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A Primer on Restoring Fiscal Space and Sustainability

Macroeconomics, Trade and Investment

A Primer on Restoring Fiscal Space and Sustainability

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A Primer on Restoring Fiscal Space and Sustainability

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Paolo Di Lorenzo, Eric Anthony Lacey¹

Abstract: This paper presents several key messages on fiscal consolidation. The paper begins by discussing the motivations, timing, design, and political economy of fiscal consolidation, as well as its macroeconomic and social impacts, drawing on the main results of a very large economic literature. It then presents the results of a new database covering 196 countries from 1980 to 2023, showing that consolidations can successfully restore fiscal sustainability by halting the accumulation of debt or even lowering debt levels. By contrast, a failure to address large and persistent sustainability gaps can complicate consolidation efforts and contribute to internal and external imbalances that hinder inclusive growth. Nevertheless, even a successful consolidation can entail tradeoffs involving growth, poverty, and inequality. Expenditure-based consolidations tend to be more common and more effective than those focused on the revenue side, and there is no clear statistical evidence that they are more likely to worsen poverty or inequality indicators. Overall, the findings show that a successful fiscal consolidation requires careful consideration of the economic context and the composition of the adjustment, as well as appropriate complementary economic policies and a credible, well-communicated strategy. Finally, consolidations tend to be less effective when implemented during a crisis, as severe shocks can compel an abrupt procyclical adjustment that depletes fiscal buffers.

Keywords: fiscal policy; debt sustainability

JEL codes: H2; H5; H63

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Executive Summary

In the wake of the recession caused by the COVID-19 pandemic and amid the ongoing spillover effects of Russia's war in Ukraine and heightened uncertainty about trade flows, restoring a sustainable fiscal dynamic has become an urgent priority for governments around the world. The primary means to achieve this goal is fiscal consolidation, a set of policy and administrative measures designed to realign public revenues and expenditures to prevent or reverse the accumulation of public debt. This paper presents an overview of key issues to be considered when designing a fiscal consolidation effort. It summarizes the main findings on fiscal consolidation from the international literature and analyzes 124 consolidation episodes from a new database covering 196 countries from 1980 to 2023. This analysis offers useful lessons on how consolidation efforts have affected debt dynamics, as well as growth, poverty, and inequality indicators. The paper also addresses several critical questions policymakers face when designing consolidation strategies, such as how much fiscal consolidation is needed, whether it is better to raise revenue or lower spending, how might consolidation affect economic performance, and how might it influence the government's electoral prospects.

Governments undertake fiscal consolidations for several reasons. The most common goal is fiscal sustainability. Worldwide, public debt was already rising before the COVID-19 pandemic, but the crisis sharply increased the debt trajectory, as governments ramped up fiscal support while tax revenues plunged. As a result, deficits and debt stocks in many countries have reached unprecedented levels. Consolidation can also be used to help curb inflation, which was greatly exacerbated by the pandemic and by Russia's war in Ukraine. A third objective is to ease pressure on the external accounts and exchange rate, which can lower borrowing costs and create fiscal space for development spending. Finally, governments may pursue fiscal consolidation to prevent the public sector from crowding out private consumption and investment.

A well-designed and timely consolidation supported by an appropriate budgetary framework typically outperforms a business-as-usual scenario. Political economy and institutional factors are critical to a successful consolidation plan. Empirical evidence shows that voters do not penalize politicians for implementing tight fiscal policies, but they do penalize them for higher rates of inflation and unemployment. A well-designed consolidation strategy may target underutilized tax bases (e.g., personal wealth) and should ensure that the cost of the adjustment is distributed fairly. Delaying consolidation for fear of the short-term costs can lead to higher inflation or higher risks of debt distress, which could force a more abrupt and severe adjustment in the future. By contrast, a sound consolidation effort can permanently improve budgetary frameworks if it is accompanied by the introduction of fiscal councils and rules. Similarly, implementing enduring improvements in budget transparency can encourage future compliance by strengthening incentives.

In the aftermath of an economic crisis, a robust recovery and the removal of crisis-response measures may be insufficient to restore sustainable fiscal dynamics. Moreover, determining when and how to phase out fiscal support measures or subsidies may entail significant challenges, especially when those measures affect the interests of organized groups. A timeframe for ending support measures should be established when those measures are introduced, for example by including sunset clauses or by linking the continuation of support to specific macroeconomic

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conditions. In more serious cases, permanent policy actions may be necessary to address the structural component of the fiscal deficit.

The international experience shows how to sustainably improve the primary balance while reducing the adverse effects of fiscal consolidation. The impact of consolidation on output and employment hinges on whether demand or supply is the main channel of transmission. Consolidations that focus on spending cuts tend to be less harmful than those based on tax hikes, and they typically generate more lasting fiscal improvements, because private investment falls by less when spending is cut than when taxes are raised. However, this principle applies only to recurrent spending, as reducing public investment may cause a drop in private investment and thus overall output. A large-scale consolidation may require measures targeting both spending and revenues, in which case revenue adjustments should focus on the least-damaging taxes. Supportive reforms—such as changes to competition policy, labor policy, or other areas designed to boost productivity growth—could help mitigate the impact of the consolidation.

Historically, fiscal consolidations have been broadly successful in stabilizing or reducing the debt-to-GDP ratio, but these gains have sometimes come at the expense of slower growth and increased poverty. A panel dataset constructed for this paper using various indicators and dummy variables reveals that past consolidation efforts were able to restore fiscal sustainability by reestablishing a debt-stabilizing primary balance in 58 percent of cases, while in 52 percent of cases the primary balance reached the level necessary to significantly reduce the debt stock, creating additional fiscal space. The analysis shows that sometimes it can be difficult to align fiscal goals (stabilizing or reducing the public debt) with other goals, such as preserving output growth, and not worsening poverty and inequality—especially in emerging markets and developing economies.

Fiscal consolidation is a challenging process but offers considerable long-term benefits. If left unaddressed, large and persistent sustainability gaps can complicate consolidation efforts and contribute to internal and external imbalances that hinder inclusive growth. Across episodes, the average real GDP per capita growth rate for each country fell to just 32 percent of its historical average during a prolonged period of unsustainability. On the other hand, countries that successfully stabilized their debt ratios enjoyed robust post-consolidation growth rates, outperforming those that failed. In a few cases, governments have been able to substantially improve their fiscal positions with no adverse impact on poverty and inequality indicators.

1. Overview

Following a series of shocks to the global economy over the past four years, public debt levels are at historic highs. The economic impact of the COVID-19 pandemic, Russia's ongoing war in Ukraine, escalating geopolitical tensions, and disruptions to international trade have adversely affected the fiscal balances of countries worldwide, with especially negative implications for emerging markets and developing economies (EMDEs). The pandemic caused a sharp contraction in economic activity and government revenue while necessitating a massive increase in public spending to mitigate the multidimensional impact of the ensuing crisis. Consequently, the fiscal position of many EMDEs deteriorated dramatically between 2019 and 2022, in some cases leading to unsustainable debt dynamics. Rising interest rates and inflationary pressures have underscored the urgency of fiscal consolidation, which can help reduce demand pressures and ease credit constraints. At the same time, many countries still need to extend fiscal support to shield poor and vulnerable households from an adverse macroeconomic environment and support a broad-based economic recovery.

Restoring sustainable debt dynamics and rebuilding fiscal space is the key fiscal policy challenge of our time. Multiple recurrent crises have largely exhausted the available fiscal space worldwide, yet climate adaptation and mitigation measures are becoming increasingly urgent. Global growth prospects are sluggish, and an increasing number of people around the world will likely be at risk of falling into poverty. In this context, policymakers must determine: (i) how much fiscal consolidation is needed; (ii) whether to increase revenue, reduce spending, or both; and (iii) whether the adjustment should be gradual or swift.

This paper provides an overview of issues to consider when designing strategies to restore fiscal sustainability and expand fiscal space, and its conclusions are especially relevant in cases where fiscal imbalances have become extreme. The paper is intended primarily for national policymakers and advisers, including World Bank economists who lead the fiscal policy dialogue with client countries. It presents (i) a review of the ample theoretical and empirical literature on the design and effects of fiscal consolidation and (ii) lessons from successful consolidations derived from a newly constructed database. Section 2 discusses the developments that have made fiscal consolidation more relevant and more challenging. Section 3 examines the political-economy considerations that influence the choice to launch a fiscal consolidation. Section 4 details how the elimination of emergency response measures and a favorable business cycle can affect the fiscal balances. Section 5 describes findings from the literature regarding how the composition of a fiscal consolidation influences economic activity. Finally, Section 6 offers a descriptive analysis of several consolidation episodes, identifying successful characteristics, their effects on economic and social indicators, and the differences between episodes preceded or not preceded by a macroeconomic shock.

This paper presents the main findings from the large literature on fiscal consolidation while adding some new insights from a novel database. Consolidations typically have serious political and economic ramifications, and they affect a wide range of stakeholders both within and outside the government. Rather than simulating fiscal multipliers or providing yet another

estimation of their size,² this paper presents a simple descriptive analysis of the implications of 108 consolidation episodes that occurred during 2000-2023. The episodes are identified by examining ex-post trends in fiscal balances,³ and success is determined by whether the consolidations halted the growth of the public-debt-to-GDP ratio and by how they affected growth, poverty, or inequality indicators. Several lessons can be drawn from these experiences. For example, many fiscal consolidations that succeeded in stabilizing the debt-to-GDP ratio also resulted in growth falling below its previous long-term trend. Moreover, consolidations are generally less successful in stabilizing debt in the wake of adverse terms-of-trade shocks or when the adjustment focuses primarily on increasing revenue rather than cutting expenditures.

2. The Objectives of Fiscal Consolidation

Governments have traditionally launched fiscal consolidations to preserve or restore sustainable fiscal and debt dynamics. Consolidation may follow a protracted period of unsustainable, often procyclical, macroeconomic policies. However, a fiscal consolidation may also be launched in response to a terms-of-trade shock, natural disaster, sudden increase in global interest rates, domestic or international financial crisis, or other adverse event severe enough to destabilize a previously sound fiscal position. In some cases, adverse events coincide with unsustainable macroeconomic policies, suddenly compounding high external debt levels, depleted international reserves, excessive sovereign exposure in the financial sector, or other preexisting domestic vulnerabilities. Whatever the cause, the adverse welfare effects of widening deficits and rising debt levels tend to reduce short-term economic growth, boost inflation, and erode the external accounts.

The most recent global shocks occurred at a time when global debt levels were much higher than in prior crises. A December 2019 World Bank report highlighted the risks arising from the decadelong accumulation of public and private debt in EMDEs, which was the fastest, largest, and most broad-based increase since the 1970s.⁴ The average annual increase in EMDE debt since 2010 was almost 7 percentage points of GDP. As a result, on the eve of the pandemic, global debt levels were higher than at the onset of the 2008 global financial crisis. In 2019, gross general government debt had surpassed the 2007 level by 26 percentage points of GDP in high-income countries (HICs), by 22 percentage points in middle-income countries (MICs), and by 14 percentage points in low-income countries (LICs) (Figure 1a). Even before the pandemic, the number of countries in which the debt-to-GDP ratio exceeded 90 percent was rising (Figure 1b). Compared to earlier periods of rapid debt accumulation (World Bank, 2019), the pre-pandemic wave was facilitated by especially loose financial conditions, including a growing appetite for local bonds. However, the economic crisis that followed the pandemic did not involve a major financial crisis, likely due to stronger regulation of the banking sector after 2008.

In the run-up to the pandemic-induced global recession, many EMDEs depleted their fiscal buffers while also implementing procyclical policies. Between 2001-2010 and 2011-2019, the

² Fiscal multipliers measure the change in economic output that results from a change in fiscal policy.

³ This approach is similar to the methodology used by Escolano et al. (2018) and differs from the narrative approach, which is based on analyzing budget documents.

⁴ Global Waves of Debt, World Bank, 2019

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average difference between the primary balance and the debt-stabilizing primary balance in EMDEs decreased by 1.5 percentage points of GDP and turned negative at -0.9 percent (Herrera and Izaki, 2024). The resulting “sustainability gap” caused debt ratios to rise even in countries with a budget surplus, as the surplus was not always large enough. Moreover, a zero or even slightly positive value for the sustainability gap does not indicate a prudent fiscal policy, as ensuring that the primary balance significantly exceeds its debt-stabilizing level helps hedge against lower-than-expected growth rates (in the short term) or higher-than-expected interest rates (in the medium term). The erosion of fiscal buffers is positively correlated with procyclical fiscal policies in EMDEs (Figure 1c). From 2011 to 2019, public spending was moderately procyclical in EMDEs (0.19) and countercyclical (-0.14) in advanced economies.

The size and composition of policy responses differed between advanced and developing countries. Many countries embraced countercyclical policies that mitigated the impact of the crisis but entailed large fiscal deficits (see Annex 2). While HICs responded more aggressively than EMDEs, above-the-line fiscal measures among the latter reached about US\$1.5 trillion, coupled with more than US\$1 trillion in support through other instruments, representing a total of 7 percent of GDP on average. The fiscal response among LICs was much lower at about 4 percent of GDP (Figure 1d), as they tended to have less fiscal space for discretionary spending, and thus the deterioration in LIC fiscal deficits was driven by cyclical effects (IMF and World Bank, 2021). For example, declining revenues among commodities producers was partly offset by lower expenditures. The fiscal response of many LICs also involved reallocating significant resources to address the fiscal pressures generated by the crisis, especially those that had elevated structural deficits and high debt levels prior to the crisis. Such countries required a larger and more immediate fiscal consolidation than those that entered the crisis in a stronger fiscal position.

The fiscal rules that had been adopted by an increasing number of EMDEs prior to the pandemic had a limited effect on reinforcing fiscal prudence. Following the global financial crisis, many countries acknowledged that well-defined rules for deficits and debt levels could play an important role in strengthening fiscal management and enhancing transparency and accountability. However, during the COVID-19 pandemic, many countries (including EU member states) adjusted the thresholds and limits of their fiscal rules, suspended those rules, or used escape clauses to accommodate the extraordinary fiscal pressures created by the crisis (Figure 1e and Figure 1f). About 90 percent of countries had deficits larger than the rule limits, while public debt exceeded the limits or anchor levels in over half of countries (Davoodi et al., 2022).

It will take years for EMDEs to return to their pre-pandemic fiscal positions. The combination of an economic crisis (the denominator effect) and the consequent countercyclical policy response (the numerator effect) rapidly widened fiscal imbalances in EMDEs. The average fiscal deficit for this group almost doubled from -4.4 percent of GDP in 2019 to -8.7 percent in 2020 and is expected remain above its 2019 level by end-2029⁵ (Figure 1g). As a result, EMDEs are projected to accumulate 25 percentage points of GDP in additional debt from 2019 to 2029.⁶ Prospects among LICs are more favorable, with deficits reverting to pre-pandemic levels in 2024 and

⁵ Source WEO database, April 2024.

⁶ This trend is confirmed also when Republic of China (where debt will increase from 60.4 percent in 2019 to 110.1 percent by 2029) is removed.

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progressively driving down debt stocks. While there is little scope to further expand fiscal policy, many governments face mounting demands to increase spending on defense, decarbonization, industrial resilience, demographic ageing, and social protection.

For many LICs, elevated levels of debt are associated with a high risk of debt distress. Debt-sustainability analyses (DSAs) carried out jointly by the IMF and World Bank reveal that about 15 percent of LICs are in debt distress, and another 40 percent are at high risk of distress.⁷ High debt levels increase the cost of debt service and can crowd out space for pro-poor and growth-enhancing public expenditures. For most of these countries, restoring fiscal sustainability requires consolidation, and in some cases it must be accompanied by additional debt relief, especially when a consolidation would threaten the delivery of essential services.⁸

Although monetary policy is typically more effective in fighting inflation, fiscal consolidation can play a complementary role. The average inflation rate among EMDEs rose from 5 percent in 2020 to 9.8 percent in 2022 and is not projected to return to its 2010-19 average of until the end of the current decade. Inflation pressures are particularly acute in LICs, and the average inflation rate in Sub-Saharan Africa is 15.8 percent. While higher-than-expected inflation can support fiscal consolidation or represent an alternative way to fund the budget,⁹ fiscal consolidation can also advance monetary policy objectives by reducing aggregate demand and helping to anchor inflationary expectations. To minimize output losses, monetary and fiscal policies must be closely aligned (Bianchi and Melosi, 2022). However, in cases where inflation is primarily imported through higher food and energy prices, the potential role of fiscal consolidation is less clear. Imported inflation may also be reinforced by exchange-rate depreciation resulting from the import-driven deterioration of the current-account balance, and it can trigger adverse second-round effects on domestic inflation. In such cases, the appropriate policy response will depend in part on the expected persistence of elevated energy and food import prices.

