

OPPORTUNITY COST OF COVID-19 BUDGET REALLOCATIONS

CROSS-COUNTRY SYNTHESIS



REPORT

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● ACRONYMS

ALL	Albanian Lek
BE	Budget execution
BPI	Budget Performance Index
CABRI	Collaborative African Budget Reform Initiative
CI	Confidence interval
DRF	Disaster risk financing
ETB	Ethiopian Birr
FATA	Federally Administered Tribal Areas (in Pakistan)
GDP	Gross domestic product
IMF	International Monetary Fund
KII	Key informant interview
MCF	Marginal cost of public funds
OPM	Oxford Policy Management
PFM	Public financial management
PKR	Pakistani Rupee
PPE	Personal protective equipment
RMSE	Root mean square error
USD	US Dollar
ZAR	South African Rand

● FOREWORD

BY THE CENTRE FOR DISASTER PROTECTION

Few countries around the world plan properly for the costs associated with disaster response. Budget reallocation is a heavily used tool – where a government takes money from planned programming and redirects it toward disaster response. Yet, little is known about how costly such reallocations prove to be, or if governments are moving funding away from critical and well-performing programmes or diverting underused funds effectively.

The Centre for Disaster Protection commissioned this research, using the experiences of covid-19 as a case study, in order to address these questions more rigorously. The research seeks to inform the development of better tools and methodologies to equip finance ministries to ask and answer these questions. The research also offers to provide insights on cost considerations of budget reallocations and what the drivers of costs may be.

Each of the countries studied, Albania, Ethiopia, Pakistan and South Africa, faced profound fiscal challenges before the onset of the pandemic and had little in the way of pre-arranged disaster risk financing instruments. Some were reluctant to further increase their debt burdens and all four countries relied heavily on budget reallocations and supplementary budgets. Cutting back their planned expenditures elsewhere. The impacts of the pandemic had knock-on effects, shrinking government revenues. With limited scope to borrow, governments in some cases found themselves spending less than they had planned prior to the onset of covid-19, compounding the economic impact of the crisis.

Budget reallocations remain a key instrument for responding to crises and should be considered an important tool in the Disaster Risk Finance toolbox. The insights in this paper on the cost of budget reallocations and the drivers of these costs can help finance ministries act to reduce the social cost of budget reallocations, as well as inform the extent to which they rely on budget reallocations for disaster response funding. International financial institutions may also find the research useful to inform the budgetary and financial instruments they offer to partner countries to help them pay for disasters – and prevent these from devastating lives and economies.

● ACKNOWLEDGEMENTS

This paper was prepared by Oxford Policy Management (OPM), for the Centre for Disaster Protection, with funding from the UK Government's Foreign, Commonwealth and Development Office. It is the synthesis of four country studies (from Albania, Ethiopia, Pakistan and South Africa) looking at the opportunity cost of budget reallocations made as a result of the covid-19 pandemic. Two of these country studies, those for South Africa and Pakistan, were prepared by OPM and funded by the Centre for Disaster Protection. The Ethiopia study was funded under the Building Resilience in Ethiopia programme, which is a technical assistance project co-funded by the UK Foreign, Commonwealth and Development Office and the United States Agency for International Development. The Albania study was prepared by the World Bank, with financial support from the World Bank–SECO Sovereign Disaster Risk Financing and Insurance Program for Middle-Income Countries.

The lead authors of the synthesis report are Stephanie Allan and Eleanor Bayley. Stephanie Allan and Dayna Connolly designed the methodology, while peer review was provided by Ruth Hill, Daniel Clarke, Lydia Poole, Sophie Evans, Theo Talbot, Omaira Chaudhry and Florian Kratke. The South Africa report was written by Owen Willcox, with inputs from Adrienne Shall. The Pakistan report was written by Kiran Tariq, with inputs from Asad Ejaz Butt. The Ethiopia report was written by Zewdu Hailegebrial, with inputs from Gabi Elte, Natalie Cooke, Jo Kemp and Stephanie Allan. The Albania report was written by Tatiana Skalon, Stephanie Allan, Dayna Connolly and Fatma Jaupi.

● EXECUTIVE SUMMARY

The covid-19 pandemic represents a global health emergency¹ that has required an urgent fiscal response.

At the height of the pandemic, governments across the world faced calls to protect economic interests and introduce far-reaching public health measures, to contain the worst of its impacts. This entailed critical decisions and difficult trade-offs, in terms of where funding would best be spent, and where it could be feasibly sourced from. This research considers the role that budget reallocations can play as an instrument for financing disaster response, by using the covid-19 response in four countries (Albania, Ethiopia, Pakistan and South Africa) as case studies. It focuses on the first fiscal year affected by the pandemic in each country.²

The research serves a dual purpose. Firstly, it seeks to contribute to the evidence on the cost and benefits of budget reallocations as an instrument for financing disaster response. It analyses the pattern of reallocations in each country (i.e. which sectors, departments or programmes were affected), and it seeks to quantify the opportunity cost of the cuts. For these purposes, opportunity cost is defined as the cost to economic output of not funding the thing that the budget was originally intended for. It includes the value of the money cut, as well as the value of the returns forgone as a result of the cut. **Secondly, this research serves as a learning exercise, which seeks to define and test a novel methodology for quantifying budget reallocations and their impact.** Budget reallocations are not routinely documented in standard expenditure reports, and as such an original methodology for quantifying the scale and incidence of reallocations was employed. This methodology starts with the production of a counterfactual which is a 'best guess' as to what expenditure would have looked like against the budget had covid-19 not happened. This was calculated by examining deviations in a 'normal year' to assess what we think would have happened. This was then used as a basis for expenditure analysis and procedural analysis to explore how spending deviated due to covid-19 and to

gather insights into why and how this happened in practice. Finally, the research draws on a range of methodologies from public economics to estimate the returns forgone from cancelled or postponed expenditure, to arrive at an estimate of the impact of reallocations. As such, what is presented in this report is intended to generate discussion on how to take this type of research forward.

The countries included in the study had very different experiences of covid-19 and their governments mobilised different responses to it. South Africa had the highest peaks in terms of the number of covid-19 cases per day, with over three times the number of cases of the second highest, Pakistan. Albania had the lowest. Both South Africa and Albania implemented extensive lockdowns, which were shorter in Pakistan, while Ethiopia stopped short of any lockdown but did (like the other study countries) introduce restrictions on travel and large gatherings. Each government financed extensive public health measures (including testing, quarantine and treatment services), and implemented or expanded social protection programmes aimed at supporting the poorest in society and providing financial support to vulnerable businesses and sectors. Significantly, these extra demands on the public purse were borne during a period in which all four countries were already experiencing fiscal constraints: Albania was reeling from an earthquake that had struck the year before, Pakistan and Ethiopia had both recently signed up to International Monetary Fund (IMF) programmes which required stringent fiscal consolidation, and South Africa had been experiencing very low gross domestic product (GDP) growth since the 2008/09 financial crisis.

While governments around the world sought to counteract the impact of the pandemic through additional public expenditure,³ in Ethiopia, Pakistan and South Africa, pre-existing high levels of debt meant spending significantly more overall was considered unaffordable. In the countries considered, only Albania

1 Note that at the time of publishing in February 2023, the World Health Organisation's declaration of covid-19 as a public health emergency of international concern remained active.

2 That is, fiscal years 2019/20 in Ethiopia and Pakistan, 2020 in Albania, and 2020/21 in South Africa.

3 Globally, government fiscal deficits jumped from 3.6% of GDP in 2019 to 10.8% in 2021, with advanced economies registering the greatest fiscal expansion (IMF 2021).

was able to exert a net fiscal stimulus, with public expenditure from Albania's ministries in 2020 being 14% higher than what had been predicted in the counterfactual (the research team's prediction of spending levels in the absence of the pandemic). By contrast, in South Africa, expenditure outturns were of a similar magnitude to the no-covid counterfactual, while in Ethiopia and Pakistan, they were 10% and 5% less than their respective counterfactuals. This reason for this was the varying opportunity and appetite for borrowing; Albania was the only country in the research which was in a position to significantly accumulate further debt to respond to the pandemic.

This meant that funding the public health and economic response measures had to come from other sources than borrowing. International financing was committed, but the data shows that the amounts were rarely disbursed in full. In terms of budgetary mechanisms, most of the study countries did not have operational disaster funds they could draw upon, and where general budget contingency funds were available (such as in Ethiopia and Albania), they were often of insufficient size (or were already exhausted) to finance the covid-19 response.

With limited alternative financing options, budget reallocations emerged as an essential tool for financing the covid-19 response in each of the countries under this study, and further afield. Governments made use of virements (the movement of funds between budget lines, usually in a way that does not substantially overhaul the nature of public expenditure, and therefore not requiring parliamentary approval), as well as supplementary/adjustment budgets (substantive changes affecting the overall budget envelope and fiscal deficit, typically requiring a new budget act to be passed by parliament). In the methodology designed and employed for this study, diverted funds or budget cuts manifest as expenditure outturn below that which is predicted in the counterfactual. While comparing the volume of reallocations across the study countries is problematic (given that the structure of budgets varies significantly between countries, making it impossible to compare like

for like)⁴ nonetheless, the "cuts" identified were equivalent to between 3–7% of total annual expenditure, which is substantial.

The incidence of budget reallocations varied within each of the study countries, and between the countries, suggesting that governments were considered in their approach to budget reallocations (as opposed to applying 'across-the-board' cuts). Unsurprisingly, budget lines associated with public health measures and covid-19-related economic assistance were 'winners' in the reallocation process. The sectoral pattern of cuts was more diverse, with some of the 'losers' being education, irrigation, culture and sports, and electoral bodies (although not uniformly in all countries). Both recurrent and capital budgets were affected – in most cases, the recurrent budget more so. However, cuts to the capital budget were considered by government officials to be more consequential.

The case studies adopted varying methodologies for estimating the broader impact (in terms of opportunity cost) of these budget reallocations. For example, the analyses for South Africa, Ethiopia, and Pakistan employed fiscal multipliers to estimate opportunity cost, while the analyses for Albania and Ethiopia used the marginal cost of funds/marginal benefit of expenditure approach (detailed under Chapter 3). Moreover, the Albania and South Africa analyses sought to exclude cuts to 'non-viable expenditures'⁵ from their impact analysis (the rationale being that the cost of cancelling such expenditures was zero to negligible because even if additional financing was available, negating the need to make cuts, these expenditures would not generate returns), whereas the analyses for Pakistan and Ethiopia did not. The effect of these differences means it is not possible to robustly compare the impact of reallocations between the case study countries.

Nonetheless, the case studies indicate that the impact of budget reallocations, in terms of opportunity cost of returns forgone from diverted funds, was significant. For covid-19, in the countries studied and for the time periods analysed, this cost is estimated to have been of the

4 The volume of budget reallocations would appear higher in a budget structure which is more disaggregated, because aggregation has the effect of masking reallocations that work to cancel each other out.

5 Non-viable expenditures can be defined as spending that is no longer feasible or effective once a disaster or external shock has occurred. The cost of cancelling such expenditures is zero to negligible because even if additional financing was available, negating the need to make cuts, these expenditures would not generate returns and so would be cancelled by the government. An example is tourism advertising spending in South Africa during the covid-19 pandemic, given that travel for tourism was banned as part of covid-19 restrictions.

order of 0.5–2 % of GDP. This is a cost which is rarely quantified when assessing the cost of disasters or taken into account when comparing the costs of different financing instrument options; these results suggest that this could be a significant oversight. Moreover, the opportunity cost multiple for budget reallocations is estimated to be in the region of 1.2–1.6, meaning each dollar mobilised incurs an opportunity cost of between USD1.20 and USD1.60.

Speed is the primary advantage of budget reallocations.

In all four countries reviewed, budget reallocations were the quickest of the disaster risk financing (DRF) instruments deployed to respond to the covid-19 pandemic (with the caveat that none of the study countries had operational and capitalised dedicated disaster funds, which as an instrument, would have likely been quicker). This speed makes reallocations particularly useful for financing the immediate response in the early stages of an external shock, and potentially acting as a useful stopgap before additional financing becomes available. The rules around budget reallocations are prescribed in countries' public financial management (PFM) legislation, but in emergency situations like the one posed by the covid-19 pandemic, fast-track procedures are sometimes put in place, or normal restrictions lifted. For example, in Albania the normative (supplementary) budget process usually takes one month, but the process was shortened to as little as 24 hours, to be able to respond more rapidly. In South Africa, a Special Adjustment Budget was passed, which allowed the government to reallocate funds in excess of the 2% limit normally applied to routine adjustment budgets.

However, greater speed and flexibility come with a greater risk of misappropriation and wastage.

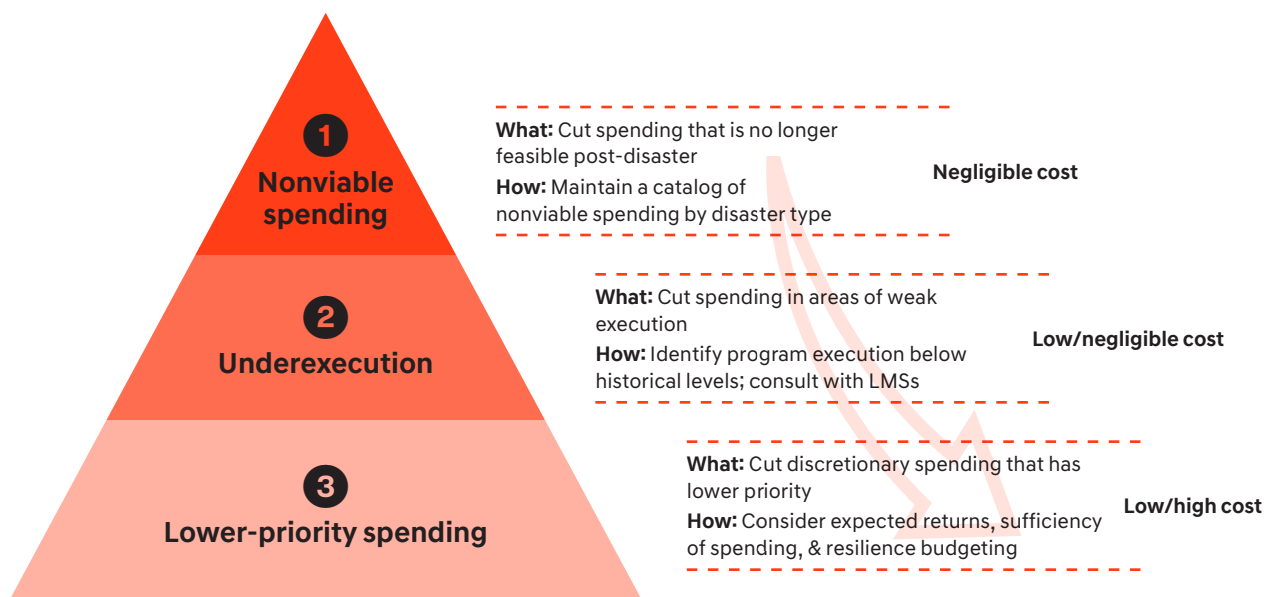
As controls are relaxed to allow funds to be urgently spent, there are increased risks of fraud and corruption, as well as a greater likelihood of wastage derived from inefficient expenditure or procurement that does not result in the best price-quality ratio. In Albania, the key informant interviews (KIIs) highlighted that the speed of the supplementary budgets came at the cost of inter-ministry consultation, while in South Africa, there are ongoing questions over how funds were spent. Other countries (outside this research) took measures to strengthen budget accountability in the covid-19 pandemic response: for example, Brazil and Honduras developed covid-19 spending online portals to enable the public to track covid-19 expenditures (IMF 2020a).

None of the governments in the study countries have explicit frameworks for approaching budget reallocations in crisis contexts, despite the widespread practice. While virements and supplementary budgets are commonplace budget management tools, frameworks to guide the redistribution of resources were not formalised in any of the four study countries. The countries' ministries of finance were found to have applied implicit, as opposed to explicit, reprioritisation criteria, largely developed in the midst of the emergency (although past experience in crisis budget management would certainly have been brought to bear). The study countries are not outliers in this regard: a literature review informing the study design could not identify any explicit publicly available frameworks for reallocating budgets in the wake of emergencies. That said, some of the common criteria followed informally included prioritising cuts to spending made unviable by the restrictions of the pandemic. Other factors considered included project performance and focusing on areas of slow spending. While normally the perspective of line ministries would be brought into the decision-making, the urgency of the situation led to the ministries of finance acting more independently in some instances.

The following recommendations are drawn from the country studies and are felt to have a wider relevance:

1. *(To governments)* **Develop an ex-ante framework for reconfiguring budgets in the wake of a disaster**, to help avoid indiscriminate across-budget expenditure cuts and to minimise the unintended negative consequences of delayed or cancelled expenditures. While such a framework will be country-specific, the Albania research suggests a framework (below) that could be a starting point for other countries. It recommends that countries iteratively identify any non-viable expenditures, and recommends maintaining a dynamic record of non-viable expenditure for different disaster types. Once that is exhausted, the ministry of finance should reallocate funds from areas where execution performance is slow to ensure funds do not sit idle when finances are scarce. The third area to target is lower-priority spending across discretionary spending areas, which can be done in advance of a disaster occurring but will need to be revised on an ongoing basis as expenditure priorities change as a crisis evolves.

Proposed framework for disaster-related budget reallocations in Albania



Source: World Bank (2021). Note: LMAs = line ministries and agencies.

2. *(To governments and development partners)* **Increase transparency in budget (re)allocations.** Governments have varied amounts of discretion around budget reallocations, and typically parliament and citizens are provided with limited information about them, and sometimes only after the fact. Ideally, more of this could be arranged ex-ante. In addition, more detail on how budgets have been reallocated and the rationale for these changes, would improve transparency and through that, potentially strengthen accountability.
3. *(To governments)* **Develop rules to guide the appropriation to, and use of, general contingency funds.** As general budget contingency funds were often unavailable or too depleted to make a meaningful contribution to financing the covid-19 response in the study countries, there is a need to calculate the appropriate contingency allocation amounts, and to develop rules to guide their usage, such as specifying eligible uses or earmarking a proportion for disasters and replenishment.
4. *(To governments and development partners)* **Where appropriate, expand and diversify risk financing instruments.** Deepening understanding of government liabilities (explicit and implicit) during and after a disaster will help to clarify how much additional financing could be required from the government (and other sources) at different stages of an emergency. From this starting point, governments can tailor a range of financing instruments that are proportionate to the needs and costs of disasters, potentially limiting the volume and cost of budget reallocations.
5. *(To research bodies and governments)* **Continue to fill research gaps on the topic of budgetary financing instruments for disasters.** This research makes a first contribution to increasing understanding of the role and cost of budget reallocations in financing disasters. Priorities for future research include the following: i) analysing the effect of the covid-19 pandemic on revenue and borrowing in a similar manner, by comparing outturns against constructed no-covid-19 counterfactuals; ii) considering the equity impacts of budget cuts; iii) comparing the impact of cuts against the value created in new and augmented expenditures; iv) extending the research to analyse the medium-term effects of the pandemic; and v) applying this methodology to other disaster types.

