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Independent Evaluation Office
of the International Monetary Fund

BACKGROUND PAPER



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The Role of IMF Financial Support in Mitigating the COVID-19 Shock

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IEO Background Paper
Independent Evaluation Office
of the International Monetary Fund

The Role of IMF Financial Support in Mitigating the COVID-19 Shock

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The views expressed in this Background Paper are those of the authors and do not necessarily represent those of the IEO, the IMF, or IMF policy. Background Papers report analyses related to the work of the IEO and are published to elicit comments and to further debate.

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ABBREVIATIONS

| | |
|------|--|
| AE | Advanced Economy |
| BOP | Balance of Payments |
| CA | Current Account |
| DSA | Debt Sustainability Analysis |
| EF | Emergency Financing |
| EMDE | Emerging Market and Developing Economy |
| EM | Emerging Market |
| FIN | Finance Department (IMF) |
| FDI | Foreign Direct Investment |
| GDP | Gross Domestic Product |
| GFC | Global Financial Crisis |
| GFN | Gross Financing Need |
| GRA | General Resources Account |
| LIC | Low-Income Country |
| MIC | Middle-Income Country |
| PRGT | Poverty Reduction and Growth Trust |
| SDR | Special Drawing Rights |
| UCT | Upper Credit Tranche |
| UFR | Use of Fund Resources |
| WEO | World Economic Outlook |

EXECUTIVE SUMMARY

The COVID-19 shock triggered a global recession of epic proportions, one considerably deeper than the 2008–09 downturn. To cushion the economic consequences of the shock, governments around the world introduced an array of policy measures to support economies.

The IMF was among the first to acknowledge the unprecedented economic challenges arising from the pandemic. Overall, the Fund response to the pandemic crisis was like no other across multiple dimensions, providing economic assessment, policy advice, and financial support. On the financial front, the Fund scaled up existing emergency financing instruments to help members meet urgent BOP needs, including in cases where a UCT-quality program was not feasible. Where UCT programs were warranted and feasible, however, the Fund provided support through these programs either by approving augmentations of access under existing arrangements or approving new ones. In SDR terms, the Fund's overall pandemic financing to emerging and developing countries was larger than during the Global Financial Crisis (GFC), with the largest share of funds going to emerging markets (EMs) but low-income countries (LICs) receiving by far the largest number of Fund arrangements this time.

In this paper we examined three main questions.

First, what economic criteria did the Fund use to decide whether to finance countries? We found that, like after past shocks, and consistent with the IMF's legal framework, following the COVID-19 shock the IMF provided financing to its members based primarily on standard balance of payments (BOP) and capacity to repay metrics. Other things equal, more Fund financing seems to have accrued to countries with bigger BOP needs, greater ability to repay measured in terms of stronger debt sustainability, and a good policy record on earlier borrowing from the Fund; while less went to countries which had access to non-Fund financing or weaker capacity to repay. In general, decisions on Fund financing were more sensitive to BOP needs, debt sustainability and historical record of Fund borrowing in the case of LICs than in the case of EMs. Fund financing was found to be less correlated with a country's health system needs or pandemic status and was not universally sensitive to the size of the estimated negative impact on the economy of the pandemic.

Second, was Fund financing adequate? A direct assessment of financing adequacy on a case-by-case basis and/or on average is complex due to the many factors at play. Importantly, in IMF-supported arrangements, the IMF is not the only source of financing, and indeed access to Fund resources is intended as a catalyst for other official and private borrowing. Reflecting these considerations, we tried to gauge the proportionality of Fund financing to needs by examining whether Fund financing managed to relax countries' external financing constraints. In turn, this involves measuring the role played directly by the Fund in contributing to close members' BOP needs as well as its indirect role in helping countries increase their net access to other sources of finance.

Looking at *direct* support, we found that the Fund financed a somewhat higher share of financing gaps than the Fund originally intended to address, as actual gaps tended to be lower than estimated at the time of disbursement. When measured ex post, Fund financing corresponded, on average, to about 13 percent and 19 percent of the EMs and LICs actual BOP needs, respectively, although the share contribution of Fund gap financing varied significantly both (on average) between income groups and country geographical categories, being lower for countries with large needs, such as small developing states.

With regard to the *indirect* impact that IMF financing had on private capital flows in the assisted countries, there is some evidence that access to Fund resources—including emergency financing (EF) as well as UCT—did have a catalytic role. Simple comparisons of countries' non-resident net capital flows before and after the approval of EF and UCT programs do not seem to point to specific catalytic effects from Fund financing. This evidence needs to be interpreted cautiously, however, because of sample selection bias, since countries that requested but did not obtain access to Fund resources are likely to be those that suffered the greatest economic shock and the greatest difficulty sustaining access to international capital markets. To correct for this bias, we applied more sophisticated econometric techniques that take account of differences in country characteristics. These estimates, also based on available quarterly BOP data, suggest that recipients of Fund EF in fact received larger inflows of portfolio capital after the Fund lending. The effect appears stronger for middle-income developing countries (MIDCs) than LICs possibly reflecting the diverse impact that Fund financing may have in countries with different income fundamentals.

Finally, was Fund financing instrumental in mitigating the COVID-19 shock in recipient countries? Answering this question is difficult because the economic performance of countries in the aftermath of the shock, as well as in the aftermath of Fund financing, depended on a multiplicity of factors including the severity and length of non-pharmaceutical interventions (NPIs), i.e., lockdowns and other restraints to economic activity and mobility, trade and global supply chain exposure, fiscal and foreign reserves space, and access to other sources of external credit. A simple examination of the evidence suggests that in terms of real growth, on average, countries that received Fund EF seem to have outperformed countries that asked but did not obtain EF, largely due to the fact that in 2020, on average, private consumption was softer in countries who did not receive funding likely because more current account adjustment was needed in these countries. Among recipients of Fund support, those that got both EF and UCT seemed to have fared better on average than all other groups, suggesting that a lack of follow-up of EF with UCT arrangements, when possible, may have been a missed opportunity. Results obtained by fitting a cross-section regression for EMDEs for 2020 support this evidence, indicating that real output in countries receiving Fund financing deviated less from historic trends relative to countries that requested but did not receive funding. A combination of EF and UCT financing and EF-based financing reduced losses more than UCT programs alone. combined EF and UCT delivered the largest reductions in economic losses.

I. FOCUS, STRUCTURE, AND METHODOLOGY

1. **Focus.** This background paper examines the impact of IMF financial support in mitigating the COVID-19 shock by assessing empirically the Fund's contributions during 2020–21 in meeting countries' financing needs, helping support active fiscal responses, and catalyzing external financing.
2. **Structure.** Concentrating on the period between March 2020 and December 2021, the paper starts by reviewing the global economic impact of the COVID-19 shock and countries' policy responses (Section II). The paper then turns to the impact and mitigating role of the Fund pandemic financial response (distinguishing between emergency financing (EF) and Upper Credit Tranche (UCT) programs, and combinations of both EF and UCT) by assessing: (i) what drove Fund financing; (ii) whether Fund financing was commensurate to countries' balance of payments (BOP) financing needs; and (iii) to what extent Fund financing directly and/or indirectly alleviated countries' BOP needs and helped improve or restore macroeconomic and financial stability (Section III). Conclusions follow (Section IV).
3. **Methodology.** The analysis presented here provides an empirical assessment of macroeconomic and financial data including global and regional data on public health, the main macro and external financing variables, as well as data on the Fund's financing (both EF and UCT). Data on Fund financing and BOP needs are obtained from Fund financing databases and official country documents. Cross-country cross-section regressions are used to study the relationship between economic losses following the shock and Fund financing to understand whether the latter played a significant mitigating role on the economies of countries that borrowed from the Fund during the pandemic.
4. **Relation to other background papers in this evaluation.** Findings in this paper complement the analysis in other thematic and country papers in this evaluation. In particular, more information on access policies and access limits, on which we base definitions to compute countries' BOP strains and categorize countries on the basis of their financing relationship with the Fund during the pandemic, can be found in the thematic paper on "Operational Aspects of IMF Financing in Response to the COVID-19 Pandemic" (Kincaid, Cohen-Setton, and Li, 2023). "The IMF's Forecasting and Policy Advice Formulation Processes During the Pandemic" (Loungani and others, 2023), focuses on IMF outlook assessments, economic forecasting processes and IMF policy advice during the pandemic, while "The IMF's Response to the Pandemic: Strategy and Collaboration with Partners" (Ocampo and others, 2023) puts Fund help into a wider context of official lending during the pandemic and offers a backdrop of the global official response to the COVID-19 shock. Findings from detailed country studies focusing on a representative group of countries which used or expressed interest in IMF EF during the evaluation period are used throughout the paper to complement higher-level findings from the empirical assessment presented here.

II. CONTEXT: GLOBAL IMPACT AND POLICY RESPONSES TO THE COVID-19 SHOCK

Global Impact

5. **The COVID-19 pandemic struck a devastating blow to the global economy.** The pandemic shock triggered the deepest global recession since World War II and was considerably worse than the Global Financial Crisis (GFC) of 2008. It caused per capita output to contract in a record-high share of countries. In contrast to 2008–2009, this time both advanced economies (AEs) and emerging market and developing economies (EMDEs) suffered heavy economic losses (Figure 1).

6. **The global shock primarily reflected the economic impact of governments' actions to curb the pandemic.** To reduce the spread of COVID-19 many governments swiftly enacted non-pharmaceutical interventions (NPIs)¹ that plunged the global economy into a severe contraction (Figure 1).² In countries without strict enforcement, social distancing in line with government advice or from voluntary compliance to mandates added to economic dislocations. The logic behind NPIs was to mitigate the duration and severity of the pandemic by reducing transmission, but also to avoid the need of more NPIs and further economic damage down the line (Cohen, 2020; Lewnard, 2020). By April 2020, about half of the world's population was under some form of lockdown, with more than 3.9 billion people in more than 90 countries or territories having been asked or ordered to stay at home by their governments. In most cases, however, NPIs did not halt the spread of infections for a variety of reasons, and infections continued to progress in waves (WHO, 2022; Wei and others, 2022).

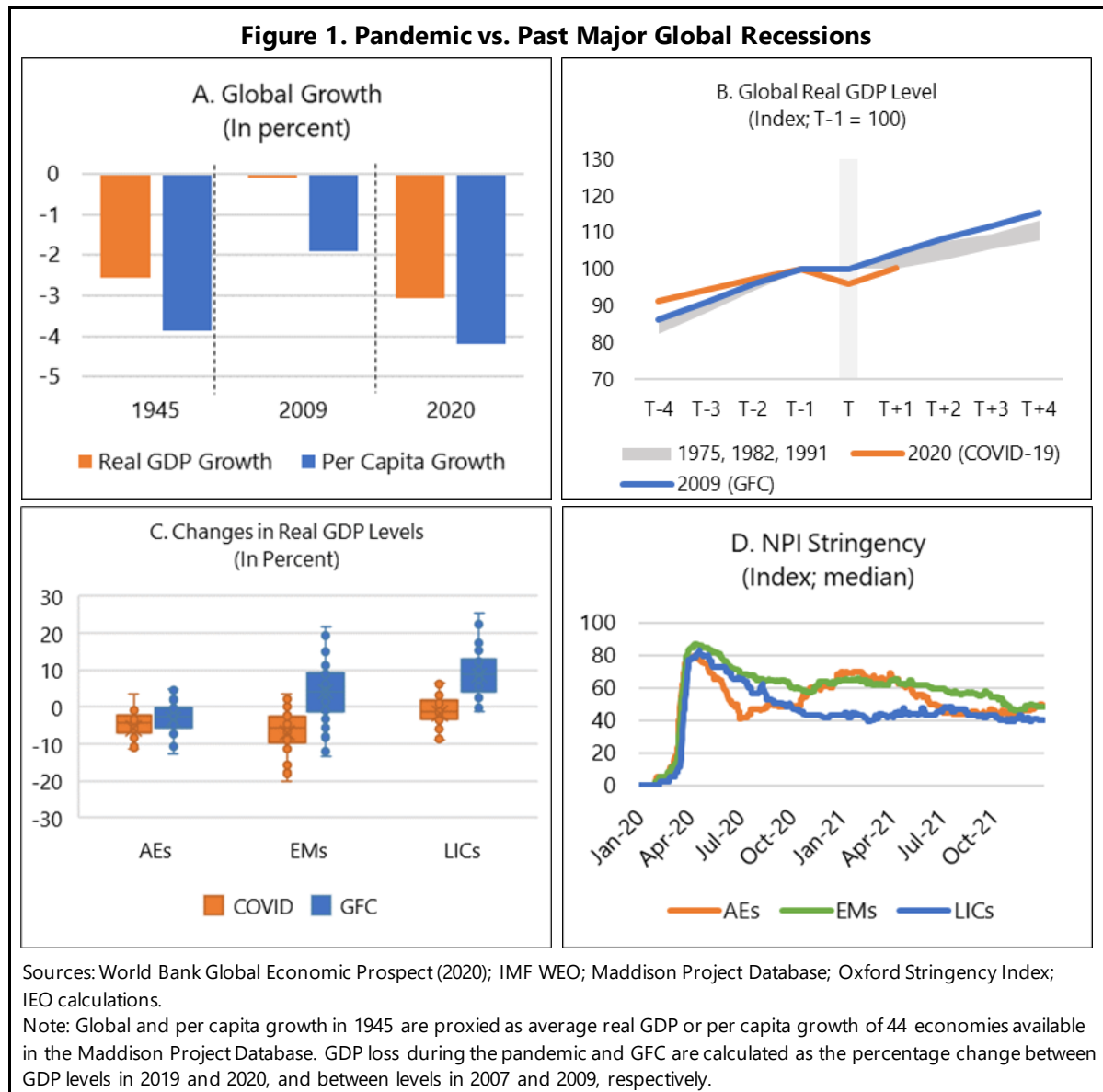
7. **Global supply, demand, and the financial sector were simultaneously hit.** On the demand side, social distancing and community lockdowns caused a dramatic collapse of non-primary consumption, while the widespread closure of national borders, together with travel and mobility bans, severely disrupted the world tourism industry. Similarly, business investment ground to a halt amidst heightened uncertainties about the depth and duration of the crisis. On the supply side, the drop in mobility and shutdown of factories associated with pandemic containment measures disrupted local and global supply, derailing production and international trade and unleashing a global supply chain and food crisis of unprecedented proportions (Verschuur and others, 2020, FAO, 2020). Unemployment soared globally,³ resulting in a

¹ NPIs generally refers to a wide range of both top-down (i.e., governmental) measures aimed at interrupting infection chains by altering key aspects of our behavior. Travel bans, curfews, social distancing, bans of social gathering, face masks, increased hygiene, remote working, workplace closures, school closures, and lockdowns are examples.