Fiscal consolidation may be especially urgent when borrowing costs are surging. Worldwide, monetary policy conditions are becoming progressively tighter in response to elevated inflation, driving up yield curves on treasury bonds, as well as the long-term part of the curve and real rates. In addition, the risk premia paid by EMDEs has steadily increased since 2022. Rising debt levels are closely correlated with credit downgrades and higher premia (Figure 1h and Figure 1i). Growth concerns and other structural factors such as budgetary transparency, relative financial development, and the quality of public institutions also contribute to the observed correlation. The possibility of an upward shift in equilibrium real rates cannot be ruled out and would have serious and lasting consequences for borrowing costs and debt dynamics. A strong commitment to a credible medium-term fiscal adjustment is therefore needed to help drive down borrowing costs and free up fiscal space to rebuild buffers and finance development spending.¹⁰

⁷ <https://www.imf.org/external/pubs/ft/dsa/dsalist.pdf>

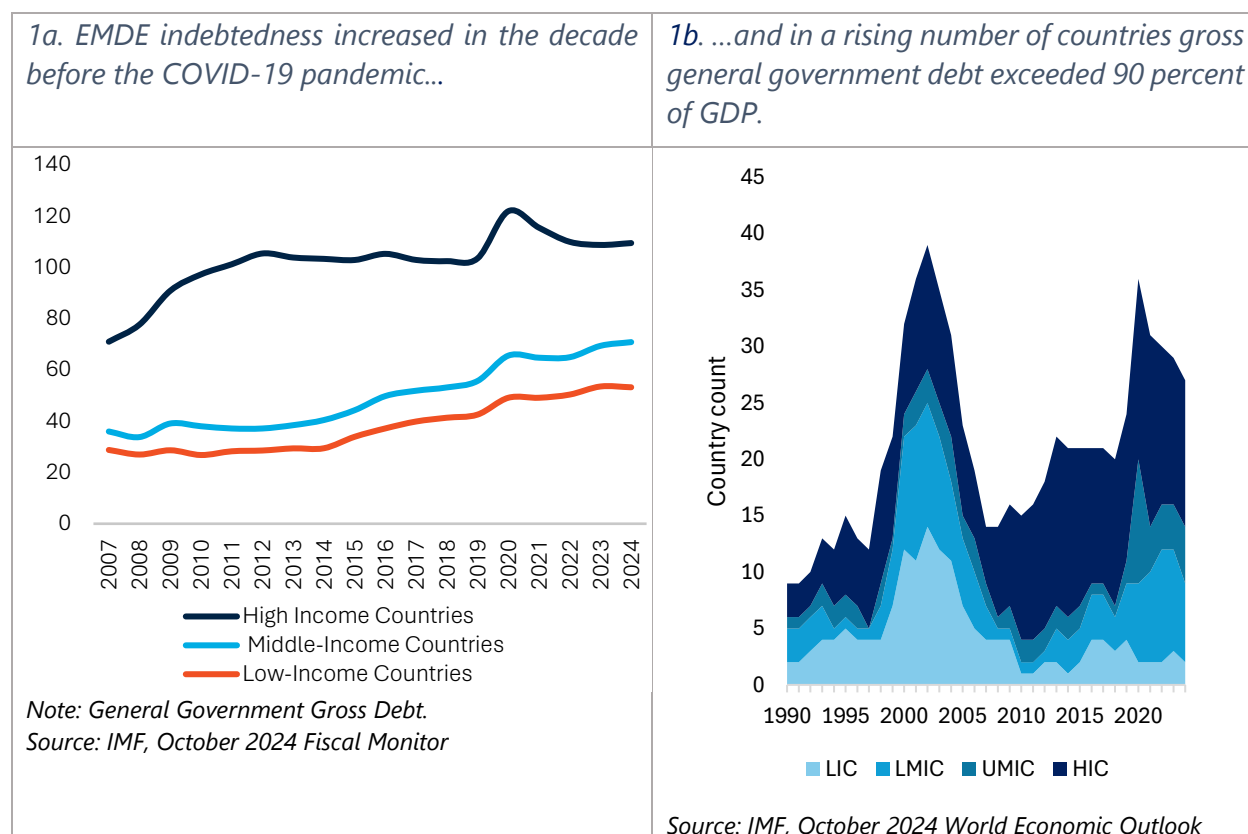
⁸ As of end-2023, only four eligible countries (Chad, Zambia, Ghana, Ethiopia) have requested debt relief under the G20 Common Framework, while some MICs, such as Sri Lanka and Suriname, are seeking debt restructuring outside the Common Framework.

⁹ For a discussion of these channels, see IMF, Fiscal Monitor April 2023.

¹⁰ David et al. (2019) finds that fiscal consolidation announcements can lead to a decline in sovereign spreads, indicating improved market confidence. Born et al. (2020) find that the risk premium declines in response to a cut of government consumption only if fiscal stress is low, but it rises when the fiscal stress is very severe.

Elevated debt levels and large fiscal deficits can also have negative spillovers on the external accounts. When expansionary fiscal policies result in unsustainable external balances, fiscal consolidation may be necessary to restore external sustainability (Figure 1j). Fiscal deficits impact the external accounts through: (a) the import content of fiscal spending, (b) the income channel, as increased output triggered by expansionary fiscal policy can also lead to an increase in imports, (c) currency appreciation triggered by expansionary fiscal policy, and (d) the increased foreign exchange required to service external debt (Utz, 1995). The relative importance of these channels depends on a country’s degree of capital mobility, openness to trade, exchange-rate regime, and elasticity of private savings to public savings.¹¹ For example, Bluedorn and Leigh (2011) find that a fiscal consolidation of 1 percent of GDP increases the current-account-balance-to-GDP ratio by an average of about 0.6 percentage points. At the same time, a favorable external situation can allow for a fiscal consolidation to be implemented without reducing output or employment. For example, Guajardo et al. (2011) find that an increase in net exports associated with a falling exchange rate can partly offset a consolidation’s negative effect on private domestic demand.

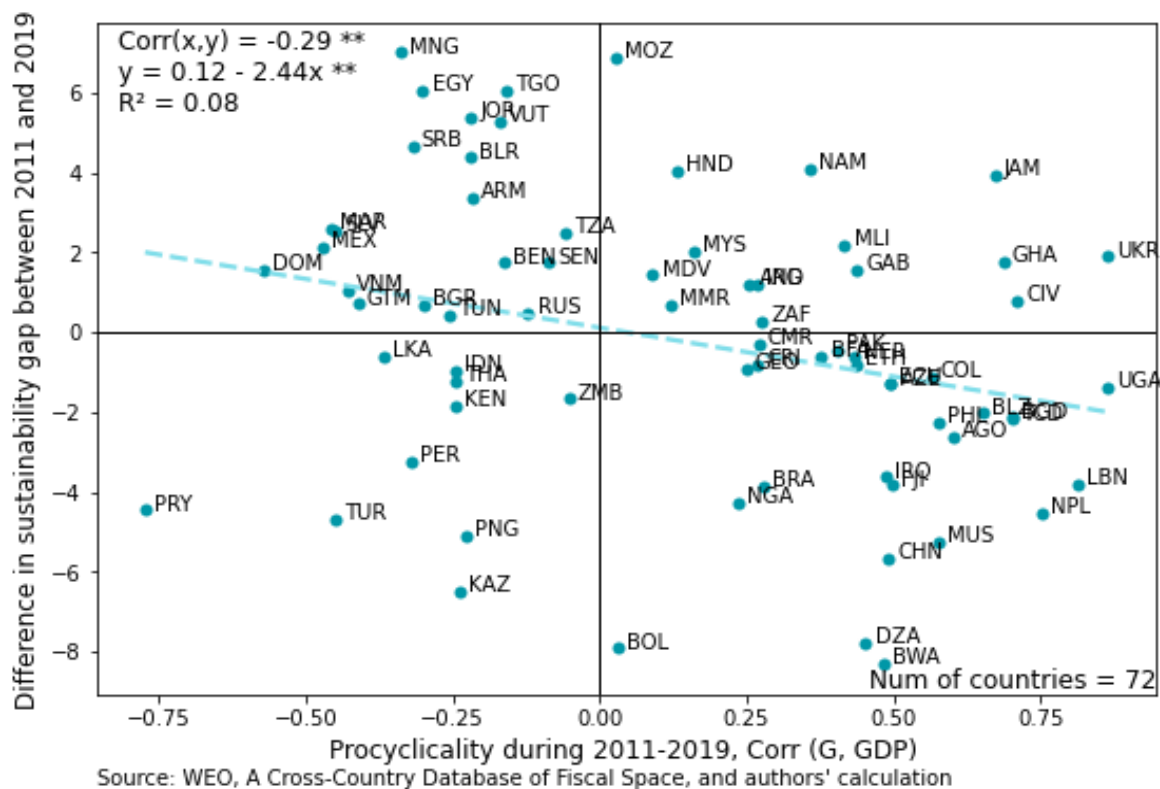
Figure 1. Fiscal Policy Indicators



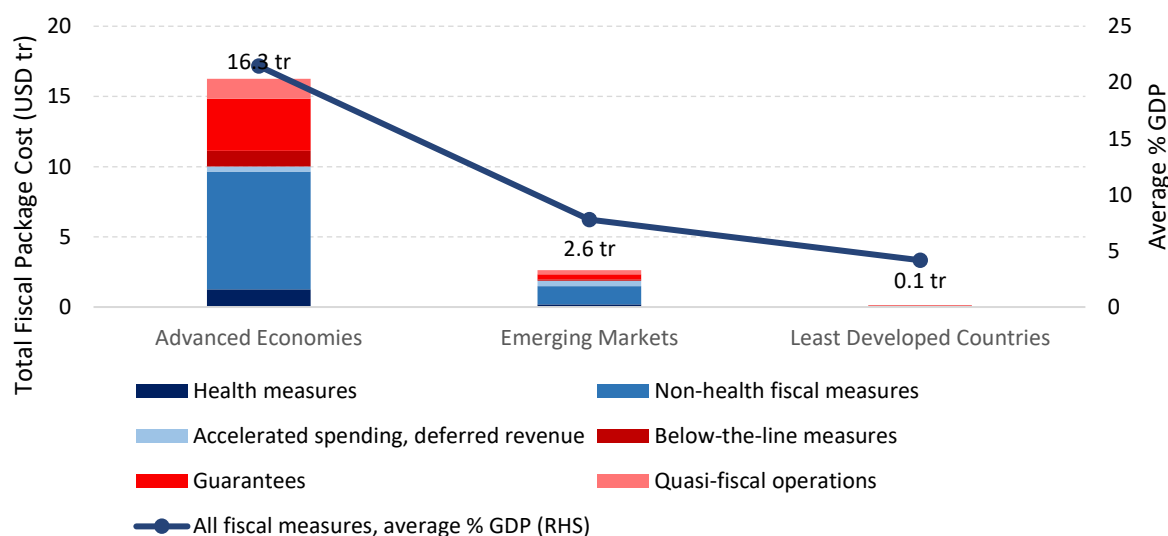
¹¹ Recent supporting evidence for the effect of fiscal consolidation on the current account (the so-called ‘twin deficit hypothesis’) comes from Bluedorn and Leigh (2011), Trachanas and Katrakilidis (2013) and Litsios and Pilbeam (2017).

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1c. In many EMDEs, procyclical spending and other factors reduced the margin by which the headline budget balance exceeded the debt-stabilizing primary balance.



1d. The size and composition of fiscal support packages differed across income groups.



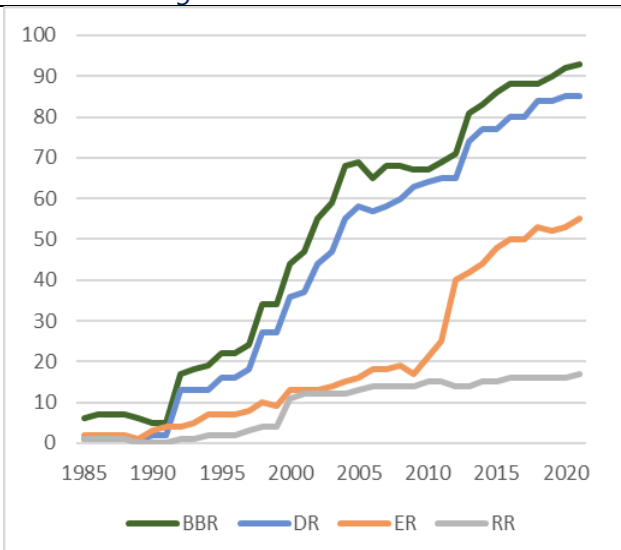
Note: Above-the-line measures are depicted in blue, measures to support liquidity are in red.

Source: IMF Database of Fiscal Policy Responses to COVID-19 (last updated September 2021).¹²

¹² The IMF points out that this dataset is provisional as governments may undertake additional measures; additionally, responses vary by country-specific circumstances. Last updated September 2021.

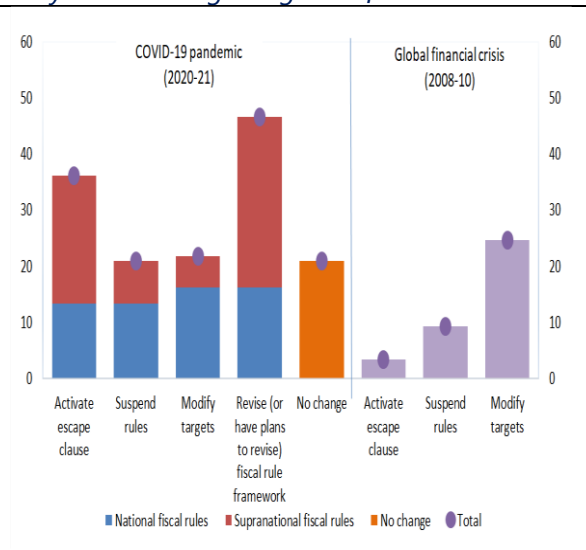
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1e. The adoption of fiscal rules has accelerated since the global financial crisis, driven by balanced-budget rules and debt rules...



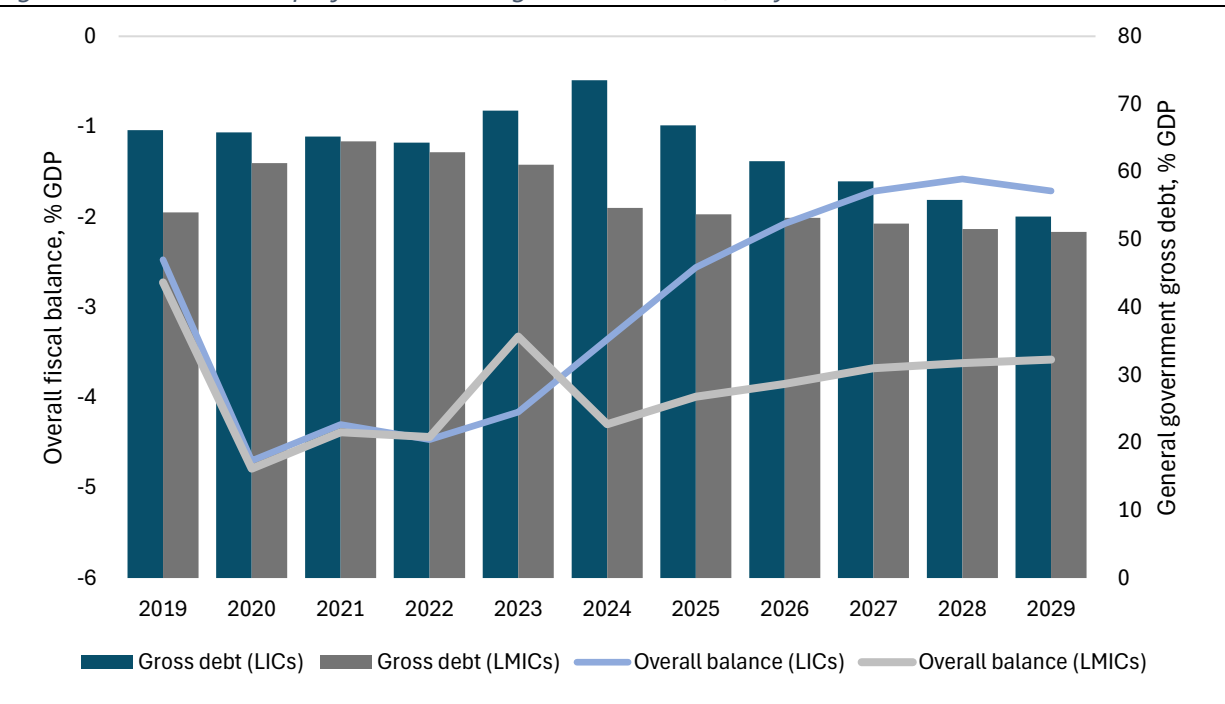
Source: IMF, Fiscal Rules Database.

1f. ...but these rules were circumvented more often during the COVID-19 pandemic than they were during the global financial crisis.



Source: Davoodi et al. 2022

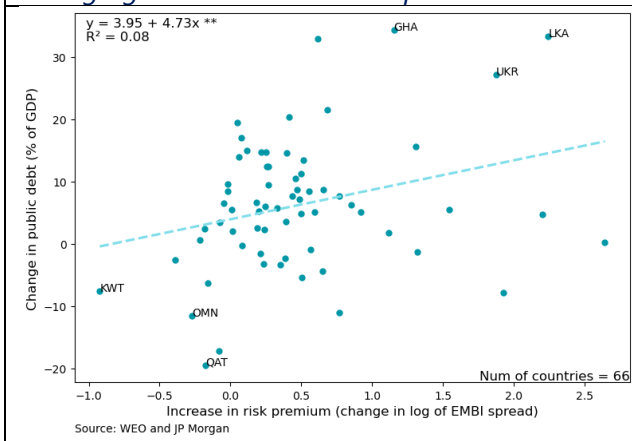
1g. Fiscal balances are projected to diverge over the next few years.



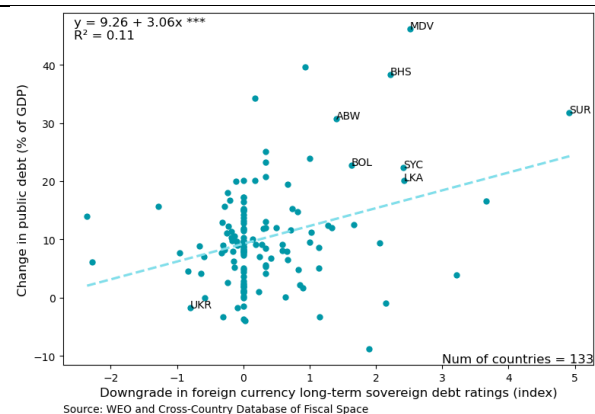
Source: IMF, October 2024 World Economic Outlook

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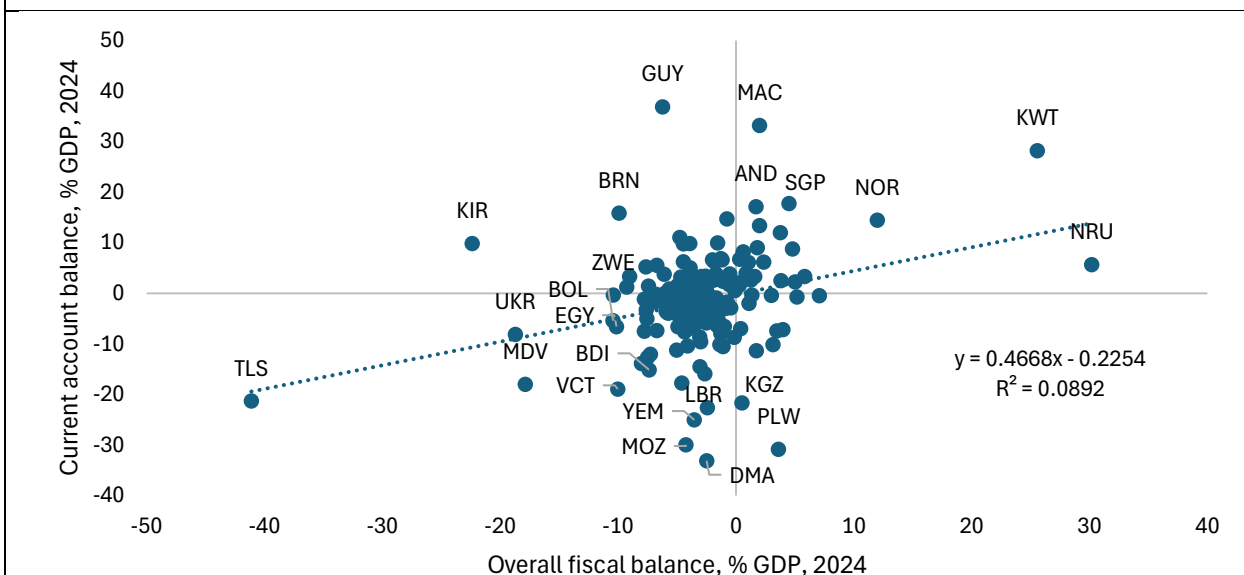
1h. Rising public debt levels from 2019 to 2022 were accompanied by rapid increases in the Emerging Market Bond Index spread.



