi Zingales. "Paulson's gift." *Journal of Financial Economics* 97, no. 3 (2010): 339-368. <https://doi.org/10.1016/j.jfineco.2010.03.011>
- Vuković, Darko B., M. Kabir Hassan, Bernard Kwakye, Armike Febtinugraini, and Mohammed Shakib. "Does fintech matter for financial inclusion and financial stability in BRICS markets?" *Emerging Markets Review* 61 (2024): 101164. <https://doi.org/10.1016/j.ememar.2024.101164>
- Wang, Rui, and Hang Robin Luo. "How does financial inclusion affect bank stability in emerging economies?" *Emerging Markets Review* 51 (2022): 100876. <https://doi.org/10.1016/j.ememar.2021.100876>
- World Bank. *Lebanon Economic Monitor: The Deliberate Depression*. Washington, DC, World Bank, 2020. <https://www.worldbank.org/en/country/lebanon/publication/lebanon-economic-monitor>
- World Bank. *Lebanon Economic Monitor: Normalization of Crisis?* Washington, DC: World Bank, 2023. <https://www.worldbank.org/en/country/lebanon/publication/lebanon-economic-monitor>
- World Bank. *Lebanon Financing Facility (LFF): B5—Strengthening Microfinance and MSME Recovery*. Washington, DC: World Bank, 2024–2025. <https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/09906282420152342>
- World Health Organization (WHO). "Emergencies: International Health Regulations and Emergency Committees. Questions and Answers." 19 December 2019. <https://www.who.int/news-room/questions-and-answers/item/emergencies-international-health-regulations-and-emergency-committees>
- Xiong, Ruoxuan, and Markus Pelger. "Large dimensional latent factor modeling with missing observations and applications to causal inference." *Journal of Econometrics* 233, no. 1 (2023): 271-301. <https://doi.org/10.1016/j.jeconom.2022.04.005>
- Yang, Fan, and Tajul Ariffin Masron. "Role of financial inclusion and digital transformation on bank credit risk." *Journal of International Financial Markets, Institutions and Money* 91 (2024): 101934. <https://doi.org/10.1016/j.intfin.2023.101934>
- Zhang, Xiaoyan, Jinbao Li, Dong Xiang, and Andrew C. Worthington. "Digitalization, financial inclusion, and small and medium-sized enterprise financing: Evidence from China." *Economic Modelling* 126 (2023): 106410. <https://doi.org/10.1016/j.econmod.2023.106410>
- Zingales, Luigi. "Presidential address: Does finance benefit society?" *The Journal of Finance* 70, no. 4 (2015): 1327-1363. <https://doi.org/10.1111/jofi.12295>

# CGAP Members



# CGAP Members (continued)



# CGAP Strategic Partners





**Transforming Lives with Financial Inclusion**



[cgap.org](http://cgap.org)