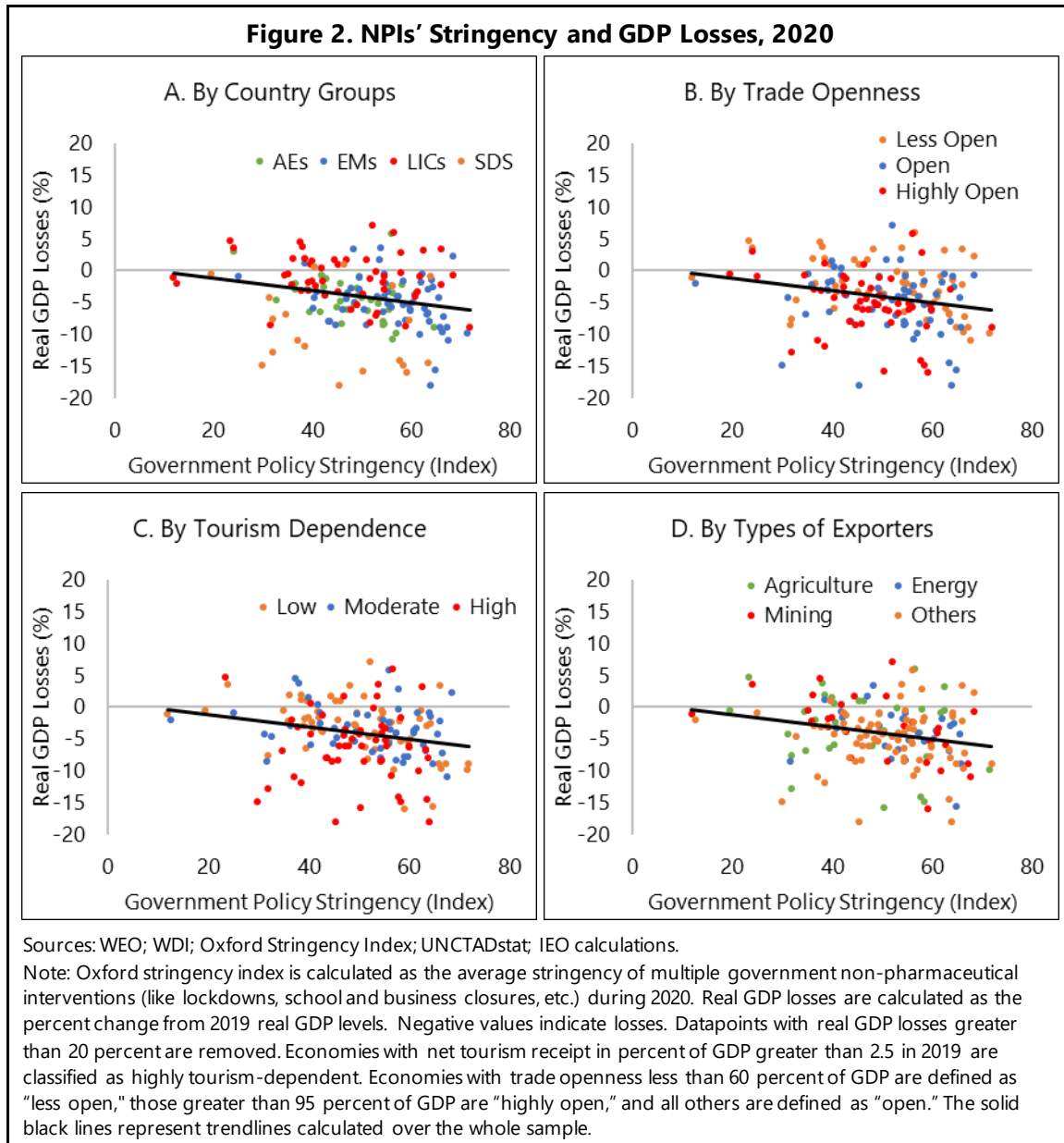
² The adverse socio-economic implications of NPIs in the years from introduction have now been well-documented in the economic literature. See, among others, IMF (2020), WBG (2020); ILO (2021); Furceri and others (2020); Furceri and others, (2021); Baek and others (2020); Bakker and others (2020); Béland, Brodeur, and Wright (2020); Chernozhukov, Kasahara, and Schrimpf (2020); Coibion, Gorodnichenko, and Weber (2020); and Gupta and others (2020).

³ Bianchi, Bianchi and Song (2021) estimated the size of the COVID-19-related unemployment shock to be between two and five times larger than the typical unemployment shock, depending on race and gender.

significant increase in mortality rates and drop in life expectancy (Bianchi, Bianchi, and Song, 2021). On the financial side, the rapidly deteriorating global outlook had wide-ranging and severe impacts upon financial markets, including stock, bond, and commodity (including crude oil and gold) markets. Panic-driven sharp selloffs in the early phase of the crisis led to a record-high capital flight from emerging markets and developing countries, and an immediate tightening of global financial conditions. At the same time, as the likely depth of the downturn became apparent, crude oil prices collapsed and stock markets plunged (Batini, 2020).



8. **The effects of the shock on economic activity in 2020 were uneven across countries and sectors.** On average, countries experienced widespread large economic losses (Furceri and others, 2020).⁴ However, differences in countries' economic structures, in the stringency of pandemic containment measures across time and space, and differences in countries' relative economic vulnerabilities to spillovers from partner countries contributed to large regional and sectoral variations in the ultimate economic impact of the pandemic (Figure 2).



⁴ Among NPIs, workplace, school, and public transport closures together with stay-at-home orders were associated with the largest economic costs.

9. **Hardest-hit countries.** Specifically, countries where NPIs were the most severe and countries heavily reliant on global trade, tourism, and commodity exports were hit hardest through three mutually reinforcing channels, namely, the collapse of commodity prices in the wake of a global recession, disruptions of global commodity-based supply chains, and the overlap of financial and commodity price cycles resulting in procyclical capital flows and debt servicing costs.

10. **The largest absolute contractions in GDP were geographically dispersed** but also, characteristically associated with the collapse of specific supply chains (for example, oil, vehicle manufacturing), whilst small developing states (especially small islands) and low-income economies suffered the largest relative economic losses from drops in trade.⁵ Likewise, sectors that were highly reliant on face-to-face interactions, such as retail trade, leisure, hospitality, and transportation, experienced a much larger shock to activity than sectors that could operate relatively well with social distancing in place, such as construction and manufacturing.

| GDP Contraction (Percent) | Countries |
|---------------------------|---|
| More than 25 | Armenia, Peru |
| 15 to 25 | India, United Kingdom, Mexico, Spain, South Africa, Malaysia, Georgia, Colombia, Portugal, Argentina |
| 10 to 15 | Tunisia, Philippines, Hungary, Malta, Croatia, France, Greece, Chile, Italy, Morocco, Singapore, Ecuador, Cyprus, Austria, Belgium, Canada, Romania, New Zealand, Türkiye, Moldova |
| 5 to 10 | China, Serbia, Germany, Slovenia, Poland, Thailand, Brazil, United States, Czech Republic, Israel, Algeria, Russia, Japan, Sweden, Netherlands, Costa Rica, Latvia, Slovak Republic, Switzerland, Australia, Indonesia, Estonia, Iceland, Kazakhstan, Finland, Luxembourg, Denmark, Lithuania, Ireland, Nigeria, Uganda |

Sources: October 2022 WEO; IEO calculations.
 Note: Measured on a quarter-on-quarter seasonally adjusted basis. Quarterly real GDP covers 71 economies. In this ranking, we used the worst performing quarter in 2020H1 for each economy to allow for differences in the impact of the shock across countries.

Macroeconomic Policy Responses

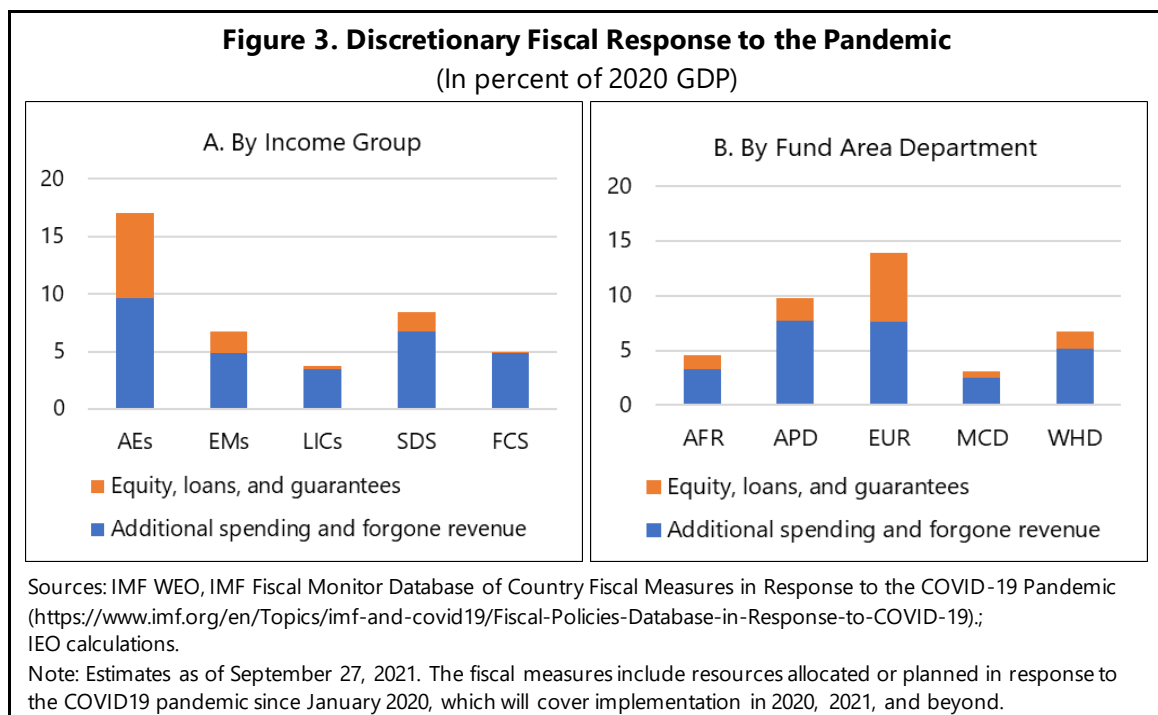
11. **To cushion the economic consequences of the shock, governments around the world introduced an array of macroeconomic policy measures to support their economies.** Global fiscal support reached almost \$16 trillion in 2020, over 18 percent of global 2019 GDP. Most of it was deployed by AEs, while the fiscal response in EMDEs was constrained by financing and debt concerns (IMF, 2021b).

12. **Fiscal support was channeled through both conventional and unconventional routes.** Public funds were distributed rapidly to support health systems, although the bulk of additional public spending was aimed to sustain workers and businesses through the economic

⁵ Moreover, interruptions in schooling and primary healthcare access are likely to have lasting impacts on human capital development.

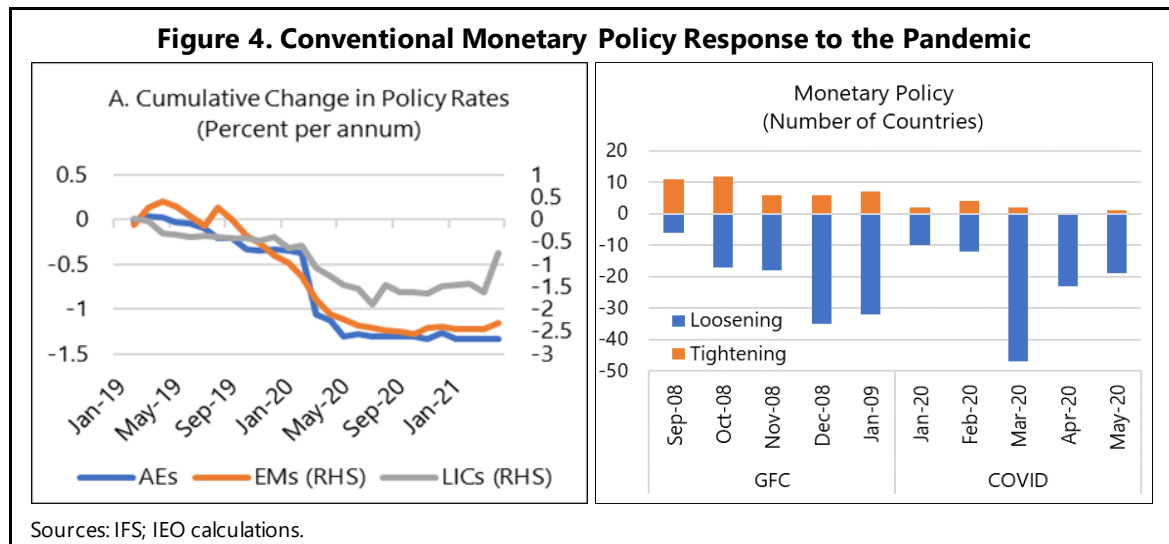
downturn, including through loans, guarantees, temporary tax breaks, and subsidies for the payment of utility services and other basic necessities. The fiscal measures were financed through diverse sources including reserve buffers, outright new borrowing, reprioritizing within existing budgets, and in many middle-income (MICs) and low-income countries (LICs), extensive multilateral support, including from the IMF.