1i. Ratings downgrades have translated higher debt levels into higher premia.



1j. Many EMDEs have dual current-account and fiscal deficits.



3. Political-economy and institutional considerations

Many studies have examined the design features and institutional context of fiscal consolidation. This section considers issues of concern to policymakers when deciding whether to launch a consolidation effort. In principle, policies that aim to narrow the deficit can be politically challenging. Higher taxes and/or lower spending levels could slow growth or even induce a recession, which would likely have a negative impact on the reelection prospects of incumbent politicians. Such policies could also adversely affect the welfare of certain groups and

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alter the overall income distribution. Establishing strong budgetary institutions or rules could help reinforce fiscal discipline and bolster the credibility of fiscal consolidation plans while limiting the scope for opportunistic behavior by policymakers or other stakeholders.

Empirical evidence suggests that politicians who implement tighter fiscal policies do not always face negative electoral consequences, except when such policies lead to increased inflation and unemployment. There is an emerging consensus in the literature that fiscal consolidation measures are not always politically costly despite being broadly unpopular. Ziogas and Panagiotidis (2021), revisiting the framework created by Alesina and Ardagna (1998) for a sample of OECD countries, find that voters punish politicians for increases in inflation and unemployment but not for tightening fiscal policies per se. Moreover, voters reward politicians who implement expenditure-based consolidations but not revenue-based ones,¹³ and they show a slight tendency to reward politicians for fiscal surpluses (Arvate et al., 2009). Chen et al. (2019) find that revenue-based consolidations adversely affect reelection prospects, especially those that rely on broad-based indirect tax and corporate tax reforms.¹⁴ Announcing tax reforms early in an administration's term and effectively communicating the rationale and benefits of consolidation measures can enable politicians to rally public support.

Consolidations should be designed to ensure that the burden of adjustment is shared equitably. A fiscal consolidation can alter the income distribution, potentially exacerbating inequality. Examining fiscal consolidation episodes in 17 OECD countries from 1978 to 2009, Ball et al. (2013) find that fiscal consolidation tends to increase inequality¹⁵ by accelerating the decline of wages as a share of total income and by increasing long-term unemployment. Expenditure-based consolidations tend to have especially large distributional impacts. Moreover, consolidations are more likely to increase inequality in countries with: (i) greater capital-account openness; (ii) higher debt-to-GDP ratios; (iii) lower average skill levels; (iv) elevated social spending and/or unemployment rates; and (v) less-progressive tax structures.

A well-designed fiscal consolidation can focus on tax bases such as property and wealth that are typically underutilized, have the least distortive impact on growth, and are the most progressive. Although tax measures can generate resistance among influential groups, they may be popular with the public if the distribution of costs and benefits is communicated effectively. Even an expenditure-based consolidation can reduce inequality by ring-fencing subsidies or social programs targeting the most vulnerable groups. Over the longer term, fiscal policies that prioritize education and training among low- and middle-income workers can further reduce inequality (Woo et al., 2016).

The choice between a top-down adjustment or one negotiated with stakeholders also involves tradeoffs. Whether top-down fiscal consolidations are more successful in reaching their

¹³ The asymmetric impact on reelection prospects of expenditure- and revenue-based consolidations likely reflects the former's more limited negative effect on growth. However, Duque Gabriel et al. (2023) find that in Europe consolidations led to a significant increase in the vote share of extremist parties, as well as lower rates of voter turnout and increased political fragmentation.

¹⁴ Research suggests that policymakers may prefer tax-based fiscal consolidation to expenditure-based consolidation because the cost of tax increases is more broadly distributed and thus less likely to mobilize opposition from interest groups (Alesina et al., 1997; Guichard et al., 2007).

¹⁵ The Gini coefficient increases by about 0.3 percentage points two years after a consolidation and by about 1.5 percentage points eight years after a consolidation.

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stated goals than those undertaken in consultation with stakeholders seems to depend very much on specific country circumstances. Top-down consolidations can be precisely calibrated to deliver the desired level of adjustment, but they risk encountering resistance during implementation. Negotiated consolidations will be supported by key stakeholders, but the negotiation process may result in a less ambitious effort that is less likely to achieve its objectives (Perotti, 1998). In either case, a critical consideration is who will bear the cost of consolidation. The cost of expenditure cuts is typically clear, well defined, and concentrated among specific groups, while the cost of revenue-side measures, especially higher indirect tax rates, tends to be spread out over a large part of the population. In practice, both approaches offer examples of successful and failed fiscal consolidations (Perotti, 1998).

Eliminating specific programs, as opposed to cutting line items across the board, may be politically difficult but also tends to be more transparent and less likely to undermine public-sector performance. Successful expenditure rationalization requires a detailed review of overall public spending to find opportunities for efficiency gains and reprioritization. Expenditure adjustments that target line items (e.g., travel, investment, salaries) that are not linked to specific public-sector outputs and services for a particular group tend to be less politically costly, especially as they can be presented as promoting efficiency. However, broad expenditure cuts risk undermining public-sector performance over the medium-to-long term. Eliminating specific programs can trigger opposition from beneficiaries, but the implications of expenditure cuts that are limited to particular programs are generally well understood and transparent.

Budget rigidities can constrain the scope for fiscal adjustment. Budget rigidities are institutional, legal, or contractual requirements or other constraints that limit the ability of policymakers to alter the size and structure of the public budget, at least in the short term. There is evidence linking budget rigidity to increased expenditure inefficiency, higher spending levels, elevated tax rates, and larger public debt stocks (Herrera and Isaka, 2024) (Figure 2). Munoz and Olaberria (2019) find that relatively large shares of rigid expenditures in the budget (e.g., public-sector wages, pensions, and interest payments) increase the risk of fiscal distress and hinder consolidation efforts. Rigid expenditures have an especially serious impact in countries with (i) higher levels of income inequality, (ii) weaker public institutions, and (iii) governments with small electoral majorities.

More transparent budget practices can contribute to better fiscal outcomes. Transparency is essential to ensure fiscal discipline and identify risks. Transparency helps prevent actors from evading taxes, mismanaging revenues, obscuring expenditures, or concealing negative fiscal outcomes. Though challenging, implementing transparency measures has been found to help support fiscal discipline, control corruption, foster economic development, and even achieve better credit ratings (Alt et al., 2006). By contrast, opacity and budget fragmentation have been found linked with pro-cyclical fiscal policy (Alesina and Perotti, 1999; Alesina, 2010; Bastida et al., 2007; Debrun and Kumar, 2007; Hameed, 2005)

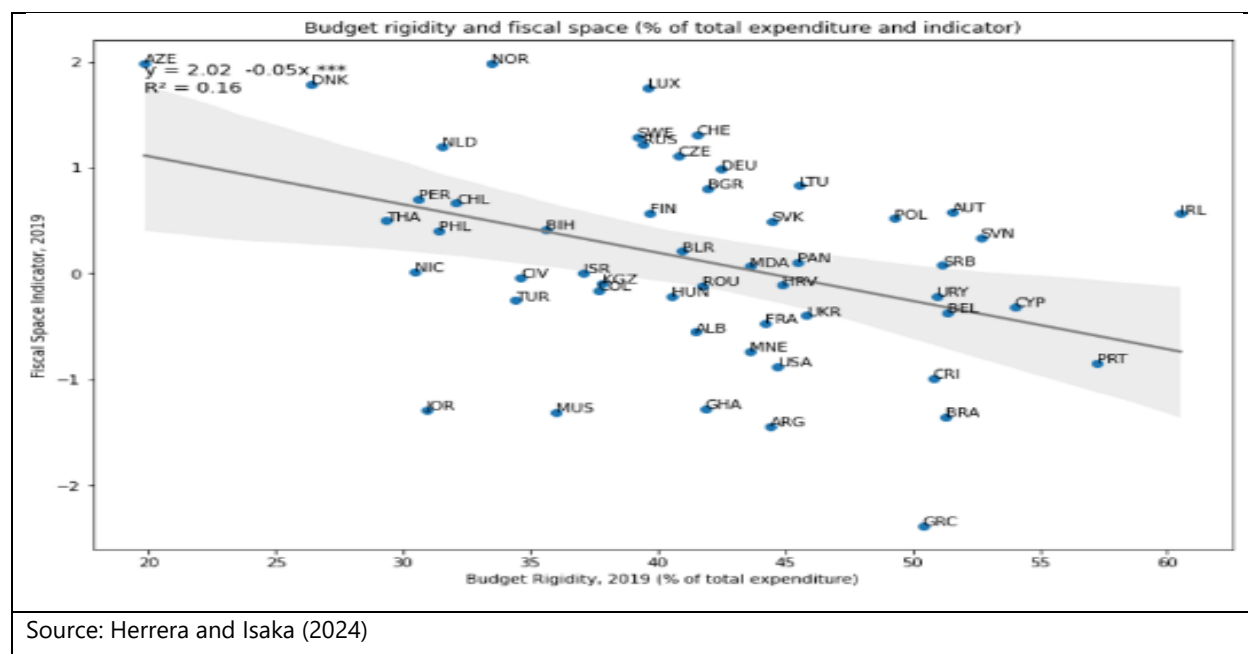
Revising fiscal rules is crucial to ensure a well-defined consolidation strategy that is aligned with the new macroeconomic context. Fiscal rules often require overly rapid post-crisis adjustments that may stifle an incipient recovery. Evidence from Latin America and the Caribbean shows that the probability of compliance with fiscal rules falls sharply during recessions (Ardanaz

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et al., 2021), and a consolidation strategy that explicitly revisits fiscal anchors and allows more gradual adjustment may be more effective. Increased uncertainty also calls for more ambitious fiscal targets and greater fiscal space. Revamped fiscal rules should be comprehensive, with debt anchors, operational guides for budgets, escape clauses, an emphasis on expenditure rules, and enhanced transparency to incentivize compliance (Eyraud et al., 2018). Some rules allow for higher deficits to enable investments in climate adaptation and mitigation (Cottarelli, 2020), but simulations for a typical EMDE show that allowing for an extra 2 percent of GDP in mitigation spending on top of a deficit ceiling of 3 percent can lead to unsustainable debt levels or require overly large surpluses of around 2.5 percent of GDP (Caselli et al., 2024).

Independent fiscal councils can enhance the effectiveness of fiscal consolidation. Fiscal councils are associated with lower forecast errors, less deficit bias, and stronger adherence to fiscal rules (Hageman, 2010). Patel and Gurazada (2021) find that fiscal councils can play a key role in supporting fiscal consolidation and sustainability, especially if underpinned by a strong political commitment. They can provide an independent and transparent assessment of a government's fiscal policies, plans, and performance in terms of the long-term sustainability of the public finances, short-to-medium-term macroeconomic stability, and other official objectives. Some advanced economies have a long tradition of using fiscal councils, and many EMDEs established councils in the wake of the global financial crisis. By end-2021, there were 51 fiscal councils in 49 countries, almost twice the number in 2010 (Davoodi et al., 2022).

Figure 2: The Relationship between Fiscal Space and Expenditure Rigidity



Source: Herrera and Isaka (2024)

4. The role of the business cycle and the withdrawal of response measures

A key question for policymakers is to what extent an economic recovery alone will restore fiscal sustainability. As an economy recovers from a crisis, rapid growth can boost revenues and lower the debt-to-GDP ratio,¹⁶ while phasing out crisis-response measures can cut expenditures.¹⁷ To be countercyclical,¹⁸ fiscal consolidation should take place when economic output is approaching or above its potential level. The speed of the recovery and the buoyancy of the tax system are key determinants of the cyclical component of fiscal stabilization. Empirical evidence shows that fiscal multipliers are larger during recessions than during expansions (Auerbach and Gorodnichenko, 2012), and that countries should be careful not to launch a consolidation before a recession has ended.¹⁹

Relying on favorable cyclical conditions to achieve fiscal consolidation may be appealing to policymakers, but this strategy often proves ineffective in practice. GDP growth promises a politically pain-free solution to unsustainable debt dynamics. A cyclical increase in revenues and/or a decline in spending on automatic stabilizers can foster complacency and undermine the resolve necessary to achieve a lasting consolidation. Moreover, delaying action can increase the eventual economic and political costs of the consolidation and may generate a range of negative consequences, including higher inflation,²⁰ increased debt-service costs, and a greater risk of debt distress. Lower fiscal deficits can reduce inflation by reducing the need for inflationary financing. A study of Latin America countries (World Bank, 2018) finds that reducing the average overall fiscal deficit by 1 percent of GDP is associated with a decline of 2.2 percentage points in the average inflation rate. Based on a panel of 61 developing countries for 1969-1998, Patillo et al. (2004) find a strong negative impact of the “debt overhang” on growth, both through physical capital accumulation and total factor productivity growth. These findings underscore the importance of timely and effective fiscal consolidation to mitigate risks and ensure sustainable economic development.

As the impact of a shock fades, policymakers must determine when to withdraw support measures, which ones to eliminate, and how fast to proceed. Support measures often account for a significant share of the increase in the fiscal deficit during a crisis, and unwinding these measures is a crucial component of fiscal consolidation. The challenge is worsened by the “ratchet effect” described by Coyne et al. (2022), under which countercyclical measures implemented

¹⁶ Growth can narrow budget deficits by raising tax revenue and/or lowering the debt-to-GDP ratio through denominator effects.

¹⁷ Annex 1 provides a discussion of the disaggregation of fiscal series into cyclical and structural components.

¹⁸ Fiscal policy tends to be procyclical in EMDEs and acyclical or countercyclical in advanced economies. See Carneiro and Garrido (2016).

¹⁹ A meta-analysis finds no conclusive evidence on the effect of economic volatility on long-term growth, although a negative relationship is found for samples of developing countries (Bakas et al., 2019). However, several channels through which volatility and growth are related have been identified, such as nominal rigidities, inconsistent or unpredictable policy actions, openness to foreign trade, financial integration, and foreign direct investment. Based on the circumstances, these different macroeconomic factors can determine a positive or negative relationship, sometimes in a non-linear way (Easterly et al., 2000).

²⁰ Some EMDEs have resorted to monetary financing of the fiscal deficit to fill the gap between public revenues and expenditures, which limits the need for borrowing but is highly inflationary.

during a crisis tend to persist into the recovery phase, leading to a permanent increase in public spending and government intervention in the economy.

The process of phasing out support measures should begin when the shock’s initial adverse effects on households and businesses have abated. However, the recent series of overlapping crises has blurred the lines between measures aimed at providing emergency relief, supporting economic recovery, and protecting vulnerable households from price volatility and inflation. For example, Gentilini et al. (2022) report that while 77 percent of pandemic-related programs were phased out by February 2022, with an average duration of just 4.5 months, similar measures were reintroduced or initiated in 2022 to counteract price shocks. The fiscal burden of these measures could have been mitigated if the original programs had included sunset clauses or provisions ending support when specific variables (e.g., food and energy prices) fell below given thresholds. When these features are absent, political pressure can stymie efforts to end support programs that have fulfilled their intended objectives.

Even discontinued policies may continue to incur costs. When revenues are deferred, even temporarily, they will not necessarily be recouped. Low-capacity tax administrations may struggle to enforce repayment, especially if a period of relaxed standards has weakened tax compliance. In addition, extended loss carry-forward policies can diminish revenues for years. On the expenditure side, even one-off expenses, such as infrastructure projects, may entail higher operations and maintenance costs for decades. Loan guarantees do not represent outright costs but may constitute contingent liabilities on the government.

Measures introduced in response to shocks can become entrenched as interest groups strive to preserve their benefits. Many subsidy programs that were originally designed to shield vulnerable households from temporary price volatility endure because interest groups that benefit from them oppose their reform. Dealing with interest groups requires substantial political will, which can arise during a crisis or following an election that delivers a clear mandate. In some cases, taking advantage of a window of opportunity (e.g., an energy price swing) can ease the reform process. Conversely, phasing out such programs becomes harder as their benefits become larger or more concentrated while their costs remain diffuse. Case studies suggest subsidy reforms are more likely to succeed when benefits are replaced with a credible offer of alternative support. Successful reforms tend to follow administrative and technological improvements in social assistance systems, which makes alternatives more credible (Inchauste and Victor, 2017).

5. Addressing the structural component of the fiscal balance while minimizing negative economic effects

The economic impact of reducing the structural deficit depends on the size and composition of the consolidation effort. Measures aimed at increasing revenue or decreasing spending will affect the economy through different “fiscal multipliers.” Revenue measures often involve closing tax loopholes, broadening the tax base, or introducing new revenue sources like carbon or wealth taxes. Expenditures can be reduced by restructuring programs or reforming entitlement systems while investing in education, health, infrastructure or other areas that can stimulate economic activity and reduce social spending in the medium term. In most cases, a comprehensive approach

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that includes both revenue generation and expenditure reduction can most effectively reduce structural deficits and ensure long-term fiscal sustainability.

The size of fiscal multipliers depends on the structural characteristics of the economy. Using a dataset that includes 44 advanced economies and EMDEs, Itzaki et al. find that fiscal multipliers are larger (i) in more developed countries, (ii) under fixed exchange rates, and (iii) in relatively closed economies, while multipliers are negative in high-debt countries. Batini et al. (2014) confirm these results and find several additional characteristics associated with larger multipliers, including labor-market rigidities, limited automatic stabilizers, and weaknesses in expenditure management and revenue administration.