1

● INTRODUCTION

1.1 Purpose of the report

Covid-19 represented a global health emergency, requiring collective global and regional responses, but also required significant responses at national- and subnational government and societal levels. Governments had to take decisions on what they thought was in the public interest, both at national and subnational levels. They considered economic interests, alongside public health impacts, both in the short and longer term. Each government made critical decisions on where funding would best be spent and where it could be feasibly sourced from. However, few studies have looked in depth at what the opportunity cost of taking funding away from certain areas of public spending might be.⁶

This synthesis study draws from four country studies, focusing on Albania, Ethiopia, Pakistan and South Africa, to calculate what the opportunity cost of budget reallocations was during the covid-19 pandemic. For these purposes, opportunity cost is defined as the cost to economic output of not funding the thing that the budget was originally intended for. It includes the value of the money cut, as well as the value of the returns forgone as a result of the cut.

The synthesis report has two purposes, which are addressed in its two main chapters (Chapters 2 and 3). The first summarises the findings of the country studies. This is the story of budget reallocations in Albania, Ethiopia, Pakistan and South Africa. To this end, Chapter 2 describes the context of each country in terms of public spending and sources of public funds during the covid-19

pandemic, what choices governments had to make in terms of what public services were funded, and why. The chapter looks at the budgetary instruments available, which helps us to understand why budget reallocations were an important instrument for them during the pandemic. It considers the ‘winners’ and ‘losers’ from the budget reallocations (i.e., which sectors, departments or programmes were allocated more funding, and which had their funding cut) and seeks to calculate the economic cost of these choices.

The report’s second purpose is to examine and elaborate on the methodology that was used in the country studies. This is done in Chapter 3. Each country study took decisions on how best to calculate the opportunity cost of budget reallocations, based in part on what data was available on budget expenditure, what the counterfactual looked like and what the best calculation of impact of public expenditure might be. We are treating the methodology as a learning exercise – exploring different ways of approaching the task of calculating the opportunity cost, drawing on what is most suitable in each context to inform future discussions and decisions on how to take this type of research forward.

As such, this synthesis report does not aim to provide a direct comparison of the story of budget reallocations in the study countries during the covid-19 pandemic, or a comparison of the methodologies applied in the country studies, but rather offers a jumping off point for, and a call to action in regard to, generating further exploration and research on the opportunity costs of budget

⁶ For example, Benson and Clay (2004) offer some preliminary estimates of the scale of budget reallocations but offer no insight into the longer-term economic or social impacts. More recently, a Public Expenditure Review of disaster-related expenditures in the Philippines highlighted challenges in tracking and quantifying budget reallocations and recommended monitoring reallocations moving forward. The review argues that without such monitoring, the government is likely to underestimate total disaster-related spending (World Bank 2020). Bevan and Cook (2015) propose an operational framework for valuing public expenditure changes in the wake of a disaster, setting out (in purely theoretical terms) the marginal cost of funds approach, which was adopted in the Ethiopia and Albania studies synthesised here.

reallocations, and what measures governments and international institutions can take to best prepare for future global and national emergencies.

1.2 Introduction to the country case studies

The synthesis draws on four country case studies which have sought to examine the impact of covid-19 on budget reallocations: Albania, Ethiopia, Pakistan and South Africa. Each country presents a different context, both in terms of their experience of covid-19 and their macro fiscal environment at the time that the pandemic hit. The Albania study was conducted by the World Bank and included members of the research team for this wider study. The Ethiopia study was conducted as part of the ‘Building Resilience in Ethiopia’ project (currently ongoing), funded by the UK Foreign, Commonwealth and Development Office, to provide insights to the Ministry of Finance in Ethiopia on DRF. The Pakistan and South Africa studies were commissioned by the Centre for Disaster Protection to learn more about both the impact (cost) of budget reallocations, and the application of this methodology in other countries. For these two studies, provincial-level analysis was also conducted to explore how constraints and opportunities, needs and impacts, differed at subnational level.

1.3 Outline of the report

The report looks first at what the findings were on the opportunity cost of budget reallocations in each of the four study countries: Albania, Ethiopia, Pakistan and South Africa. It then looks in detail at the methodological approaches taken by the different country studies. This structure was chosen in order to preserve the coherence of the narrative and to focus on the contextual factors that shaped government decisions, processes and impacts (in Chapter 2), and then to help readers to understand how the country studies came to their conclusions (in Chapter 3). The following paragraphs discuss Chapters 2 and 3 in more detail.

As indicated above, Chapter 2 presents the findings of the country studies, including the story of the covid-19 pandemic in those countries, the responses of their governments, the budget expenditure (based on the creation of a counterfactual), and then, finally, the calculation of the opportunity cost of those budget reallocations.

The story starts with a description of the covid-19 context for each country, detailing the covid-19 experience and government response, and the macro fiscal picture in each country. It is this context that shaped the scale of the response, the policy choices, and the budgetary instruments available to each government at that period in time. This context draws attention to the economic context and climate, which in three of the four case studies served to limit how much public borrowing they felt they could undertake to respond to covid-19, and makes clear why many governments opted to undertake budget reallocations.

The synthesis then examines what other instruments governments used to finance the covid-19 response, and what restrictions they faced in using them, before turning to the formal processes by which governments could undertake budget reallocations, and what happened in practice. This is particularly pertinent as the pandemic created needs that could not necessarily be addressed through existing processes and protocols. However, it also created risks in regard to transparency and accountability.

The report then delves into what the impact of covid-19 was on public expenditure, and how it deviated from the counterfactual (an estimate of what spending would have been in the absence of covid, based on previous budgeting and spending patterns), before examining what the impact was of those budget reallocations in terms of the opportunity cost, including exploring what happened at the provincial level in Pakistan and South Africa.

Finally, Chapter 2 concludes with a summary of what the experiences of these four countries can tell us about budget reallocations as a DRF instrument, and what recommendations we can take away from the experiences in Albania, Ethiopia, Pakistan and South Africa.

Chapter 3 details the methodology. As an early exploration of calculating the opportunity costs of budget allocations, the different country teams opted to adopt approaches to their calculations based on two criteria: what was most relevant to the country context (this often depended on what data was available and in what format), and what was the most appropriate methodology for estimating the impact of public expenditure. Our aim is to share a range of methodologies for future researchers to explore, learn from and improve upon. The methodology section also outlines the challenges encountered by the different country studies, as well as recommendations for future use.

All four studies, however, based their approach to the analysis of the opportunity cost on four pillars: the development of a counterfactual, expenditure analysis,

procedural analysis, and impact analysis (see Figure 1). This approach reflects the trajectory of the budget reallocations story set out in Chapter 2.

Figure 1: Methodological pillars

1. Counterfactual	2. Expenditure Analysis	3. Procedural analysis	4. Impact analysis
<ul style="list-style-type: none"> ● Best-guess estimation of public expenditure outturns in the scenario that the epidemic had not occurred. ● The outturns counterfactual can be established through utilising the original budget (pre-pandemic) and assessing deviations expected in “normal” years. 	<ul style="list-style-type: none"> ● Comparison of actual expenditure against the counterfactual. ● Focus on the incidence of spending cuts, identifying the ‘winners’ and ‘losers’, capturing changes on a sectoral basis, and in administrative, economic and functional/ programmatic classifications. 	<ul style="list-style-type: none"> ● Review of the legal and institutional framework, alongside any guidelines on budgeting and expenditure procedures. ● KIIs with Government on the processes by which budget allocations decisions are made, mapped across the emergency cycle. 	<ul style="list-style-type: none"> ● Economic analysis of the estimated impact of cut or delayed expenditures in terms of social and economic returns forgone. ● Analysis at the aggregate/sectoral level, and for a few key budget programmes for illustrative purposes.

Source: Authors.

The ‘counterfactual’ refers to an estimate of what spending might have looked like in the study countries had the covid-19 pandemic not occurred. It is developed by analysing historical data on spending against the budget to develop a realistic picture of how actual spending would likely have deviated from the budget in ‘normal times’ (periods not affected by a disaster).

The expenditure analysis examines how actual expenditures in the study year (see Table 1) deviated from the counterfactual and identifies sectors and programmes which had more funds allocated to them (or ‘overspent’ compared to the counterfactual) and those which had funding cut (or ‘underspent’ compared to the counterfactual).

The procedural analysis looks at the process by which governments undertook budget reallocations in the covid-19 emergency, to better understand why and how governments took decisions on where to cut funding and where to reallocate it. It explores both the formal rules that they had to follow, and informal decisions that were

necessitated by the climate of crisis during the pandemic.

Finally, the impact analysis calculates what the impact would be of the spending cuts outside of the normal-time deviations. This impact analysis is conducted in a nuanced way: for example, in South Africa and Albania KIIs are used to determine what non-viable expenditure should be excluded from the analysis, and moreover the approach to calculating the effect of spending cuts varies, depending on what is most suitable to the context in each country.

The research on which this synthesis is based took an exploratory approach to the methodology applied in each country to enable readers to learn from the process as much as from the results. There were advantages and disadvantages for each methodology, which is outlined in Section 3.2. As such, different countries took slightly different approaches to the application of the methodology. For the calculation of the counterfactual, contextual factors influenced how many years of data could be used by each country (see Box 4). For the

development of the counterfactual, Pakistan, Ethiopia and Albania used the median of past year’s budget execution rates, with added scrutiny where there were significant deviations. In South Africa, however, they used the median Budget Performance Index (BPI).

The timing of the pandemic, in relation to the fiscal year, impacted the ability to calculate the impact of the crisis. For South Africa, the pandemic hit just as the country had

submitted its 2020/21 budget, so there was a clear budget to work from. However, for Pakistan and Ethiopia, covid-19 hit during the 2019/20 budget, so the 2020/21 budget reflected covid-19 priorities and could not be used in the analysis. As such, the period of analysis is necessarily much shorter (see Table 1). Further details can be found in Section 3.2.

Table 1: Analysis period for analysing covid-19 impact

Country	Year of analysis	Period of covid-19 impact
Albania	2020 (January - December 2020)	March - December (10 months)
South Africa	2020/21 (April 2020 - March 2021)	April - March (12 months)
Pakistan	2019/20 (July 2019 - June 2020)	March - June (four months)
Ethiopia	2019/20 (July 2019 - June 2020)	March - June (four months)

2

● FINDINGS

2.1 What was the covid-19 experience and what was the government response in each country?

The different study countries had different experiences of covid-19. This depended on a number of contextual factors, including when and how quickly covid-19 spread and what health infrastructure and systems were in place to respond to it. It also depended on how the countries' governments chose to respond: for example, when (or if)

countries went into lockdown, and what kind of lockdown they implemented, which impacted the potential for services and projects to be implemented and therefore resources used. As such, it is valuable to outline how the countries and their governments experienced and responded to covid-19.

Table 2 outlines the key covid-19 experiences and public responses for each country included in this synthesis report.



Table 2: Covid-19 experience by study country

Country	First recorded case of covid-19	Peak covid-19 cases per million ⁷ (Our World in Data)		Public response measures (Global Monitoring)
Albania	8 March 2020	12 December 2020	281.16	<ul style="list-style-type: none"> ● Restrictions on air travel (tourist travel) from March 2020 to 19 December 2021 ● Day-long curfews and night-time curfews implemented from 21 March 2020; varied up until being lifted on 2 March 2022 ● Closure of land and sea borders ● Limits on air travel
Ethiopia	March 2020	25 August 2020	12.7	<ul style="list-style-type: none"> ● State of emergency from April to September 2020 ● Closure of schools and restrictions on gatherings ● No lockdown implemented
Pakistan	26 February 2020	19 June 2020	27.7	<ul style="list-style-type: none"> ● National lockdown implemented 23 March 2020 for three weeks ● Localised curfews in place periodically, up to approximately August 2021 ● Education facilities closed in March 2020, shutting periodically until September 2021 ● Borders closed regionally and international flights cancelled
South Africa	March 2020	January 2021	314.8	<ul style="list-style-type: none"> ● National lockdown from 27 March 2020 to 30 April 2020 ● Partial lockdown (level 3) during second wave from December 2020 ● Lockdown reduced to level 2 in May 2021 ● Lockdown reduced to lowest level in October 2021

Sources: Our World in Data and Global Monitoring.

⁷ This indicates the peak cases of covid-19 per million during the analysis periods for each country, as outlined in Section 1.3.

The countries included in the study had very different experiences of covid-19 and saw different responses from the country governments. South Africa had the highest peaks in terms of the number of covid-19 cases per day, with over three times the number of cases of the second highest, Pakistan, in the period March 2020 – September 2021. Albania had the lowest cases per day in terms of total number in this period but had the longest period of lockdowns, with ‘smart’ curfews implemented until March 2022.

For Ethiopia and for Pakistan, it is notable that they had relatively short periods of restrictions, attributed to the potential economic impact. In Pakistan, the national lockdown lasted for just three weeks before restrictions were lifted. However, targeted restrictions were implemented until August 2021. Ethiopia did not implement a lockdown period although the Ethiopian Government did close schools and restrict gatherings nationally. For South Africa it is notable that, following a brief national lockdown from 27 March to 30 April 2020, the government only implemented partial lockdowns when cases rose to much higher peaks in January 2021 and July 2021. It is worth noting that the intensity of lockdowns may have decreased in 2021 as covid-19 vaccines became more available, or due to other factors which may have meant that deaths or hospitalisations were less likely or less severe from 2021 onwards.

As well as increased expenditure related to health, each country in this study implemented or expanded social protection programmes, with the aim of supporting both the poorest in society, as well as those individuals and sectors who it was expected might struggle the most with the impacts of the covid-19-related public response measures. In Albania the government doubled unemployment benefits and social assistance and provided support to small businesses and the self-employed, including the provision of a sovereign guarantee in relation to business loans. The Albanian Government also provided transfers to struggling sectors, such as tourism and pensions, as well as supporting citizens through tax deferrals and forgoing measures. In Ethiopia, the Productive Safety Net Programme was expanded, both in terms of provision and access. The Ethiopian Government also removed import taxes on

goods relating to covid-19 and provided remits on tax debts and select tax waivers, as well as loans to small and micro enterprises. In Pakistan the government expanded the Benazir Income Support Programme, reduced taxes on foods, and reduced fuel prices, as well as providing support to small and medium-sized enterprises and businesses in the agriculture sector. Provincial governments in Pakistan also announced social protection packages. In South Africa, the government expanded its social safety net programme, as well as implementing broader measures, such as backing loans for businesses. Each country, therefore, implemented measures to protect its more vulnerable citizens.

The fiscal stimulus packages that the study country governments designed appeared to aim at two goals: supporting key sectors of the economy to withstand the covid-19 crisis and supporting vulnerable groups in society. All countries provided loans and/or loan guarantees to small businesses. Pakistan, for example, reduced taxes on food, as well as reducing fuel costs. In addition to strengthening health services with the purchase of equipment and resourcing, all four countries provided social protection and social assistance packages to poor and vulnerable groups.

2.2 How did the macro fiscal picture differ between countries?

The macro fiscal picture, both prior to and during the covid-19 crisis, is crucial to understand what options the country governments had available to them to finance their fiscal response to covid-19 and what risks they needed to manage.

Prior to covid-19, all four countries were experiencing fiscal constraints. Pakistan and Albania recorded their highest debt-to-GDP ratios in 2019, at 85% and 78%, respectively. South Africa had a debt-to-GDP ratio of 63.5%. Ethiopia had a debt-to-GDP ratio of 31.4%. However, the IMF highlights that Ethiopia displayed other indicators of debt distress, such as foreign exchange shortages (IMF 2020b). The overall fiscal balance for each country (see Table 3) ahead of the pandemic also highlights the challenges that they faced, particularly Pakistan and South Africa, with fiscal balances of -7.8% and -5.0%, respectively.

Table 3: Debt and fiscal balance (% GDP) (World Bank, 2022)

Country	Public debt 2019-20 (% of GDP)	Overall fiscal balance 2019 (% of GDP)
Albania	78	-1.9
Ethiopia	31.4	-2.8
Pakistan	84.8	-7.8
South Africa	63.5	-5.0

Against this backdrop of moderate to very high debt-to-GDP ratios, and a consequential trajectory toward towards fiscal tightening, each country had different macro fiscal circumstances prior to and during the covid-19 pandemic, outlined below.

Albania. In November 2019, prior to covid-19, Albania was hit with the strongest earthquake it had experienced in over 40 years. Public spending to address the impacts of the earthquake, coupled with decreasing liquidity due to maturing Eurobonds in 2020, increased financial risks and costs for Albania. Albania’s economic growth was expected to slow by 0.5% in 2020. With covid-19, the economy shrank by 3.3% in 2020 (OECD 2021). Despite this backdrop, the Albanian Government introduced a fiscal stimulus package of about 3.5% of GDP (Sejko 2021), which pushed the fiscal deficit to 8% of GDP and the debt-to-GDP ratio to 78%.

Ethiopia. Ethiopia had a declining tax-to-GDP ratio before the pandemic, which started from an already low base, and the onset of the covid-19 crisis effectively reversed its early improvements in tax revenue collection. Ethiopia’s economic growth in 2019–20 was 6.1%, lower than the National Bank target of 10%. Ethiopia had high rates of borrowing prior to covid-19, which had led to a large IMF programme of support and corresponding reforms to be implemented in 2019.⁸ As such, Ethiopia’s room for implementing a fiscal response to covid-19 was limited. While Ethiopia did not lock down as other countries did, it still felt the effects of covid-19 through

the loss of tourism revenue and the loss of foreign trade taxes. Ethiopia was also impacted by the conflict in the Tigray region, which began in November 2020. The conflict caused internal displacement and likely impacted economic investment.

The Ethiopian Government developed a package of fiscal support equivalent to 3% of GDP, however, as demonstrated later in this report, this was more than countered by cuts in expenditure elsewhere.