13. **On the monetary policy front, major central banks responded to the crisis by drastically easing monetary conditions and pumping liquidity to counter market disruption (Figure 3).** The U.S. Federal Reserve’s monetary stimulus in March and April 2020 was particularly powerful since it was both aggressive—including rate cuts and asset purchases measuring more in annualized terms than the combined purchases under QE1, QE2, and QE3—and novel in its promise of unlimited further easing and allowance for purchases of corporate bonds. These actions were accompanied by several steps to safeguard global dollar liquidity, among which, notably, extending the maturity of existing swap line agreements with major central banks and reintroducing temporary swap line arrangements with a number of large EM central banks repeating an intervention taken during the GFC. Together, these measures helped stabilize the dramatic reversal of emerging market (EM) capital flows in the early months of the crisis (Batini, 2020). The European Central Bank monetary stimulus was also bold, including a EUR 750 billion Pandemic Emergency Purchase Program, the reactivation of swap lines with some other AE central banks, and the extension of new swap lines to the central banks of Bulgaria, Croatia, and Denmark.



14. **At the same time, in contrast to previous episodes of capital flow reversals, EMDE central banks eased monetary conditions across the board** by cutting policy rates and took aggressive actions to support liquidity and prevent impairment of domestic financial markets,

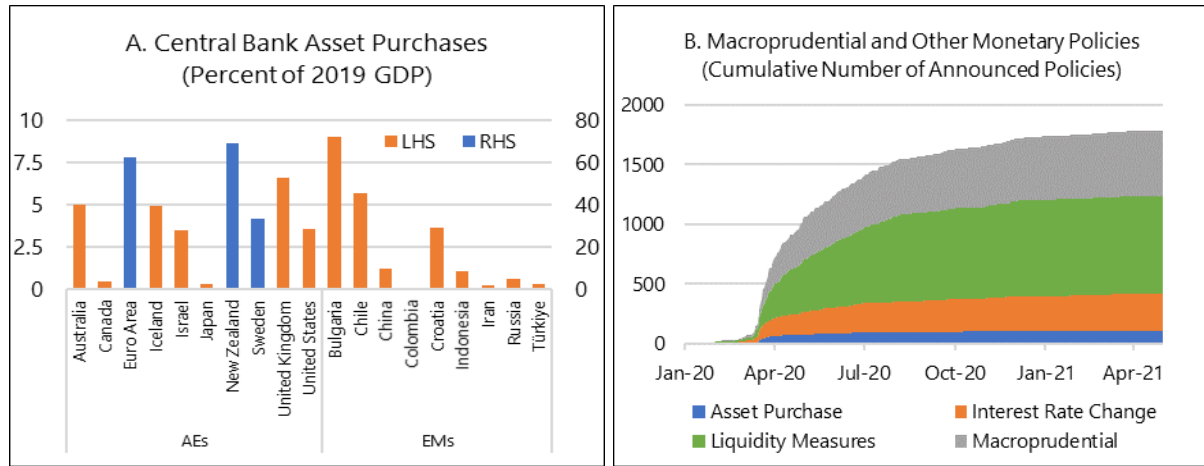
including through an extension of the duration of repo operations, foreign exchange (FX) forwards and swaps, and macroprudential measures (Figure 4). Several EM central banks, for example, in Colombia, Indonesia, South Africa, and Türkiye, implemented asset purchases for the first time, similar to quantitative easing by AE central banks, to help support local currency government bond markets disrupted by heavy foreign investor sales, address local market dysfunction, as well as, in some cases, ease the monetary policy stance as policy rates approached the lower bound in order to stabilize monetary and financial conditions.



15. **Countries with flexible exchange rate regimes allowed rates to depreciate sharply** in March–April 2020 in response to outflow pressures and rising risk aversion. At the same time many central banks, for example those in Brazil, Egypt, Indonesia, Mexico, Peru, Russia, Türkiye, and Ukraine, responded to shortages in FX and increased desire for FX cover via measures that included forwards, swaps, and repos, as well as direct intervention in the FX market. Nonetheless, for most EMs, the overall exchange rate depreciation was somewhat less than at the time of the GFC. In the end, the scale of direct foreign exchange intervention was quite limited; central banks seemed comfortable allowing currencies to depreciate while relying on inflation targeting monetary policy regimes to anchor inflation expectations. In some cases, however—for example, in Egypt and Türkiye—interventions were particularly heavy and led to a significant loss of FX reserves (IMF, 2020).

16. **Macroprudential policy measures were also eased extensively alongside traditional demand policy tools (Figure 5).** Regulations on liquidity and loan classification were adjusted to allow commercial banks to better support the real sector during the pandemic. In addition, some countries including China, Colombia, and Türkiye loosened certain macroprudential restrictions on lending and borrowing that were meant to limit the unwarranted financial leverage that can occur during expansionary phases. Their easing was intended to support lending to households and firms hit hard by the crisis. Capital account measures were used more rarely, if at all (Batini, 2020).

Figure 5. Unconventional Monetary and Macroprudential Policy Response to the Pandemic



Sources: Yale Program on Financial Stability; IEO calculations.

Note: Announced central bank asset purchases are expressed relative to nominal GDP in 2019.

17. **The large and concerted macroeconomic support contributed to a V-shaped recovery**, even as the COVID-19 pandemic went through several waves, and financial market conditions recovered quite quickly relieving stress in most EMDEs. The strong demand rebound associated with a lessening of NPIs and the fiscal and monetary stimuli led to a rebound in global activity starting in the second half of 2020. However, strong demand growth together with country supply chain disruptions, led to a gradual pick up in inflationary pressures in 2021, which were further aggravated in 2022 in context of Russia's invasion of Ukraine.

III. IMPACT OF IMF FINANCING

18. **This section examines the role played by Fund financing in support of recipient countries' economies in the aftermath of the COVID-19 shock.** To this end, it focuses on three main questions. First, what economic criteria did the Fund use to decide whether and how much finance and access to provide? Second, was Fund financing adequate to meet external financing needs? And third, was Fund financing instrumental in mitigating the economic impact of the COVID-19 shock in recipient countries? We explore each question in turn.

A. What Drove Decisions on Fund Financing?

19. **Fund remit.** Under the IMF's Articles of Agreement, the IMF may only provide its general resources to assist members to solve their BOP problems and under adequate safeguards to ensure the borrowers' ability to repay. Although the Fund's strategy during the pandemic provided more numerous and temporarily more generous EF than during earlier crises, the decision and modalities employed by the Fund to extend financing during the pandemic were still framed within the general principles of the Articles.

20. **As discussed in Kincaid, Cohen-Setton, and Li (2023), qualification criteria for EF and UCT arrangements differ.** Specifically, EF (either under the Rapid Financing Instrument (RFI) or the Rapid Credit Facility (RCF)) is available in the case of an actual and urgent BOP need in circumstances when a UCT quality program is judged to be either not necessary or not feasible. EF drawings may require prior actions, but do not involve ex post conditionality. UCT arrangements deal with cases of present, prospective, potential or protracted BOP needs and usually involve prior actions and ex post conditionality (or for FCL, PLL, and SLL specific qualification criteria) to provide assurances that the country will follow policies to restore (for PRGT, make sufficient progress towards) external stability and ensure the country's capacity to repay the Fund.

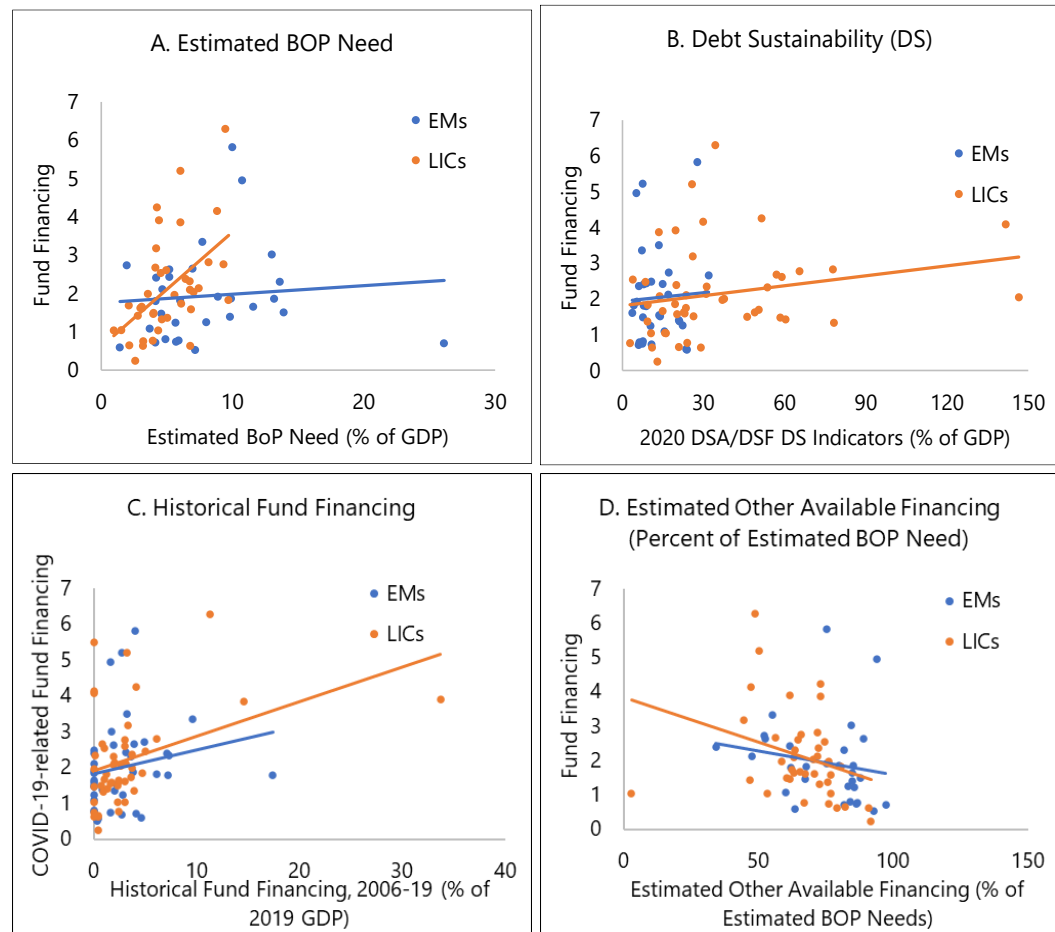
21. **Common EF and UCT lending metrics.** While UCT lending involves a fully fledged program, financing decisions for the provision of EF and UCT facilities both rely on standard metric of BOP need, debt sustainability, and capacity to repay in line with the Articles. These metrics were found to be used in the decisions made by the Fund to lend during the pandemic, both in the case of EF and UCT lending.

22. **Determinants of Fund financing.** To get a handle on what were the key determinants of the amount of financing we related Fund lending provided to a range of variables related to a country's need and ability to repay. These include estimated BOP needs from Use of Fund Resources (UFR) request documents; indicators of debt sustainability, notably provided by the Fund's Debt Sustainability Analysis (DSA); the present value of the debt-to-GDP ratio from the Fund's Debt Sustainability Framework⁶ for LICs; and the record of relatively recent borrowing relationship with the Fund.

23. **Fund financing went mostly to the BOP needy and debt sustainable.** This exercise shows that, other things equal, more Fund financing was provided to countries with larger BOP needs, better ability to repay, and less access to other sources of financing (Figure 6). In general, decisions on Fund financing were more sensitive to BOP needs, debt sustainability and historical record of Fund borrowing in the case of LICs than in the case of EMs.

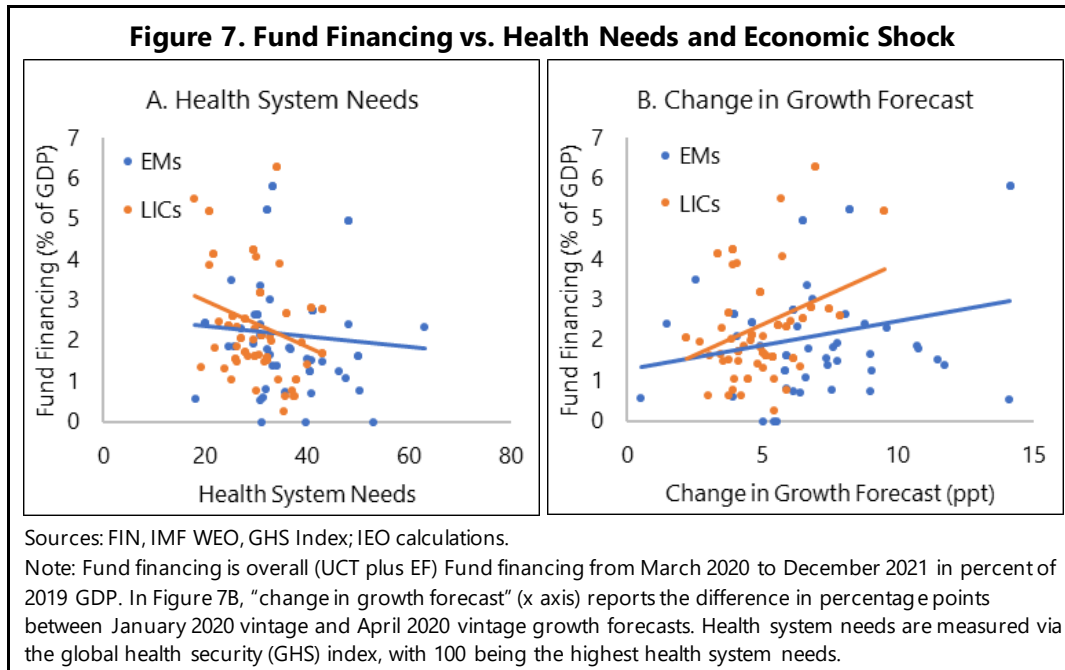
24. **Health system needs and economy less key.** Fund financing—either EF or UCT—was also found to be rather insensitive to a country's health system needs or pandemic status. It was also rather unresponsive to the size of the estimated negative impact on the economy of the pandemic in EM countries, while it was found to be more responsive to the growth impact of the pandemic shock in the case of LICs (Figure 7).