In principle, a consolidation's impact on output should depend on whether demand or supply effects dominate. In the simple Keynesian model, lower levels of government spending and increased taxes weaken aggregate demand and reduce output. In extreme cases, this can result in "self-defeating" fiscal consolidations in which the decline in output exceeds the decline in debt and the debt-to-GDP ratio increases (Fatas and Summers, 2016; Aikman et al., 2022). However, a fiscal consolidation can also have positive effects on short-run output and growth (Giavazzi and Pagano, 1990 and 1996), especially if used to correct an unsustainable fiscal situation marked by high debt levels and wide deficits (Perotti, 1998; Rother et al., 2010). In such cases, fiscal consolidation can improve the overall economic outlook and encourage private investment. By lowering interest rates and reducing the expected future tax burden, expenditure-based consolidations can boost private consumption and investment.²¹

Protracted and excessively deep consolidations can have a long-lasting adverse impact on GDP growth. Ardanaz et al. (2021) show that for a sample of 44 developing countries and 26 advanced economies, a decline in the cyclically adjusted fiscal deficit equal to 1 percentage point of GDP results in a decline in output of about 0.4 percentage points of GDP.²² Countries with limited fiscal space had to curtail capital spending during the pandemic due to emergency spending pressures and revenue losses, with deeply negative implications for long-run growth (IMF and World Bank, 2021)²³ The cost of corporate credit tends to increase during fiscal consolidations, particularly for small firms and domestic firms (Ağca and Igan, 2013), regardless of whether the consolidation is driven by spending cuts or tax hikes (Ağca and Igan, 2019). The costs of consolidation also depend on levels of private indebtedness, with severe contractions observed when private debt is high but not when private debt is low (Klein, 2017).

Expenditure-based fiscal consolidations tend to be less contractionary than tax-based ones, and they lead to more persistent fiscal improvements. In a simple Keynesian model, the absolute value of the tax multiplier is smaller than that of the expenditure multiplier because an initial change in demand leads to a change in output, which leads to a change in income and consumption, and so on. In the case of a change in taxes or transfers, there is no initial change in

²¹ Numerous studies (e.g., Giavazzi and Pagano 1996, Rzońca and Ciżkowicz 2005, Jha et al. 2014, or Khanfir 2019) show the existence of positive short-term impacts of fiscal consolidation on output and growth. However, de Cos and Moral-Benito (2011) show that the finding of non-Keynesian effects may be due to endogeneity of fiscal consolidation.

²² Comparable results are found by Guajardo et al (2011): a 1 percent of GDP fiscal consolidation reduces real private consumption over the next two years by 0.75 percent, while real GDP declines by 0.62 percent.

²³ The impact of the crises on productivity is less clear cut, though the crises have triggered changes in the way people work, including a shift to home-based working.

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demand, only a change in disposable income, which leads to a change in consumption, which leads to a change in output, and so on (Blanchard, 2017) This would imply that tax-based fiscal consolidations are less recessionary than expenditure-based fiscal consolidations, but the international experience suggests the opposite. Based on 17 OECD countries over a 30-year period, Alesina et al. (2015, 2019) conclude that expenditure-based fiscal consolidations have often had no impact on output, while tax-based consolidations have sometimes led to recessions and even failed to reduce the debt-to-GDP ratio. On average, an expenditure-based consolidation equal to 1 percentage point of GDP reduces GDP by about 0.25 percentage points, and the effect lasts less than two years. By contrast, tax-based consolidations of the same size on average generate losses of more than 2 percentage points of GDP, and the effect lasts three to four years.

Multiple factors explain why expenditure-based fiscal consolidations tend to be less contractionary than tax-based consolidations. The greater recessionary impact of tax increases may be due to demand-side factors such as: (i) a greater decline in private agents' permanent income,²⁴ (ii) increased uncertainty for entrepreneurs that adversely affects private investment; and (iii) lower short- and long-term interest rates, which can crowd in private consumption and investment, generating a positive net impact on output (Ahrend et al., 2006). Higher taxes may also reduce the labor supply, exacerbating the adverse effects of tax-based fiscal consolidations. However, positive fiscal multipliers for tax increases are often found in studies that use structural vector autoregressive methodologies to identify exogenous fiscal shocks or that use cyclically adjusted revenue to measure tax-policy variables under the direct control of the government. Using an alternative measurement approach, Riera-Crichton and al. (2016) find that tax increases have deeply negative fiscal multipliers (-0.66 on impact and -3.56 after three quarters).

However, in low-taxation countries, a gradual tax-based consolidation may be superior to cutting public investment or reducing social transfers. Gunter et al. (2021) show that the fiscal multiplier of tax increases is zero for countries with relatively low initial tax rates (around 10-12 percent) and becomes increasingly negative for those with higher initial tax rates and larger changes in the tax rate. The output costs of spending cuts also tend to be lower for more gradual consolidations. As a result, low-taxation countries may find it beneficial to raise taxes as part of a fiscal consolidation rather than cut public investment or reduce social transfers, particularly transfers to poor and vulnerable households. In addition, the short-run output costs of reducing primary spending are also non-linear (i.e., marginal costs increase with the size of spending cuts), underscoring the advantages of a gradual consolidation.

As large fiscal consolidations may require both expenditure- and revenue-side measures, the latter should focus on the least-distortionary taxes and on broadening the tax base. O'Reilly (2018) suggests that policymakers should prioritize property taxes (particularly taxes on immovable property), followed by consumption taxes and then personal income taxes, as these tax types are the least harmful to growth, whereas corporate income taxes seem to be the most harmful. However, the validity of these findings has not yet been confirmed for LICs, which face their own challenges and have tax structures that differ from those of HICs and MICs (Mcnabb, 2018). Dabla-Norris and Lima (2018) find that changes in tax rates slow growth more than changes

²⁴ Liquidity-constrained consumers may be more numerous during recessions and their consumption will be directly affected by tax increases.

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in the tax base. Fiscal multipliers for tax-rate changes are larger and statistically significant, starting at about -1.2 after one year and reaching -1.5 to -2 after two years. By contrast, fiscal multipliers for tax-base changes are negligible.

Environmental taxes have low fiscal multipliers and can support a fiscal consolidation that aims to minimize output losses. Schoder (2021) estimates multiplier effects on output and jobs for a panel of 75 HICs and LICs from 1994 to 2018. The estimated fiscal multipliers for increased environmental taxes range from -1 on impact to -1.8 at their peak. Personal income tax multipliers are slightly higher, ranging from -1.4 to -2.3. While income taxes reduce employment, environmental taxes do not. Consistent with other findings in the literature, Schoder finds that environmental tax multipliers are zero or close to zero unless taxes are increased (i) when output contracts, (ii) when fuel prices are high, (iii) when environmental tax levels are high, or (iv) when the carbon intensity of output is low. Countries that rely on commodity trade face higher tax multipliers.

Cuts to recurrent expenditures have a less damaging impact on output than cuts to investment. All else being equal, lower levels of public investment discourage private investment and reduce overall output. Ardanaz et al. (2021) show that a decline in public investment of 1 percentage point of GDP lowers GDP by 0.7 percentage points within three years. Arizala et al. (2021) find that in Sub-Saharan Africa fiscal consolidations involving cuts to public investment have the largest adverse effect on output, while those that rely on cuts to recurrent spending may have no negative impact on output in the short term and may even have a positive impact in the medium term.²⁵

The most effective fiscal instrument to respond to a shock depends in part on the shock itself. Ghassibe and Zanetti (2022) show that public spending is effective when weak demand drives a recession but ineffective (and potentially inflationary) when the recession originates from a negative supply shock. Tax cuts can effectively stimulate an economy facing an adverse supply shock but are less capable of addressing weak demand. Overall, fiscal instruments that stimulate aggregate demand, such as increased government spending and lower consumption taxes, are countercyclical under demand-driven recessions but procyclical under supply-driven ones. As a result, cutting public spending may be less painful during a supply-side shock, as it will tend to ease inflation and stimulate private consumption and investment.

Complementary macroeconomic and structural policies can support an effective consolidation. A conducive economic environment, including looser monetary conditions and disinflation, increases the likelihood of a successful consolidation (Molnár, 2012). During shocks, rising inflation often limits the scope for monetary policy to soften the impact of fiscal consolidation. Fiscal consolidation should be appropriately coordinated and sequenced with the withdrawal of other policy measures to avoid cliff effects and minimize adverse effects from policy interdependencies. Structural policy reforms that foster economic growth can help to offset the contractionary impacts of consolidation. Policymakers concerned about the potential effects of

²⁵ Dawood and Francois (2017) also conclude that cuts in government consumption rather than investment during fiscal consolidation can crowd-in private consumption.

consolidation on output or employment, for example, could prioritize complementary reforms to competition policy, labor policy, or other areas that affect productivity growth.

6. Lessons from previous fiscal consolidations

6.1. Selection criteria and characteristics of consolidation episodes

Most studies define fiscal consolidation based on changes in the cyclically adjusted primary balance (CAPB), though some exclusively focus on consolidations announced by the government. The former approach offers several advantages. It applies a uniform methodology across countries, measures actual execution rather than approved measures, and allows for broader country and episode coverage. However, CAPB estimates may fail to filter non-policy factors like asset bubbles or commodity price swings, and they are affected by the uncertainty about the size of the output gap. In addition, the sensitivity of revenues and expenditures to the business cycle can vary over time.²⁶

The following analysis uses a panel dataset and dummy variables to identify consolidation episodes and gauge their impact on fiscal and macroeconomic outcomes. Episodes are standardized around time t , which is the first year of the consolidation. Most data are sourced from the World Economic Outlook, which covers 196 countries. The full sample (updated as of October 2024) covers 1980–2024. Three core indicators are used to identify the fiscal adjustments: the primary balance, the CAPB, and the sustainability gap. Data coverage for these indicators is relatively strong, especially in more recent years.²⁷ In total, 124 episodes satisfy all four requirements for defining a fiscal consolidation (Table 1). See Annex 5 for further details.

Table 1: Criteria for Defining a Fiscal Consolidation

An improvement in the primary balance	The primary balance increases by at least 0.5 percent of GDP over two years while not decreasing by more than 0.3 percent year-on-year in any single year.²⁸
A sustained consolidation	The improvement lasts for at least two consecutive years.
A demonstrated policy choice to consolidate	The cyclically adjusted primary balance increases by at least 0.1 percent year-on-year for at least two consecutive years.
A demonstrated need to consolidate	The debt-stabilizing primary balance exceeds the actual headline primary balance by at least 2 percent of GDP in the year before the consolidation begins.

²⁶ Escolano et al. (2018) list the studies and the definitions used to identify episodes of fiscal consolidation. See Annex 1.

²⁷ Observations for the primary balance are available for about 67 percent of country-years for the full sample and the same share for EMDEs. For the CAPB, coverage is 40 percent and starts in 2000 due to output-gap data availability. For the sustainability gap, coverage is about 58 percent.

²⁸ When choosing between the CAPB or the headline primary balance, the rationale for the CAPB is that it can better isolate episodes where policymakers have made a deliberate effort to consolidate, as opposed to cases in which commodity cycles resulted in a favorable impact on revenue, or when changes in the business cycle impacted the primary balance through automatic stabilizers or expanding tax bases. However, calculating the CAPB is data-intensive – missing data for some required inputs yields CAPB observations for fewer than two-thirds of primary balance observations.

Two waves of fiscal consolidation efforts occurred from 2000 to 2022. The frequency of fiscal consolidation episodes is comparable with the three global waves of debt identified by World Bank (2019) in 1990, 2002, and 2010. Each debt wave coincided with periods of low interest rates and significant financial innovation (Figure 3a). The number of fiscal consolidations increased in parallel with rising debt levels and then peaked two to three years later as the debt wave ended. The consolidation wave that followed the global financial crisis peaked in 2012. A fourth post-pandemic wave peaked in 2022, accounting for 44 episodes, over half of which were in MICs. This latter wave was characterized by the use of numerous frontloaded expenditure-based measures (Figure 3b and 3b).

Consolidations were most frequent in HICs and in the Middle East and North Africa, Europe and Central Asia, and Latin American and the Caribbean regions. Sixty-nine episodes were in HICs, 52 in MICs, and only three in LICs (Figure 3d).²⁹ Data availability influences these results, as only 45 percent of the post-1990 country-years for LICs have data for the CAPB, versus 58 percent for HICs and MICs. Similarly, about 50 percent of LIC country-years include data on debt-stabilizing primary balances, compared to 62 percent for HICs. In geographic terms, the distance in the distribution between Europe and Central Asia (43 cases, or 0.84 per country) and Sub-Saharan Africa (14 cases, or 0.29 per country) is considerable even after accounting for data constraints, given the latter region's generally weak fiscal frameworks. South Asia had the fewest episodes per country. Most consolidation episodes were short-lived, with 66 lasting for only two years (see also Price, 2010). Thirty-seven episodes lasted three years, and 16 lasted at least four³⁰ (Figure 3e). There is no difference in the distribution of the length of consolidation between income groups.³¹

Governments often hesitate to launch a consolidation, even though unaddressed fiscal imbalances may exacerbate macroeconomic challenges. Among countries that launch a consolidation, policymakers wait an average of 3.3 years after a large sustainability gap opens up (Figure 3f). However, in the 26 cases in which unaddressed fiscal imbalances lasted three years or more, the median debt level had increased by 16 percentage points of GDP by the time the episode ended. Moreover, real GDP per capita growth is contracting (-0.3 percent) in the median country in the year when the imbalance arises. More generally, countries with a large and persistent sustainability gap typically experience slower per capita GDP growth than they did when they had no sustainability gap (Figure 3g). The average real GDP per capita growth rate during a prolonged period of unsustainability falls into the 32nd percentile of the historical value for each country, on average, across episodes. Sustainability gaps are also linked to pressure on the exchange rate, the current account, and inflation. In turn, these factors contribute to higher debt ratios and, all else being equal, result in larger sustainability gaps.³²

²⁹ Burundi (2016-18), Chad (2015-18), (Sierra Leone (2017-19).

³⁰ Factors that tend to impact the duration of a fiscal consolidation episode include the magnitude of adjustment needed (captured by the size of the budget deficit), monetary conditions supportive of higher economic growth (including a depreciating exchange rate, and reductions in the implicit interest paid on debt), and the degree of social-political resistance.

³¹ Escolano et al. (2018) review fiscal consolidation episodes for advanced and developing economies and find that consolidation episodes last between three to four years and tend to be longer in advanced than in developing economies.

³² On the other hand, prolonged periods of unsustainability are not very frequent. Almost half of episodes are just a single year long, with an average duration of 2.4 years. Among consolidation episodes (during or immediately after the end of time with a

More than half the episodes were preceded by a shock. Most consolidation episodes were preceded by a rapid buildup of public debt (57 percent of cases) (Figure 3h). In the two years before the start of a fiscal consolidation, the public debt stock typically increased by a cumulative 10 percentage points of GDP (Figure 3i). Other recurrent shocks include terms-of-trade shocks (40 percent of cases) and drastically below-trend growth (52 percent of cases) due to violent conflict, public health emergencies, or other extreme circumstances.³³ Only 18 consolidation episodes (15 percent) followed a natural disaster, and just six took place after a natural disaster in a context also marked by slowing growth. The number of consolidation episodes in countries where debt had already been accumulating is strongly associated with the presence of other macroeconomic shocks: a large debt increase occurred in 64 percent of episodes that followed a terms-of-trade shock and 69 percent of all episodes that followed a growth slowdown.

Table 2: Criteria for Defining Shocks

Disaster	Terms-of-trade shock	Growth slowdown	Rapid debt buildup
At least one disaster occurred in the three years prior to the consolidation causing damage greater than 0.5 percent of GDP (from EM-DAT).	The IMF commodity terms-of-trade index score (2012=100) fell by 15 percent or more in at least one of the three years prior to consolidation.	In the two years prior to the consolidation, average GDP per capita was below the historical 70 th percentile.	The debt-to-GDP ratio increased each year for five years and exceeded the country's historical 70 th percentile.

The typical consolidation episode is expenditure-based and frontloaded. Of the episodes in the sample, 51 percent were expenditure-based, 35 percent were revenue-based, and the remaining 15 percent were mixed.³⁴ Historically, expenditure-based consolidations have been popular in Europe and Central Asia (70 percent) and in Sub-Saharan Africa (75 percent), despite the latter's low average tax-to-GDP ratio.³⁵ Only 17 percent of consolidations were backloaded, while 65 percent were frontloaded, and the rest were evenly spread³⁶ (Figure 3c).

Large improvements in the fiscal balance were observed at the end of the consolidation episodes. The median change in the primary balance (and in the CAPB) in the first year of an

need to consolidate), unsustainability ends after 3.7 years on average. Among cases that don't end in consolidation, unsustainability lasts 1.6 years on average, thanks to the benefits of a cyclical recovery, debt write-off, or one-year increases in the primary balance too brief to meet our definition of fiscal consolidation. Although one might expect consolidation to shorten the duration of unsustainability—and it certainly does—, it is also associated with longer cases of fiscal unsustainability as it appears that countries tend to wait until a problem proves to be lasting before addressing it with serious consolidation.

³³ The fact that consolidation episodes following ToT shocks are more than twice times more frequent than when a disaster hit can be explained by the larger frequency of their occurrence (898 episodes representing 12.6 percent of the years with available data, versus 546 episodes). An additional explanation is that disasters produce sharp and immediate effects on the economy so that in the aftermath of disasters consolidation is usually postponed in favor of a fiscal expansion to accommodate for the emergency and the reconstruction.

³⁴ We define revenue (expenditure)-based episodes as those where at least 55% (no more than 45%) of the adjustment happens through revenue (expenditure) measures, in line with Alesina et al. (2021). Episodes with values in between are considered mixed. In the same vein, front(back)loaded episodes as those where at least 55% (no more than 45%) of the adjustment happens in the first half of the consolidation. Episodes with values in between are considered neither frontloaded nor backloaded.

³⁵ Only one of the three fiscal consolidations undertaken in Sub-Saharan African countries with tax revenue below 15 percent of GDP was revenue-based, the 2007-09 consolidation in Guinea-Bissau.

³⁶ This result is consistent with findings by Tsibouris et al. (2006) and Baldacci et al. (2004).

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episode was above 2.9 percent. Balances typically continued to improve in the following two years before stabilizing at a level 4.7 percentage points of GDP (4.3 percentage points for the CAPB) higher than before the start of the consolidation (Figure 3j). Budget savings (-3 percent of GDP in the first two years) drove the improvement in the primary balance. Typical targets for savings included investment in fixed capital (especially in EMDEs and LICs) and the public-sector wage bill (Figure 3k). In HICs, spending on social transfers played an important role, falling by more than 0.5 percent of GDP in the first two years of the consolidation. Only in EMDEs did spending typically begin growing again as a share of GDP in the third year, rising by 0.3 percent of GDP. Consumption taxes were the main source of new tax revenue, especially in HICs, where they generated 0.35 percent of GDP in the first year alone, followed by corporate income tax at 0.24 percent. In MICs, “other revenue” (usually state-owned enterprise dividends and revenue from commodities) was the main source of new revenue, accounting for more than 1 percent of GDP over two years (Figure 3l). Additional revenue from corporate income tax was comparable to the level of HICs, while consumption taxes only began increasing in the second year of the consolidation.