Pakistan. Pakistan underwent a fiscal crisis in 2018–19, having taken on large loans to fund infrastructure development (Gettleman 2018), which pushed the current account deficit to USD18 billion. This, coupled with low tax revenue collection, prompted a policy of fiscal consolidation in 2019–20. Within this, the government aimed to improve tax revenue collection, reducing the fiscal deficit and increasing debt repayments, as well as implementing a policy of austerity in regard to public spending. However, covid-19 led to falling tax revenues and so the government had to focus on containing expenditures. GDP growth fell from 5% to below 1% in 2019–20 (Khan Waraich 2022). Before covid-19 hit, fiscal consolidation was also an objective at the provincial level, as the country’s provinces depend on federal transfers and have limited revenue collection.

The Government of Pakistan introduced a package of fiscal support equivalent to 2.9% of GDP, but, similar to Ethiopia, cut spending elsewhere to finance it.

8 The IMF programme of support provided USD2.9 billion through the Extended Credit Facility and the Extended Fund Facility (IMF 2019).

South Africa. Following the financial crisis in 2008–09, South Africa’s economy had been struggling with low growth, with GDP per capita declining between 2009 and 2019. Before covid-19 hit, GDP had contracted in four of the last five quarters. Unemployment was already high, at 39.7%, with youth unemployment reaching 59% (expanded definition of unemployment) (Statistics South Africa, 2020). This then increased as the impacts of covid-19 were felt on the labour market. The debt-to GDP ratio was already increasing, but this accelerated during the covid-19 crisis, due to slow economic growth, low commodity prices, bailouts for state-owned entities and rapidly increasing civil servant salaries. The response from government to covid-19 involved scaling up capacity in the public health system and mitigating the effects of restricted economic activity for households and business. The Reserve Bank also reduced interest rates in this period. However, the South African Government did initiate a wide-ranging South African Rand (ZAR) 500 billion (USD32.4 billion, approximately 9% of GDP) fiscal response package in April 2020, largely counterbalanced by cuts elsewhere.

While all the countries in this study were constrained by their fiscal position going into the covid-19 crisis, each government chose to implement fiscal response packages. In all of the study countries the government spent a significant proportion of GDP on the fiscal response. However, the sources of this funding differed due to the restrictions on each in terms of whether and what they felt they could borrow. Where borrowing was considered less feasible, cutting other spending was a key means to financing these packages. This is explored further in Section 2.3.

Government budgets for all countries were also affected by the slowdown in the economy during the covid-19 crisis. Where lockdowns were imposed by governments, economic activity was severely limited. Even in Ethiopia, which did not impose a national lockdown, the government implemented rules to prevent large gatherings, which impacted some industries, as well as public service provision, such as education. In Albania, the economy contracted by 4.7% over the course of covid-19. Pakistan’s GDP contracted by 1.3% over 2019–20 and South Africa’s GDP contracted by 6.4% (World Bank 2023). Ethiopia experienced growth of 6.1%, but, as stated above, this was below the 10% target. All countries also experienced reductions in revenue, due in part to the reduction in taxes on foreign imports and reductions in tax revenues.

2.3 Alternative instruments used by the study country governments to finance the covid-19 response?

How these fiscal response packages were funded differed depending on how much the study country governments were able or willing to borrow, and what other instruments and sources of funding they had access to, in addition to what could be reallocated in the budget.

The size of existing budgets or the mechanisms designed for emergency response were insufficient to meet the scale of the need to respond to the covid-19 crisis and, critically, none of the study countries had sufficiently capitalised dedicated disaster reserve funds they could draw on. In Ethiopia, the government operates a general contingency budget, which is managed by the Ministry of Finance. Although there is no legislation specifying the size of the contingency, and there is limited guidance on its use, this instrument was deemed insufficient to fund the fiscal response, in part because it had already been used, prior to the covid-19 crisis. In Albania, the Council of Minister’s Reserve Fund was expanded but remained insufficient in size to tackle the scale of the covid-19 crisis. In South Africa, the Disaster Management Act (Act 57, 2002) stipulates that the funding for disaster response should be provided by the organ of state that is responsible for affected areas. However, the scale of the covid-19 crisis meant that providing a fiscal response from within ministries or agencies (for example, in health) was not possible. In Pakistan, particularly at the provincial level, the operationalisation of the funds themselves posed a problem: the Provincial Disaster Management Funds were not fully operationalised in all provinces: in Punjab the fund is not fully operational and the Provincial Management Act is at a draft stage, and in Sindh there is no budgetary allocation for the fund.

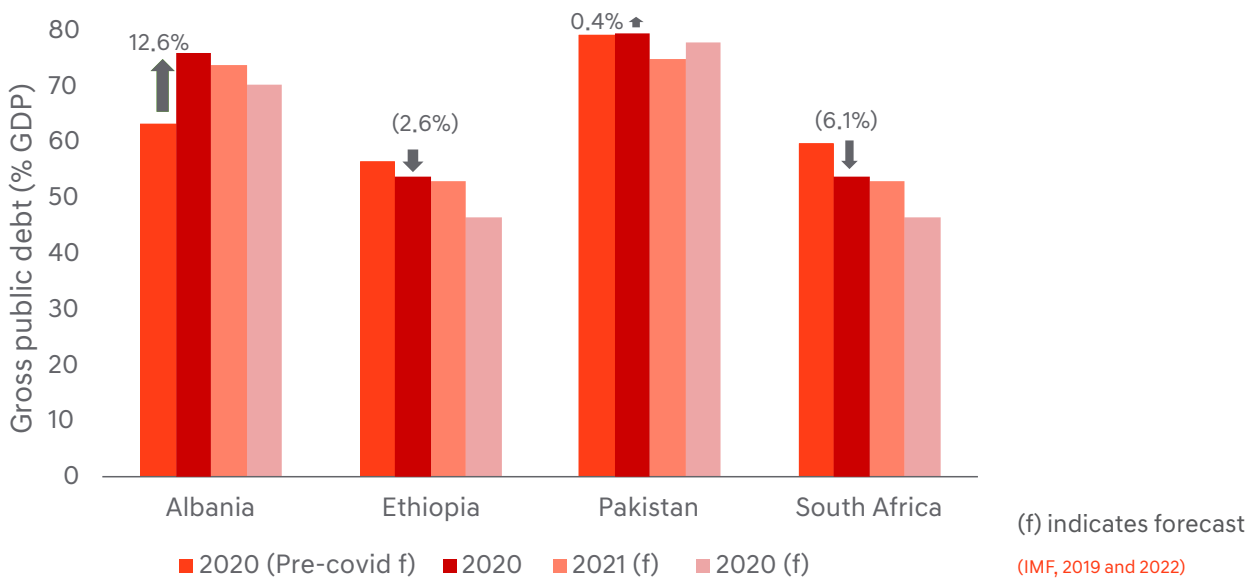
Speed of access to funds was an important factor in terms of deciding what funding instruments to use and what instruments or mechanisms not to use. For Albania, one of the advantages of turning to external financing was that the process for issuing Eurobonds could be fast-tracked. In South Africa, the government did not use the established DORA disaster risk management grants because to do so it would have had to submit its proposals to the National Disaster Management Centre, which would then have needed to seek approval from the Treasury. In contrast, for Pakistan, the National Disaster Management Fund, administered by the National

Disaster Management Commission, was instrumental precisely because it provided a fast-track route to procurement. However, it should be noted that funding was reallocated within the fund, rather than being added to the fund. The Finance Division prioritised budget reallocations from available donor-assisted programmes, and thus the study considers this to have constituted budget reallocation for the purpose of the analysis.

Governments sourced funds for increased expenditure by borrowing domestically and internationally, to varying degrees. Borrowing was a significant source of funding for the governments in all four countries, although opportunities and political appetites for taking on debt varied. In Albania the government tapped into domestic

market borrowing, as well as securing a concessional loan under the IMF Rapid Financing Instrument. As the government was already preparing for Eurobond issuance, it fast-tracked this process, which enabled the government to access EUR650 million (USD570 million). Pakistan also drew on loans from external lenders, some of which came with concessional terms (such as from the IMF and the Asian Development Bank). South Africa received a loan from the New Development Bank and the IMF, and Ethiopia also received a loan from the IMF. Figure 2 offers a crude estimate of how covid-19 impacted debt levels, by comparing pre-covid-19 2020 forecasts of debt-to-GDP with actuals. It demonstrates that only Albania accumulated significant additional debt to respond to the pandemic.

Figure 2: How debt-to-GDP changed between 2020 forecasts and actuals



Fears of the market response and perceptions of how much governments calculated (politically and economically) that they could borrow constrained what some governments felt they could access. This was particularly the case for South Africa, where debates are ongoing as to whether the government could have borrowed more to support the fiscal response. For South Africa, the fiscal response required ZAR690 billion (USD44.7 billion), but in the end the government only increased spending by ZAR36 billion (USD2.3 billion). The government borrowed just ZAR95 billion (USD6.2 billion) from multilateral organisations as it felt that it

was constrained by high debt levels. In Ethiopia the government borrowed ETB59.5 billion (USD1.9 billion) from domestic and external loans to fund the fiscal response. However, this was ETB29 billion (USD925 million) more than planned and the original budget for external borrowing had already been deemed too high by the IMF and the Government of Ethiopia.

In each of the study countries, official development assistance funds were promised but did not materialise in full. The international donor community pledged funds to support Ethiopia’s covid-19 response. When this was

not followed through in practice, this created shortfalls for the government, some of which was covered by further borrowing. Aid provision is an unpredictable source of funding for governments, as it comes with conditionalities and disbursement does not always match the funds planned, as highlighted in Table 4, creating further difficulties for reliable budgeting. Looking across the

same time period (from the start of the pandemic to 31 July 2021) reveals significant disparities in per capita disbursements, varying from USD104 and USD81 in the cases of Albania and South Africa respectively, but only USD9 and USD15 for Ethiopia and Pakistan, respectively (Centre for Disaster Protection, 2021).

Table 4: Official Development Assistance (ODA) commitments and disbursements in response to covid-19 (Centre for Disaster Protection, 2021)

Country	Time frame	Total funds committed (million \$)	Total funds committed per capita (\$)	Total funds disbursed (million \$)	Total funds disbursed per capita (\$)
Albania	March 2020 - December 2020	300.5	104.3	192.5	66.8
Ethiopia	March 2020 - June 2020	801.0	7.1	503.8	4.5
Pakistan	March 2020 - June 2020	2,431.9	11.2	2,091.1	9.7
South Africa	April 2020 - February 2021	4,755.8	81.2	4,294.2	73.3

Pakistan and Ethiopia also benefitted from the suspension of debt service payments by the Paris Club group of creditors. In April 2020 the Paris Club agreed to debt suspension for a number of countries, including Pakistan and Ethiopia. The Pakistan country study highlighted that this enabled government funding to be redirected to the covid-19 response fund.

2.4 What formal laws and processes govern budget reallocation decision-making in the study countries? Were they followed in the wake of covid-19? What informal criteria guided the government response?

As most of the study countries were operating in a tight fiscal space, due to their macroeconomic environment at the time, budget allocations were an attractive instrument for governments to use. This is supported by the Collaborative African Budget Reform Initiative's (CABRI's) analysis of its covid-19 Public Finance Fiscal Response Monitor, which highlighted that for many

African countries, budget allocations were an attractive instrument as many governments had limited fiscal space to respond to the pandemic (CABRI 2021). While governments had different procedures and protocols for budget reallocations, some key learning points emerged from their experiences.

Budget reallocations were an important instrument for all countries in this study because of the speed at which they could be executed. In some cases, due to the fast-moving nature of the covid-19 crisis, some countries condensed the process further. In Albania the normative budget process usually takes one month, but the process was shortened to overnight or a week, to be able to respond more rapidly. In the Albania study, one acknowledged cost of this speed was under-engagement across government, except between the individual ministry concerned and the Ministry of Finance and Economy. For South Africa, the Special Adjustment Budget, passed in June 2020, provided the necessary speed required by the government. The other main option, going through the National Disaster Management

Committee, would have taken an estimated four months to process. For Ethiopia and Pakistan, budget reallocations could take place at speed as the decisions on budget reallocations take place within their respective ministries of finance. In Ethiopia especially, any reallocations within programmes can be made upon the approval of the head of the relevant public body, who just needs to notify the Ministry of Finance of the changes. In Pakistan, the Ministry of Finance decided to focus on reprogramming donor funding. They were also able to swiftly redirect funds through the National Disaster Management Fund, capitalising on the debt suspension from the Paris Club group of creditors, which enabled the country to redirect those funds to the fiscal response package.

In the large-scale emergency setting of the covid-19 pandemic, virements were often too restrictive an instrument to be able to respond at the scale required. Although they were used by the governments of Albania and South Africa, supplementary / adjustment budgets were a more important instrument to respond at the required scale and to be able to reallocate funding more easily across different government institutions. For Albania, there are relatively stringent restrictions on the use of virements. Virements between programmes or ministries, departments and agencies need approval from the Council of Ministers, and virements of capital funds even within a programme need Ministry of Finance approval, which can take anywhere between five days and two weeks. In South Africa, virements cannot exceed 8% of the total amount appropriated to that division in the main appropriation. They also cannot be used to reduce capital allocations. Restrictions on the reallocation of capital budgets are necessarily very strong in normal circumstances, although this presented a particular obstacle as the nature of the covid-19 crisis meant that there was a high likelihood of governments being unable to spend capital budgets during the period of lockdown, where, for example, construction or maintenance could not take place.

Supplementary budgets and adjustment budgets were not unusual procedures in any of the countries in this study, but the nature of covid-19 increased the frequency and scale of these budgets. Albania passed four supplementary budgets (termed ‘normative budgets’) in 2020, which was slightly more than the usual two to three normative budgets that Albania usually undertakes annually. This is because there was more uncertainty and there were more changes in the financial situation for the

government over this period. The first two normative budgets focused on financing early relief efforts in Albania – including key financing for wages and social support. The third normative budget reinstated some of the earlier cuts to public services, as additional financing had come on board at this point. As with other rebudgeting exercises in normal times, the fourth normative budget was used to allocate funding elsewhere, where it looked like the spend would not take place. In South Africa the law (Section 16 of the Public Financial Management Act) for adjustment budgets caps the adjustments at 2%, which was insufficient for the covid-19 response. As such, the government had to pass a Special Adjustment Budget in June, as the only lawful means by which the government could reallocate to the degree it deemed necessary. A normal adjustment budget followed in October 2020. In Pakistan, covid-19 hit towards the end of the fiscal year, around the time of the supplementary budget that Pakistan normally implements at the end of the fiscal year, to account for any underspends or overspends. This process was not new. In Ethiopia, two supplementary budgets were implemented during the course of the year. In particular, the budget had to take into account that some ODA was not received, and therefore it increased expenditure and implied a higher deficit. However, the deficit was lower than projected, which indicates a reliance on budget reallocations. This all indicates that the scale of the covid-19 crisis meant that it was difficult for governments to accurately plan spending during the period of the crisis, especially in the moment. However, some of the supplementary budgets were actually ‘business as usual’.

While processes for budget reallocations followed the legal requirements in the study countries, the decisions on which budgets were cut involved a more informal process. For Albania and South Africa, the criteria and process for decision-making on what would be cut was an informal one. In Albania, KIIs indicated that the criteria for decision-making were not formalised during the crisis, but broadly operated as follows: (1) cuts to personnel (although focused on unfilled vacancies); (2) cutting office expenses that were no longer required (e.g. office utilities); (3) cuts to investment budgets. On the latter, the interviews highlighted that there were efforts to minimise these cuts early in the fiscal year because at that stage there was limited evidence of underspending, but by the second normative budget these cuts were unavoidable. Later on in the fiscal year, the normative budgets cut capital expenditure based on execution performance.

In South Africa, the criteria were also broadly informal, but KIIs indicated that it followed the following considerations: (1) removing underspent funds due to delays caused by lockdown; (2) suspending allocations for capital that could be delayed or rescheduled to the following fiscal year; (3) suspending programmes with poor performance history or slow spending; (4) redirecting funds within functions.

In Ethiopia, the Ministry of Finance can reallocate between institutions, although transfers from capital to recurrent budgets are prohibited. The Ministry of Finance broadly takes decisions on reallocations based on the following criteria: (1) project performance; (2) budget execution; (3) foreign exchange availability; and (4) line ministry perspective. However, the prohibition on transfers from capital to recurrent can be circumnavigated by sending capital funds to the contingency budget and then spending that budget on recurrent expenditures. Moreover, normally the process for reallocations takes six weeks (and so they are not a fast instrument), but this gives rise to indirect budget reallocations. For example, cash restrictions can be used to force underspending of particular programmes, without the need to more formally withdraw and reallocate funds.

The emergency setting and procedures meant that, although following the law, the processes for spending and accountability were less transparent and therefore increased the risk of the misallocation or misuse of funds during the period of study. All of the study countries implemented some form of emergency measures, which enabled the countries to speed up the process of budget reallocations, as well as procurement processes and spending. This speed, while deemed necessary to respond to the crisis in a proportionate and timely way, opened up opportunities for funds to be misallocated – or worse, misused, because dedicated processes for this type and speed of emergency response were not in place. Speed can restrict opportunities for consultation, discussion and transparency. In Albania, the KIIs highlighted that the speed of the normative budgets came at the cost of inter-ministry consultation. In South Africa, there are ongoing questions over how funds were spent. The Auditor General in South Africa took a ‘real time audit’ approach to produce special reports on

the financial management of covid-19. This experience is echoed by other countries. CABRI’s analysis of budget reallocations during covid-19 also highlights that stakeholder consultation was limited to a smaller number of ministries (for example, in Nigeria and in Cameroon). Moreover, they state that because emergency measures were in place, oversight was a greater challenge (CABRI 2021).

2.5 How did public expenditure deviate from existing plans, on account of covid-19?

Wherever they could afford to borrow, governments around the world sought to counteract the impact of the pandemic through additional public expenditure. Globally, government fiscal deficits jumped from 3.6% of GDP in 2019 to 10.8% in 2021, with advanced economies registering the greatest fiscal expansion (IMF 2021). In the four countries considered in this research, Albania stands out as an example of a state which was able to exert a fiscal stimulus. This shows up in the finding that public expenditure from Albania’s ministries in 2020 was 14% higher, or Albanian Lek (ALL) 40.8 billion (USD376 million) more, than what had been predicted in the counterfactual (the research team’s prediction of spending levels in the absence of the pandemic). Borrowing was critical to finance this growing deficit, particularly the issuance of a substantial (EUR650 million; USD570 million) Eurobond.