⁶ For a description of the framework and complete list of definitions of variables employed in the DSF LICs, see here <https://www.imf.org/en/publications/dsa>.

Figure 6. Drivers of Overall Fund Pandemic Financing

Sources: IMF; IEO calculations.

Note: "Fund financing" and "COVID-19-related Fund financing" are both overall (UCT plus EF) Fund financing from March 2020 to December 2021 in percent of 2019 GDP. "Historical Fund financing" is cumulative Fund financing from 2006 to 2019 in percent of 2019 GDP. Ex ante BOP needs in percent of GDP are estimated financing needs as reported in staff documents supporting Fund financing requests. These take account of planned/expected policy adjustments so that overall financing is adequate to meet financing needs. "Ex ante Other Available Financing" indicates estimated available (non-Fund) financing as reported in staff documents supporting Fund UFR requests. For debt sustainability indicators, in line with the Fund DSA/DSF frameworks, for EMs, "gross financing needs" are defined as GFN to GDP ratio in 2020 taken from the last issuance of DSA MAC before the pandemic. For LICs, net present value of debt to GDP ratio in 2020 is taken from the last issuance of LIC DSF before the pandemic. Note that the relationship between the variables shown and overall financing needs to be interpreted cautiously given the different nature of EF and UCT, as well as GRA and PGRT-based Fund financing. Debt sustainability indicators for EMs and LICs also differ in nature, and while we plot them on a same chart, they are not strictly comparable.



B. Was Fund Financing Commensurate to Countries' Needs?

25. **Concerns about proportionality of financing.** Even if in 2020 Fund financing reached an unprecedented number of countries at record speed, concerns were raised on whether Fund financing was commensurate with addressing countries' envisaged financing needs. Some argued that more financing should have been provided considering the huge potential humanitarian and economic consequence of unaddressed balance of payments needs amid a pandemic and the sizeable amount of available IMF lending capacity. Others noted that IMF's total lending commitments in 2020 were remarkably large by historical standards, and that the strategy of deploying smaller amounts at rapid speed through EF tools was expected to help catalyze additional financing from other sources—both official and market. Moreover, EF could be supplemented by follow-up UCT programs, which have a longer duration and can provide a larger total amount, for countries needing more help, especially as the economic impact of the pandemic persisted. Some observers also raised concerns about the considerable risks to the Fund's balance sheet and the strains on the capacity for Poverty Reduction and Growth Trust (PRGT) lending from the rapid and high lending deployment of EF that was provided.

26. **A difficult assessment.** A direct assessment of financing adequacy on a country-by-country basis and/or on average is complex due to the many factors at play. These include not just differences in the timing and severity of the shock hitting each country, but also countries' different initial conditions, including borrowing space under Fund's access limits and varied vulnerability to the shock, as well as heterogeneities in the impact of policy reactions both at home and abroad. Access decisions also depended on a country's ability to use other sources to meet financing needs, including from international markets as well as from other official sources.

27. **Fund not only game in town.** Importantly, for most countries drawing on Fund resources, the IMF is not the only source of financing. Indeed, for EF purchases approved between March 2020 and December 2021, on average, IMF financing covered only about one-third of the expected BOP gap (Kincaid, Cohen-Setton, and Li, 2023). IMF financing is intended to catalyze external financing from the private and official sectors (that is, the presence of IMF support reassures other creditors and encourages them to continue to lend). This, together with policy adjustment, enables the member country's economy to meet its short-term external financing needs and return to medium-term external viability.

28. **Relaxing external constraints.** Reflecting these considerations, one way to gauge the proportionality of Fund financing to needs is to examine to what extent Fund financing managed to relax countries' external financing constraints. In turn, this involves measuring the role played directly by the Fund in contributing to meet members' BOP needs as well as its indirect role in helping countries increase their net access to other sources of finance. Other potential mitigating effects, like the benefits for future debt service of using concessional PRGT resources, are not examined here.

Fund Direct BOP Support

29. **Was Fund direct support to members commensurate to their actual BOP needs?** As discussed in Box 1, Fund decisions on lending are based on assessments of a country's BOP needs at the time of approval, taking account of policies the country has taken or is planning to take to address its economic situation; and of fiscal needs and the fiscal financing gap. Fund documents supporting all requests for UFR are required to present estimates of financing needs and how such financing needs are to be met, including through Fund credits.

30. **Evaluation of BOP needs.** Typically, estimated BOP needs evolve over time and the need estimate at the time of the purchase and actual BOP needs ex post inevitably differ. Figure 8 shows this by comparing 2020 BOP needs by vintage of estimation and actual outcomes, based on BOP data.⁷ In particular, the green "Apr 2022" bars report data contained in the April 2022 dataset for 2020. BOP needs are proxied by the difference between gross financing needs (GFN) and available financing. In turn, GFN are defined as the sum of current account (CA) deficit plus short-term debt on a maturity basis, amortization, and reserve accumulation. Available financing includes net FDI and debt financing from private and official creditors. Specifically, Figure 8A indicates that, for countries that requested Fund financing, estimated needs in 2020 rose significantly from the pre-pandemic projections in January 2020 to projections made in April after reflecting the impact of the pandemic and stayed close or rose in most cases around June 2020. The ex post values (from the April 2022 WEO) are generally close but below the initial April and June 2020 estimates.

⁷ These are not precisely the figures provided in staff documents supporting UFR requests but do allow for comparison over time.

Box 1. Determining Balance of Payments Needs—Fund’s Practice¹

Section 3(b) in Article V in the Fund’s Articles of Agreement identifies three kinds of BOP need: (1) an above-the-line BOP deficit calculated from “autonomous” transactions, i.e. international transactions undertaken for their own sake, as opposed to below-the-line transactions undertaken for the purpose of financing a BOP deficit or an increase in reserves;² (2) the need to raise inadequate gross reserves, and/or; (3) developments in a member’s reserves related to members needs to use the Fund’s resources to settle balances among themselves (for example, within a regional multilateral body) without having a BOP deficit or a need to build up reserves. These criteria are exclusive —i.e., no other form of need can justify a purchase—but alternative—i.e., any one of these need criteria is sufficient. The need³ can be present, prospective, or potential and is seen as urgent if failing to address it would lead to an immediate and severe economic disruption.

From an operational perspective, the Fund ascertains the existence of a BOP need by evaluating BOP developments and projections taking account of the policies that a country plans to undertake to meet such need and return to medium-term external stability, the associated financing outlook, and how the member’s reserves measure up against relevant indicators such as imports, short-term external debt, monetary aggregates, and so on. According to the dedicated Strategy, Policy and Review Department (SPR) template contained in a *Guidance Note on Justification of Access Level in Staff Reports* (IMF, 2020), measures of the relevant variables entering the calculation of a BOP need according to the Fund operational framework should be itemized in country documents in the External Financing Requirements and Sources table, as follows:

| | |
|-----------------------------|--|
| Gross financing requirement | = External current account deficit + debt amortization + repayment of arrears + IMF repurchases and repayments + gross reserves accumulation |
| Available financing | = Net FDI + debt financing from private creditors + official creditors |
| Financing gap | = Gross financing requirements - Available financing |

While all staff documents contain information of use of Fund resources compares to financing needs, alternative presentations are sometimes used in the External Financing Requirement table. This can be seen comparing the External Financing Table for three LIC requesting EF. In one case (DRC), only the financing gap is shown, with no indication of its components. In the other two cases (Uganda and Tonga), the components of the financing gap are itemized but in one case (Uganda) changes in foreign reserves are listed as part of the components of the gross financing requirement and in another case among the components of available financing (Tonga).

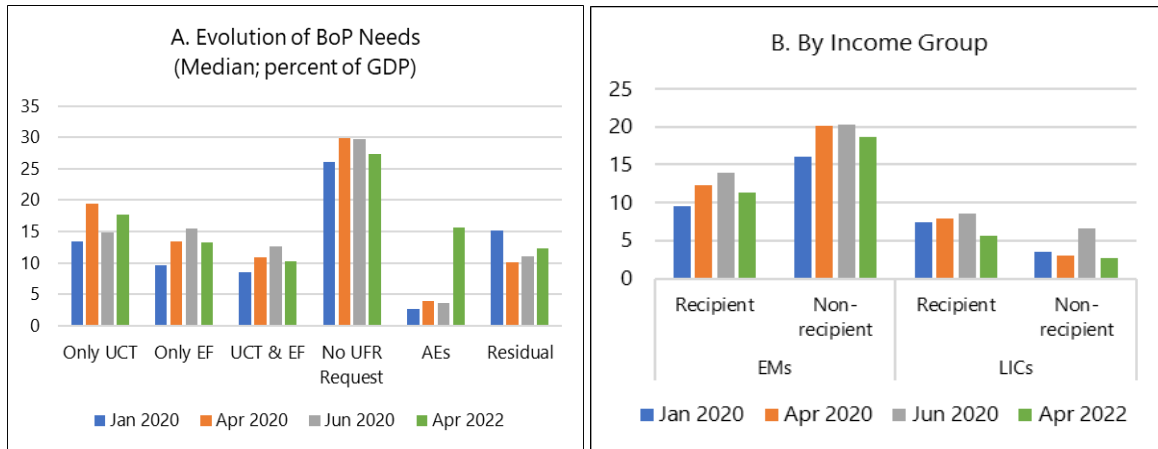
¹ This box was coauthored by Colombe Ladreit (former IEO intern) and Jiakun Li (IEO).

² While, in most cases, transactions can be readily classified on the basis of standard accounting definitions, the member will be given the benefit of the doubt in any case of uncertainty.

³ The BOP need can be protracted under the ECF.

31. **BOP needs and income levels.** Data indicates that BOP needs for countries (either receiving or not receiving Fund support) varied depending on income group. Typically, EM countries that did not receive Fund financing (both those that did not request it or those that requested it but did not receive access) had larger BOP needs than EMs who did receive Fund support; but the opposite is true for LICs (Figure 8B). In the case of EMs, when estimated needs are compared across time, countries with increased BOP needs after the COVID-19 shock hit tended to experience lower actual needs independently of whether they had received Fund support or not, reflecting the quick, widespread global rebound in economic activity in late 2020. This inverse relationship is not present, however, in the case of LICs (Figure 9).

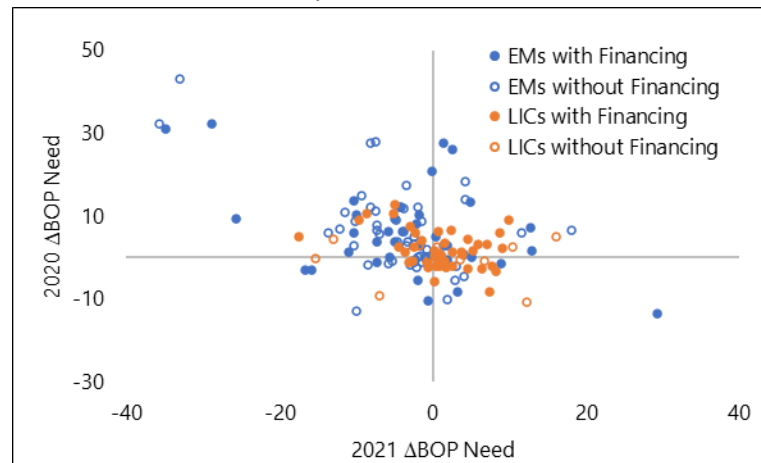
Figure 8. Evolution of 2020 BOP Needs—Fund Financing Recipient and Non-Recipient Countries



Sources: IMF WEO; IEO calculations.

Note: Bars report 2020 BOP needs by vintage. The green “Apr 2022” bar reports historical data as contained in the April 2022 WEO dataset for 2020. BOP needs are proxied by the difference between gross financing needs (GFN) and available financing. In turn, GFN are defined as the sum of CA deficit plus short-term debt on a maturity basis, amortization, and reserve accumulation. Available financing includes net FDI. In line with the 2010 Staff Guidance Note on “Justification of Access Level in Staff Reports,” GFN and available financing are proxied, to the extent possible, with available BOP data for each country.