In prolonged episodes, revenue measures became the main driver of the adjustment. Revenue drove consolidation in countries where primary balances increased for four consecutive years, possibly because revenue measures were initially considered the least-appealing fiscal instrument, both politically and economically. Policymakers may also be reluctant to finance what they consider a short-term need by permanently raising the tax level. Consequently, tax increases were more likely to be implemented as part of a medium-term consolidation plan than a short-term adjustment. Tax revenue rose after the short-term effects of the consolidation had already been absorbed, and the scope for achieving further savings progressively diminished.

6.2. Defining a successful fiscal consolidation

Multiple criteria can be used to identify successful consolidations (Table 3). Most of the definitions of success used in the empirical literature follow (with some modifications) the definition introduced by Alesina and Ardagna (1998). A period of tight fiscal policy is successful if (i) in the three years following the period of tight policy the average ratio of the cyclically adjusted primary deficit to GDP is at least 2 percentage points below its value during the period of tight policy or (ii) three years after the tight period the debt-to-GDP ratio is 5 percentage points below the level during the tight period. Some studies consider the level of the primary balance, while others focus on changes in the primary balance.³⁷ In line with the first criterion, the following analysis controls for the effects of consolidation on other welfare indicators.

Table 3: Criteria for Defining a Successful Consolidation

Sustainability gap	The primary balance at the end of consolidation is equal to or greater than the debt-stabilizing primary balance.
Debt-to-GDP ratio	The debt-to-GDP ratio at the end of consolidation is no higher than in the year prior to consolidation.
Real GDP per capita growth	The average annual per capita GDP growth rate during the consolidation is at least 90% of its average annual level in the 10 years prior to the consolidation.

³⁷ See Escolano and other (2018) for a review of the definitions of success.

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Poverty	At the end of the consolidation, the poverty headcount ratio (at US\$2.15 per day in 2017 PPP terms) is not higher than it was in the year prior to the consolidation.
Inequality	At the end of the consolidation, the Gini coefficient is not higher than it was in the year prior to the consolidation.

Fiscal adjustments were more successful in restoring debt sustainability by stabilizing the debt-to-GDP ratio than they were in creating new fiscal space by reducing the ratio. In 58 percent of cases, adjustments were able to immediately reach or exceed the debt-stabilizing primary balance (Figure 4a). The success rate was higher in EMDEs (62 percent) than in HICs (55 percent). An analysis of debt-creating flows shows that during the first year inflation was a decisive factor for the median country and more than offset the borrowing required by persistently negative primary balances (Figure 4c). Moreover, in 52 percent of cases the primary balance reached the level required to reduce the debt.³⁸ Consolidations that successfully decreased the debt stock did so by almost 9 percentage points of GDP in three years.

Achieving fiscal consolidation while maintaining economic growth and avoiding adverse social impacts is challenging. The fiscal effort undertaken in countries that raised the primary balance to a sustainable level was almost twice as large as in those that failed, but successful countries also maintained faster growth rates and largely exceeded their pre-consolidation growth trajectories, suggesting that a large fiscal effort is compatible with sustained growth (Table 6a and Table 6b). However, only in 42 percent of consolidation cases was the improvement in the primary balance necessary to stabilize the debt ratio associated with an average annual per capita growth rate of at least 90 percent of the 10-year average, or vice-versa (Figure 4b).³⁹ While large data gaps prevent a thorough analysis of the impact on poverty and inequality, the available information indicates that only in one-third of known cases was fiscal consolidation not associated with deteriorating poverty or inequality indicators. However, in cases where poverty and inequality indicators did not deteriorate, the primary balance still improved considerably both in absolute terms (rising by almost 6 percent) and relative to cases where the balance did not improve (Table 8a and Table 9a), demonstrating that fiscal consolidation need not adversely affect poverty or inequality.

Fiscal consolidation should not be unnecessarily delayed. As expected, rapid debt accumulation complicates consolidation efforts. The 58 percent overall success rate fell to 35 percent among countries in which debt was swiftly rising prior to the consolidation.⁴⁰ The presence of terms-of-trade shocks had a similar impact on the chances of success. Countries that had suffered a terms-of-trade shock managed to stabilize the debt while preserving growth in only 31 percent of cases, versus 49 percent of countries that had not experienced such shocks (Table 4).

³⁸ Moreover, in three cases countries were able to bring the debt back to the level prior to the consolidation without simultaneously closing the primary gap, pointing to the role of other factors such as favorable stock-flow adjustments.

³⁹ For instance, in EMDEs the rate of success moves down from 62 percent, when the only criterion considered is the elimination of the sustainability gap, to 40 percent when the preservation of the long-term growth trend is required too.

⁴⁰ Similarly, consolidations are more successful in stabilizing debt and preserving growth rate in the scenario where growth in GDP per capita already slowed down in the 2 years prior to the consolidation.

Moreover, consolidations that followed a terms-of-trade shock worsened inequality in 90 percent of cases.

Table 4: The Success Rates of Post-Shock Consolidations

		Debt successfully stabilized without compromising growth		
Type of shock	Shock	Y	N	Success rate
Debt buildup	Y	22	41	35%
	N	25	25	50%
Low growth	Y	29	30	49%*
	N	18	36	33%
Disaster	Y	7	10	41%
	N	41	56	42%
Terms-of-trade	Y	14	31	31%
	N	34	35	49%*
		Debt successfully stabilized		
Type of shock	Shock	Y	N	Success rate
Debt buildup	Y	30	33	48%
	N	36	15	71%**
Low growth	Y	36	23	61%
	N	29	25	54%
Disaster	Y	9	9	53%
	N	58	40	59%
Terms-of-trade	Y	23	22	51%
	N	44	26	63%

Note: *statistically significant with $p\text{-value} < 0.1$

**statistically significant with $p\text{-value} < 0.05$

In HICs, expenditure-based adjustments have tended to effectively restore fiscal sustainability and support growth. The composition of the adjustment affects the rate of success in HICs but is not statistically significant in LICs or MICs. While backloading or frontloading the adjustment has no apparent impact on success, expenditure-based consolidations tend to be more successful than revenue-based consolidations when the only goal is to stabilize the debt level (65 percent versus 47 percent) or reduce it (49 percent versus 30 percent) (Table 5). Expenditure-based consolidations are also more likely to succeed without slowing growth.⁴¹ There is no statistical evidence that revenue-based consolidations are less likely to cause a deterioration in poverty or inequality indicators than expenditure-based consolidations, even among HICs,

⁴¹ This result is in line with the findings from Ziogas and Panagiotidis (2021). Moreover, like their other findings, our data show that fiscal consolidations launched in a weaker economic situation prior to the start of the consolidation effort tend to result in more successful fiscal consolidations – defined either as stabilization of the debt-to-GDP ratio (table 6b).

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which generally have more progressive tax systems. Inequality did not increase in only one-quarter of the 24 consolidations in HICs for which Gini index data are available, and all these successful consolidations were expenditure-based. This could indicate that (i) given adequate political and administrative capacity it is possible to implement well-targeted expenditure cuts, even to social transfers, that do not necessarily worsen the income distribution⁴² and (ii) revenue-side consolidation measures are not typically progressive even in HICs.

Table 5: Consolidation Compositions and Impacts

	Consolidation Type	Achieved a debt-stabilizing primary balance (A)	(A) + Reduced the public debt stock	(A) + Sustained growth	(A)+ Did not increase poverty	(A)+Did not increase inequality
HICs	Expenditure-based	67%***	54%***	59%***	14%	0%
	Revenue-based	30%	15%	15%	17%	26%
EMDEs	Expenditure-based	63%	42%	38%	60%	60%
	Revenue-based	61%	43%	48%	100%	100%
All Countries	Expenditure-based	65%*	49%*	51%*	25%	32%
	Revenue-based	47%	30%	33%	40%	30%

***statistically significant with p -value<0.01 * statistically significant with p -value<0.1

Consolidations lasting more than two years tended to help bring the primary balance to a level that stabilized the public debt. The success rate for closing the sustainability gap increases from 56 percent for consolidations lasting two years to 80 percent for those lasting four years (Figure 4c). The likelihood that the debt will return to its pre-consolidation level increases from 37 percent for two-year consolidations to 43 percent for four-year consolidations. The negative impact on growth also seems to soften when consolidations last three or four years (Figure 4f). Unfortunately, in most cases improvements in the primary balance achieved during the consolidation were partly but not fully reversed in the two years following the consolidation⁴³ (Figure 4f). However, assuming that debt accumulation in the two years prior to the consolidation would have continued, launching a consolidation still reduced debt levels (Figure 4g).

⁴² Opposite results on the relations between composition and inequality are reported by IMF (2014)

⁴³ Measuring by primary balance, the backsliders which fully wiped out the gains of consolidation are Australia (2015-17), Belize (2016-18), Botswana (2002-2006), Dominica (2014-2016), Montenegro (2012-14), North Macedonia (2014-18), Papua New Guinea (2014-18), Portugal (2005-07), Russia (2016-18), Sri Lanka (2015-18), Suriname (2016-18), and Tunisia (2017-19).

These findings remain valid even when the condition on the sustainability gap is dropped.

Ilzetksi et al. (2013) find that fiscal multipliers can be zero or negative in high-debt situations, affecting the outcomes of fiscal consolidation implemented under those circumstances. When the criterion on the sustainability gap is dropped, the number of identified episodes almost triples, rising from 124 to 338. However, the success rate in avoiding a large adverse impact on economic growth remains stable at 66 percent, as do the overall effects on poverty and inequality, while the probability of stabilizing or reducing the debt increases. Finally, no statistically significant evidence could be found (i) that inflation above the historical average supports successful consolidation by facilitating expenditure cuts (relative to GDP) by keeping nominal expenditures constant as real expenditures fall or (ii) that consolidation generates positive effects on private investment, whereas standard theory suggests that excess savings generated by fiscal consolidation should go into private investment via credit.

7. Conclusions

This study draws lessons on the implications of fiscal consolidation based on the international experience. An analysis of 124 consolidation episodes reveals that even though governments often wait three or more years to act after the primary balance falls well below its debt-stabilizing level, consolidations have been largely successful in restoring fiscal sustainability. In 58 percent of cases, fiscal consolidation halted the accumulation of new debt, and in 52 percent of cases the debt stock declined, with most countries experiencing more favorable economic conditions. Expenditure-based consolidations were more common and more successful than revenue-based consolidations according to a range of criteria.

Episodes of fiscal consolidation have five key characteristics. First, the need to restore fiscal sustainability after years of debt accumulation was the most common reason for initiating a consolidation, though many were launched in response to external shocks, particularly terms-of-trade shocks. Second, consolidations generally succeeded in reaching a debt-stabilizing primary balance, but the success rate was lower for those that followed a period of debt accumulation. Third, countries that achieved a debt-stabilizing primary balance enjoyed stronger growth during the consolidation phase than those that failed. Fourth, expenditure cuts were more frequently used and more successful than tax increases. Finally, regardless of the composition, consolidations often had a negative impact on variables directly related to wellbeing, such as per capita growth, poverty and inequality.

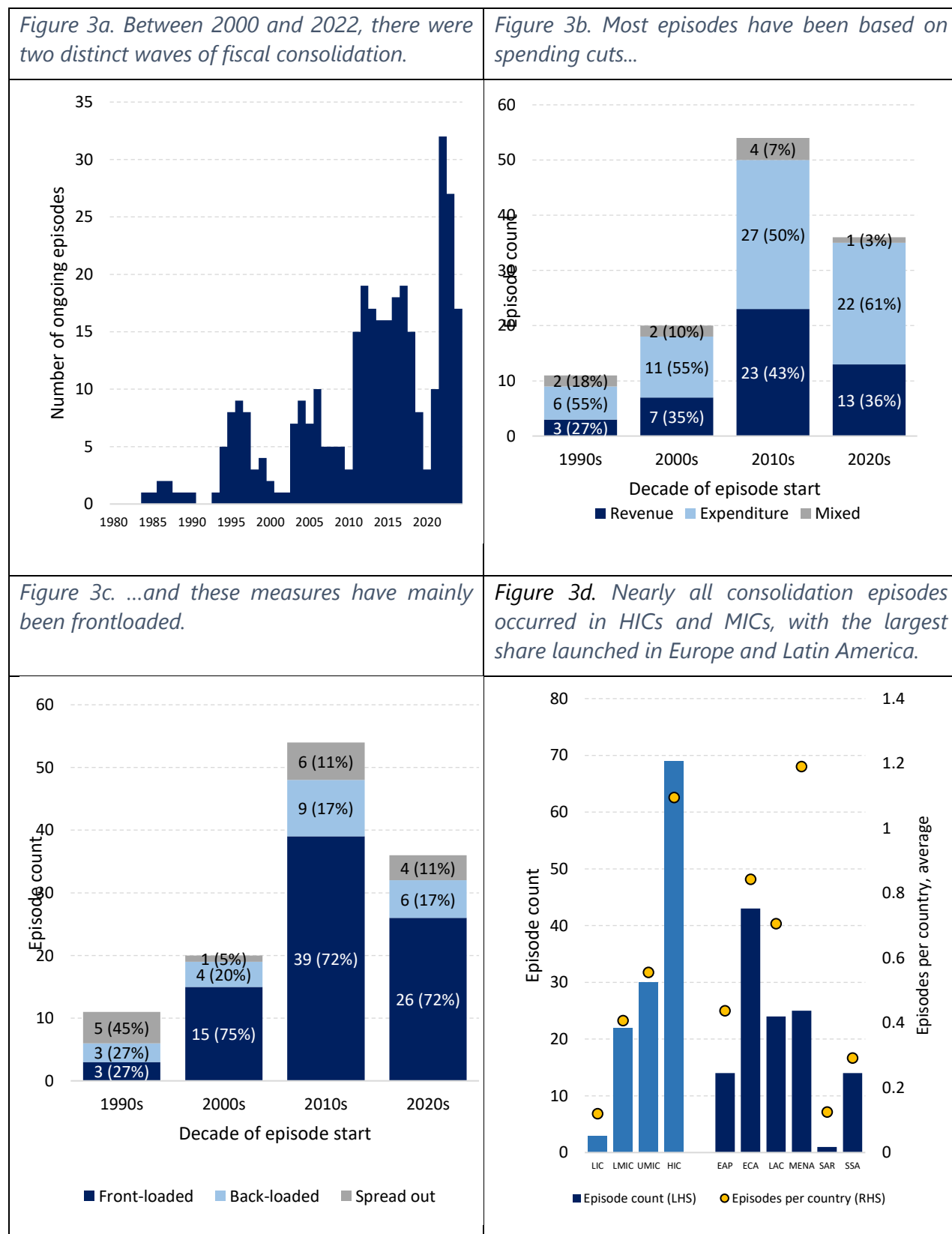
Fiscal consolidation is a challenging process but offers considerable long-term benefits. If left unaddressed, sustainability gaps can complicate consolidation efforts and contribute to internal and external imbalances that hinder inclusive growth. In countries experiencing a large and persistent sustainability gap, per capita GDP growth typically underperforms relative to the period with no sustainability gap, as average real GDP per capita growth during a prolonged period of unsustainability falls into the 32nd percentile of the historical value for each country, on average, across episodes. On the other hand, countries that successfully stabilized their debt ratios enjoyed robust post-consolidation growth rates, outperforming those that failed. In a few cases, governments have been able to substantially improve their fiscal positions with no adverse impact on poverty and inequality indicators.

Successful consolidations require careful political management and must be timed for the right stage in the business cycle. As even a well-designed plan will likely entail tradeoffs and face opposition from interest groups, a successful consolidation effort requires considerable political will. While policymakers sometimes have no choice but to consolidate, the analysis highlights that a favorable economic environment has supported debt stabilization, especially in HICs. Conversely, consolidations tend to be less effective when implemented during a crisis, as severe shocks can compel an abrupt procyclical adjustment that depletes fiscal buffers.

Policymakers must negotiate tradeoffs between improving the fiscal balances and ensuring sustainable economic growth. Since fiscal consolidations typically involve cuts to discretionary spending, their content and implementation timeframe must be carefully designed to minimize adverse short-term effects on growth. Policymakers should assess the potential social implications of a prolonged consolidation in advance and design measures to mitigate its impact on poor and vulnerable households.

Further research is needed to identify and more precisely quantify all the factors that determine how fiscal consolidation influences all macroeconomic variables, with a special focus on the role of the business cycle. Additional analysis could shed light on the long-term effects of fiscal consolidation on per capita growth, poverty, and income inequality. Future studies should consider the counterfactual scenario of no consolidation, as the unchecked accumulation of debt could weaken productivity, undermine long-term growth, and divert budgetary resources from investment and social spending, with negative consequences for development.

Figure 3: An Analysis of Consolidation Episodes



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Figure 3e. Consolidation episodes were generally short-lived, lasting two or three years at most.

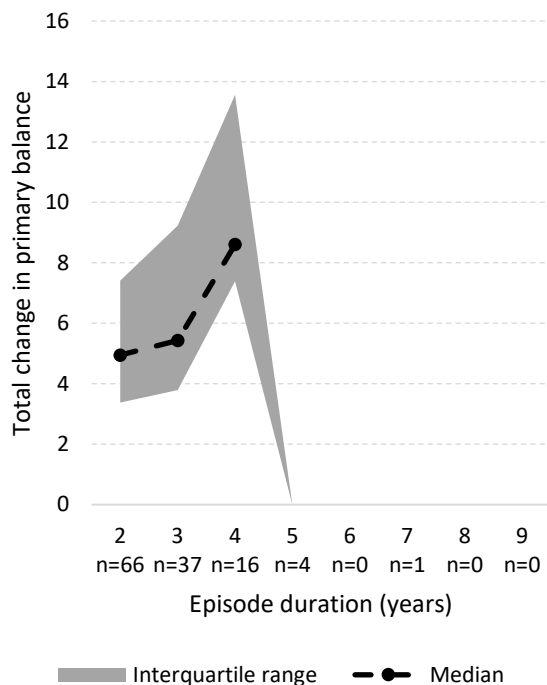


Figure 3f. Countries that launch consolidations do so three years after the emergence of a large sustainability gap.