However, in Ethiopia, Pakistan and South Africa, pre-existing high levels of debt meant spending significantly more overall was considered unaffordable; and in some cases, the drop in domestic revenues forced an overall cut in public expenditure (relative to non-crisis years). This manifested in expenditure outturns which were of a similar or smaller magnitude than the counterfactual. In Ethiopia, for example, the total federal expenditure⁹ in 2019/20 was equivalent to 90% of the counterfactual, or Ethiopian Birr (ETB) 22 billion (USD702 million) less than it. In Pakistan, the total federal expenditure in 2019/20 was equivalent to 95% of the counterfactual, or Pakistani Rupees (PKR) 335 billion (USD2.1 billion) below it.¹⁰ Meanwhile, in Sindh Province in Pakistan, actual spend was only 85% of the counterfactual budget, or PKR151.6 billion (USD955 million) below it. Punjab had an overall underspend of 96% of the counterfactual

9 Excluding spending on regional grants.

10 This does not include debt servicing costs, which alone register an underspending of around PKR5 trillion against the counterfactual (because of debt payment suspension received from Paris Club creditors due to covid-19).

budget, of PKR67.3 billion (USD401.5 million) below it. The Government of Ethiopia and the Government of Pakistan typically overspend their recurrent budgets and underspend on their capital budgets, but in both cases in 2019/20 overspending on recurrent was curtailed, and the shortfall in capital expenditure was even greater than usual. This was because high debt levels going into the pandemic (standing at 56.5% of GDP for Ethiopia, and 81.1% for Pakistan in 2019/20) meant they had very limited borrowing opportunities, and when faced with shortfalls in revenues as a result of covid-19 in fact had to reign spending in. In South Africa, the story was similar with regard to pre-existing high levels of debt (standing at 63.5% of GDP in 2019/20), severely limiting the fiscal response that the Treasury could offer to stimulate the economy and to take care of vulnerable groups. As such, aggregate expenditure in 2020/21 was equivalent to 99.8% of the no-covid-19 counterfactual – meaning overall spending levels were largely unaffected by the pandemic.

All of the study countries registered substantial budget reallocations to free up funds to finance covid-19 measures, and to make up for revenue shortfalls. The

focus of the research has been on those functions, sectors and programmes which had resources diverted away from them – as it was expected that this would potentially incur an opportunity cost due to the delayed or cancelled spending. In the methodology employed, diverted funds or budget cuts manifest as expenditure outturn below that which is predicted in the counterfactual. The volume of budget reallocations necessarily increases the more granular the analysis is: for example, focusing on shifts between three or four high-level economic categories would typically identify fewer areas of overspending and underspending than might be apparent at the programmatic level, given there could be well in excess of a hundred programmes in a budget. This is because aggregation has the effect of masking reallocations that work to cancel each other out. Given this, and given that the structure of budgets varies significantly between countries, it is challenging to compare the total volume of reallocations. The table below summarises the findings from the various studies with regard to the total volume of underspending against the counterfactual, but the level of disaggregation varies and as such should not be considered like for like.

Table 5: Underspend against the counterfactual across study countries

Country	Level of analysis	Total underspend against the counterfactual	Contextualisation ¹¹
Ethiopia (2019/20)	Functional classification (of which there are three categories)	ETB19.8 billion (USD632 million)	Equivalent to 38% of total covid-19 expenditure in 2019/20, or 5% of total expenditure in 2019/20
Albania (2020)	Economic classification (of which there are five categories)	ALL17.7 billion (USD163 million)	Equivalent to 93% of total covid-19 expenditure in 2020, or 5% of total expenditure in 2020
South Africa (2020)	Sub-programme (of which there are approximately 1,100)	ZAR95.8 billion (USD6.2 billion)	Equivalent to 19% of covid-19 expenditure, or 6% of 2020 expenditure
Pakistan (2019/20)	Economic classification (of which there are 12 categories)	PKR494.4 billion (USD3.1 billion)	Equivalent to 41% of total covid-19 expenditure, or 7% of 2019/20 expenditure

Notes: Federal expenditures only. Pakistan excludes expenditure on debt servicing costs. Ethiopia excludes expenditures on regional grants.

11 When expressing reallocations as a percentage of covid-19 expenditure, this is purely for illustrative purposes, and does not imply that reallocations went to finance covid-19-related expenditures. In a context of falling revenues, reallocations could also have been undertaken to protect other priority government spending not necessarily related to covid-19.

The incidence of budget reallocations varied within each country, and between countries, suggesting that governments were considered in their approach to budget reallocations. By this, we mean that certain sectors and classes of expenditure were cut to varying degrees, while others were ringfenced to varying degrees. This contrasts to strategies of ‘across-the-board’ cuts, which are typically a last-resort option, when a finance ministry has insufficient information on which to base reallocation decisions, or the political economy does not permit more selective approaches. This was the case elsewhere in the response to covid-19: a cross-Africa study by CABRI found that several countries, including Liberia, the Central African Republic and the Republic of the Congo, applied large cuts across all sectors and items in response to covid-19, with limited links to policy and at the risk of adversely affecting the delivery of essential services.¹²

Unsurprisingly, budget lines associated with public health measures and covid-19-related economic assistance were ‘winners’ in the reallocation process. As detailed in the methodology overview, the focus of this study is on those sectors and expenditure categories which were the ‘losers’ in the budget reallocation process, i.e., which had funds taken away from them. This is the focus of the rest of this section. However, in all of the case studies some of the budget lines were net ‘winners’, enjoying additional expenditure compared to the counterfactual, because reallocations diverted funding towards them. These were predominantly lines associated with public health measures and economic support packages associated with the covid-19 response and recovery, as summarised in the box below.

Box 1: ‘Winners’ from the reallocation process

In Albania, most of the overspending was found under the Ministry of Finance and Economy, which was responsible for support to small businesses and the self-employed, as well as the Ministry of Health and Social Protection, which included expenditures on medical equipment, personal protective equipment (PPE), quarantine centres and social protection programmes.

In Ethiopia, the education and health sectors revealed high overspends. In education this was because public universities served as response centres and were utilised for quarantine and isolation. With regard to the health sector, many public health professionals (including retired professionals) were deployed to support covid-19 preparedness and response efforts, increasing wage and salary expenditure in the sector. Furthermore, the government provided life insurance coverage for employees that had direct contact with covid-19 patients, increasing the Ethiopian Health Insurance Agency’s expenditure.

In Pakistan, the biggest gain was for the Benazir Income Support Programme and the Poverty Alleviation Fund, both of which provided cash transfers for poor households and worker groups most affected by covid-19. The National Disaster Management Authority was another ‘winner’ in the reallocation process, as it played a central role in the procurement of PPE and other equipment required for the covid-19 response. So too were the Petroleum Division (to account for fuel subsidies) and the Federal Bureau of Revenue (for payment of Income Tax and Sales Tax Refund Bonds).

In South Africa, the largest gains were for the Social Development department, in particular for social assistance grants to affected households and businesses, as well child support. Increases to the Cooperative Governance Department’s budget reflected a large increase due to transfers to municipal governments, to offset the decline in rates income expected because of lockdowns. Health also registered a sizeable gain, above the expected level of spending, related to covid-19 response measures.

¹² Liberia, for instance, decreased the goods and services budget allocation of all budget heads, with a small number of exceptions, such as the ministries of health and finance and the National Food Agency (CABRI 2021).

Budget reallocations adversely affected both recurrent and capital budgets, with the latter considered more consequential. In Ethiopia, a larger underspend was recorded on the recurrent side of the budget (ETB13.4 billion, USD428 million) than on the capital budget (ETB6.6 billion, USD211 million); however, a large part of this was because of the ex-post financing of the budget for the National Disaster Risk Management Commission, driving up the counterfactual (see Box 2). The capital underspend was seen by government interviewees as more consequential, with multiple capital projects either delayed or postponed, resulting in political costs (loss of trust in government), social costs (loss in social benefit from the projects), and economic costs (higher input prices than budgeted for, on account of inflation). In Albania, similarly, the largest underspending was recorded in the goods and services category (a total of ALL5.7 billion (USD53 million)), but this was largely the result of non-viable spending due to the economic and social restrictions introduced to fight the pandemic. Underspending on planned capital investment was estimated at ALL5.2 billion (USD48 million), a significant share of which was reportedly for viable investments that nonetheless were delayed or postponed to free up

resources for other priorities. In South Africa, there was not found to be a large reduction in capital spending overall, though some capital spending – for example on schools and universities, as well as railways and housing – was delayed. Larger negative discrepancies were identified in recurrent spending, particularly compensation of employees and departmental agencies (which had an underspend versus the counterfactual of ZAR12 billion (USD778 million)), due to unfilled vacancies and a pay freeze. In Pakistan, both recurrent and development spending at the federal level were lower than the counterfactual expenditure 2019–20; although, in a surprise result, civil works expenditure (which covers investment in buildings and roads) and operating expenses (which is the operating expenses of government buildings) exceeded the respective counterfactuals, when the expectation was that they would have declined in the wake of covid-19 lockdowns. However, a full-scale lockdown was only imposed for a very short time in Pakistan and was lifted to avoid a severe economic downturn. Construction was one of the first sectors that was allowed to resume commercial activities as the sector is highly dependent on public investments and is also a major income source for government revenues.

Box 2: Trends in Ethiopia’s prevention and rehabilitation expenditure

Due to limited fiscal space, the Government of Ethiopia does not allocate sufficient resources for anticipated disasters to the prevention and rehabilitation sub-sector, relying instead on allocating additional resources in the course of the year, following an emergency (which occurs more often than not). As a result, the actual recurrent expenditure for prevention and rehabilitation is significantly different from the approved budget due to the ex-post funding of disasters from the budget line. For instance, the four-year average (2015/16–2018/19) approved recurrent budget for prevention and rehabilitation was ETB119 million, but the average actual recurrent expenditure was ETB14 billion, indicating that on average only 0.8% of the funding required to respond to disasters was allocated ex-ante through the approved budget.

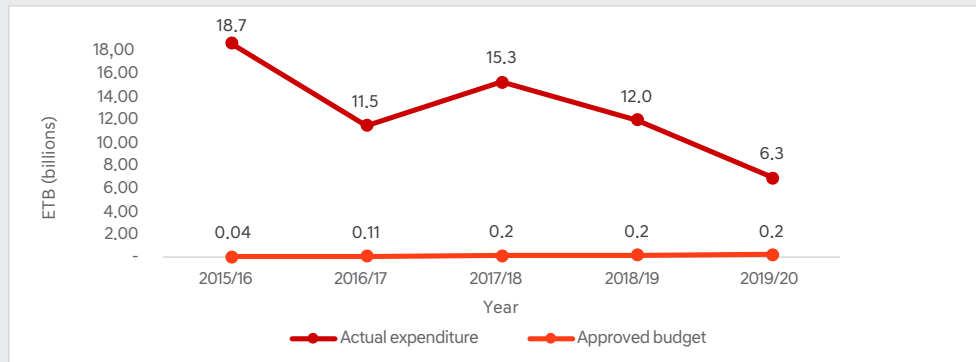
In 2019/20, the actual expenditure on prevention and rehabilitation was again high, at ETB7 billion, relative to

the approved budget of ETB215 million. However, when compared to the counterfactual (ETB14 billion) – or the estimated spend had covid-19 not occurred – the actual expenditure was low, likely reflecting the different nature of the disaster that arose from covid-19, which saw increases in health expenditure in response to the disaster, as opposed to more traditional disaster responses.

This situation makes it clear that it is difficult to compare a ‘disaster year’ with a ‘non-disaster year’ in Ethiopia, given the high frequency of disasters. It also makes a compelling case for more ex-ante financing for the sector, which indeed the Government of Ethiopia has since done, increasing the approved budget for the Ethiopian Disaster Risk Management Commission by 46% in the 2022/23 budget.

continued →

Trends in prevention and rehabilitation recurrent expenditure, Ethiopia



Source: Ministry of Finance data, reported in *Building Resilience in Ethiopia* (2022).

The pattern of cuts by sector or function varies by country, reflecting the differing priorities of the governments, as well as varying covid-19-restrictions introduced in each country (as these restrictions freed up resources to be diverted to other activities). The table below sets out which sectors were noted as ‘losers’ in the reallocation process, and in which countries. What emerges is a very diverse picture. Some reallocation decisions were relatively easy: notably where spending was no longer viable. In the case of covid-19, this included budget lines for spending on large events, on office

facilities, on postponed elections, on tourism, or (in some cases) on construction, which were (to varying degrees) prohibited. Similar non-viable expenditures would be expected for other disaster types: for example, an earthquake or flood could damage facilities, which would temporarily reduce the need for operating expenses. However, alongside these easily justified reallocations, more difficult decisions were made to cut expenditures which remained feasible, and which, if they had gone ahead, would have likely generated socioeconomic returns.

Table 6: Sectoral underspends

Sector / subsector	Countries where sector underspent against the counterfactual				Description
	Albania	Ethiopia	Pakistan	South Africa	
Education	x	x		x	<p>In the case of Ethiopia, only 55% of the funds earmarked for the higher education programme were utilised, compared to the historical budget execution performance of 84%, and project-level underspends against the counterfactual amounted to ETB1.3 billion (USD41 million).</p> <p>The Albanian Ministry of Education, Sports and Youth underspent against the counterfactual by ALL2 billion (USD18 million), which is equivalent to 5% of the ministry's spending in 2020. Some of this reallocation was in response to covid-19, but some of it was related to the transfer of post-earthquake rehabilitation of education facilities to the Ministry of Reconstruction.</p> <p>In South Africa, underspending by the Department of Higher Education and Training on training of ZAR5.5 billion (USD357 million) was because the Skills Development Levy was paused in an effort to reduce tax payments by companies. Moreover, subsidies to universities were reduced substantially. At the provincial level, Mpumalanga's Department of Education saw substantially less infrastructure spending as monies that would have been used for the construction of new schools in underprivileged areas were redirected to Covid-19-proofing schools.</p>
Irrigation		x	x (Sindh)		<p>In response to slow expenditure progress by the Ethiopian Irrigation Development Commission, an estimated ETB10 billion (USD319 million) was reallocated from irrigation projects for the covid-19 response, equivalent to 70.1% of the original budget for irrigation projects.</p> <p>In Sindh Province, irrigation capital expenditure was PKR11.3 billion (USD71 million) lower than the predicted value in the counterfactual.</p>
Culture and Sports		x		x	<p>In Ethiopia, the ban on large gatherings, including sporting events, led to an underspend against the counterfactual of ETB1.8 billion (USD57 million). In conjunction with the ban, the government used the Ethiopian Youth Sport Academy as a quarantine and isolation centre. As a result, activities or projects in the culture and sports sector were halted to contain the spread of the virus.</p> <p>In South Africa, expenditure in Gauteng Province under Sport, Arts, Culture and Recreation was partially surrendered because planned events and programmes were cancelled because of the pandemic.</p>
Election bodies		x		x	<p>In Ethiopia, the national elections were postponed by a year, and approximately ETB2 billion (USD64 million) was reallocated from the National Election Board's budget and deposited in the contingency budget and then allocated for the covid-19 response.</p> <p>In South Africa, the Independent Electoral Commission also had funds diverted away from it, despite the fact that municipal elections were scheduled for November 2021.</p>

Table 6 continued

Sector / subsector	Countries where sector underspent against the counterfactual				Description
	Albania	Ethiopia	Pakistan	South Africa	
Defence	x				<p>Expenditure of the Albanian Ministry of Defence was ALL3,3 billion (USD30 million) less than the counterfactual, equivalent to 15% of total expenditure by the ministry in 2020, as the pandemic gave the government some cover to fall below the NATO spending target for the year.</p> <p>In contrast, in South Africa, spending by the Department of Defence was higher than expected because the military was used to enforce lockdown regulations, and military hospitals contributed to the health effort. Defence spending was also protected in Ethiopia and Pakistan, most likely on account of ongoing security concerns which coincided with the pandemic.</p>
Tourism				x	<p>In South Africa, tourist sector advertising spending was curtailed, because travel to and within South Africa for touristic purposes was banned. As a result, the Department for Tourism demonstrated the largest underspend at the level of vote/department, at only 33% of the no-covid-19 counterfactual.</p>
Public works, roads and transport				x	<p>A number of programmes in the national Public Works, Roads and Transport department spent between 7% and 20% less than expected in South Africa, the reasoning being that construction projects were not seen as feasible during a lockdown. This affected rail transport particularly. Gauteng Province also recorded a slowdown in road construction and maintenance, and Mpumalanga in transport operations.</p> <p>In contrast, in Albania, construction spending (including post-earthquake reconstruction) and maintenance expenditure was relatively unaffected by covid-19 restrictions.</p>
Transfers to subnational governments			X (FATA)	x	<p>In South Africa, expenditure against the Department of Cooperative Governance was 11% (or ZAR8.4 billion; USD545 million) higher than projected through the counterfactual, on account of the local government equitable share grant, which increased due to lockdowns resulting in declining rates payments (property taxes) and payments for electricity - a major source of revenue for municipalities.</p> <p>In Pakistan, most transfers were protected, apart from the underspending on the development budget for Federally Administered Tribal Areas (FATA). In these areas, which have been newly merged with Khyber Pakhtunkhwa Province, socioeconomic development lags significantly behind the rest of the country, and so they were promised additional funding from the federal government to accelerate their development, which did not materialise.</p> <p>In Ethiopia, regional grants were outside the scope of the analysis (although it was notable that the budgeted amounts were nearly fully executed, more so than in previous years). Indeed, these expenditures are often considered non-discretionary, and can be difficult, politically, to reduce.</p>

2.6 What was the broader impact (in terms of opportunity cost) of these budget reallocations?

The opportunity cost of budget reallocations is a measure of the cost to economic output of not funding the thing that the budget was originally intended for. It includes the value of the money cut, as well as the value of the returns forgone as a result of the cut. Based on this, the ‘opportunity cost multiple’, is the opportunity cost per USD1 of budget mobilised. So, for example, for a USD1 million public expenditure programme where the social return on USD1 was USD1.50, the opportunity cost of cutting that programme would be USD1.5 million, and the opportunity cost multiple would be 1.5.