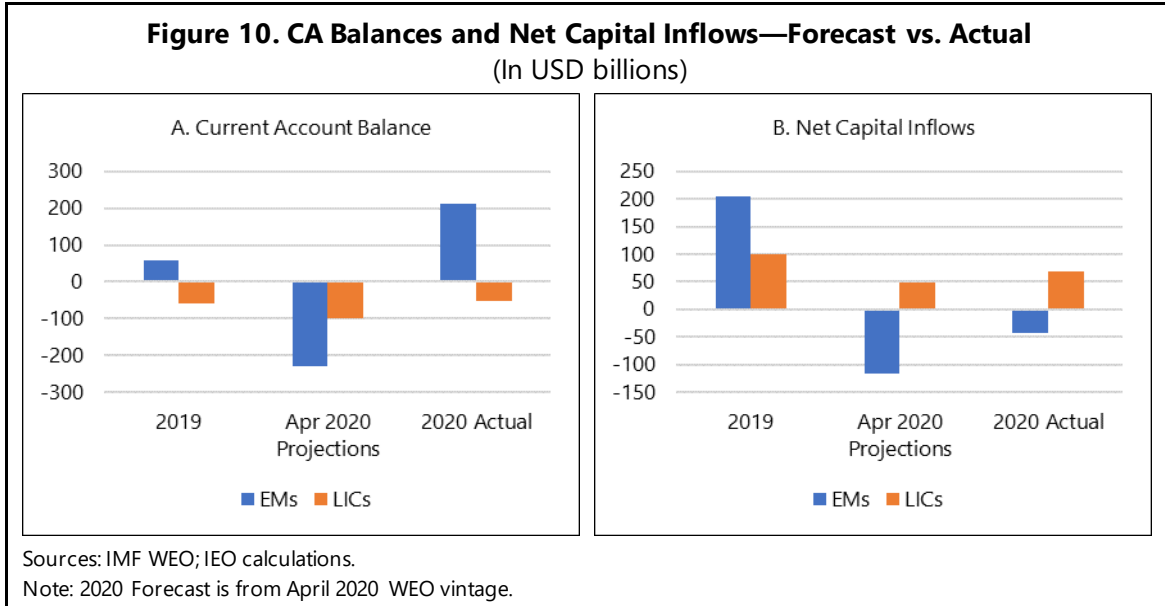
Figure 9. Changes in BOP Needs 2020–21 by Income Group (In percent of GDP)



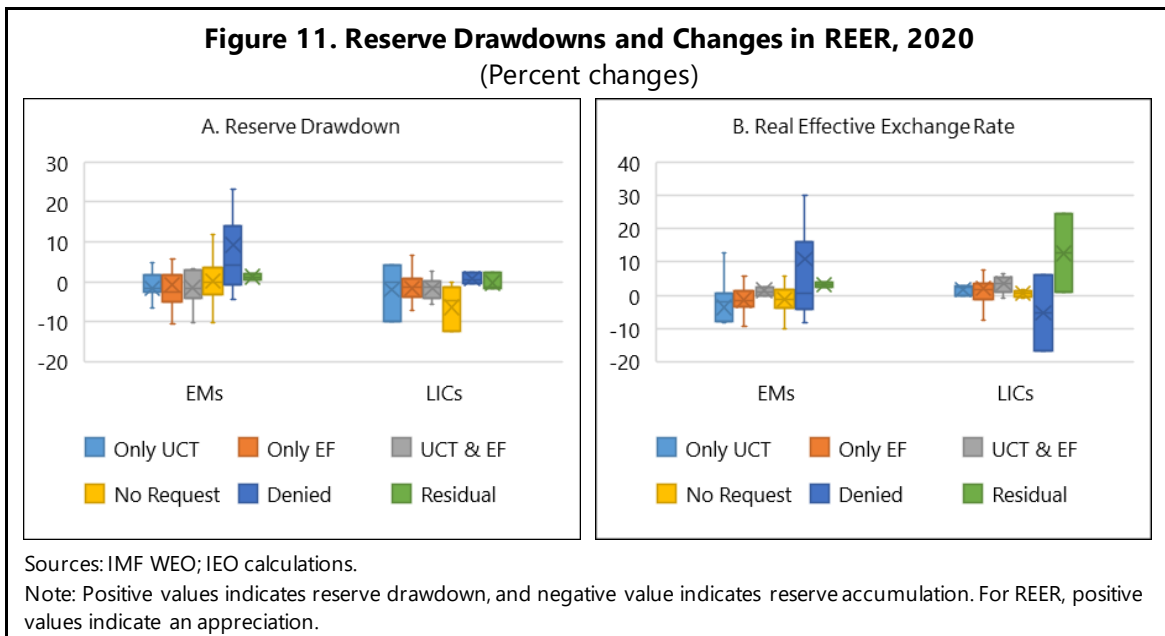
Sources: IMF WEO; IEO calculations.

Note: See Figure 8.

32. **Drivers of changes in BOP needs.** Changes over time in estimated BOP needs reflect time variations in both the capital account balance—from unexpected reversal in capital flows, for example—and the CA balances—from stronger or weaker than expected trade flows (Figure 10).

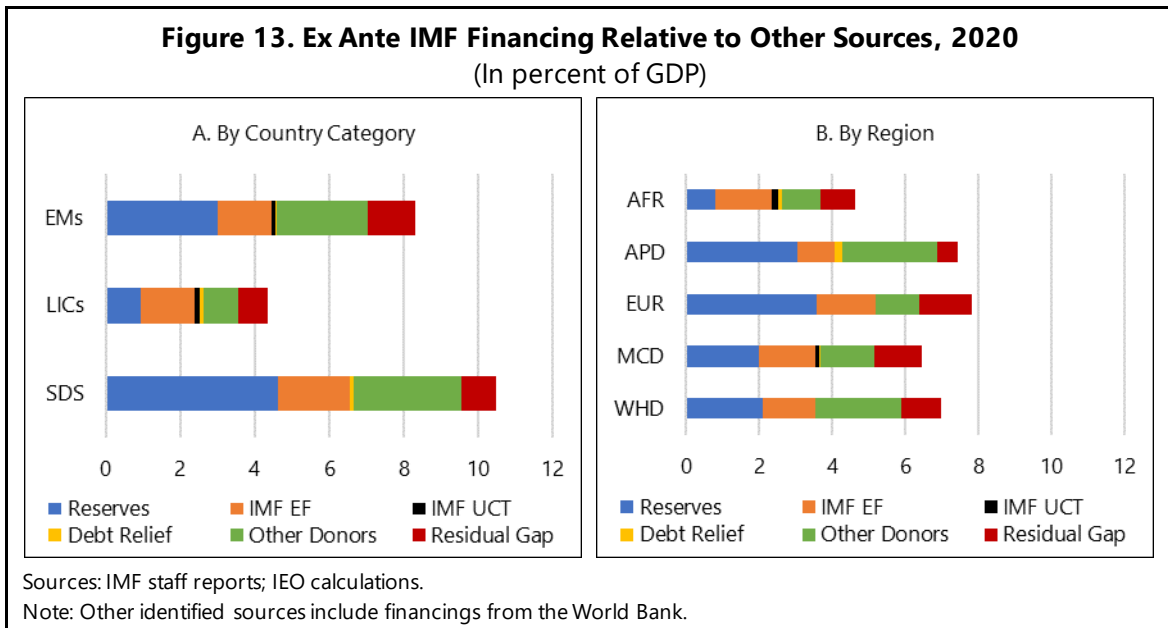
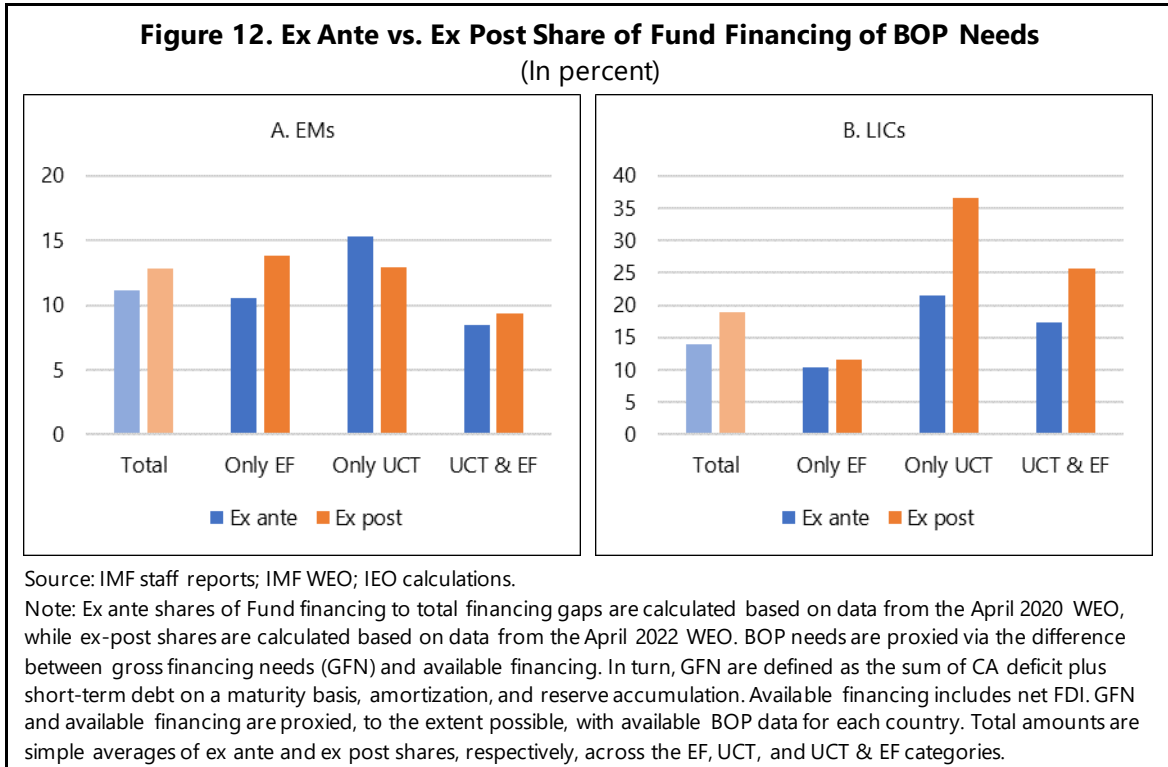


33. **Reserves, exchange rates and non-Fund financing.** In turn, these changes typically originated from modifications in targets for foreign international reserves, fluctuations in the real exchange rate, as well as deviations in secured levels of non-Fund financing (including debt relief) relative to original expectations. In turn, these changes reflected needs and/or the presence or absence and type of a Fund arrangement, with EMs and LICs without access to Fund facilities experiencing larger gyrations in reserves and real exchange rates, respectively (Figure 11).



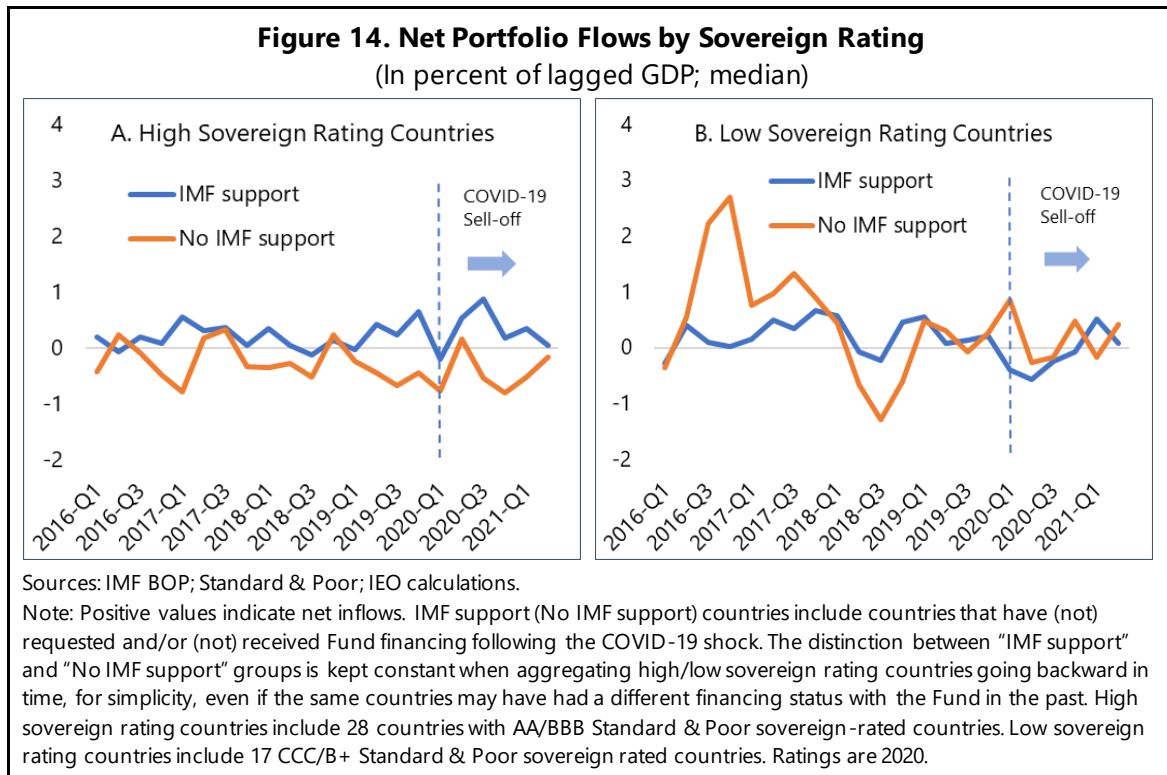
34. **The Fund provided a somewhat higher share of financing than initial estimates.** Revisions in estimated BOP needs, together with changes over time in the expected sources and amounts of non-Fund identified financing tended to imply that the Fund provided a somewhat

larger share of financing gap that the Fund originally expected to provide (Figure 12). At the same time, Fund financing as a share of the financing gap of each country varied significantly both (on average) between income groups and country geographical categories (Figure 13). For example, Fund financing tended to fill a smaller share of the financing needs of small developing states, which faced a potentially large economic shock from the pandemic.



The Fund's Catalytic Role

35. **A second relevant question is: what *indirect* catalytic impact did IMF financing have on private capital flows to the assisted countries?** Figure 14 provides a first pass at this question comparing the pattern of capital inflows pre- and post-COVID for countries that did or did not use Fund resources in 2020. A catalytic impact of Fund's financing on net private capital flows is difficult to discern from the figure, particularly in countries with low credit ratings.



36. **Granular analysis.** Thus, we adopted a more granular analysis to explore this question, and performed a historical comparison, comparing countries' non-resident net capital flows (and their net debt, equity, and FDI components) before and after the approval of EF and UCT programs (both traditional and precautionary).

37. **Accounting for volatility.** In comparing pre- and post-approval flow dynamics in countries using Fund resources, it is important to note that Fund lending took place amidst heightened capital flow volatility which makes it hard to isolate the Fund's catalytic impact on flows. When the COVID-19 pandemic broke out in 2020, capital flows to EMDEs experienced an extraordinarily fast and sharp reversal adding to the pressures on reserves from the disruption in global trade. Portfolio outflows were much larger than those seen during the GFC and dwarfed those occurring during stress events such as the "taper tantrum" in 2013 or the China risk shock of 2015 (Batini, 2020). However, flows recovered quickly in the context of a broad range of responses, including Fund lending but also steps by major central banks to preserve liquidity in international markets and further ease monetary conditions in AEs.