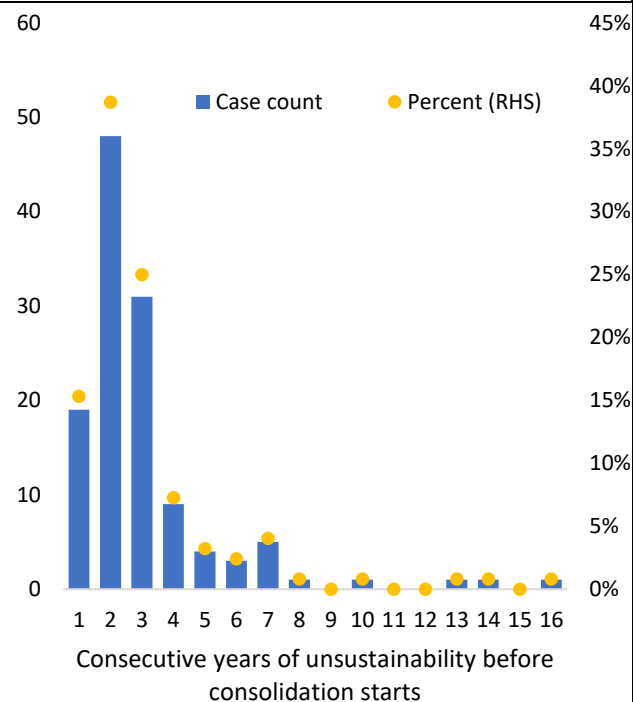


Figure 3g. Countries experiencing a large and persistent sustainability gap tend to have per capita GDP growth rates below their historical average.

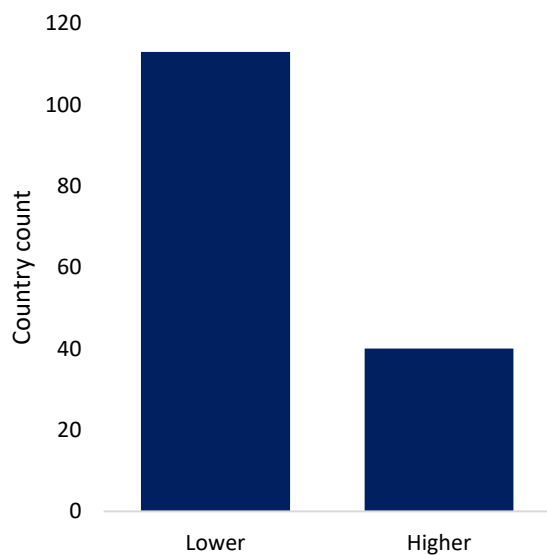
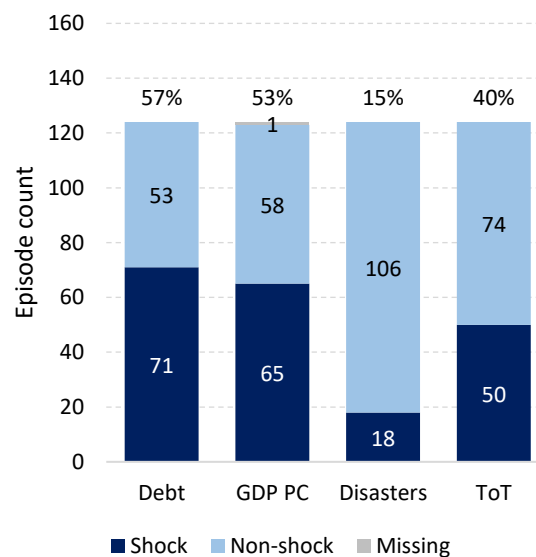


Figure 3h. About half of the consolidation episodes were preceded by an economic shock.



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Figure 3i. Typically, public debt was accumulating at a decreasing rate before the start of a consolidation and stabilizes with the consolidation.

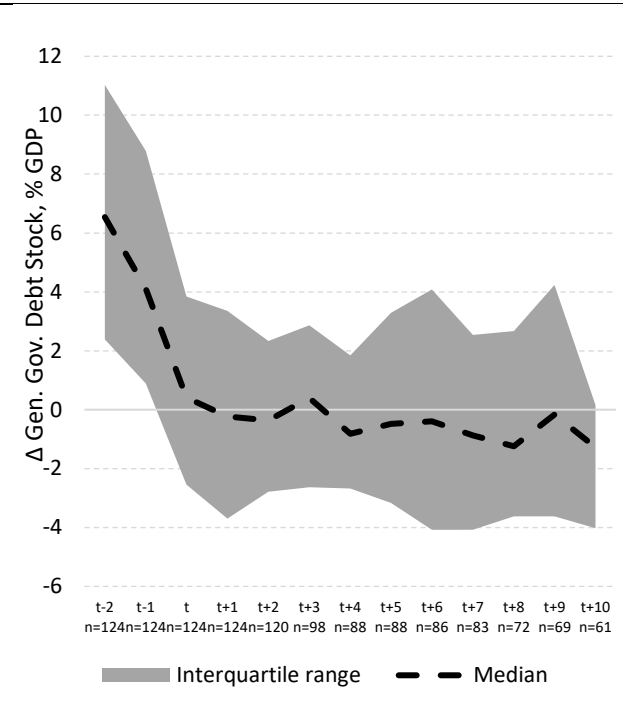
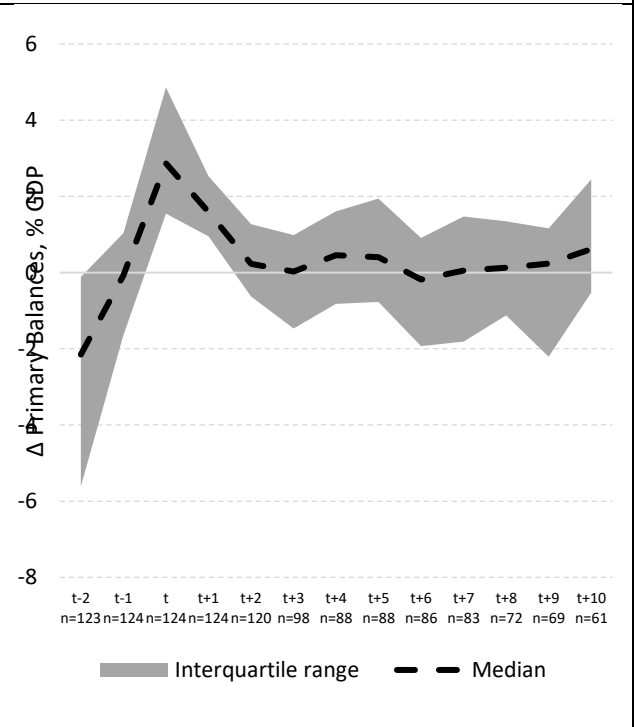


Figure 3j. The headline primary balance typically improved by 2.9 percentage points of GDP in the first year of consolidation.



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Figure 3l. Corporate income and consumption taxes are the main source of new tax revenue.

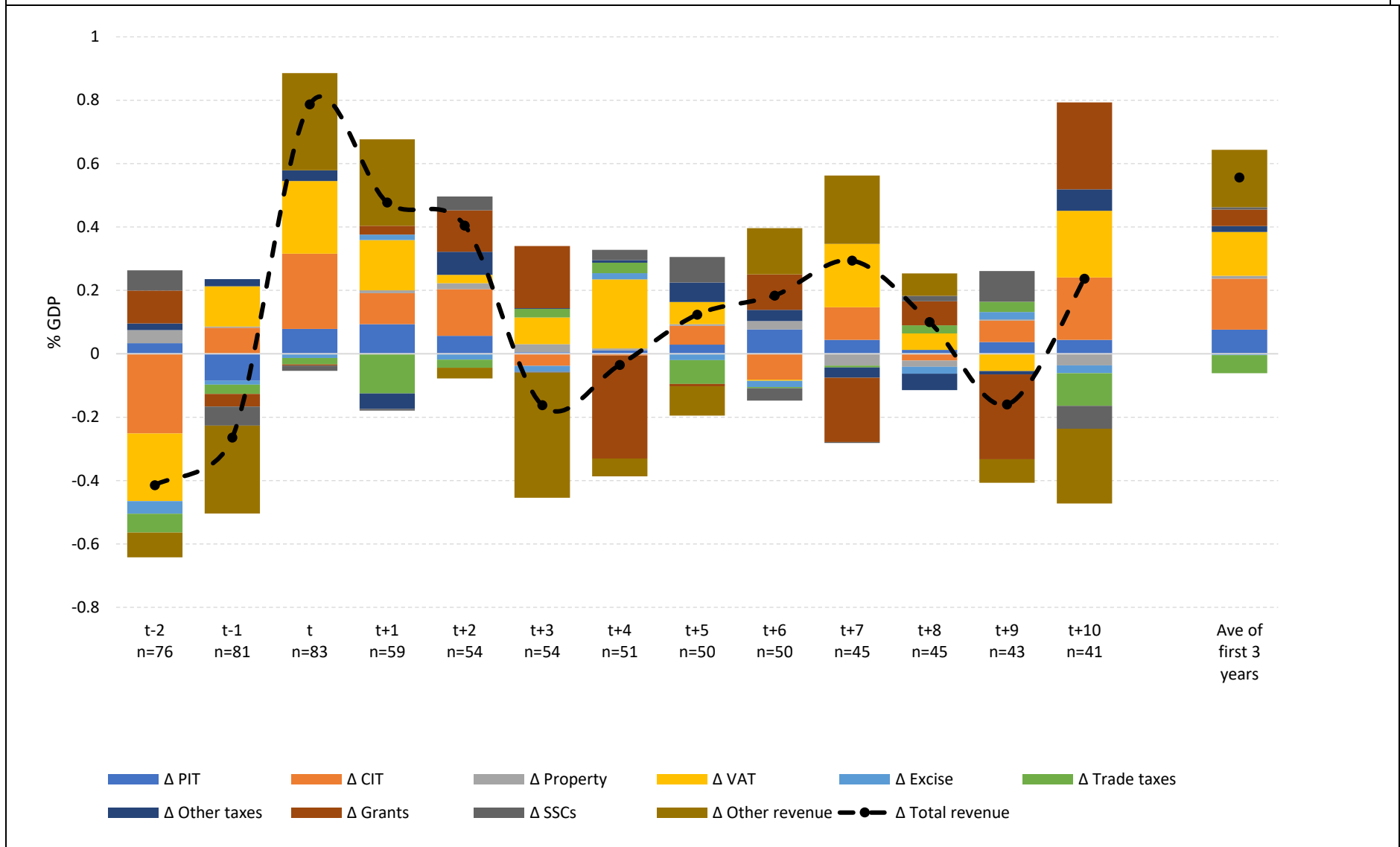


Figure 4: Impacts of Fiscal Consolidation

Figure 4a. The rate of success varies according to the criteria used.

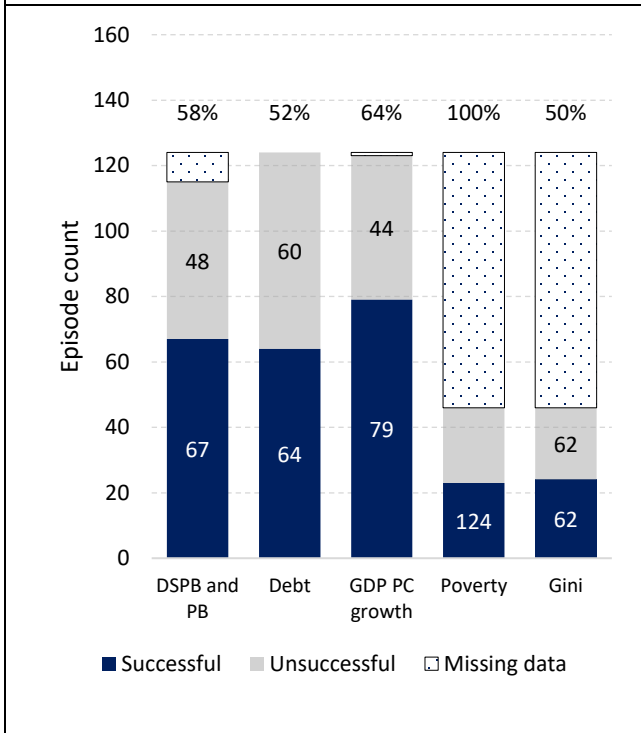


Figure 4b Achieving multiple types of success is relatively more difficult..

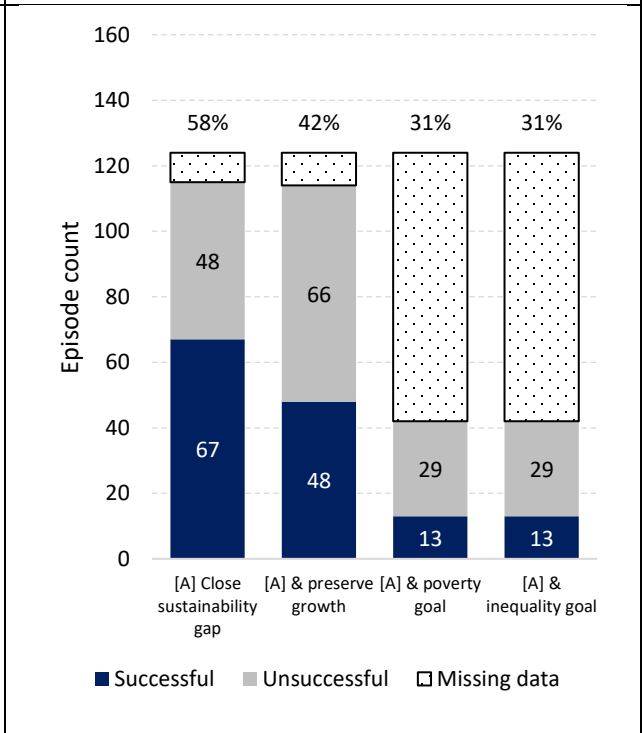


Figure 4c. Deficit reduction supported debt stabilization, albeit with a substantial contribution from inflation.

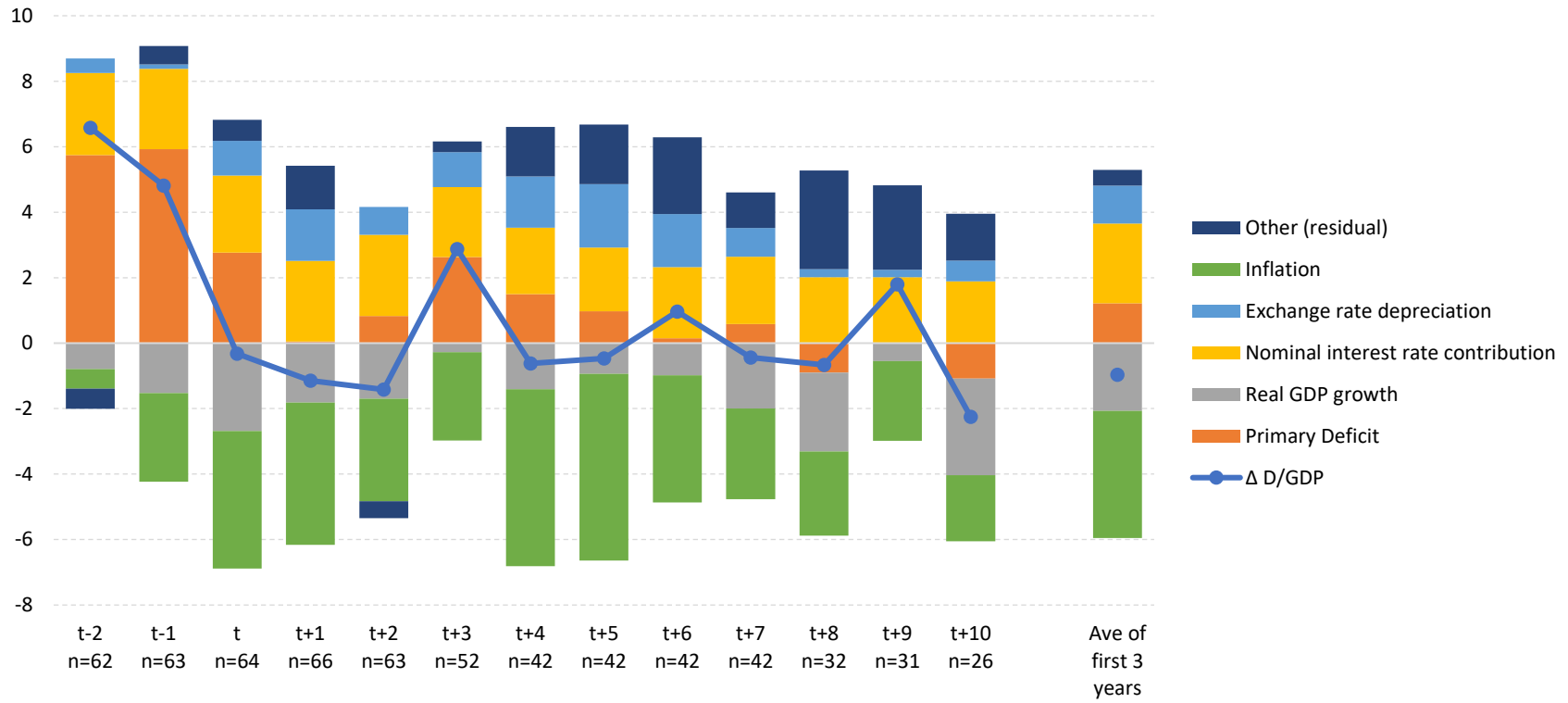


Figure 4d Consolidations require four years to achieve a substantial rate of success in closing the sustainability gap...

Figure 4e ...but prolonged episodes have a better impact on growth.