The country studies adopted divergent methodologies for estimating the impact of budget reallocations, starting with how ‘non-viable’ expenditures were treated. For two of the case studies, the first step in the impact analysis was estimating what portion of underspend against the counterfactual was for non-viable expenditures and discounting these expenditures from impact calculations. Non-viable expenditures can be defined as spending that is no longer feasible or effective once a disaster or external shock has occurred. The cost of cancelling such expenditures is zero to negligible because even if additional financing was available, negating the need to make cuts, these expenditures would not generate returns and so would be cancelled by the government. Both the South Africa and Albania studies sought to quantify non-viable expenditures, and to exclude them from the impact analysis. In South Africa, interviews

identified a number of big-ticket underspends where the planned investments were non-viable, including construction expenditure (as this was prohibited during the first lockdown). These lines were extracted from the impact analysis in full, totalling ZAR13.7 billion (or USD888 million) of the ZAR95.7 billion (USD6.21 billion) total underspend).¹³ In the case of Albania, assumptions were made (based on interviews) in order to estimate a percentage of non-viable expenditure for each high-level economic category: including, for example, 10% of the personnel underspend (as covid-19-induced recruitment freezes were in place for a brief period). This led to ALL7.8 billion (of the ALL17.7 billion in underspending, equivalent to USD72 million) being discounted from the impact analysis. The Ethiopia and Pakistan studies did not extract non-viable expenditures from the impact analysis. In the case of Ethiopia, this was primarily because the absence of lockdowns meant most public services were able to continue (or would have been able to, had it not been for funding constraints). The Pakistan analysis also did not discount a portion of the underspend because research constraints provided no basis for doing so, although this is noted as a limitation in how the methodology was executed.

The South Africa, Ethiopia and Pakistan studies employed fiscal multipliers to estimate opportunity cost, while Albania and Ethiopia used the marginal cost of funds/marginal benefit of expenditure approach (detailed in the next chapter). The results are presented below. Ethiopia adopted both approaches because data was available to do so, and to provide a comparison between them.

13 South Africa also estimated overspends versus the counterfactual (so relocations towards specific budget lines) which were deemed to be not covid-19-related (specifically for substantial resources devoted to injecting capital into state-owned companies, such as Eskom and South African Airways, for problems that pre-date the pandemic), and discounted these from the impact analysis.

Table 7: Summary results and methodologies for assessing impact

Country (year of analysis)	Methodology	Impact of reallocations				Contextualisation	Opportunity cost multiple
		Underspend against the counterfactual (A)	Of which, is viable (B)	Additional value lost from cutting viable expenditures (C)	Opportunity cost of reallocations (D =B+C)		E= D/A
Ethiopia (2019/20)	Fiscal multiplier; applied to total underspend; estimated at functional classification level	ETB19.8 billion (USD632 million)	ETB19.8 billion (USD632 million)	ETB11 billion (USD351 million)	ETB30.8 billion (USD983 million)	This is equivalent to 0.5% of 2019/20 GDP, or 21% of covid-19 expenditures	1.56
	Marginal cost of funds approach; <i>applied to capital expenditure of three institutions only</i> (Irrigation Development Commission, Ministry of Science and Education, and Ethiopian Roads Authority)	ETB22.3 billion (USD711 million)	ETB 22.3 billion (USD711 million)	ETB 6.9 billion (USD220 million)	ETB 29.2 billion (USD931 million)	This is equivalent to 0.3% of 2019/20 GDP, or 13% of covid-19 expenditures	1.31
Albania (2020)	Marginal cost of funds approach; applied to total underspend (estimated at economic classification), less non-viable expenditures	ALL17.71 billion (USD163 million)	ALL9.95 billion (USD92 million)	ALL2.31 billion (USD21 million)	ALL12.3 billion (USD113 million)	This is equivalent to 0.76% of 2020 GDP, or 65% of covid-19 expenditures	1.23
South Africa (2020)	Fiscal multiplier; applied to total underspend (estimated at economic classification level), less non-viable expenditures	ZAR 95.8 billion (USD6.21 billion)	ZAR 82.1 billion (USD5.32 billion)	ZAR 16.4 billion (USD1.06 billion)	ZAR 98.5 billion (USD6.39 billion)	This is equivalent to 2% of 2020 GDP or 20% of pledged covid-19 relief package	1.20
Pakistan (2019/20)	Fiscal multiplier; applied to total underspend on the development (capital) budget only, estimated at economic classification level	PKR 228.6 billion (USD1.44 billion)	PKR 228.6 billion (USD1.44 billion)	PKR 228.6 billion (USD1.44 billion)	PKR 457.2 billion (USD2.88 billion)	This is equivalent to 1.1% of 2019/20 GDP, or 38% of covid-19 expenditures	2

It is not permissible to compare the results across countries because of methodological variations in the studies;¹⁴ nonetheless, these results imply that the impact of budget reallocations, in terms of the opportunity cost of returns forgone from diverted funds, was significant. For covid-19, in the countries studied and for the time periods analysed, this cost is estimated to have been of the order of 0.5–2 percentage points of GDP. This is a cost which is rarely quantified when assessing the cost of disasters or taken into account when comparing the costs of different financing instrument options. These results suggest that this could be a significant oversight. Moreover, the opportunity cost multiple for budget reallocations is estimated to be in the region of 1.2–1.6, meaning each dollar mobilised incurs an opportunity cost of between USD1.20 and USD1.60.¹⁵

South Africa and Pakistan undertook complementary impact analyses on the net change in expenditure. The headline impact analysis presented above estimates the opportunity cost of areas of underspending against the counterfactual, ignoring the impact of any areas of overspend. Isolating the impact of underspends is deliberate, because it is possible that with alternative financing in place these costs could have been avoided (and financing the overspending through different means). Nonetheless, the South Africa and Pakistan analyses also calculated the impact, in the form of the net change in spending. Impact, calculated in this way, is lower, as some of the losses from budget cuts are cancelled out by gains from areas of additional expenditure. In the case of South Africa, the impact of the covid-19-induced net change in expenditure is ZAR49.1 billion (USD3.18 billion), or 1% of GDP; while in Pakistan, the impact of the covid-19-induced net change in capital expenditure is PKR 210 billion (USD1.32 billion), or 0.5% of GDP.

2.7 What impacts were felt at the project level?

The Albania and Ethiopia studies used select project-level case studies to demonstrate the impact of budget

reallocations in more concrete terms. In the Ethiopia study, a cost–benefit analysis of the Welmel Irrigation Project was presented. The project started in 2019/20, the year the pandemic hit, and had a total outlay of ETB3 billion (USD96 million) and was expected to generate financial returns of ETB4.5 billion (USD144 million), as the new feeder canal network, and irrigation and drainage system, are predicted to directly benefit the productivity of 22,000 farming households. It was estimated that a one-year delay in implementing the project would have an economic cost of ETB32 million (USD1 million). Meanwhile, in Albania, the Ministry of Education, Youth and Sports delayed by one year financing for the reconstruction of two faculty buildings of the Polytechnic University of Tirana, and the Agricultural University Tirana, which had been damaged in the November 2019 earthquake. This covid-19-related delay is estimated to have resulted in an ALL1.5 billion (USD14 million) loss to the Albanian economy (in net present value terms) over a period of 15 years, equivalent to the benefits of nearly three times the total cost incurred by the government in reconstructing the faculty buildings. The returns forgone were related to deferred earnings resulting from students completing their studies and taking up employment, lower private sector profits from consumer spending out of graduating students' earnings, and lower government revenues from income taxes. Other examples from the Albania study demonstrate the risks associated with reallocating funds away from planned expenditures on which donor co-financing is contingent, with the example provided of a social assistance project where the government was not able to allocate the budgetary resources required to meet disbursement-linked indicators, thereby delaying the scheduled disbursement of funds from the World Bank.

These examples demonstrate that project-level cuts during disasters are by no means insignificant. The project-level case studies are intended to be illustrative and cannot be used to infer any findings for the impact of reallocations overall. Nonetheless, they serve to demonstrate the different channels by which budget

14 Including, inter alia, different approaches to the calculation of normal-time deviations (budget execution rates versus Budget Performance Index (BPI)), different levels of budget disaggregation at which reallocations are quantified (with more aggregate analysis revealing smaller reallocation volumes), different treatment of non-viable expenditures (attempting to exclude them or not), different approaches to assessing impact (fiscal multiplier versus marginal cost of funds approach versus project-level cost-benefit analyses), and different periods of analysis (derived from different fiscal years).

15 The Pakistan analysis presents an opportunity cost multiple of 2, but this is an outlier because it focuses on capital reallocations only (which are associated with a higher fiscal multiplier). Moreover, the particularly high capital multiplier value used in this case (drawn from macro fiscal forecasting of the Government of Punjab) is explained in part by the fact that in Pakistan public investment crowds out some private investment, so any cuts in capital spending have a substantial impact on growth.

reallocations can undermine the achievement of project objectives. This is particularly the case for infrastructure projects, where the returns are generally expected to be higher, and where delays can result in additional charges and penalties, as well as inflationary pressures on input prices. Maintenance on capital is also generally considered a high-return investment and it was noted that this had been cut in South Africa by the provincial governments reviewed.

2.8 How does the regional level differ from the federal level?

In South Africa and in Pakistan, studies were conducted at the subnational level (which is the provincial level in both countries), to give insights into what different challenges were encountered at different levels of government. The subnational level can be at the front line of key services in an emergency. In Pakistan and in South Africa, the provincial governments have devolved responsibilities for health and education provision, as well as social protection and, as such, faced expenditure demands due to the pandemic.

For all of the provincial-level governments covered by the study (i.e., Pakistan and South Africa), federal/national transfers were not sufficient to cover increased expenditure demands to respond to covid-19. As such, budget reallocations were required at the provincial level too. For Pakistan, under the 2010 constitution, responsibilities for health, social protection, education, and disaster response (among others) are devolved to the provincial level. For South Africa, the 1996 constitution devolves responsibility for the planning, regulating and provision of healthcare services to the provincial level, in addition to key responsibilities for the delivery of other key frontline service, such as education. As such, the provincial levels had significant responsibilities for responding to increased public service demand. All of the provincial governments covered by this study, therefore, recorded significant budget reallocations in 2019–20. National funding was not sufficient to cover the extra costs required for the provision of some services, notably health. In Mpumalanga, South Africa, the government provision through conditional grants (usually provided to fund specific purposes) was reduced by ZAR706.6 million (USD46 million). The province did receive ZAR46.1 million (USD3 million) for the Provincial Disaster Relief Grant and ZAR173 million (USD11 million) for the new covid-19 component, however, overall, the province had

to reprioritise ZAR1.6 billion (USD89 million). In Gauteng Province, South Africa, the government had to reprioritise ZAR7.9 billion (USD512 million), despite increasing net receipts to the province by 2.6% (an addition of ZAR4.8 billion; USD311 million). In Sindh Province in Pakistan, the overspend was PKR13.6 billion (USD86 million) for the development budget, and PKR5.5 billion (USD35 million) for the recurrent budget, financed by reallocations and funding from foreign grants. In Punjab, reallocations also took place to cover overspends. The supplementary budget, for example, covered PKR5.17 billion (USD32.6 million) for covid-19 response in the health sector.

Health was a ‘winner’ across all provinces, and culture and sports were often a ‘loser’, but elsewhere, ‘winners’ and ‘losers’ from budget reallocations in different provinces varied according to local circumstances.

Health budgets were increased in both provinces in South Africa (Gauteng and Mpumalanga). Another sectoral ‘winner’ in Gauteng was economic development, linked to the Provincial Government’s commitment to the Tshwane Automotive Special Economic Zone, although in Mpumalanga, this sector was cut substantially, along with tourism. Gauteng and Mpumalanga both reallocated substantial funding away from culture and sports. In Pakistan, the only similarity noted was in overspending against the counterfactual in health for both Punjab and Sindh provinces. Other ‘winners’ in the Sindh analysis were local government and food departments, whereas in Punjab education and home affairs departments were ‘winners’. In terms of ‘losing’ sectors, chief amongst these were finance (in both provinces), agriculture (Punjab only), energy and home affairs (Sindh only).

Overall, there were underspends in each of the provinces covered by the study. In South Africa, Gauteng and Mpumalanga provinces had overall underspends of 3.1% and 0.6%, respectively. In Sindh Province in Pakistan the underspend for the recurrent budget was PKR153.4 billion (USD967 million), while for the development budget it was PKR 63.2 billion (USD398 million). The data and KIIs indicated that in provinces, significant underspends were attributed to lower operational costs (office hire, conferences, etc.). In Sindh, the operating underspend was PKR156.2 billion (USD984 million). In Gauteng the underspend on goods and services was ZAR2.1 billion (USD136 million) and in Mpumalanga this amount was ZAR82.7 million (USD5 million). These were costs that would not have gone ahead

due to the covid-19 restrictions that were in place. Each province also sought to limit expenditure on infrastructure projects. In Sindh, on the development side, the biggest underspending against the counterfactual related to allocations for district development schemes (PKR15.5 billion; USD98 million), irrigation (PKR11.3 billion; USD71 million), social protection (PKR11 billion; USD69 million), works and services (PKR5.1 billion; USD32 million) and public health engineering (PKR3.4 billion; USD21 million). In Gauteng Province, one of the largest underspends was in transport infrastructure (ZAR-1,190,692; USD-77,202). In Mpumalanga Province, education infrastructure recorded a significant underspend. As at the federal level, the provinces sought to delay or redirect spending that would have gone on infrastructure (some of which could not go ahead due to covid-19 restrictions) with the aim of moving it to the covid-19 response and other areas of overspending in the provincial budgets. According to the KIIs, as seen in this study at the national level, provincial governments also sought to limit the recruitment of new staff to save costs.

There were some differences in how and where provincial governments chose to reallocate spending from. Underspends were a significant source from which provincial governments drew funds for the covid-19 response, but the rationale for their approaches (and the sources of funds) differed slightly. The Provincial Disaster Management Act enabled, in theory, the provinces in Pakistan to draw on foreign grants to support disaster response. In Punjab, however, the Provincial Disaster Management Fund had not yet been fully operationalised when the pandemic struck. In Sindh, the government could draw on the Provincial Disaster Management Fund, which was in receipt of World Bank funding. This resource was diverted to the covid-19 response but, crucially, this drew funds away from other potential disaster responses, notably flood response. In South Africa funding through the equitable share was reduced (with higher costs on public health spending expected instead), but central government provided conditional grants for covid-19 response. Reallocations happened within the equitable share at sub-programme level, as outlined below.

The picture changes at the sub-programme level, suggesting that the impacts of funding cuts did not necessarily apply by sector. In Mpumalanga there was increased health expenditure for the provision of PPE for health workers, the appointment of key personnel in the health sector, preparing and equipping health facilities for covid-19, and ensuring maximum functionality of the provincial health system. However, there were large reductions in spending on sub-programmes in health, such as the reduction in facilities spending. The picture was similar for education. The increased spending by the Department of Education was to retrofit schools so that they could reopen while complying with covid-19 regulations. Education, however, had an overall underspend because of a reduction in costs for infrastructure development (this funding was diverted to adapting schools so that they could comply with social distancing requirements, etc.). The picture was similar in Gauteng Province, with increased spending on health programmes, such as health administration, and education programmes, such as examinations, but with some programmes showing significant underspends, such as health sciences training and education administration. These examples illustrate that while the opportunity cost of the impact of sector-level budget reallocations can be calculated, the picture is more nuanced when looking at the individual components of each sector.

At subnational level, different provincial governments have different powers and abilities to access external funding, leaving some more reliant on the federal or national level funding. Whereas federal or national governments were able to access domestic financing as well as directly apply for international financing, provincial governments are more restricted in their options, leaving budget reallocations and funding from higher levels of government as the main key fiscal tools to finance the response to covid-19 at provincial level. However, ability to raise funds at the provincial level does differ even within a country. In Mpumalanga, South Africa, the government funding depended on their own revenue, the equitable share and conditional grants from central government. However, Gauteng (a more affluent province) was also able to raise funds through 'financing from province' in addition to central government funding. In Sindh, Pakistan, the province had the ability to formally raise funds through foreign grants, in addition to central government funding and provincial revenue collection.

2.9 What does this tell us about budget reallocations as a DRF instrument?

Budget reallocations are a widely used DRF instrument.

They were an essential tool in financing the covid-19 response in each of the countries in this study, and further afield. A number of cross-country surveys have documented the centrality of reallocations as a covid-19 management tool, with budget deviations increasing by an average of 54% in 2020 compared to 2019, according to a survey by the PEFA secretariat (PEFA 2022), and CABRI reporting that 73% of African countries used at least one supplementary budget in response to the pandemic in 2020 (CABRI 2021).

Speed is the primary advantage of budget reallocations.

In all the countries reviewed, budget reallocations were the quickest of the DRF instruments deployed to respond to the covid-19 pandemic (with the caveat that none of the study countries had operational and sufficiently capitalised dedicated disaster funds). This speed makes reallocations particularly useful for financing the immediate response in the early stages of an external shock, and potentially acting as a useful stopgap before additional financing becomes available. Virements tend to be quicker, but less flexible, than supplementary budgets, and in countries where virement regulations are particularly restrictive, may not offer the wholesale change to budgets required following an emergency. Workarounds may exist, like in Ethiopia where virements are channelled through the contingency budget to circumvent some of the restrictions; alternatively, some countries can fast-track the supplementary budget preparation and approval process in a crisis, so they are not much slower than virements.

Budget reallocations are largely non-transparent.

Compared to other risk retention and risk transfer instruments, it is very difficult to know exactly where budget reallocations are diverting funding from and to, and the complexity of the methodology used in this study is testament to that. It is not inconceivable that a government could keep a transparent record of virements, or that a supplementary budget could be published with a detailed account of how it differs from the original budget passed, and why. Such a record did not exist in the study countries, and this is not unusual. Information on what reallocation decisions are made, and why, is often not documented during a crisis, and is forgotten soon thereafter, which is why there has been limited research in this area in the DRF or PFM literature. While national

auditors have undertaken reviews of covid-19 spending, this is often after the fact (with the exception of South Africa's Auditor General who undertakes 'real-time audit').

Budget flexibility comes with a greater risk of misappropriation and wastage. As controls are relaxed in order to be able to urgently spend funds, there are increased risks of fraud and corruption, as well as a greater likelihood of wastage derived from inefficient expenditure or procurement that does not result in the best price-quality ratio for public spend. CABRI (2021) notes the reduced public consultation transparency associated with budget revisions during the covid-19 period; and this was the case in two of the countries in this research (Albania and South Africa). Some countries outside our research took measures to strengthen budget accountability in the pandemic: for example, Brazil and Honduras developed covid-19 spending online portals to enable the public to track covid-19 expenditures (IMF 2020a).