38. **Not all Fund financing is born equal.** It is also relevant to note that different types of Fund financing are likely to exert different catalytic effects on capital flows. Although both EF and UCT programs aim to address balance of payment needs, their approach to access levels and conditionality differ, plausibly implying distinct impacts on private capital flows. IMF EF could leverage other official borrowing, potentially when country teams across international financial institutions work closely together, but it is less likely to generate non-resident private capital inflows as they do not involve conditionality on post-disbursement policy commitments; while UCT programs with ex post conditionality could potentially leverage both—as well as dissuade residents from taking capital out of the country.

39. **Looking first at EM experiences, country data suggest that (Figure 15):**

- Countries that received financing from the Fund were subject to larger net capital outflows in 2020Q2 relative to countries which requested financing but did not receive it; and somewhat larger net outflows in both average and median terms than countries which did not request Fund financing (Figure 15A).
- Most EMs experienced a net loss of FDI on impact of the pandemic shock and subsequently, largely irrespective of whether they obtained financing from the Fund or not (Figure 15B).
- Net inflows of portfolio equity capital strengthened somewhat for Fund financing recipients and non-recipients alike, both on impact and in the quarter following the financing approval for the first group (Figure 15C). However, this phenomenon is less evident for countries that requested Fund financing but did not get it eventually.
- There were net outflows of capital on portfolio debt instruments for both recipients and non-recipients of Fund financing after financing was approved in the first group (Figure 15D). This phenomenon is less evident for countries that requested Fund financing but did not get it eventually.

40. **Available LIC data suggest that (Figure 16)⁸:**

- In the case of LICs, a different pattern emerges: the median (and average) LIC that requested but did not receive Fund financing experienced a net *inflow* of capital in 2020Q2 (and 2020Q1), while the median (and average) LIC that either received Fund support or did not ask for it both experienced capital *outflows* in net terms.
- Like EMs, most LICs experienced a net loss of FDI on impact at the time of the shock and subsequently, largely irrespective of whether they asked and/or obtained financing from the Fund. Some LICs that did not request financial assistance from the Fund, however, saw an increase in FDI flows both in 2020Q1 and Q2.

⁸ Note that disaggregated quarterly capital account data are only available for a limited group of LICs.

- In a few LIC cases receiving financial support from the Fund, this seems to have helped halt the net outflow of equity and/or debt capital from these countries at the time when the shock hit. Countries that requested but did not receive Fund financing, however, also did not experience significant equity or debt outflows either before or after the decision by the Fund to not meet their request took place.

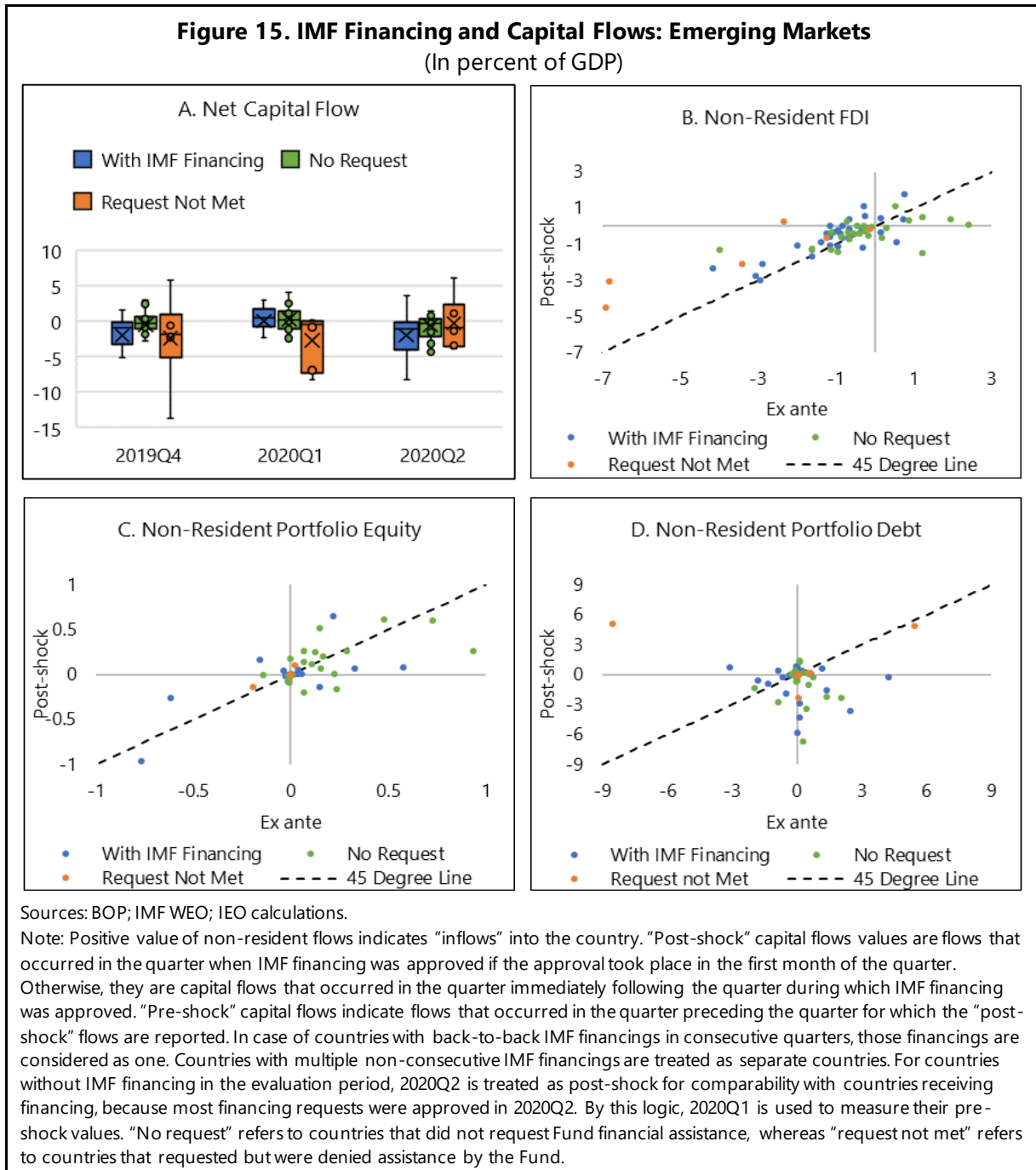
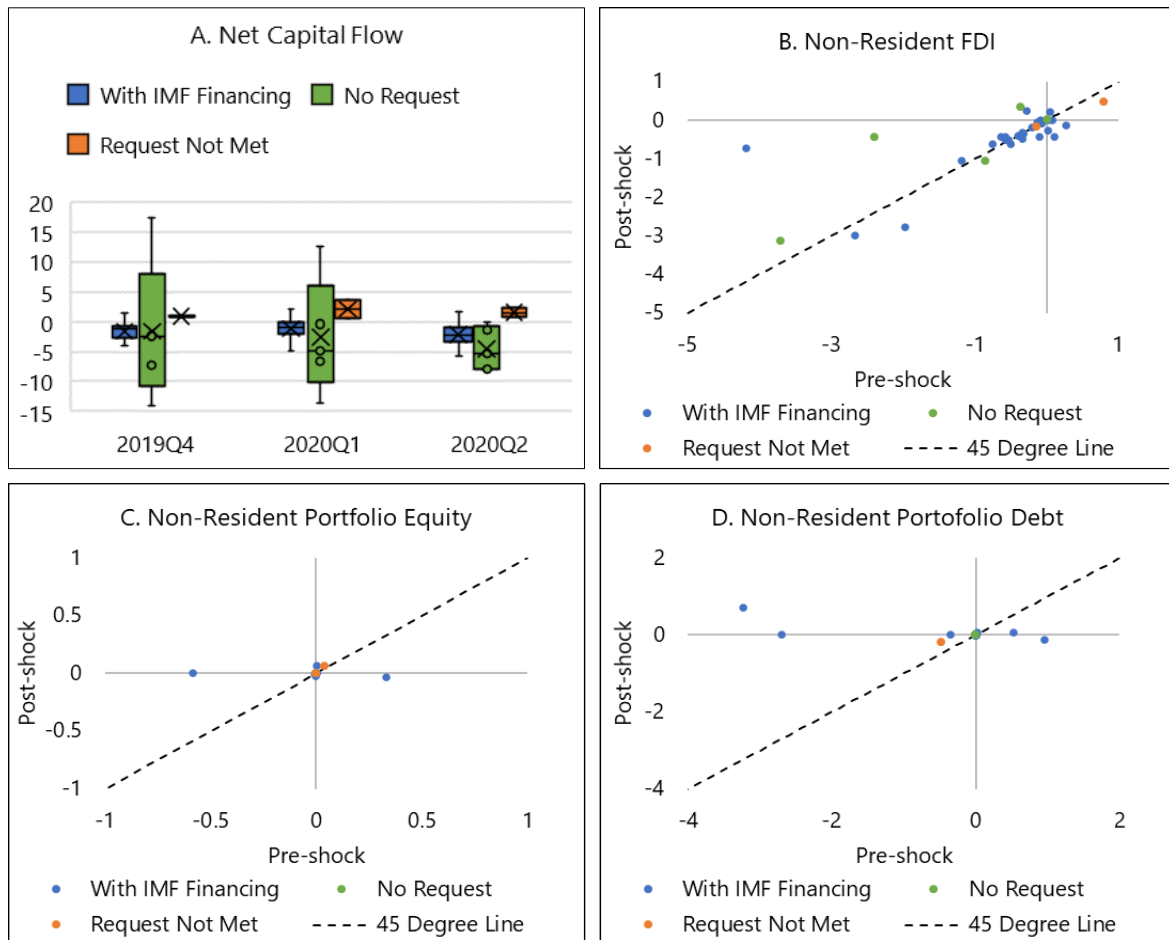


Figure 16. IMF Financing and Capital Flows: Low-income Countries
(In percent of GDP)



Sources: BOP; IMF WEO; IEO calculations.

Note: Positive value of non-resident flows indicates "inflows" into the country. "Post-shock" capital flows values are flows that occurred in the quarter when IMF financing was approved if the approval took place in the first month of the quarter. Otherwise, they are capital flows that occurred in the quarter immediately following the quarter during which IMF financing was approved. "Pre-shock" capital flows indicate flows that occurred in the quarter preceding the quarter for which the "post-shock" flows are reported. In case of countries with back-to-back IMF financings in consecutive quarters, those financings are considered as one. Countries with multiple non-consecutive IMF financings are treated as separate countries. For countries without IMF financing in the evaluation period, 2020Q2 is treated as post-shock for comparability with countries receiving financing, because most financing requests were approved in 2020Q2. By this logic, 2020Q1 is used to measure their pre-shock values. "No request" refers to countries that did not request Fund financial assistance, whereas "request not met" refers to countries that requested but were denied assistance by the Fund.

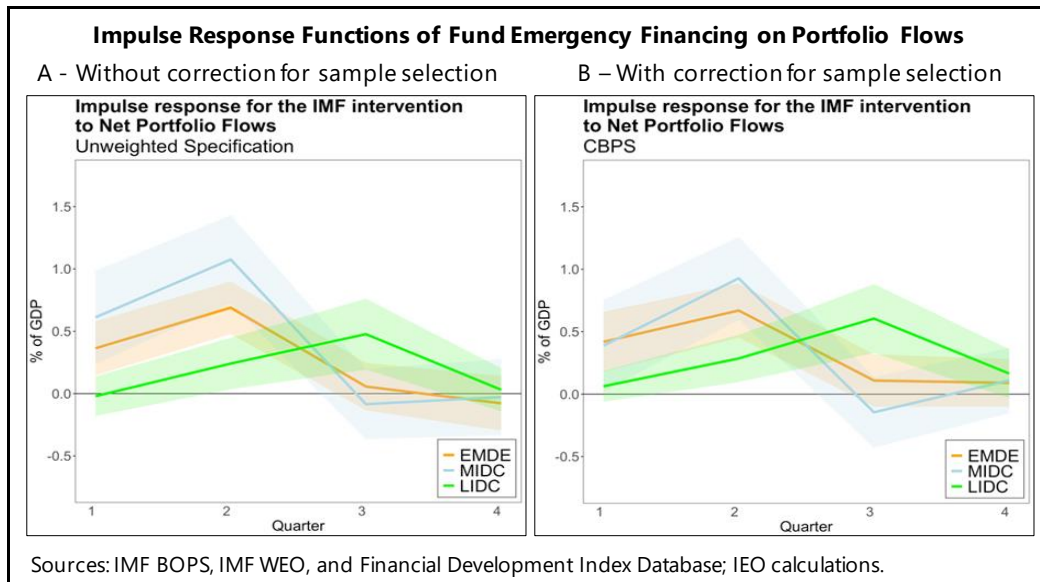
41. **These results need to be interpreted cautiously because of sample selection bias:** countries that used Fund resources are likely to be those that suffered greater economic shock and the greater difficulty sustaining access to international capital markets, than those that did not request UFR; and countries whose request for UFR was not met are likely to have the most difficult economic circumstances of all. To correct for this bias, we applied more sophisticated econometric techniques that take account of differences in country characteristics focusing on portfolio flows using a quarterly data set, as explained in Box 2.

Box 2. Estimating the Catalytic Effect of IMF Emergency Financing Using Quarterly Data¹

This box studies the catalytic effect of IMF EF on net portfolio flows during COVID-19 using quarterly Balance of Payments (BOP) data. Using quarterly data helps us distinguish developments in capital flows that preceded from those that followed the provision of emergency financing (EF) within a year. It also helps exploit time variation in the provision of EF and trace out the dynamic effect of EF on capital flows. On the other hand, it comes at the cost of a smaller coverage of EMDE countries compared to annual data, especially for LICs. The resulting quarterly panel dataset employed here thus covers 83 EMDEs over the period 2018–2021, comprising 60 MIDCs and only 23 LICs. Of this group, 36 received EF, 8 asked but did not receive, and 39 did not request.