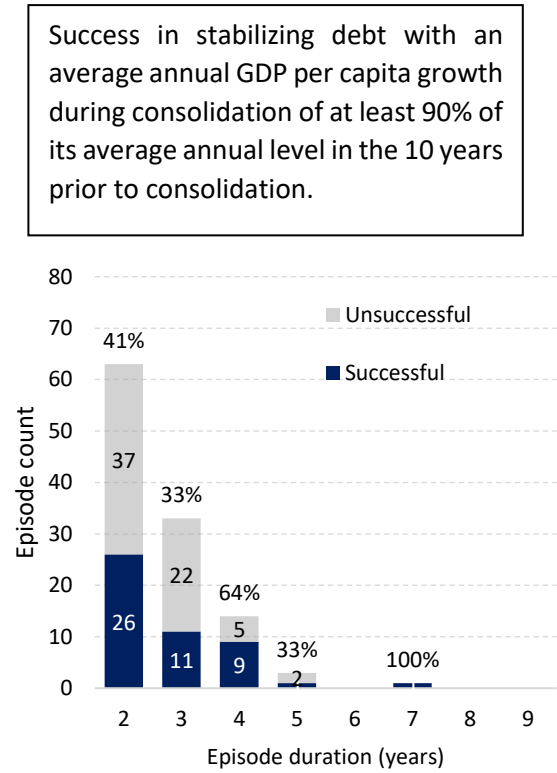
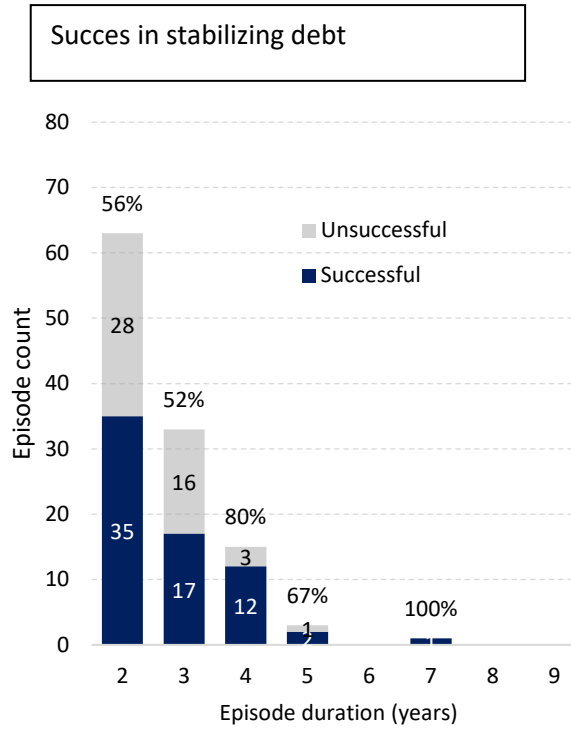


Figure 4f. Backsliding typically erased some, but usually not all, of the gains from consolidation on the primary balance.

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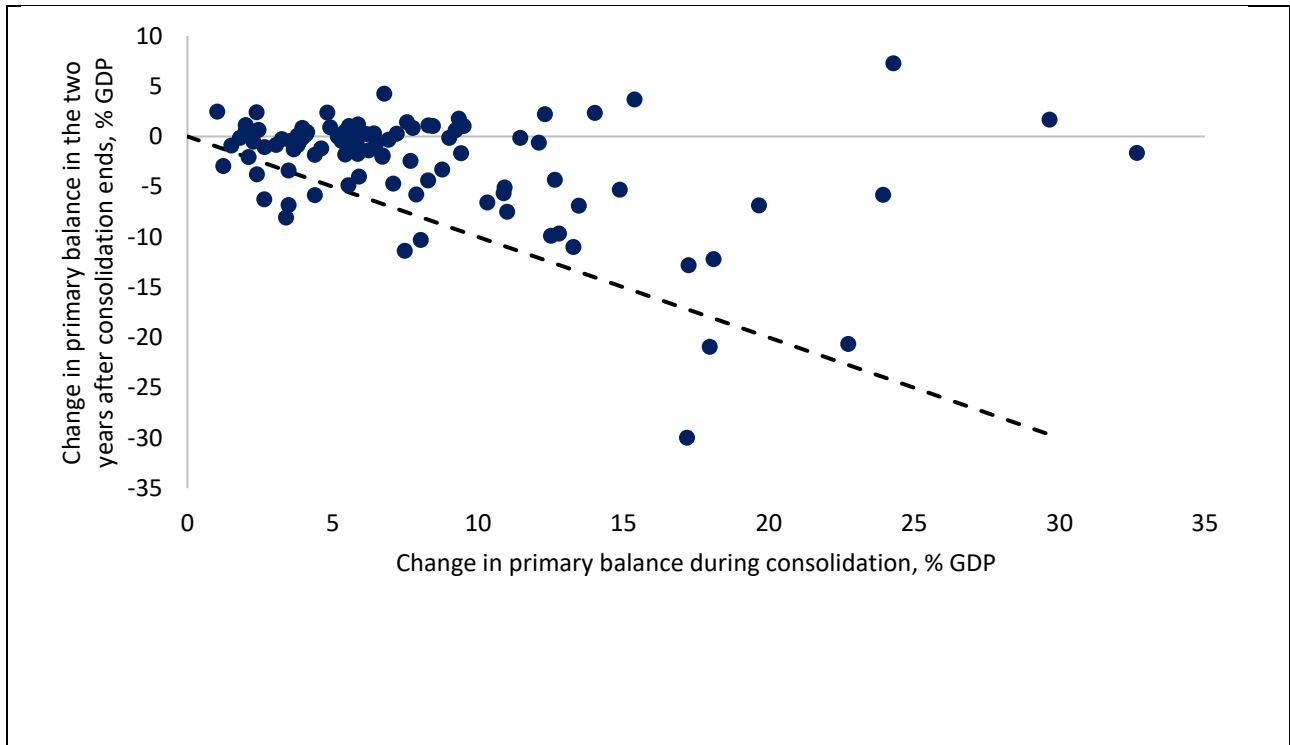
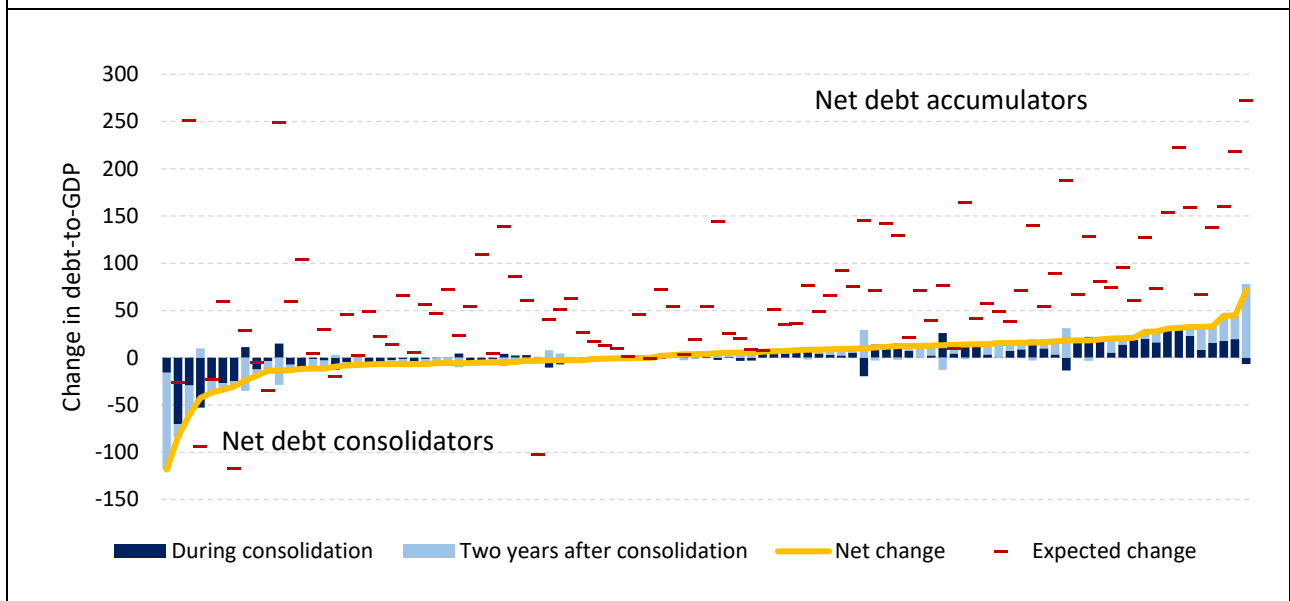


Figure 4g. Most countries that launched a consolidation still saw their debt increase, but not by as much as those that did not launch a consolidation.



Note: Expected change shows where debt-to-GDP would have been in the counterfactual case that assumes that the rate of accumulation of debt in the two years prior to consolidation would have continued.

Table 6: Success defined as closing the sustainability gap

a (median values)

		No. obs	Expenditure-based obs	Revenue-based obs	Mixed obs	Frontloaded obs	Backloaded obs	Spread obs	Δ Primary balance ^a	Δ Primary expenditure ^a	Δ Primary revenue ^a
All	Successful	67	41*	20	6	42	15	10	7.2	-4.5	2.4
	Unsuccessful	48	22	23	3	38	6	4	3.8	-2.2	1.6
HICs	Successful	36	26***	6	4	24	6	6	6.0	-4.9	1.1
	Unsuccessful	29	13	14	2	24	4	1	3.8	-2.5	1.4
EMDEs	Successful	31	15	14	2	18	9	4	8.3	-4.0	4.3
	Unsuccessful	19	9	9	1	14	2	3	3.1	-2.1	1.7

^a as percent of GDP ***P-value <0.01 * P-value <0.10

b (median values)

		Successful episodes ^a			Unsuccessful episodes ^a		
		Before	During	After	Before	During	After
All	TOTAL						
	GDP per capita growth	-0.1	3.0	1.5	0.6	1.6	1.5
	Δ Debt to GDP	11.4	-3.4	0.2	10.9	3.8	0.9
HIC	Δ Current account balance	-1.1	2.5	-0.8	0.0	1.1	-0.2
	GDP per capita growth	0.2	3.1	1.4	0.5	1.2	1.5
	Δ Debt to GDP	9.4	-3.3	-2.0	11.1	4.1	0.2
EMDEs	Δ Current account balance	-0.7	2.5	-0.8	0.2	1.0	0.1
	GDP per capita growth	-0.3	2.8	1.9	1.3	1.6	1.7
	Δ Debt to GDP	12.6	-3.9	1.8	9.1	3.0	2.1

Δ Current account balance -1.4 2.4 -0.6 -3.2 3.8 -2.6

^a as percent of GDP; Before = t - 1 and t - 2; During = years of consolidation; After = last year of consolidation + 1 and last year of consolidation + 2

Table 7: Success defined as closing the sustainability gap without reducing GDP growth

a (median values)

		No. obs	Expenditure-based obs	Revenue-based obs	Mixed obs	Frontloaded obs	Backloaded obs	Spread obs	Δ Primary balance ^a	Δ Primary expenditure ^a	Δ Primary revenue ^a
All	Successful	47	31*	14	2	29	10	8	6.8	-4.5	2.4
	Unsuccessful	67	32	29	6	51	11	5	5.0	-2.6	1.8
HICs	Successful	27	22***	3	2	17	5	5	6.2	-5.1	1.0
	Unsuccessful	37	17	17	3	31	5	1	4.3	-2.7	1.7
EMDEs	Successful	20	9	11	0	12	5	3	7.2	-3.2	4.9
	Unsuccessful	30	15	12	3	20	6	4	5.9	-2.2	2.3

^a as percent of GDP; ***P-value <0.01 * P-value <0.10

Table 7b (median values)

	TOTAL	Successful episodes ^a			Unsuccessful episodes ^a		
		Before	During	After	Before	During	After
All	GDP per capita growth	-0.7	3.9	1.9	0.8	1.5	1.3
	Δ Debt to GDP	11.6	-6.6	-1.5	11.1	3.4	2.1
	Δ Current account balance	-1.2	2.3	-0.6	-0.5	1.5	-0.5

HIC	GDP per capita growth	-0.2	3.6	1.6	0.5	1.4	1.4
	Δ Debt to GDP	10.4	-3.8	-3.7	10.7	3.5	0.3
	Δ Current account balance	-0.8	2.3	-0.7	0.2	1.0	-0.2
EMDEs	GDP per capita growth	-3.2	4.4	3.4	1.2	1.5	1.2
	Δ Debt to GDP	12.5	-9.8	-0.3	11.2	3.2	2.4
	Δ Current account balance	-1.8	2.5	-0.3	-2.7	3.6	-2.7

^a as percent of GDP; Before = t - 1 and t - 2; During = years of consolidation; After = last year of consolidation + 1 and last year of consolidation + 2

Table 8: Success defined as closing the sustainability gap without increasing poverty

a (median values)

		No. obs	Expenditure-based obs	Revenue-based obs	Mixed obs	Frontloaded obs	Backloaded obs	Spread obs	Δ Primary balance ^a	Δ Primary expenditure ^a	Δ Primary revenue ^a
All	Successful	13	7	4	2	9	1	3	5.8	-4.0	2.5
	Unsuccessful	29	21	6	2	21	5	3	3.7	-3.0	1.0
HICs	Successful	6	4	1	1	4	0	2	6.1	-5.0	2.0
	Unsuccessful	26	19	6	1	19	5	2	3.8	-3.1	1.0
EMDEs	Successful	7	3	3	1	5	1	1	5.8	-3.3	2.5
	Unsuccessful	3	2	0	1	2	0	1	3.2	-1.6	1.7

b (median values)

Before = t - 1 and t - 2; During = years of consolidation; After = last year of consolidation + 1 and last year of consolidation + 2

		Successful episodes ^a			Unsuccessful episodes ^a		
TOTAL		Before	During	After	Before	During	After
All	GDP per capita growth	0.1	3.9	2.6	0.2	2.1	1.6
	Δ Debt to GDP	12.5	-3.8	-0.5	8.8	0.8	1.3
	Δ Current account balance	1.7	2.5	1.0	1.1	0.7	-0.2
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HIC	GDP per capita growth	0.3	3.2	3.4	-0.1	2.1	1.6
	Δ Debt to GDP	12.5	-1.6	-2.1	8.6	0.7	-0.3
	Δ Current account balance	1.7	1.3	0.5	1.1	0.9	-0.2
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EMDEs	GDP per capita growth	0.1	3.9	1.3	0.8	3.1	0.5
	Δ Debt to GDP	12.5	-3.9	1.8	14.2	2.4	6.9
	Δ Current account balance	-1.1	3.1	1.0	2.8	-1.5	-0.1

Table 9: Success defined as closing the sustainability gap without increasing inequality.

a (median values)

		No. obs	Expenditure-based obs	Revenue-based obs	Mixed obs	Frontloaded obs	Backloaded obs	Spread obs	Δ Primary balance ^a	Δ Primary expenditure ^a	Δ Primary revenue ^a
All	Successful	13	9	3	1	9	2	2	5.5	-3.3	1.4
	Unsuccessful	29	19	7	3	21	4	4	4.1	-2.9	1.2
HICs	Successful	7	6	0	1	5	1	1	5.3	-3.5	0.6
	Unsuccessful	25	17	7	1	18	4	3	4.1	-2.9	1.2
EMDEs	Successful	6	3	3	0	4	1	1	5.7	-2.4	2.4
	Unsuccessful	4	2	0	2	3	0	1	5.8	-2.8	3.0

b (median values)

Before = t - 1 and t - 2; During = years of consolidation; After = last year of consolidation + 1 and last year of consolidation +

		Successful episodes ^a			Unsuccessful episodes ^a		
TOTAL		Before	During	After	Before	During	After
All	GDP per capita growth	1.2	3.6	1.3	-0.1	1.9	1.7
	Δ Debt to GDP	11.6	-3.4	0.7	12.0	0.8	0.2
	Δ Current account balance	1.1	2.1	0.0	1.5	0.7	-0.1
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HIC	GDP per capita growth	1.2	3.3	1.2	-0.4	1.9	1.7
	Δ Debt to GDP	8.0	-3.2	1.0	10.7	0.6	-1.2
	Δ Current account balance	2.1	0.3	-0.4	1.1	1.0	-0.2
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EMDEs	GDP per capita growth	0.8	4.6	1.9	0.3	2.4	-0.4
	Δ Debt to GDP	12.1	-5.2	0.7	16.1	2.7	8.6
	Δ Current account balance	-1.3	4.0	1.0	2.3	-1.9	1.7

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Annex 1 Other studies and definitions of fiscal consolidation

This appendix reproduces table A1 from Escolano (2019), which lists studies of fiscal consolidation and the definitions used in those studies, among other details.

Table 7. *Reproduction of table A1 from Escolano (2019)*

Author(s)	Variable used to Measure Adjustment	Definition of Adjustment Episode	Sample Countries	Sample Years	Number of Episodes	Size of Adjustment (%GDP)
Afonso and Jalles (2011)	Change in CAPB; budget plans	(i) At least 2pp change in the CAPB in one year or at least 1.5 pp change on average over two years; (ii) CAPB change is >1.5 standard deviation in one year; (iii) Fiscal consolidation episodes as defined by Devries and others (2011)	18 countries. ADV/EU	1970-2010	59-79	0.7 to 2.3
Ahrend and others (2006)	Change in CAPB	At least 1pp change in one year; or at least 1pp change in two years with at least 0.5pp in the first year	24 countries OECD	1980-2005	81	> 8
Alesina and Ardagna (1998)	Change in CAPB	At least 2pp change in one year; or at least 1.5pp change in two years	20 countries, OECD	1960-1994	51	NA
Alesina and Ardagna (2009)	Change in CAPB based on Blanchard (1993) methodology	At least 1.5pp change in one year	21 countries, OECD	1970-2007	107	1.85
Alesina and Perotti (1995)	Change in CAPB based on Blanchard (1993) methodology	Blanchard fiscal impulse is less than -1.5 percent of GDP	20 countries, OECD	1960-1992	66	2.6
Alesina and Perotti (1997)	Change in CAPB	At least 1.5pp change in one year; or at least 1.5pp change in two years with each more than 1.25pp	20 countries, OECD	1960-1994	62	2.57
Ardagna (2004)	Change in the CAPB	CAPB improves and, two years after, debt/GDP is at least 3pp lower than in the year of the fiscal tightening	17 countries, OECD	1975-2002		NA
Ardagna (2009)	Change in CAPB	At least 2pp change in one year; or at least 2pp change in two years with each more than 1.5pp	25 countries, OECD	1970-2006	86	2.9
Baldacci and others (2004)	Change in the primary balance	At least 0.5 percent of GDP change per year	25 countries, EME	1980-2001	177	NA
Baldacci and others (2010)	Change in CAPB	Improvement in the CAPB during post-banking crisis years	99 countries, ADV/EME	1980-2008	100	NA
Baldacci and others (2013)	Change in CAPB	At least two consecutive years of reduction in the ratio of public debt to GDP with increases in the CAPB of at least 0.5 percent of GDP per year, sustained for two years or more during the debt reduction episode	107 countries, ADV/EME/LIC	1980-2012	79	3.9
Barrios and others (2010)	Change in CAPB	At least 1.5pp change in one year; or at least a 1.5pp change in three years, with no annual deterioration larger than 0.5pp	23 countries, EU/OECD	1978-2008	235	NA
Devries and others (2011)	"Policy-action" approach	As identified by contemporaneous policy documents	17 countries, OECD	1978-2009	173	Annual of 0.74
Eichengreen and Panizza (2014)	Level of primary balance	Primary surplus episode is large when the average value of the primary surplus during the episode is, alternatively, greater than 3, 4, or 5 percent of GDP. Primary surplus is persistent when the episode lasts at least 5, 8, or 10 years.	54 countries, ADV/EME	1974-2013	36	NA
Giavazzi and Pagano (1990)	Changes in taxes net of transfers and government consumption	All country/years in sample	10 countries, EU; focus on Denmark and Ireland	1973-1989		NA
Guichard and others (2007)	Change in CAPB	At least 1pp change in one year; or at least 1pp change in two years with each more than 0.5pp	24 countries, OECD	1978-2006	85	2.8