The appropriate level of budget reallocations is context specific. In general, excess reallocations are indicative of weaknesses in budget planning; however, in an emergency context they are vital to finance response and recovery measures that help stem the overall impact of the emergency. An appropriate level of budgetary reallocations will vary according to country-specific factors, such as the level of financial constraint (and ability to access markets), PFM rules (for example, degree of flexibility to reallocate budget envelope along the year, parliamentary scrutiny requirements), or capacities to accurately anticipate needs. The IMF guidance on permissible levels of budgetary reallocations recognises that it is a balancing act: insufficient flexibility will be a straitjacket on uncertain liabilities, while too much flexibility will undermine budget credibility (IMF 2020a).

A key determinant of the volume of budget reallocations is a government's capacity to borrow. In Ethiopia, Pakistan and South Africa, fiscal space constraints and debt sustainability concerns meant the governments had to look to the existing budget to finance a lot of the covid-19 response package. In Albania, it was found that budget reallocations were limited due to the extensive borrowing engaged in, and the Albania Ministry of Finance and Economy recognised that, without this, the budget reallocations would likely have been more severe. South Africa, Pakistan and Ethiopia all received

significant concessional support during the pandemic. These cases are illustrative of how the covid-19 crisis worsened a growing debt crisis, especially affecting emerging market and developing economies and made worse by the war in Ukraine driving inflation and rising import prices. Were another disaster to occur in this context (as has been case with the recent floods in Pakistan), it is almost certain that deeper and more costly budget cuts would be required.

The analysis confirms that most budget reallocations are not free, and that above a certain level they impose a significant opportunity cost. The more a government relies on budget reallocations, the more costly they are for each dollar mobilised. Finance ministries can be astute in opting to cut non-viable expenditures first, as these do not impose an opportunity cost, but there is a natural limit to such ‘free’ cuts. After these initial cuts, subsequent cuts incur an economic cost that increases at a growing rate with the volume of cuts needed.

The cost of budget reallocations is driven by some discernible factors; besides the volume of cuts themselves, the incidence of budget cuts is important. For example, capital budgets are known to be vulnerable to budget cuts because a lot of recurrent expenditure is considered non-discretionary, but the potential returns to capital budgets are higher. This was reflected in the Ethiopia analysis, which used a higher fiscal multiplier for capital spend vis-à-vis government consumption (0.42 versus 0.82). Moreover, different sectors offer different levels of return – as research under the Copenhagen consensus has sought to establish.¹⁶ In addition, the sufficiency of existing levels of expenditure also affects the impact of cuts, on account of diminishing marginal returns to investment, so that cuts to underfunded sectors, or in poorer countries with lower levels of public expenditure, can be more damaging than cuts in countries where public services are generally well-funded. Lastly, it is evident that prioritising cuts to areas of planned spending which are rendered non-viable because of disaster impacts or response measures can reduce the overall impact of cuts, although what that might look like is highly country- and disaster-specific.

Budget contingencies, or reserve funds, can provide a timely source of additional finance without the need to cut funds elsewhere, but these are not always available or of sufficient size, and impose an opportunity cost of their own. With the exception of Pakistan’s national-level fund, none of the Governments in this study had a dedicated disaster fund which they could use to finance covid-19 spending, which probably contributed to the volume of reallocations required. This was not the case globally: for example, Colombia made drawdowns from a range of stabilisation funds at its disposal – including the National Emergency Mitigation Fund, National Guarantees Fund, and Occupational Risk Fund – and used transparent in-year adjustments to appropriate these stabilisation funds for prioritised covid-19 emergency spending (PEFA 2022). The availability and proper management of disaster reserve funds can assist crisis management by serving as fiscal buffers and helping to build the resilience of the PFM system. They also help avoid the need to identify areas to cut in the budget in the midst of the emergency, although resources allocated to a reserve fund incur their own opportunity cost as they are not appropriated to other public services and could potentially lie unused if an emergency does not occur in a particular year. Other countries draw on general budget contingencies – as was the case in Albania and Ethiopia. However, in both instances, the funds were insufficient to finance the covid-19-response, and demonstrated how timing can matter (where an emergency occurs later in the fiscal year, the likelihood that budget contingencies will already be diminished is higher). This should not be interpreted as a justification for ever-increasing budget contingencies; the IMF cautions that a large contingency fund limits a government’s ability to appropriate funds elsewhere, and hence limits the provision of information to parliament and line ministries at the budget approval stage on how the budget will actually be used. Therefore, it is critical to have clear rules and transparency on the triggers for use of the fund and on allocations of money, as well as transparent reporting. Pakistan’s plethora of off-budget funds, and Ethiopia’s limited oversight of and parameters around the contingency budget, are practices that could be strengthened.

¹⁶ The Copenhagen consensus was an initiative that ranked areas of investment needed to enhance global welfare, based on an assessment of the costs and benefits of the solutions proposed. Top-ranking areas for investment included early childhood nutrition, malaria, immunisation, and deworming.

Few governments have explicit frameworks for approaching budget reallocations in crisis contexts, despite this practice being widespread. While virements and supplementary budgets are commonplace budget management tools, frameworks to guide the redistribution of resources were not formalised in any of the four countries in the study. The ministries of finance were found to apply implicit as opposed to explicit reprioritisation criteria, largely developed in the midst of the emergency (although past experience in crisis budget management would have certainly been brought to bear). The study countries are not outliers in this regard: a literature review informing the study design could not identify any explicit publicly available frameworks for reallocating budgets in the wake of emergencies.

During a crisis, strong direction from the centre of government over the budget reallocation is an asset. In Ethiopia, Pakistan and Albania, the ministry of finance (or equivalent) retained substantial control over budget processes throughout the pandemic. This is a practical solution to the need to respond quickly to political direction. Regardless of whether the budget process is usually top-down or more bottom-up, the IMF recommends that ‘clear political guidance and consensus will be needed from the outset [of a crisis] on the overarching goals of the budget process. This could mean a more prominent role for the Prime Minister’s Office or special Cabinet committees, in conjunction with the ministry of finance, in setting goals and ensuring collective ownership’ (IMF 2020a). Other countries outside our research set sought to engage more directly with line ministries and local governments throughout the crisis, including through the establishment of multisectoral committees with special powers to lead and monitor the covid-19 response and make decisions regarding resource allocations. Within Africa, this was the approach applied in Benin, Comores, eSwatini, Guinea, Mozambique, Nigeria, Seychelles, Chad and Togo (CABRI 2021). Albania adopted a pragmatic approach, gradually increasing the engagement of line ministries more with each successive supplementary budget, as the outlook became clearer and time pressures eased somewhat.

17 See for example, GFDRR and World Bank Group (2014), Goes and Skees (2003), Clarke and Mahul (2011), and Clarke et al. (2016).

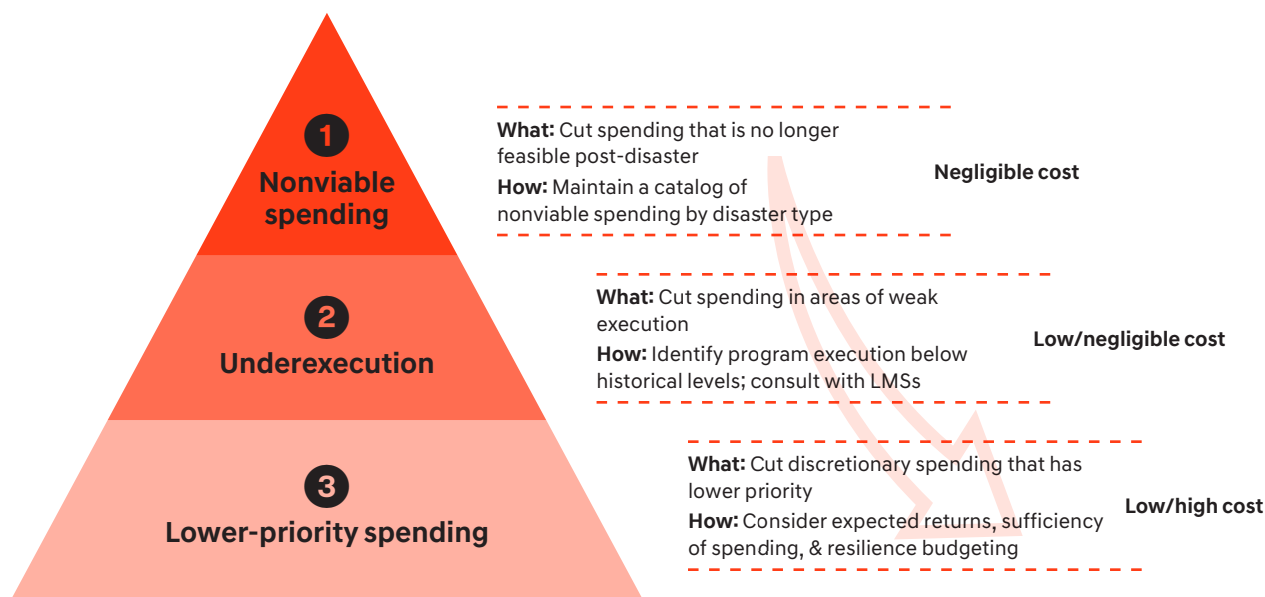
2.10 Recommendations

The following recommendations were proposed across multiple of the country studies or were taken from a single country study but are deemed to have wider relevance. They are targeted to governments, their development partners, and research institutions, as specified.

1. *(To governments)* **Develop an ex-ante framework for reconfiguring budgets in the wake of a disaster**

Pre-arranged financing has the potential to facilitate rapid response, increase cost effectiveness, and facilitate decision-making.¹⁷ Budget reallocation is an ex-post financing instrument that offers quick cash to governments at the early stages of a crisis, acting as a useful stopgap before additional financing becomes available. There is, however, a cost to this type of instrument, as this research makes clear. But such costs can be minimised if budget reallocations are viewed more as an ex-ante financing tool, and if a framework is established before a disaster occurs that sets out where budget resources could be freed up under different disaster scenarios (linked to expected costs modelled in a fiscal risk statement, where available), in order to limit associated costs. Such an approach could help avoid recourse to indiscriminate across-budget expenditure cuts and would minimise the unintended negative consequences from delayed or cancelled expenditures. While such a framework would be country-specific, the Albania research suggests a framework which could be a starting point for other countries too. The framework is illustrated in the figure below. As a first port of call, it recommends that countries iteratively identify any non-viable expenditures, which can potentially be done through exercises such as rapid post-disaster assessments or through the use of satellite technology. The framework suggested by the Albania research recommends maintaining a dynamic record of non-viable expenditure for different disaster types. Once that is exhausted, the framework suggests the ministry of finance should reallocate funds from areas where execution performance is slow, as this will ensure that funds do not sit idle when finances are scarce. The third area to target is lower-priority spending across discretionary spending areas. It is more complex to define this area, but information about sectoral priorities, expected returns on public investments, and the underlying sufficiency of sector budgets, can help inform decision makers. This assessment can, to a degree, be done in advance of a disaster occurring, but will need to be revised on an ongoing basis as expenditure priorities change over time as a crisis evolves.

Proposed framework for disaster-related budget reallocations in Albania



Source: World Bank (2021). Note: LMAs = line ministries and agencies.

2. (To governments and development partners) Increase transparency in budget reallocations

Governments have varied amounts of discretion around budget reallocations, and, typically, parliament and the citizens are provided with limited information about them, and sometimes only after the fact. Ideally, more of this could be arranged ex-ante (see Recommendation 1), but, in addition, more detail on how budgets have been reallocated should be provided after the fact, and the rationale for these changes, would improve transparency and accountability, and would improve the efficacy of the ex-ante framework over time. This requirement and process could be codified to establish expectations and transparency of process, perhaps through or in conjunction with the work of the audit office. Moreover, improved transparency and accountability in relation to international crisis financing flows could help ensure external financing is distributed in a less discretionary and more equitable manner.¹⁸

3. (To governments) Develop rules to guide the appropriation to, and use of, general contingency funds

In a number of the study countries, a general budget contingency budget was unavailable or too depleted to make a meaningful contribution to financing the covid-19 response, suggesting that there is a need to calculate the appropriate contingency allocation amounts, and to develop rules to guide their usage, such as specifying eligible uses or earmarking a proportion for disasters and replenishment.

4. (To governments and development partners) Where appropriate, expand and diversify the risk financing instruments

Deepening the understanding of the government's liabilities (explicit and implicit) during and after a disaster will help to clarify how much additional financing could be required from the government (and other sources) at different stages of an emergency. From this

18 See Yang et al. (2021) for more on this point.

starting point, governments can tailor a range of financing instruments that are proportionate to the needs and costs of disasters, potentially limiting the volume and cost of budget reallocations. Additional instruments could include establishing disaster reserve funds, or in some cases (like Albania and Pakistan) capitalising reserve funds which have been legally established but are currently dormant.

5. (To research bodies and governments) Continue to fill research gaps on the topic of budgetary financing instruments for disasters

While this research makes a first contribution to increasing understanding of the role and cost of budget reallocations in financing disasters, more could be added through research in other country contexts and for different disaster types. Moreover, there remains a relatively limited understanding of how to best use budget reallocations – which are a government’s quickest source of financing, in most cases – in the event of a pandemic or other crisis. Other priorities for the research agenda in this area are discussed in Section 3.6.

3

METHODOLOGY

3.1 Overarching approach

The overarching question this research seeks to answer is:

How did governments use budget reallocations as an instrument to finance the covid-19 response, and at what cost?

Informing this are three subsidiary research questions:

i. How did public expenditure deviate from existing plans, on account of covid-19?

ii. What formal laws and processes govern budget reallocation decision-making? Were they followed in the wake of covid-19? What informal criteria guided reallocation decision-making?

iii. What has been the broader impact (in terms of opportunity cost) of these budget reallocations?

In order to answer these research questions, a four-pillar methodology was developed, as set out in Figure 4. The rest of this section details the methodological approach to each pillar, in turn.

Figure 4: Methodological pillars

1. Counterfactual	2. Expenditure Analysis	3. Procedural analysis	4. Impact analysis
<ul style="list-style-type: none"> ● Best-guess estimation of public expenditure outturns in the scenario that the epidemic had not occurred. ● The outturns counterfactual can be established through utilising the original budget (pre-pandemic) and assessing deviations expected in “normal” years. 	<ul style="list-style-type: none"> ● Comparison of actual expenditure against the counterfactual. ● Focus on the incidence of spending cuts, identifying the ‘winners’ and ‘losers’, capturing changes on a sectoral basis, and in administrative, economic and functional/ programmatic classifications. 	<ul style="list-style-type: none"> ● Review of the legal and institutional framework, alongside any guidelines on budgeting and expenditure procedures. ● KIIs with Government on the processes by which budget allocations decisions are made, mapped across the emergency cycle. 	<ul style="list-style-type: none"> ● Economic analysis of the estimated impact of cut or delayed expenditures in terms of social and economic returns forgone. ● Analysis at the aggregate/sectoral level, and for a few key budget programmes for illustrative purposes.

Source: Authors.

3.2 Approach to Pillar 1: Counterfactual development

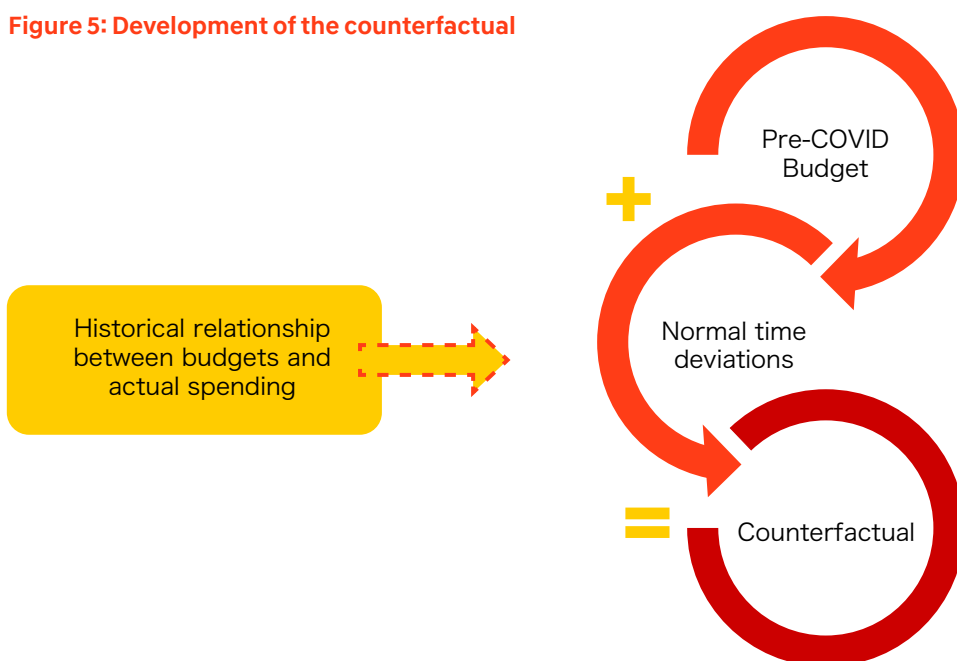
The counterfactual for this piece of analysis reflects the best-guess estimate of expenditure composition in a world in which the covid-19 pandemic never occurred. In order to conduct this type of analysis, the first step under Pillar 1 was to develop an estimate of what spending might have looked like in the study countries had the pandemic not occurred – termed the spending counterfactual. This was needed because it offered a baseline against which actual expenditure could be compared, in order to isolate the estimated impact of the pandemic.

The chosen starting point for developing the counterfactual was the approved pre-covid-19 budget in each country. Government spending in ‘normal years’ is, to varying degrees, relatively predictable (from an annual perspective) since state budgets provide a roadmap for what spending is meant to look like; this roadmap is then signed into law, in most countries. Every country is different, as guided by their PFM laws, but spending is typically unable to deviate substantially from plan (the budget) without approval from the finance ministry, and in some cases the legislature. This means that budgets provide a reasonably good starting point for estimating actual expenditure at the end of the year.

Adjusting pre-covid-19 budgets for ‘normal-time’ deviations is essential to avoid over-attributing expenditure deviations to the effects of the pandemic.