The impact of EF on portfolio flows is first estimated using a simple panel fixed-effects model. Beyond controlling for country-specific time invariant factors and time-specific country invariant factors, this model does not correct for sample selection. In fact, it gives non-zero weights to all countries in the control group, irrespective of their difference in characteristics with countries in the treated group. The econometric analysis then attempts to correct for sample selection bias by using the covariance-balance propensity score (CBPS) approach of Imai and Ratkovic (2014), which ensures perfect covariate balancing—i.e., full elimination of the average differences in characteristics between countries in the treated and control groups. When implementing the CBPS approach, the following variables—external financing needs (proxied by CA + KA – FDI), FX reserves (measured in months of imports), the pre-crisis forecast of 2020 GDP growth, and the level of international financial integration (as proxied by the Financial Markets Depth Index of the IMF)—are used to balance the treatment and control groups within each income class.

Results from these two empirical specifications suggest that recipients of Fund EF experienced higher net portfolio inflows on average. The effect appears stronger for MIDCs than LICs both on impact and in the subsequent quarter, but also dissipates faster. These differences in the catalytic effect of Fund financing between MICs and LICs may reflect different roles that Fund financing may have in countries with different income fundamentals. Heterogeneous selection effects, with a positive sample selection bias for MIDCs and a negative sample selection bias for LICs could also contribute to the observed differences.



¹ This box was coauthored by Jérémie Cohen-Setton (IEO) and Francesco Toni (University of Cote d'Azur and Sant'Anna-IUSS).

42. **Positive effect.** These estimates suggest that recipients of Fund resources in fact received larger inflows of portfolio capital after the Fund lending that would have been the case otherwise. The estimated catalytic effect is somewhat larger after correcting for sample selection bias, but also visible in a model that controls for country-specific factors alone. These effects are larger for MIC than LICs.

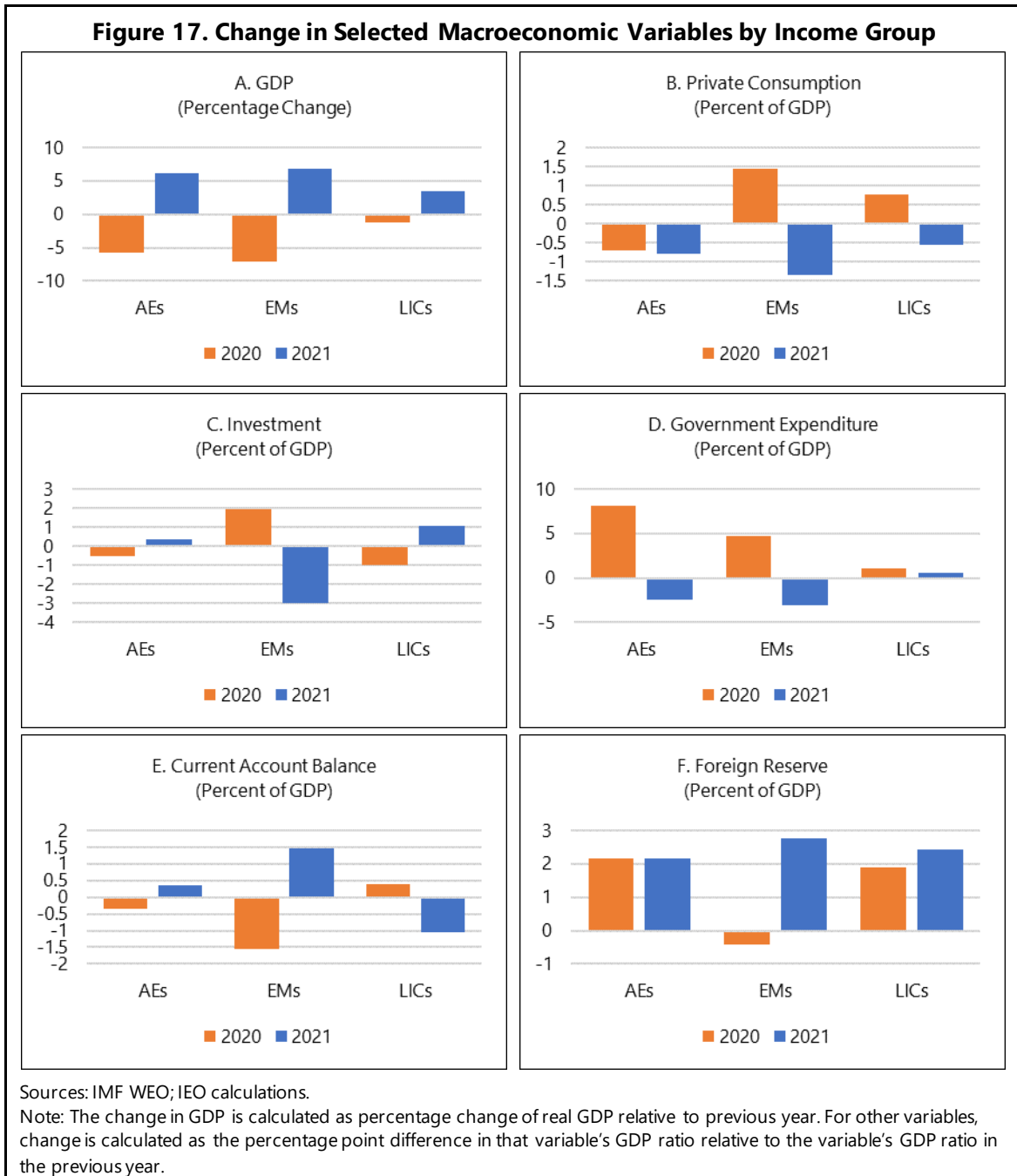
C. Did Fund Financing Mitigate the COVID-19 Shock?

43. **Fund goal.** The ultimate goal of Fund financing consists in achieving, maintaining, restoring, or making progress toward a stable and sustainable macroeconomic position consistent with strong and durable growth. Did the Fund, by means of its numerous and swift pandemic financing arrangements, mitigate the COVID-19 shock and thereby deliver on these objectives?

44. **Difficult assessment.** Assessing whether financing was effective at mitigating the pandemic shock is difficult because, as discussed, the economic performance of countries in the aftermath of the shock as well as the ultimate use of Fund financing, depended on a multiplicity of factors including the severity and length of NPIs, the scale of the impact of the shock on different sectors of the economy, trade and global supply chain exposure, fiscal and foreign reserves space, and access to other sources of external credit. Given the interplay of these many factors, it is hard to pinpoint exactly the specific mitigating role played by Fund financing either at the country or at the aggregate level.

45. **Macroeconomic performance.** To put things into context and with these caveats in mind, we first review the relative macroeconomic performance across countries by income group independently of Fund support. To this end, Figure 17 contrasts the evolution of real GDP growth, private consumption, private investment, government expenditure, CA balances and foreign international reserves across three income groups: AEs, EMs, and LICs.

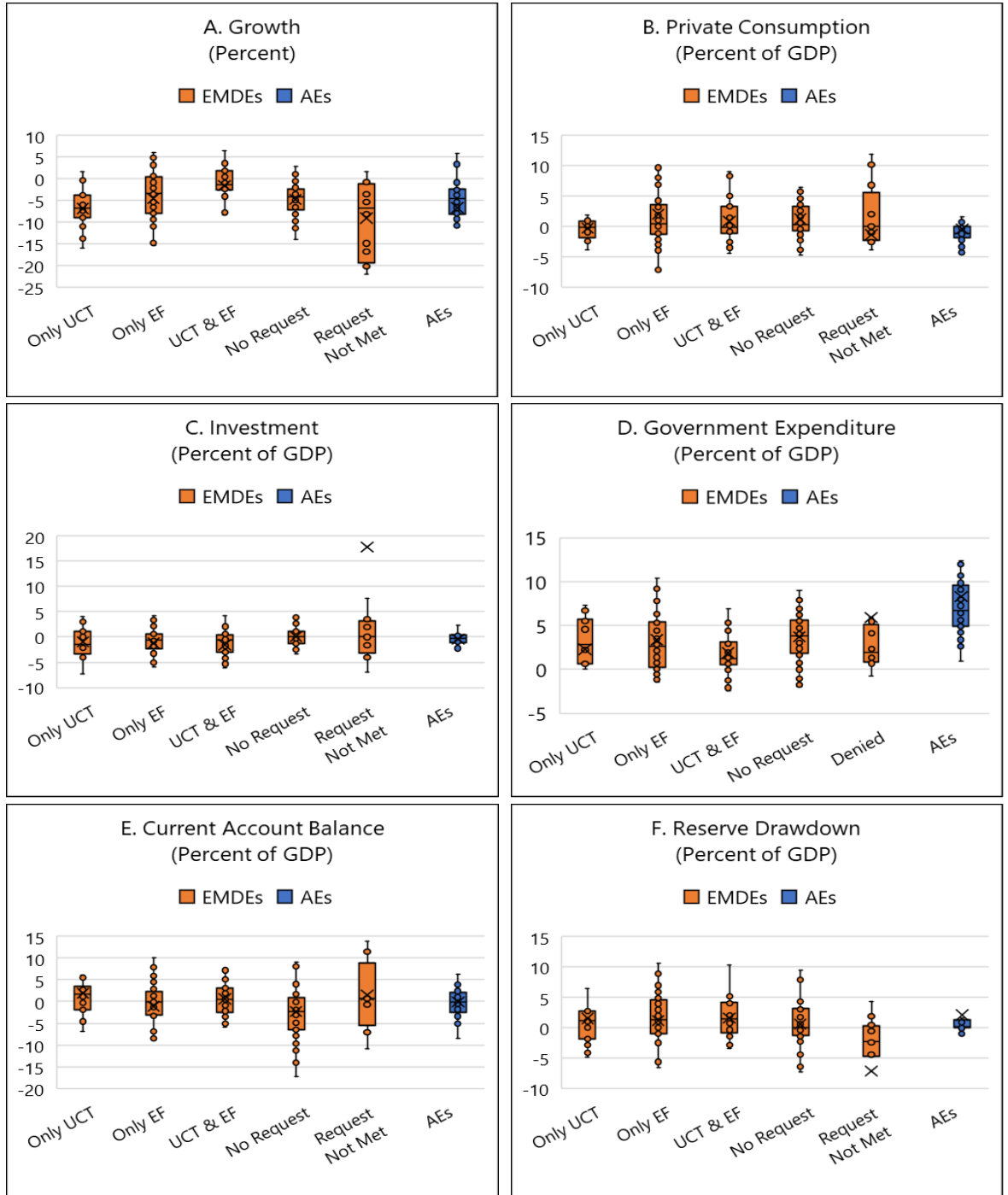
46. **Universal downturn, with some caveats.** In line with Section II, key messages are that in 2020 GDP growth fell virtually everywhere, yet the fall was less pronounced in LICs, where both private consumption and the CA seemed to improve slightly, in contrast with developments in AEs and EMs. Possible explanations include that in LICs: (i) economic activity was less affected by the pandemic including because of the more limited recourse for NPIs and social distancing (see Figure 1); (ii) LICs' aggregate demand is dominated by the consumption of primary goods like food which did not recede during the pandemic; and (iii) while, like elsewhere, exports in these countries suffered from the dramatic slowdown in global trade at the height of the pandemic, many LICs are non-oil commodity exporters and may have benefitted from the resilience—after the initial shock—in the demand for some specific non-oil commodity exports. At the same time, as governments attempted to accommodate fiscally the contraction, government expenditure increased everywhere. In LICs (and to a smaller extent AEs) this was accompanied by cuts to private investment, which retrenched in the face of decreasing risk appetite despite ample global liquidity. EMs also experienced a correction in investment spending, and a sharper one, but this materialized in 2021.



47. **Controlling for Fund financing.** The same comparison is then carried out after dividing countries according to their access to Fund financing (Figure 18). In terms of real growth, the median contraction for countries that requested but did not gain access to Fund financing was deeper than for countries receiving EF and/or UCT arrangements.⁹ Moreover, the negative tail of outcomes experienced by countries that were unable to access Fund financing was more dispersed.

⁹ Countries that received only UCT financing did not, instead, contract less—on average or in median terms—than countries which asked but did not get Fund financing.

Figure 18. Change in Macroeconomic Variables by Access to IMF Financing
(Year-on-Year, 2020)



Sources: IMF WEO, FIN, MONA; IEO calculations.

Note: Change is calculated relative to 2019. Real GDP growth is calculated as percentage change. Datapoints are considered outliers if they lie 1.5 times the length of the box (known as the interquartile range) from either end of the box. A cross marks the average of the distribution. Libya (denied) had real GDP growth of -60 percent in 2020. The middle line of the box represents the median or middle number. The "x" in the box represents the mean. The bottom line of the box represents the median of the bottom half or 1st quartile. The top line of the box represents the median of the top half or third quartile. The whiskers (vertical lines) extend from the ends of the box to the minimum and maximum value.

48. **The role of private consumption.** The observed difference in growth performance seems ascribable primarily to the fact that in 2020, both on average and in median terms, private consumption was softer in countries that asked but did not receive funding. These countries also spent less public money and displayed smaller CA imbalances, as they had to adjust more than countries with access to Fund financing.

49. **Both in mean and median terms reserve drawdowns were larger in countries with a desire but no possibility to access Fund financing,** notwithstanding their stronger CA outcomes.

50. **Among recipients of Fund support, those who got a combination of EF and UCT arrangements seemed to have fared better on average** than all other groups, including those who never requested financing, outperforming AEs as well. In light of this, the fact that a very large share of EF recipients did not eventually shift to a UCT program points to a missed opportunity.

51. **A more rigorous analysis can be obtained by estimating the relationship between the deviation in a country's real output level from historic trends after the COVID-19 shock and Fund financing across countries.** If Fund financing exerted a mitigating effect on the shock, we should be able to observe on average a smaller loss in countries that received it, other things equal.