Author(s)	Variable used to Measure Adjustment	Definition of Adjustment Episode	Sample Countries	Sample Years	Number of Episodes	Size of Adjustment (%GDP)
Guajardo and others (2011)	"Policy-action" approach	As identified by contemporaneous policy documents	17 countries, OECD	1978-2009	173	0.99
Gupta and others (2005)	Change in the overall deficit	At least 1 percent of GDP improvement in one year	25 countries, EME	1980-2001		NA
Heylen and Everaert (2000)	Change in CAPB	At least two consecutive years when the CAPB improved by at least 2pp (at least 0.25pp in the first year)	18 countries, OECD	1975-1995	39	3.2
Hjelm (2002)	Change in CAPB	At least 3 pp in one year; or at least 3 pp over 2 years; or at least 4 pp over 3 years; or at least 5 pp over 4 years	19 countries, OECD	1970-1997	19	NA
IMF (2013a)	Level of primary balance	Maximum five-year moving-average primary balance	43 countries, ADV/EME	1950-2012		3½-4
IMF (2013b)	Level of CAPB, change in CAPB	Average CAPB for any consecutive 3-year period; change in the CAPB over 3 years	54 countries, ADV/EME	1990-2011		CAPB level of 3.5; CAPB change of 3
Kumar and others (2007)	Change in CAPB	At least 1pp improvement in one year	24 countries, OECD	1972-2006	81	1.7
Lambertini and Tavares (2007)	Change in the primary balance	At least 1.5pp improvement in one year	20 countries, OECD	1970-1999	99	NA
Mati and Thorton (2008)	Change in the primary balance	At least 0.75pp improvement in one year; at least 1.5pp improvement in one year and no deterioration in the following two years	23 countries, EME	1970-2004	198; 132	NA
McDermott and Wescott (1996)	Change in CAPB	At least 1.5pp improvement over 2 years and does not decrease in either of the two years	20 countries, OECD	1970-1995	74	NA
Molnar (2012)	Change in CAPB	At least 1.5pp improvement per year; gradual but continual tightening over several years		1960-2009		3
Perotti (2012)	"Policy-action" approach	As identified by contemporaneous policy documents	Denmark, Finland, Ireland, Sweden	1982-1998	4	6.2
Tsibouris and others (2006)	Change in primary Balance	Uninterrupted improvement in the primary budget balance	165 countries, ADV/EME/LIC	1971-2001	366	>5
Von Hagen and others (2002)	Change in CAB	At least 1.25pp improvement for two years; or at least 1.5pp improvement in one year and positive in the preceding and following year	20 countries, OECD	1960-1998	65	2.29
Von Hagen and Strauch (2001)	Change in CAB	At least 1.25pp improvement for two years; or at least 1.5pp improvement in one year and positive in the preceding and following year	20 countries, OECD	1960-1998	65	2.29
Zheng (2014)	Level of primary balance	Average primary fiscal surplus over a five-year period	87 countries, ADV/EME	1956-2009		NA

Note: CAPB: cyclically adjusted primary balance as a percent of potential GDP; CAB: cyclically adjusted balance as a percent of potential GDP; pp: percentage point of potential GDP; ADV: advanced countries; EME: emerging market economies' LICs: low income countries; EU: European Union

Annex 2 Data and sources

Table 8. List of sources and indicators

Source	Indicator
World Economic Outlook (WEO)	General government primary net lending/borrowing (% GDP)
	General government net lending/borrowing (% GDP)
	General government revenue (% GDP)
	General government total expenditure (% GDP)
	General government gross debt (% GDP)
	Current account balance (% GDP)
	Gross domestic product per capita, constant prices (national currency)
	Gross domestic product, current prices (U.S. dollars)
Government Finance Statistics (GFS)	Total expenditure (% GDP)
	Expenses (% GDP)
	Compensation of employees (% GDP)
	Use of goods and services (% GDP)
	Social benefits expense (% GDP)
	Subsidies expense (% GDP)
	Interest expense (% GDP)
	Grants expense (% GDP)
	Consumption of fixed capital (% GDP)
	Gross/net investment in nonfinancial assets (% GDP)
	Revenue (% GDP)
	Taxes on income, profits, and capital gains: payable by individuals (% GDP)
	Taxes on income, profits, and capital gains: payable by corporations and other enterprises (% GDP)
	Taxes on property (% GDP)
	Value-added taxes (% GDP)
	Excises (% GDP)
	Taxes on international trade and transactions (% GDP)
Grants (% GDP)	

	Social contributions (% GDP)
World Development Indicators	Poverty headcount ratio at \$2.15 a day (2017 PPP) (% of population) [SI.POV.DDAY]
WDI	Gini index [SI.POV.GINI]
MFMod	Exchange rate (LCU / USD Value LCU)
Overall balance and debt are replicated from WEO for this analysis (debt-creating flows) to use one source for all indicators	Primary Fiscal Balance (LCU % of GDP)
	Overall Fiscal Balance (LCU % of GDP)
	Gross Domestic Product at Market Price Value (Millions LCU % change)
	General Government Debt Stock (Millions of Local Currency % of GDP)
	General Government External Debt Stock (USD % of GDP)
	Gross Domestic Product at Market Price Volume (Millions LCU % change)
EM-DAT	Data on disaster damages (current USD)
IMF	Commodity terms of trade index (weighted by ratio of exports to total commodity exports with time varying, rolling weights)

Table 9. List of derived indicators

Indicator	Notes
Primary expenditure (% GDP)	Calculates net interest expense by taking the difference between the primary balance and the overall balance (WEO data). Assumes interest revenue is zero, which treats net interest expense as interest expense. Subtracts interest expense from total expenditure to estimate primary expenditure.
Real GDP per capita growth	Calculates a year-on-year growth rate for each year using WEO data on real GDP per capita.
EM-DAT disaster damage figures (% GDP)	Divides estimates of total disaster damages (including natural and technological disasters) in each year by the WEO's estimate of GDP in current USD.
Other expenses (% GDP)	A residual. Subtracts known components of expense from total expense. Required in cases of missing granular indicators.

Other taxes (% GDP)	A residual. Subtracts known components of total taxes from total taxes. Required in cases of missing granular indicators.
Debt-creating flows	See LIC Debt Sustainability Framework guidance note for more information
Cyclically adjusted primary balances (% GDP)	See forthcoming note on cyclicity by EMFTX for more information
Debt-stabilizing primary balances	See Escolano (2010)

Annex 3: Fiscal consolidation tool update, a robustness test

The findings on episodes of fiscal consolidation featured in this paper are calculated using vintages of available datasets from around October 2024, primarily the October 2024 World Economic Outlook (WEO) Database. However, an earlier version of this paper was based on data from six months earlier. This produced two sets of findings, which this annex will compare as a short robustness test. The annex will conclude with a study of drivers of differences between the two sets of findings.

The earlier version of this paper’s findings, to be called the April 2024 results, featured 108 episodes of fiscal consolidation meeting the robust definition discussed in this paper⁴⁴ and was based on the period 1980-2023 given available data at the time. This annex will feature just two tables of results to be compared with Table 6A and 6B from this paper.

Most notable is the large shift in sample toward HICs, as the EMDE sample size fell in the October 2024 results while the HIC sample grew. The EMDE success rate also dropped quite a bit. April 2024 results featured more significant statistical evidence ($p < 0.01$ vs $p < 0.1$) that expenditure-based episodes are more successful (comparison of statistical significance is not shown in the table), defined as closing the sustainability gap by the end of consolidation. Differences between the two sets of results in terms of change in primary balance, primary expenditure, and revenue are small, although revenue gains appear to have been higher for unsuccessful HICs and lower for successful EMDEs in the April 2024 results. In table A.2 (a comparison of Table 6.B), findings from April 2024 results were mostly consistent with this paper’s findings, with a few differences that do not undermine the overall narrative. Notably, the October 2024 results find much starker debt-to-GDP contraction among successful episodes (especially EMDEs), while unsuccessful HICs faced less debt accumulation at all times and unsuccessful EMDEs faced much higher debt accumulation leading into consolidation.

Table A.1 – Change in table 6A between April 2024 results and October 2024 results

		No. obs	Expenditure-based obs	Revenue-based obs	Mixed obs	Frontloaded obs	Backloaded obs	Spread obs	Δ Primary balance ^a	Δ Primary expenditure ^a	Δ Primary revenue ^a
All	Successful	-8	-8	0	0	1	-4	-5	1.2	-0.7	0.2
	Unsuccessful	15	12	2	1	12	1	2	-0.8	0.0	-0.8
HICs	Successful	11	7	3	1	10	1	0	1.0	-1.1	0.0
	Unsuccessful	10	9	0	1	8	2	0	-2.0	0.1	-1.8

⁴⁴ The primary balance must increase at least 0.5% of GDP since two years prior for at least two years in a row, the cyclically adjusted primary balance (CAPB) must be increasing each year by at least 0.1% of GDP, and the primary balance must be at least 2% of GDP below its debt-stabilizing level (DSPB) in the year before consolidation starts.

EMDEs	Successful	-19	-15	-3	-1	-9	-5	-5	2.1	-0.4	1.7
	Unsuccessful	5	3	2	0	4	-1	2	-0.9	0.1	-0.2

Table A.2 - Change in table 6B between April 2024 results and October 2024 results

		Successful episodes ^a			Unsuccessful episodes ^a		
TOTAL		Before	During	After	Before	During	After
All	GDP per capita growth	-0.9	0.7	-0.6	0.7	0.6	0.0
	Δ Debt to GDP	1.7	-2.7	-0.1	-0.2	-3.2	-1.4
	Δ Current account balance	-1.2	0.3	0.3	-0.4	0.3	-0.7
HIC	GDP per capita growth	-0.6	1.2	-0.6	1.5	0.6	0.0
	Δ Debt to GDP	1.0	-1.8	-0.2	-2.9	-4.8	-2.4
	Δ Current account balance	-0.4	0.3	0.0	-0.9	0.2	0.0
EMDEs	GDP per capita growth	-1.2	0.2	-0.4	0.3	0.0	-0.1
	Δ Debt to GDP	0.8	-4.2	0.1	8.1	-1.9	0.2
	Δ Current account balance	-1.5	0.2	0.8	-3.0	3.1	-3.4

Note: Successful is defined as closing the sustainability gap. In table A.1, all but rightmost three columns show counts, and the rightmost three columns in Table A.1 and all columns in Table A.2 show median values.

The reader may wonder what drives differences. The October 2024 results would be expected to only add one year (2024) to the period of analysis. This year difference did add many observations, mainly due to the definitional requirement to have two consecutive years of consolidation to qualify as an episode, and many countries consolidating post-pandemic needed only to add 2024 to qualify. However, this does not seem sufficient to explain moderate differences for a few median values.

One possible driver is changes in the indicators featured in the tables (growth, debt, current account balances, etc.). In figure A.1 the reader can see overlapping country-year GDP per capita growth observations from both vintages of the WEO as a scatter to gain a sense of changes. Much of these changes are due to the WEO updating recent estimates and swapping forecasts/estimates with actual observations, but historical revisions are non-negligible (see figure A.2). Still, the observations largely agree (R^2 of 95%), so this does not sufficiently explain the change in results.

Figure A.1

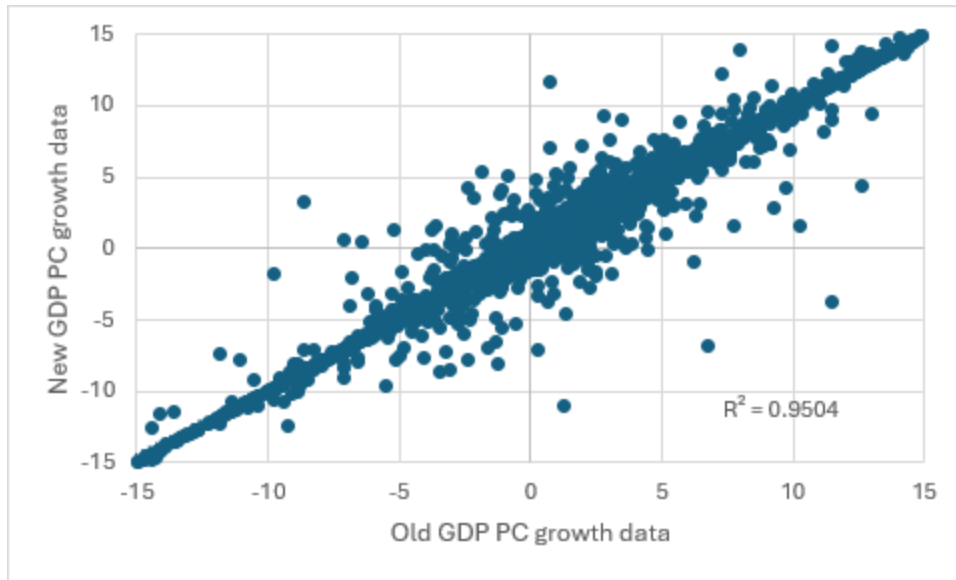
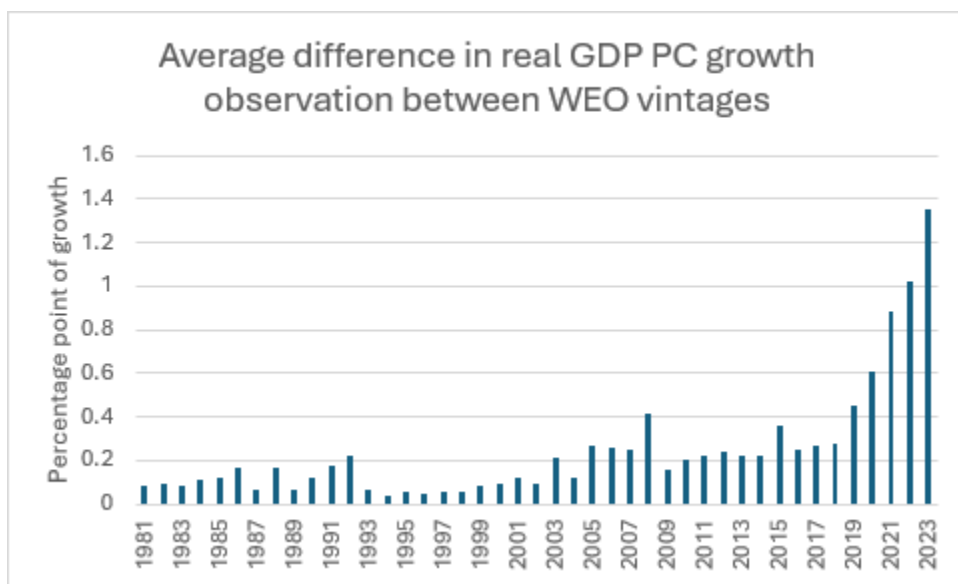


Figure A.2



The main driver of differences is the composition of samples, beyond adding 16 observations in the October 2024 results. As already mentioned, the decrease in EMDE representation within the sample as well as the drop in the EMDE success rate (lowering the successful EMDE sample size) drive part of this. Figure A.3 compares the full April 2024 and October 2024 samples. Episodes are considered matching when they are in the same country, start year, and end year. Only 56% of the old episodes remained in the October 2024 sample, and considering the newly added episodes, this means the October 2024 sample is only composed of 49% episodes exactly occurring in the April 2024 sample. If we relax the standards and only require the country and start year of the episode to be the same to find a match, then we have 62% of the original episodes which appeared in the October 2024 sample, resulting in 54% of our latest sample being made up of episodes in the April 2024 sample (see Figure A4). In many cases, the difference is only a minor shift, in which an episode only counts as starting a year later than it did before, causing it to not match across samples. Often, this is due to shifts in the cyclically adjusted primary balance (CAPB) and debt-stabilizing primary balance (DSPB). These estimates are composed of many indicators, such that any shift in one of them (output gap estimates, effective interest rates, elasticities, revenue and expenditure observations, etc.) could mean the delta CAPB in a given year flips sign, or some other difference that adjusts our inventory of episodes. This also explains the reduction in size of the sample of successful EMDEs, because the definition of success featured in the comparison of results in this annex is based on the sustainability gap (DSPB data). These changes appear enough to explain the few starker differences in findings in our tables across the two sets of results.

The reader is thus encouraged to consider consistent results across both sets of findings as more robust, and to note that when working with countries where capacity to release high-quality data is a constraint, that findings may be subject to change as figures improve over time.

Figure A.3

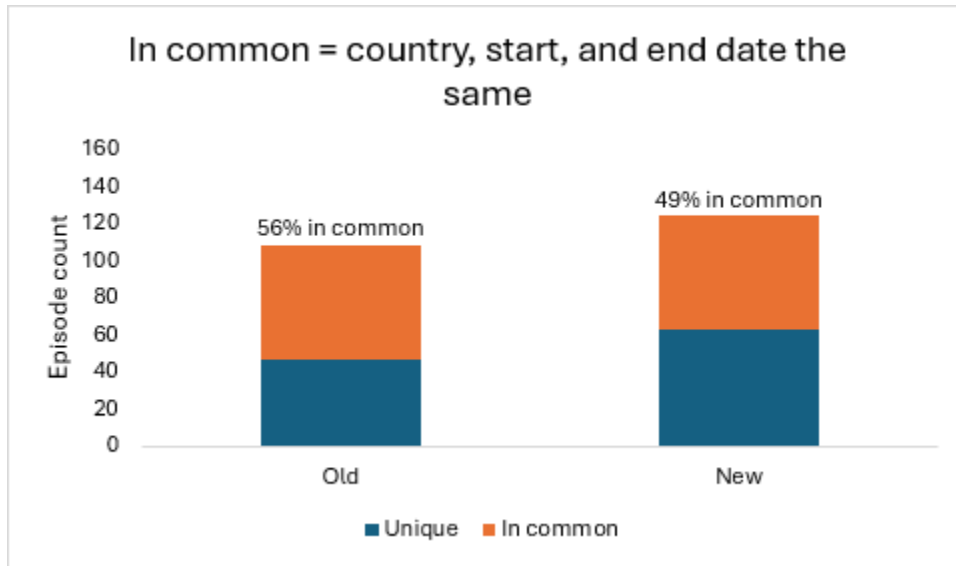


Figure A.4

In common = country and start date the same