In reality, even in years not affected by an emergency, expenditure outturns will never match budgets perfectly. This is because of imperfect information at the stage of budget formulation, weak budgeting capacity, and varying capacity of ministries to spend their budgets as planned. Usually, patterns of under- and over-execution occur within a given government budget across multiple years. For example, in many countries, the capital budget is less well-executed than the recurrent budget because of the complex nature of the projects, diverse number of inputs, challenges in forecasting costs, and frequent use of subcontractors. Through analysing past budget and spending data, this research aimed to identify these trends, termed normal-time deviations, and to apply them to the 2020 pre-covid-19 budgets, forming the counterfactual. The extent to which different countries’ expenditure data demonstrates clear patterns and trends varies, and so the research teams conducted rigorous quality assurance in regard to the modelled normal-time deviations prior to developing the counterfactual and used KIIs to validate it.

Figure 5: Development of the counterfactual



Box 3: Years of analysis

Although the covid-19 pandemic impacted countries across the globe over multiple years, the analysis has a narrower timeframe. The starting point for building the counterfactual for each country is the pre-covid-19 budget for 2020, as at the time it was formulated covid-19 was not a major concern outside of China.

South Africa offered the most straightforward case study, with the pandemic hitting just as the 2020/21 budget was approved in March (and instantly required a supplementary budget), meaning the original budget for 2020/21 (running from April to March) is a very good starting point, unaffected by in-year policy changes not related to the pandemic (since it had not been implemented yet).

Albania, Ethiopia and Pakistan were more challenging, with fiscal years running from January to December for Albania, and from July to June for Ethiopia and Pakistan, meaning that the first year of the crisis falls across two budget years – 2019/20 and 2020/21. When the 2020/21 budgets were formulated, the pandemic was already a known risk and the budgets included spending on various response and recovery measures

and cannot therefore be deemed a pre-covid-19 baseline. As such, the 2020/21 budget period and beyond is not included within the analysis due to the lack of an appropriate (pre-covid-19) baseline. Assuming budget reallocations started from around March 2020, this means that the period of impact under consideration is 12 months in the case of South Africa, 10 months in the case of Albania, and four months for Ethiopia and Pakistan.

While it is technically feasible that medium-term expenditure framework budgets (produced prior to the pandemic) could be used to form the basis of a medium-term counterfactual, in reality in most developing economies medium-term spending plans are rarely a reliable guide to future budgets, with annual budgets the main driver of spending. Furthermore, medium-term plans are usually presented in much more aggregated terms, as a result of uncertainty, and as such it becomes challenging to develop a robust counterfactual for any period ahead of the latest pre-covid-19 budget. The table below presents the time period the research covers for each country case study.

Country	Year of analysis	Period of covid-19 impact
Albania	2020 (January - December 2020)	March - December (10 months)
South Africa	2020/21 (April 2020 - March 2021)	April - March (12 months)
Pakistan	2019/20 (July 2019 - June 2020)	March - June (four months)
Ethiopia	2019/20 (July 2019 - June 2020)	March - June (four months)

In order to calculate what might be considered normal-time deviations between budgets and final spending outturn, a number of approaches were explored. These are as follows:

- **The median of past years' budget execution rates, as was adopted in Pakistan, Ethiopia and Albania.** The budget execution rate is calculated as simply the difference between the budget and outturn, in percentage form. A zero value implies perfect

execution, while a negative number demonstrates underspending and a positive number demonstrates overspending. In order to scale this up and to form a picture of the trend, a simple average of the historical data can be taken. The median is a useful tool if a reasonable time series is available as it excludes outliers which can bias the average. While it only utilises the middle subset of the data, this helpfully excludes one-off events that are not representative of normal trends. The benefit of taking the median budget execution ratio

as the normal-time deviation is that it is very simple and transparent. The simplicity, however, also results in its main flaw: taking only a point estimate hides the variation in the data and may not be picking up a real trend. Some of these pitfalls can be avoided, to a degree, through manual review/quality assurance. Although government datasets are too vast to allow for trawling through each and every individual budget line to determine if each calculated average normal-time deviation is a sensible one, the research team built rules into the data to facilitate an appropriate level of scrutiny. For example, analysing deviations that fall

above or below a certain limit, trialling different time periods across which deviations are calculated, or following different approaches for newer programmes which are less likely to demonstrate clear trends. In Example 4 in Table 8, the mean is positive, driven by the large overspend in 2015, whereas the median is negative, taking the average of the two middle numbers. However, looking at the data, neither option is convincing and therefore alternative approaches should be considered for budget lines like these, if the budget line is large enough to warrant attention.

Table 8: Illustrative budget execution ratios

	2014	2015	2016	2017	2018	2019	Mean	Median	Preferred approach
1. Budget execution ratio	-9%	-30%	-15%	-11%	-2%	-14%	-14%	-13%	Median
2. Budget execution ratio	10000%	10%	25%	5%	12%	78%	1688%	19%	Median
3. Budget execution ratio					-50%	-20%	-35%	-35%	Mean - or develop a rule
4. Budget execution ratio	-100%	587%	-80%	-70%	4%	2%	57%	-34%	Neither - rule required

- **The median BPI, as was adopted in the South Africa study.** The budget execution ratio has one unfortunate property and that is that if there is significant overspending, by more than the original allocation, then the value of the ratio can become very high. The same does not apply to underspending, which can only fall to -100, so results are not symmetrical. This can be problematic when using summary statistics like the average and the variance. The South Africa study addressed this by using a statistic termed the BPI. The index is:

$$BPI = \frac{(audited\ outcome - appropriation)}{(audited\ outcome + appropriation)}$$

The index is zero when the expenditure outcome is exactly the same as the budgeted appropriation. When there is underspending, the index is negative, and a positive value indicates overspending relative to the

allocation. The index is quite similar to a percentage change calculation, except that instead of scaling the result to one part of the calculation (in our case the budgeted appropriation) it is scaled to the sum of both components. This means that the index cannot result in very large results. The result will always lie between -1 and 1. To model normal-time deviations, the South Africa study calculated the BPI for each line of spending. For each fiscal year of the eight fiscal years in the database, it took the median of these, and converted this into the Rand counterfactual by applying it to the 2020/21 budget amount:

$$ProjectedExpenditure_{2020/21} = FinalAppropriation_{2020/21} * MedianBPIIndex$$

Table 9 contains a worked example of the methodology.

Table 9: Illustrative BPI

Budget line	2017/18			2018/19		2019/20			Median BPI	2020/21	
	Final appro.	Audit outcome	BPI	Final appro.	BPI	Final appro.	Audit outcome	BPI		Final appro.	Counterfactual
Basic education	64,387	64,864	100.4	68,026	99.4	72,084	78,234	104.1	100.4	73,355	75,890

Alternative approaches, including the use of confidence intervals and machine learning techniques, were trialled but ultimately not adopted because of insufficient data points or predictive capacity. For this reason, they are not discussed here. A short summary of these approaches is provided in Annex A.

The box below details the number of years considered for the estimation of normal-time deviations in each study country, and the level of the budget at which they were applied. In general, more years is better as it gives a truer

picture of developing trends. However, practical considerations around data availability, changing formats, and accounting structures, as well as the necessary exclusion of other years with prominent disaster events, limited the number of years' data which could be used. The box also sets out the level of budget disaggregation at which the normal-time deviations were assessed. It is generally much easier to identify a trend in the data when the data is highly aggregated; however, focusing on budget aggregates risks overlooking changes that occurred within and between individual sectors or programmes.

Box 4: Time periods used to estimate normal-time deviations and disaggregation in the counterfactual

In **Pakistan**, at the **federal level**, normal-time deviations were calculated from six years of data, from 2013/14 to 2018/19. Going back any further was not feasible as the standardised Chart of Accounts was introduced in 2009 and was slowly implemented over the next three years. In **Sindh and Punjab** normal-time deviations were calculated from two years of data, from 2017/18 to 2018/19. This short time period was stipulated due to a change in reporting: the budget execution reports prior to 2017/18 contained only high-level information on expenditures. In the absence of operational programme budgeting, the counterfactual was developed down to major object classification level (13 at the federal level, 12 at the provincial level), for each ministry (86 in total at the federal level, 46 at the provincial level) and minor function.

In **South Africa**, normal-time deviations were calculated from eight years of data, from 2012/13 to 2019/20. The national-level counterfactual was

developed for each line ministry (40 in total), by sub-programme (of which there were c.1,700), broken down by economic spending classifications.

In **Ethiopia**, normal-time deviations were calculated from four years of data, from 2015/16 to 2018/19. Data prior to this period was not accessible in the form required. The counterfactual was developed for each line ministries and public institution (122 in total) at the programme level (of which there were c.900), grouped by the economic classifications: capital and recurrent. Since programme budgeting is still under development in Ethiopia, normal-time deviations at sub-programme and project level are too unstable.

In **Albania**, normal-time deviations were calculated for six years (2014–2017) to exclude the impact of the earthquake in 2019. Deviations were calculated for each ministry, broken down by programme and the four major economic expenditure categories.

3.3 Approach to Pillar 2: Expenditure analysis

The expenditure analysis encapsulates the second pillar of the analysis, focusing on answering the first research question: how did public expenditure deviate on account of covid-19? This aspect of the analysis involved comparing detailed outturn data to the counterfactual established under Pillar 1, revealing the incidence of spending cuts across the year of analysis. Both the sector ‘winners’ and ‘losers’ were identified through this stage, tracking how and when money moved between budget lines. The level of disaggregation (i.e., ministry level, programme, sub-programme, or project) differed by country, driven by the ease of formulating normal-time deviations, among other factors. The adjustment of the counterfactual for normal-time deviations meant that no further assumptions or manual adjustments were required at this stage; the analysis in effect isolated the estimated covid-19-related deviations.¹⁹

3.4 Approach to Pillar 3: Procedural analysis

Pillar 3 of the analysis sought to understand what informal criteria guided decision-making around budget reallocations during the covid-19 pandemic, and to what effect. While the quantitative expenditure analyses were designed to reveal the extent to which

underspending occurred in the year of analysis, the explanations and logic behind such underspends cannot be drawn out from examining the numbers only. Qualitative analysis was required to understand the processes around how, when and why budget reallocations were made, alongside the potential impact (moving on to Pillar 4). Document analysis and KIIs with government officials were the main tools that the research relied on to understand how the process worked in practice.

In each country, the approaches used took on a slightly different shape, but they were guided by the phases of the emergency cycle of the covid-19 crisis: preparation, response, and recovery for the year of analysis. The KIIs differed in each country study; however, the objectives remained the same – namely, to understand the budgetary decisions that were made. Each set of questions was guided by what the data was indicating or highlighting at that point in time. Therefore, rather than suggesting specific questions for the KIIs, Table provides an indication of key areas, relating to the three phases. KIIs that occurred following the expenditure analysis were guided by focus questions on areas of identified underspend (see Table 10).

Table 10: Guidance for KIIs

Key lines of inquiry, by phase
Phase: Preparation
Determine: <ul style="list-style-type: none"> ● at what point covid-19 became a concern for your ministry/department (what triggered this and what marked it becoming part of their agenda) ● if and how financing needs/requirements were determined, and if and how these additional financing needs were met (if any were identified); for this, probe on: <ul style="list-style-type: none"> ○ who was involved in decision-making ○ which decisions were made by others/informed by guidance, and which decisions they had autonomy over ○ what factors/considerations were used to guide decisions under their control ● the timing and sequencing of such events related to additional financing needs, and how they were financed. ● the extent of coordination between national and subnational governments, and between different parts of government at their level.
Phase: Response

continued →

¹⁹ Other shocks that occurred throughout the year are also included in this estimate. While this is not deemed problematic, since the research aimed to understand the impact of budget reallocations as a result of shocks, in some countries caution will be required in associating reallocations with specific shocks.

Key lines of inquiry, by phase

Determine:

- how financing needs/requirements were determined (the actors involved, the guidelines and/or criteria followed)
- how additional financing needs were met (sources of financing, guidelines/criteria involved)
- the impact of reduced financing (if any)
- alternative financing options that were considered, and what informed final choices
- what criteria informed decision-making around which expenditures were cut and which were protected
- the timeliness of the decision-making process (how decisions were made in relation to the progress of caseloads/developments in the progression of the pandemic)
- the extent of stakeholder involvement in decisions around budget reallocation
- whether formal processes were followed, or whether derogations were permitted/necessitated, and the nature of these, or whether it was more informal, and, if so, the implicit criteria/considerations applied
- the extent of coordination between national and subnational governments and between different ministries, departments and agencies
- whether government considered timings on restarting paused projects/programmes, and, if so, using what criteria?

Phase: Recovery

Determine:

- the extent to which covid-19-specific policy measures were rolled back as a result of a lack of financing; and how decisions were made
- how financing needs/requirements were determined (the actors involved, the guidelines and/or criteria followed)
- how additional financing needs were met (sources of financing, the guidelines/criteria involved)
- the impact of reduced financing (if any)
- alternative financing options that were considered, and what informed final choices
- what criteria informed decision-making around which expenditures were cut and which were protected
- the timeliness of the decision-making process
- whether formal processes were followed, or whether derogations were permitted/necessitated, and the nature of these, or whether it was more informal, and, if so, the implicit criteria/considerations applied
- coordination between national and subnational governments, and between different parts of government
- whether governments considered timings on restarting paused projects/programmes, and, if so, using what criteria?

Table 11: Guidance for questioning post-expenditure analysis for affected line ministries

Underspending
<ul style="list-style-type: none"> ● Present the overall findings, and zoom in on the specific sector ministry. ● Ask the interviewee if the cuts align with their recollection of events; if not, ask which programmes and projects they believe have been negatively affected by budget reallocations; inquire about the nature of the project and the rationale behind the reallocations. ● Inquire as to whether projects were cancelled or delayed? If delayed, inquire about the estimated period of delay.
Underspending
<ul style="list-style-type: none"> ● For programmes or projects that suffered from budget reallocations, inquire whether and how the non-financial performance of these projects has been impacted. ● Apart from underperformance of outcomes, determine if there were any other costs associated with these cuts (e.g., contractual penalties or degradation of assets). ● Inquire whether and how cuts might have impacted the realisation of the ministerial/sector strategic plans. ● Sufficiency of spending: inquire as to what could have been achieved with additional financing, if that financing had been forthcoming in the year in question.

3.5 Approach to Pillar 4: Impact analysis

In order to quantify the opportunity cost of budget reallocations associated with covid-19, the public expenditure that did not occur needed to be valued. The assessment of actual expenditures compared against the constructed counterfactual demonstrated which budget programmes, in which sectors, were under-executed on account of covid-19: i.e. it identified which budget lines were relative ‘losers’ in the reallocation process (and, by comparison, which were ‘winners’). This information – concerning the extent and nature of budget reallocations – on its own made a valuable addition to the understanding of the public expenditure impacts of disasters in the study countries. However, this research set out to take the analysis a step further and to understand the consequences of the reallocations, i.e. what value was forgone or delayed, as a direct result of covid-19 budget reallocations. By doing so, it aimed to contribute to a fuller understanding of the relative costs of different DRF options, where one way of paying is through budget reallocations (and others might include borrowing or insurance etc).

Opportunity cost is defined as the loss of other alternatives when one alternative is chosen. In this context it is used to mean the losses associated with forgoing certain budgeted expenditures, in order to

reallocate the funds for covid-19 preparedness, response or recovery, or to account for reduced fiscal space brought about by the pandemic. In plain terms, the opportunity cost of budget reallocations is a measure of the cost to economic output of not funding the thing that the budget was originally intended for. It includes the value of the money cut, as well as the value of the returns forgone as a result of the cut.

To analyse the losses from forgone expenditures, one needs to quantify the value of that expenditure, had the spending gone ahead. Assessing the benefits accruing from public expenditure is not straightforward, and valuing public expenditure which did not take place presents additional challenges. In valuing private expenditures, the purchase price of the marginal unit – that is, the marginal cost of expenditure – is a readily available and accurate indication of marginal value. The ability to value public expenditures, by contrast, is hindered by the absence of competitive markets for the goods and services governments usually provide. For example, this is the case for public goods (such as national defence), and goods with substantial externalities that are not reflected in their price (such as a school, the value of which is more than the price of the building and the salaries of teaching staff).

Box 5: Covid-19 related expenditures

This research did not aim to estimate the returns associated with the covid-19-related expenditures, or to calculate whether the net returns from reallocating funds were higher than those from not doing so. The decision to allocate funding to covid-19 measures is taken as given, and the focus of this analysis was to quantify the cost of financing those additional measures through reallocating funds.

For this reason, limited attention was paid to which spending lines were given additional funding in the reallocation process. However, the South Africa and Pakistan studies did quantify the impact of net changes in expenditure against the counterfactual, which incorporates areas of positive variance.

Efforts to assess the opportunity cost of budget reallocations are partial and contestable but are an important first step to filling this gap in the literature.

The methodology sets out various means of arriving at reasonable estimates, which can be illustratively useful for governments and can encourage further research in this area.

3.5.1 Determining viable expenditure

Ideally, the impact analysis should only seek to include cancelled or postponed expenditure that would have been viable, had additional financing been available.

The covid-19 emergency is perhaps unique in the way it led to government restrictions on economic and social activity, which may have rendered some expenditures temporarily valueless on account of being unviable given the restrictions. In the Albania and South Africa studies, non-viable expenditures were identified through KIIs, and were excluded from the impact analysis. In South Africa, interviews identified a number of big-ticket underspends where the planned investments were non-viable, including construction expenditure (as this was prohibited during the first lockdown). In the case of Albania, assumptions were made (based on interviews) to estimate a percentage of non-viable expenditure for each high-level economic category, including, for example, 10% of the personnel underspend (as covid-19-induced recruitment freezes were in place for a brief period). The Ethiopia and Pakistan studies did not extract non-viable expenditures from the impact analysis.

The impact analysis was conducted at economy and project levels. Economy-level impact analysis (as was carried out in all four studies) provides a headline number of the impact of cuts; however, it is less precise as more

assumptions are required. Focusing on the programme or project level (as was done with illustrative examples in Albania and Ethiopia) provides much greater insights into the on-the-ground impact of cuts, but cannot be feasibly scaled to arrive at an aggregate impact.

3.5.2 Valuing public expenditure at the economy-wide level

At the economy-wide level, two methodologies for assessing impact were used across the country studies.