52. **To this end we estimated a cross-section regression across a sample of 128 EMDEs** (74 EMs and 54 LICs) including both recipients and non-recipients of Fund financing over the period March 2020 to end-2020. Specifically, we estimated the relationship between countries' economic loss in 2020¹⁰ and Fund financing, controlling for several other possible drivers of economic loss. These included: (i) the stringency of NPIs, as measured by the peak in 2020 of the quarterly Oxford stringency index; (ii) oil exporter status (yes/no), from WEO classifications; (iii) countries' fiscal space, measured as the gap between a country's fiscal balance in 2019 and the historical debt-stabilizing fiscal balance (a historical debt-stabilizing fiscal balance gap greater than 1 percent of GDP is considered "substantial"; a smaller one is considered "limited"); (iv) international reserves adequacy at end-2019, measured in terms of months of imports (reserves are considered "substantial" if they cover more than 8 months of imports, and otherwise, "limited"); (v) the degree of trade openness, measured as the ratio between imports plus exports to nominal GDP in 2019; (vi) the level of exchange rate rigidity, measured by exchange rate index in the IMF AREAER database (this index ranges from 1 to 10, with 1 being the most rigid); (vii) discretionary fiscal spending in percent of GDP from the IMF Fiscal Monitor (labelled "fiscal support"); and (viii) reserve drawdown in 2020 in percent of GDP from IMF WEO. Fund financing (yes/no) was measured based on the IMF COVID-19-related financial assistance

¹⁰ This is measured as a deviation from the level of real GDP in 2020 from a linear trend fitted to each country's real GDP over the period 2000 to 2019. A positive value of this variable indicates that actual output was below trend. Accordingly, explanatory variables with an estimated negative coefficient indicate loss mitigation and vice versa.

table, excluding assistance under the Catastrophe Containment and Relief Trust (CCRT). In column 2, while countries requesting but not gaining access were identified in Kincaid, Cohen-Setton, and Li (2023). Fund financing was further divided into EF, UCT, and UCT & EF. No demand for Fund financing was set equal to 1 when a non-recipient did not request Fund financing either because they experienced no financing needs or had access to other official borrowings.

53. **A *prima facie* reading of results shown here reaffirms some key priors that emerged from the visual evidence we presented in earlier sections.** Namely, results indicate that:

- *Stricter NPIs and oil exporter status led to larger losses.* Overall, as documented in Figure 2 and in line with findings in the literature including IMF (2020), countries with more stringent NPIs experienced larger downturns due to the combined demand-supply-financial shock associated with extensive restrictions of economic activity and mobility. SDS countries also experienced significantly larger losses, in line with Figure 2.
- *Strong fiscal fundamentals helped contain losses.* Having substantial (versus limited) fiscal space seems to have helped reduce losses, in line with IMF findings in Fotiou and Lagerborg (2022). However, having substantial (versus insufficient) foreign reserves, and a more closed economy, or a more flexible exchange rate did not show to have a statistically significant impact on the size of economic loss endured.
- *Fund EF mitigated losses in recipient countries.* Emergency financing is estimated to have reduced economic losses relative to countries that requested but did not gain access to Fund financing. When EF was followed (or predated) by UCT arrangements, the reduction in economic downturn is estimated to have been even larger, in line with Figure 18. Financing based on UCT programs alone, however, did not result in statistically significant reduction in losses, also in line with Figure 18.

54. **Estimates of the cross-section regressions in Table 2 need to be interpreted with caution** given omitted variable concerns that affect cross-country analyses and endogeneity concerns. For example, there could be an endogenous relationship between NPIs and fiscal space, as countries with different levels of fiscal space may have calibrated NPIs in light of the enduring economic loss and thereof, impact on fiscal space. This may generate spurious estimates of the coefficients on NPIs and/or fiscal space. Likewise, economic preconditions—like fiscal space, reserve adequacy but also trade integration, are ultimately related, and could have influenced decisions on NPIs. This also may generate a spurious negative correlation between the stringency of NPIs and economic activity between Fund financing and NPIs, reflecting the fact that Fund staff may have been more inclined to support countries with stricter measures in place. Likewise, the presence or absence of Fund financing may be affected by a country's fundamentals—and vice versa—like the amount of a country's fiscal space and stock of reserves. This problem is alleviated by the fact that we enter the variables capturing fundamentals with a lag.

| | (1) | (2) |
|------------------------------|----------------------|----------------------|
| NPI | 0.127** (0.062) | 0.113* (0.063) |
| Oil Exporter | 8.681*** (2.482) | 8.23*** (2.454) |
| Substantial Fiscal Space | -3.68** (1.449) | -3.579** (1.444) |
| Substantial Reserve Adequacy | 2.506 (2.204) | 2.231 (2.215) |
| Trade Openness (2019) | 0.034 (0.033) | 0.032 (0.033) |
| ERR Index (2019) | 0.451 (0.291) | 0.35 (0.306) |
| Fiscal Support | 0.107 (0.118) | 0.062 (0.105) |
| Reserve Drawdown | 0.122 (0.142) | 0.139 (0.143) |
| Fund Financing | -7.204*** (2.115) | |
| EF | | -7.87*** (2.19) |
| UCT | | -2.182 (3.182) |
| UCT & EF | | -8.119*** (2.934) |
| No Need for Fund Financing | -7.712*** (2.566) | -7.285*** (2.548) |
| SDS | 3.849* (2.213) | 3.817* (2.143) |
| Constant | -4.14 (5.681) | -2.211 (6.028) |
| N | 128 | 128 |
| R-sd overall | 0.335 | 0.356 |
| SE (error term) | 7.896 | 7.836 |

Source: IEO calculations.
Note: Robust standard errors in parentheses. * p<0.1 ** p<0.05 *** p<0.01

IV. CONCLUSIONS

55. **The COVID-19 shock triggered a global recession of epic proportions, one considerably deeper than the 2008–2009 downturn.** To cushion the economic consequences of shocks, governments around the world introduced an array of policy measures to support economies.

56. **The IMF was among the first to acknowledge the unprecedented economic challenges arising from government responses to the pandemic.** Overall, the Fund response to the pandemic crisis was like no other across multiple dimensions, providing economic assessment, policy advice, and financial support. On the financial front, the Fund scaled up existing emergency financing instruments to help members meet urgent BOP needs, including in

cases where a UCT-quality program was not feasible. Where UCT programs were warranted and feasible, however, the Fund provided support through these programs either by approving augmentations of access under existing arrangements or approving new ones. In SDR terms, the Fund's overall pandemic financing to emerging and developing countries was larger than during the GFC, with the largest share of funds going to EMs but LICs receiving by far the largest number of Fund arrangements this time.

57. **In this paper we examined three main questions.**

58. **First, what economic criteria did the Fund use to decide whether to finance countries?** We found that, like after past shocks, and consistent with the IMF's legal framework, following the COVID-19 shock the IMF provided financing to its members based primarily on standard BOP and capacity to repay metrics. Other things equal, more Fund financing seems to have accrued to countries with bigger BOP needs, greater ability to repay measured in terms of stronger debt sustainability, and a good policy record on earlier borrowing from the Fund; while less went to countries which had access to non-Fund financing or weaker capacity to repay. In general, decisions on Fund financing were more sensitive to BOP needs, debt sustainability and historical record of Fund borrowing in the case of LICs than in the case of EMs. Fund financing was found to be less correlated with a country's health system needs or pandemic status and was not universally sensitive to the size of the estimated negative impact on the economy of the pandemic.

59. **Second, was Fund financing adequate?** A direct assessment of financing adequacy on a case-by-case basis and/or on average is complex due to the many factors at play. Importantly, in IMF-supported arrangements, the IMF is not the only source of financing, and indeed access to Fund resources is intended as a catalyst for other official and private borrowing. Reflecting these considerations, we tried to gauge the proportionality of Fund financing to needs by examining whether Fund financing managed to relax countries' external financing constraints. In turn, this involves measuring the role played directly by the Fund in contributing to close members' balance of payments needs as well as its indirect role in helping countries increase their net access to other sources of finance.

60. **Looking at *direct* support, we found that the Fund financed a somewhat higher share of financing gaps that the Fund originally intended to address,** as actual gaps tended to be lower than estimated at the time of disbursement. When measured ex post, Fund financing corresponded, on average, to about 13 and 19 percent of the EMs and LICs actual BOP needs, respectively. However, the share contribution of Fund gap financing varied significantly both (on average) between income groups and country geographical categories, being lower for countries with large needs, such as small developing states.

61. **With regard to the *indirect* impact that IMF financing had on private capital flows in the assisted countries, there is some evidence that access to Fund resources—including EF as well as UCT—did have a catalytic role.** Simple comparisons of countries' non-resident

net capital flows before and after the approval EF and UCT programs do not seem to point to specific catalytic effects from Fund financing. This evidence needs to be interpreted cautiously, however, because of sample selection bias, since countries that requested but did not obtain access to Fund resources are likely to be those that suffered the greatest economic shock and the greatest difficulty sustaining access to international capital markets. To correct for this bias, we applied more sophisticated econometric techniques that take account of differences in country characteristics. These estimates, also based on available quarterly BOP data, suggest that recipients of Fund EF in fact received larger inflows of portfolio capital after the Fund lending. The effect appears stronger for MIDCs than LICs possibly reflecting the diverse impact that Fund financing may have in countries with different income fundamentals.

62. **Finally, was Fund financing instrumental in mitigating the COVID-19 shock in recipient countries?** Answering this question is difficult because, as discussed, the economic performance of countries in the aftermath of the shock, as well as in the aftermath of Fund financing, depended on a multiplicity of factors including the severity and length of NPIs, trade and global supply chain exposure, fiscal and foreign reserves space, and access to other sources of external credit. A simple examination of the evidence suggests that in terms of real growth, on average, countries that received Fund EF seem to have outperformed countries that asked but did not obtain EF, largely due to the fact that in 2020, on average, private consumption was softer in countries who did not receive funding likely because more CA adjustment was needed in these countries. Among recipients of Fund support, those that got a combination of UCT and EF seemed to have fared better on average than all other groups, suggesting that a lack of follow-up of EF with UCT arrangements may have been a missed opportunity. Results obtained by fitting a cross-section regression to EMDEs over the period 2020 support this evidence, indicating that real output in countries receiving Fund financing deviated less from historic trends relative to countries that requested but did not receive funding. Combined EF and UCT and EF-based financing reduced losses more than UCT programs alone. Combined EF and UCT delivered the largest reductions in economic losses.

REFERENCES

- Acuña-Zegarra, M.A., M. Santana-Cibrian, and J.X. Velasco-Hernandez, 2020, "Modeling behavioral change and COVID-19 containment in Mexico: A trade-off between lockdown and compliance *Mathematical Biosciences*," 325 (2020), p. 108370.
- Barbarossa, Maria Vittoria, and Jan Fuhrmann, 2021, "Compliance with NPIs and possible deleterious effects on mitigation of an epidemic outbreak," *Infectious Disease Modelling*, Volume 6, 2021, pps. 859-874,
- Batini, Nicoletta, 2020, "The COVID-19 Crisis and Capital Flows," IEO Background Paper No. BP/20-02/05 (Washington: International Monetary Fund).
- Bianchi, Francesco, Giada Bianchi, and Dongho Song, 2021, "The Long-Term Impact of the COVID-19 Unemployment Shock on Life Expectancy and Mortality Rates," NBER Working Paper 28304 (Cambridge, MA).
- Cohen, Jon, and Kai Kupferschmidt, 2020, "Mass testing, school closings, lockdowns: countries pick tactics in 'war' against coronavirus," *Science* (New York, NY).
- Food and Agriculture Organization of the United Nations, 2020, "The State of World Fisheries and Aquaculture 2020" (Rome).
- Fotiou, Alexandra, and Andresa Lagerborg, 2021, "Smart Containment: Lessons from Countries with Past Experience," IMF Working Paper No. 21/099 (Washington: International Monetary Fund).
- Furceri, D, P Loungani, J D Ostry, and P Pizzuto, 2020, "Will Covid-19 affect inequality? Evidence from past pandemics," *Covid Economics* 12: 138-57.
- Furceri, Davide, and others, 2021, "Will COVID-19 Have Long-Lasting Effects on Inequality? Evidence from Past Pandemics," IMF Working Paper No. 21/127 (Washington: International Monetary Fund).
- Imai, Kosuke, and Marc Ratkovic, 2014, "Covariate Balancing Propensity Score," *Journal of the Royal Statistical Society: Series B Statistical Methodology*, January.
- International Labor Organization, 2021, "ILO Monitor: COVID-19 and the world of work. Seventh edition: Updated estimates and analysis," January (Geneva).
- International Monetary Fund, 2010, "Staff Guidance Note on the Use of Fund Resources for Budget Support," March (Washington).
- _____, 2017, "Handbook of IMF Facilities for Low-Income Countries," Policy Paper, December (Washington).

- _____, 2020, "The Great Lockdown—Dissecting the Economic Effects," World Economic Outlook, Chapter 2, pps. 65–84, October (Washington).
- _____, 2021, "World Economic Outlook: Managing Divergent Recoveries," April (Washington).
- Kincaid, G. Russell, Jeremie Cohen-Setton, and Jiakun Li, 2023, "Operational Aspects of IMF Financing in Response to the COVID-19 Pandemic," IEO Background Paper No. BP/23-01/02 (Washington: International Monetary Fund).
- Lewnard, Joseph A., and Nathan C. Lo, 2020, "Scientific and ethical basis for social-distancing interventions against COVID-19," The Lancet Infectious Diseases.
- Verschuur, Jasper, Elco E. Koks, and Jim Hall, 2020, *The implications of large-scale containments policies on global maritime trade during the COVID-19 pandemic*.
- _____, 2021, "Global economic impacts of COVID-19 lockdown measures stand out in high-frequency shipping data," PloS one, 16(4), e0248818.
- Wei, Yongyue, and others, 2022, "Global COVID-19 Pandemic Waves: Limited Lessons Learned Worldwide over the Past Year," Engineering, Volume 13, pps. 91–98.