The fiscal multiplier was used to give a single, headline figure for the cost of reallocations in monetary or GDP terms in South Africa, Ethiopia and Pakistan. This multiplier is a measure of the short-term impact of discretionary fiscal policy on output, defined as the ratio of a change in output to the change in spending/taxation. The value of the multiplier is sensitive to a range of factors, including trade openness (higher reliance on imports – lower multiplier), labour market rigidity (less rigidity – lower multiplier), the size of automatic stabilisers (as these could offset some of the impact of the multiplier), monetary policy (where it is looser and/or not near a zero bound – lower multiplier), the exchange rate regime (flexible – lower multiplier), debt levels (more public indebtedness – lower multiplier) public expenditure management performance (greater inefficiency – lower multiplier), and the timing of the economic cycle (expansionary phase – lower multiplier) (Batini et al. 2014). Given these factors, a wide variation of estimates of the multiplier exist for any given country – sometimes varying so much as to differ in sign. The research teams reviewed various estimates and employed the most recent one, unless there was reason to warrant an alternative estimate.

Box 6: Fiscal multiplier estimates

In **Ethiopia**, two fiscal multiplier estimates were used. Firstly, a range of 0.21–0.624 was applied to the aggregate under-expenditure under the ‘the bucket approach’. The IMF approach was applied separately to capital and recurrent expenditure, with multipliers of 0.82 and 0.42, respectively, used.

In **South Africa**, 12 distinct estimates for the fiscal multiplier were reviewed, and the most recent value,

1.2, was used, because of its recency and because it was estimated during a slowdown, which is useful given the fact that Covid-19 lockdowns caused a severe recession.

In **Pakistan**, a fiscal multiplier for development spending of two was used, as it is the only available estimate from a credible source that has also been used by a government for macro fiscal modelling.

An alternative aggregate measure uses the average marginal cost of funds as a means of estimating the marginal value of public finance; this was used in the Albania study and for select sectors in the Ethiopia study. The marginal cost of public funds (MCF) is defined as the social cost of a tax rate increase that raises an additional dollar of tax revenue. Implicit in this is the recognition that taxation is not cost-neutral, but rather exerts a deadweight burden on the economy due to distortions in the labour market, as well as savings and investment decisions. These may be particularly pronounced where a government pursues a progressive tax regime. Furthermore, because tax systems do not operate optimally, the MCF varies between different taxes within a system; however, weighted averages tend to come in above one. For Albania, an average MCF estimate of 1.15 was employed (Auriol and Warlters 2009, 2012; Ensor 2016); for Ethiopia, the MCF estimate used was 1.28 (Auriol and Warlters 2012).

The marginal benefit of expenditure was inferred from the MCF, with adjustments to reflect the sufficiency of expenditure. Where public expenditure is on average roughly at the ‘right level’, it follows that the average marginal benefit of public expenditure would be equivalent to the average MCF (i.e., level of expenditure is optimised). In reality spending is unlikely to be at an optimal level (particularly in developing countries), and the degree of overspending/underspending is likely to differ by sector. By arriving at a measure of the optimality of sector spending levels, sector-by-sector adjustments to the estimate of the marginal value of public expenditure were made. In Albania, the assessment of sufficiency was made through a combination of KIIs with sector programme managers/budget managers, consultation

with non-government actors engaged in public expenditure issues (including an independent fiscal research body of the central bank, and civil society organisations working on public finance issues), as well as a comparison with other relevant country spending patterns (Bulgaria c. 2007, Belarus c. 2016, Georgia c. 2018, Croatia c. 2001 and Romania c. 2006). In Ethiopia, we used the marginal benefit of capital expenditure under three agencies (the Irrigation Development Commission, the Ministry of Science and Education, and the Ethiopian Road Authority), adjusting the MCF estimate through interviews with the relevant ministries, as well as a comparison of the expenditure level with comparator countries (Uganda c. 2019 and Rwanda c. 2020).

3.5.3 Valuing public expenditure at the programme and project level

For a more granular approach, cost-benefit analyses were conducted in Albania and Ethiopia for select investments which were cut/postponed. Cost–benefit analyses aim to put a monetary value on the benefits expected from publicly funded projects or programmes, and to compare these to the costs which were expected to be incurred. Presenting some illustrative cost–benefit analysis-like analyses for a limited number of projects was a tool that was used to understand the potential impact in more concrete terms. It was not possible to conduct these for all affected projects, and selection was therefore based on an assessment of data availability (and feasibility of the analysis), as well as the size of the cuts. Moreover, conducting full cost–benefit analyses from scratch was ultimately beyond the scope of this research. Instead, the studies sought to build on existing government appraisals, reviewed by independent technical experts.

3.5.4 What have we learned from implementing this methodology?

Implementing this methodology has served to demonstrate some of the challenges associated with valuing public expenditure, which are made even more difficult when attempting to value expenditure that did not actually occur. Assumptions were made under every pillar, which compounded each other, so much so that replicating the results would be challenging. However, assumptions were required whatever course was taken. The hope is that by laying out all of the assumptions used in this research, future investigations will be able to add to the diversity of approaches and strengthen the conclusions.

Comparison across countries is not easy, in part because of the divergent approaches adopted at each stage of the methodology. The country studies took different approaches to the calculation of normal-time deviations (budget execution rates versus BPI), to the treatment of non-viable expenditures (attempting to exclude them or not), and to the assessment of impact (fiscal multiplier versus marginal cost of funds approach versus project-level cost–benefit analyses). Moreover, the difference in fiscal years means the period analysed in regard to reallocations varied from four to 12 months. Lastly, the assessment of budget reallocations was dependent on how the budget data was sliced, with more disaggregated analyses necessarily revealing more reallocations than aggregated analyses. The upshot of all of these variations is that cross-country comparison is very challenging.

Nonetheless, this research is valuable for bringing to the fore an otherwise hidden cost of this DRF tool. The findings presented, however preliminary, should enrich estimates of the cost of disasters and inform financing instrument choices. Moreover, the research builds a compelling case for a more strategic approach to budget reallocations, which seeks to limit opportunity cost.

3.6 How can the methodology be strengthened?

This analysis is among the first contributions to research on the impacts of budget reallocations. The approach adopted would benefit from further refining, and the analysis presented in this report can be considered as a first effort, intended to generate discussion and promote further research and a diversity of approaches to

answering the question about budget reallocations.

One gap identified within the existing framework is the absence of counterfactuals for other key variables, notably revenue and borrowing. Constructing a counterfactual for only one piece of the fiscal picture (expenditure) makes it very difficult to comment concretely on the interplay between budget reallocations and borrowing, which is thought to be significant. Further analysis could attempt to develop a more comprehensive set of counterfactuals in order to shed light on the role that different instruments play in responding to a crisis.

The research could be expanded to consider the equity impacts of budget cuts. This could, for instance, overlay the expenditure analysis with household survey data to ascertain which income groups access services that were subject to cuts. Alternatively, it could consider the fate of flagship programmes for poor and disadvantaged groups in the reallocation decisions.

Moreover, the research could usefully compare the value forgone of budget cuts with the value created in new and augmented expenditures. This research did not consider in detail the ‘winners’ from the reallocation process, or question whether the activities financed were the right choices, or interrogate the processes and criteria according to which those decisions were made. Future research could valuably analyse the additional covid-19-related expenditures (across different economic classes of spending), and, in doing so, consider the approach to reprioritisation of the amounts saved through the reallocation process.

In certain contexts, the research could be extended to analyse the medium-term effects of the pandemic. Given the scale and longevity of the crisis, the covid-19 pandemic is likely to have implications for budgets well beyond the single year (2020) considered in this analysis. For a multi-year and sizeable disaster, focusing on the impact of expenditure in one year is likely to result in some gaps. In order to meet the financing needs associated with the ballooning deficit and debt levels, it is likely that there will be budget reallocations across the medium term, as compared to pre-covid-19 plans. In countries where medium-term budgets are sufficiently disaggregated and are a reasonably good predictor of actual spending patterns, it would be feasible to extend this analysis to additional years.

More insights could be gleaned by applying this methodology to other disaster types. Covid-19 is unlike other disasters in many respects. Its global nature means that the study of the budgetary consequences can be usefully compared across countries, but at the same time, some unique aspects of the pandemic may diminish the findings' relevance for other disaster types. For example, the fact that covid-19 impacted the entirety of a country, and, as a result, some governments opted to introduce far-reaching restrictions on economic and social behaviour, meant significant underspending was discounted as non-viable. Such restrictions would be

much less common following a more typical disaster, such as a drought or flood, or during an external economic and financial crisis. Moreover, because so many countries were affected, concessional financing was probably more readily available for covid-19 than it would be for a disaster that hits a single country or a region within a country. Applying this methodology to other disaster types would provide insights into how reallocation decisions are made when options for non-viable cuts are more constrained, and when additional resources need to be channelled to particular locales within a country.



National COVID 19 Vaccine Introduction Launching Program at Eka Kotebe Hospital Addis Ababa, Ethiopi, 2021. Photo: Nahom Tesfaye (CC BY-NC-ND 2.0)

4

● CONCLUSION

This study has sought to address a key gap in the DRF and PFM literatures: namely, the cost of budget reallocations as a tool for financing a public response to disasters. In doing so it aimed to shed light on an indirect cost of disasters. The covid-19 pandemic offered an opportunity to look at how budget reallocations were utilised across four countries in response to a common disaster, over a similar time period.

Despite methodological challenges, the findings of this study clearly indicate that budget reallocations were an important tool for financing the covid-19 response.

Cross-country comparison of the volume of funds reallocated is not easy, because of variations in the methodologies adopted by the four country studies. For example, the assessment of budget reallocations is highly dependent on the level of disaggregation of the budget data analysed, with more disaggregated analyses necessarily revealing more reallocations than aggregated analyses. Moreover, the country studies covered different periods of impact, and also took different approaches to the calculation of normal-time deviations and the calculation of impact. Nonetheless, digging below the aggregate picture, all four study countries registered substantial budget reallocations in order to free up funds to finance covid-19 measures and to make up for the drop in revenues. Across the country study group, covid-19-induced budget cuts (as measured as underspends against the counterfactual) were estimated to add up to 3–7% of annual expenditure.

The analysis confirms that most budget reallocations are not free: above a certain level they impose a significant opportunity cost, and the more a government relies on budget reallocations, the more costly they are per dollar mobilised. Further methodological hurdles arose in undertaking the impact

analysis; however, with impacts of 0.5–2 percentage points of GDP associated with cuts in the order of 3–7% of annual expenditure, the costs were found to be significant. The opportunity cost multiple for budget reallocations was estimated to be in the region of 1.2–1.6, meaning each dollar mobilised incurs an opportunity cost of between USD1.20 and USD1.60. These are costs which are rarely quantified when assessing the cost of disasters, or taken into account when comparing the costs of different financing instrument options; these findings suggest that this is a significant oversight.

The cost of budget reallocations is driven by some discernible factors, with the incidence of budget cuts being of note. A higher opportunity cost is generally associated with cuts to the capital budget, as well as cuts to relatively underfunded sectors. Conversely, prioritising cuts to areas of planned spending which are rendered non-viable because of disaster impacts or response measures can reduce substantially the overall impact of cuts.

A further determinant of the volume of budget reallocations is a government's capacity to borrow. In Ethiopia, Pakistan and South Africa, fiscal space constraints and debt sustainability concerns meant the governments had to look to the existing budget to finance a lot of the covid-19 response package. They did receive significant concessional support during the pandemic, from the IMF, World Bank and other donors, but this was not enough to stave off the need for budget cuts. These cases are illustrative of how the covid-19 crisis worsened a growing debt crisis that is especially affecting emerging market and developing economies. As the debt crisis deepens in many countries, as subsequent disasters occur in this context, it is almost certain that deeper and more costly budget cuts will be required.

Speed is the primary advantage of budget reallocations.

In all of the countries reviewed, budget reallocations were the quickest of the DRF instruments deployed to respond to the covid-19 pandemic (in the absence of capitalised disaster reserve funds). This speed makes budget reallocations particularly useful for financing the immediate response in the early stages of an external shock, and for potentially acting as a useful stopgap before additional financing becomes available.

However, speed may come at the cost of transparency.

Compared to other risk retention and risk transfer instruments, it is very difficult to know exactly where budget reallocations are diverted funding from and to. Information on what reallocations decisions are made and why is often not documented during a crisis, and is forgotten soon thereafter, which is why there has been limited research in this area in the DRF or PFM literature. Because of the lack of transparency, budget flexibility comes with a greater risk of misappropriation and wastage.

While virements and supplementary budgets are commonplace budget management tools, frameworks to guide the redistribution of resources were not formalised in any of the four countries in the study.

The ministries of finance of these countries were found to apply implicit as opposed to explicit reprioritisation criteria, largely developed in the midst of the emergency. To this end, for most countries there would be value in developing ex-ante a framework to guide budget reallocation decisions in the wake of a crisis. This would ideally be accompanied by measures to diversify the risk financing instruments countries have access to, potentially limiting the volume and cost of budget reallocations, as well as efforts to improve transparency and to enhance investment in risk reduction and preparedness.

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● ANNEX A: ALTERNATIVE METHODOLOGIES FOR MODELLING NORMAL-TIME DEVIATIONS

A further option that the research considered for modelling normal-time deviations is utilising confidence intervals, picking up on one of the downsides of using a point estimate and developing a range instead. Confidence intervals (CI) can be calculated as follows:

$$CI = \overline{BER} \pm z \frac{s}{\sqrt{n}}$$

where \overline{BER} is the average of the budget execution (BE) ratio (as above), whereby z is the confidence level value, s is the sample standard deviation, and n is the sample size. The confidence level value makes it possible to set a level of confidence regarding the budget execution ratio for a

particular year's expenditure for a particular line of expenditure being within the confidence interval. It is normal practice in statistics to use a confidence level value of 95%. Using this formula will produce an upper bound and a lower bound, as illustrated in Table 12. Given the distribution of past budget execution ratios, we would expect 95% of future budget execution ratios to fall within this band. In order to develop the counterfactual, the upper and lower bands would be applied to the pre-covid-19 budget values. When comparing the counterfactual to the actual expenditure in the covid-19 year, anything falling outside of this range would be deemed to be a result of the pandemic.

Table 12: Illustrative example of a confidence interval approach

Ministry	Programme	Sub-programme	Average BE ratio	Std deviation of BE ratio	Sample size	Lower bound	Upper bound	Size
Education			101.9	33.2	181	99.6	104.3	4.7
	Admin		101.8	9.8	48	100.5	103.2	2.7
		Sub-programme 1	101.0	3.1	8	100.0	102.1	2.1
		Sub-programme 2	107.3	12.4	8	103.1	111.5	8.3
		Sub-programme 3	95.5	9.3	8	92.3	98.6	6.2
		Sub-programme 4	109.7	14.4	8	104.9	114.5	9.6
		Sub-programme 5	99.4	1.1	8	99.1	99.8	0.7

The main benefit of this approach is that the researcher is able to utilise much more of the data, and to introduce a degree of sensitivity testing, since point estimates are unlikely to provide a complete picture of historical deviations. However, if this approach results in large confidence intervals, it is likely that only a small share of spending within the covid-19 year will fall outside of the bounds, and can be deemed to be the result of the pandemic. This could occur because confidence intervals will pick up the outliers, unlike the median approach. To mitigate this, it is best to utilise confidence intervals at a more aggregated level (i.e., by line ministry only), where

outliers are less likely to be prevalent; or to manually omit outliers. In practice, in this study, with only four to eight years of budget data on which to base the estimates, it was ascertained that there were too few data points for this approach to be adopted.

Both the median and confidence interval approach utilise only a share of the available data. An alternative option was investigated: using machine learning techniques to estimate budget execution ratios. This analysis considered four separate models: linear regression, decision tree, random forest and Catboost. These are described below.

- **Linear regression** is a common approach to modelling the relationship between a series of independent variables and a single dependent variable. In this analysis, we used linear regression to predict the budgetary discrepancy for various government entities. For simplicity, we only considered linear terms in this model, as it is unlikely that including higher-order terms would improve the model's accuracy significantly. For the linear regression model, we used the 'lm' function, which is built into R's base package.
- **A decision tree** is a type of supervised machine learning algorithm that is capable of working with both categorical and continuous variables. It works by 'splitting' the independent variables into a series of sub-categories, analogous to branches of a tree. When the model is being trained, the algorithm chooses which independent variables to split and how, such that it minimises the error between the predicted and actual discrepancy. To make a prediction, the algorithm will then make a series of 'decisions', informed by the data it was trained on, but using the testing dataset. For the decision tree model, we used the 'rpart' function, from the rpart package. (Therneau and Atkinson 2019).
- **Random forests** models are an extension of decision tree models, usually referred to as 'ensemble' learning. In the case of random forests, instead of using a single decision tree, it trains a 'forest' of randomly initiated decision trees (in isolation from each other). Random forests then take the mean of the predicted outcomes across all individual trees to provide a single prediction for a given set of data. Overall, random forests tend to perform better than decision trees because of their ensemble characteristics, but typically take more time to train. To evaluate the random forest model, we used the '#train' function from the caret package, specifying the 'ranger' method.
- Similar to random forests, **Catboost** is an ensemble supervised learning method that is composed of a series of decision trees. However, unlike a random forest model where the decision trees are trained

independently of each other, Catboost trains its decision trees sequentially, learning from one iteration to the next, using a gradient descent algorithm. The use of a gradient descent algorithm in this capacity means Catboost can be classed under a category of algorithms that are referred to as 'gradient boosting machines' (GMBs). However, unlike many other GMBs, Catboost is capable of handling categorical data, which is an important feature given that a large share of government data is categorical in nature. To evaluate the random forest model, we used the 'train' function from the caret package, specifying the 'catboost.caret' method.

Each model was evaluated using the root mean square error (RMSE) formula, shown below:

$$RMSE = \sqrt{\sum(d_{act} - d_{pred})^2}$$

where d_{act} and d_{pred} are the actual and predicted discrepancies respectively. The RMSE is the standard deviation of the prediction error: the smaller the RMSE, the more accurate the model (Moody 2019). However, it is important to emphasise that the RMSE does not describe the model's confidence of a prediction (e.g., confidence intervals).

For this approach to be deemed suitable and for it to have enough predictive power to estimate normal-time deviations, the RMSE results should be significant and around, or less than, 0.1. The approaches were all tested on the data sets for Pakistan, Ethiopia and South Africa. All models for Pakistan were consistently poor at predicting the discrepancy, achieving an RMSE of approximately 0.9. For Ethiopia, the RMSE remained significant, but not as large as that for Pakistan, averaging 0.216. Although the models for South Africa contained the smallest RMSE of all three countries, an RMSE of roughly 0.1, this error is still considerably large given that for at least 50% of all observations, the discrepancy exists between 0.99 and 1. For this reason, these models were not used in any of the country studies.

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Cover image: A building worker on a large construction site in the semi-desert, Klein Karoo, South Africa 2020.
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