

Cautious optimism:

How IMF economic surveillance
can foster the green transition





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1 | Economic surveillance at crossroads

Sound economic policies are necessary for meeting the end-goal of the green transition, including through the phasing out of fossil fuel extraction and consumption. From trade policy to fiscal measures and from banking regulations to social protection reforms—all facets of macroeconomic policy have a role to play in bringing about a major shift towards the implementation of climate change adaptation and mitigation measures. Enter the International Monetary Fund (IMF). This international organization has a key mandate to safeguard global economic stability, and has been actively positioning itself at the forefront of the economic policy flank of the fight against climate change. As its Managing Director Kristalina Georgieva outlined, “we embrace the transition to the new climate economy—one that is low carbon and climate resilient, that helps fight the causes of climate change and adapt to its consequences” (Georgieva 2021)

How do the IMF’s policies link up to green transition objectives? While the organization may be better known for its lending programs to countries in crisis, an underappreciated core area of its operations is the surveillance of its members’ economic policies. For most countries, this exercise is conducted annually or biennially, and its output—a so-called “Article IV report”—sets out the assessments of IMF staff vis-a-vis a country’s economic challenges and advice on how to overcome them. Such advice sets the tone of policy debates within countries and informs the decisions of international investors, therefore making it highly consequential.

Until recently, Article IV reports—and the related Financial Sector Stability Assessments (FSAPs)—neglected appropriate coverage of the economic impact of climate change, including the range of physical risks from natural disasters, transition risks due to the shift to a low-carbon economy, and spill-over risks on account of the economic fallout of a green transition in a country’s major trading

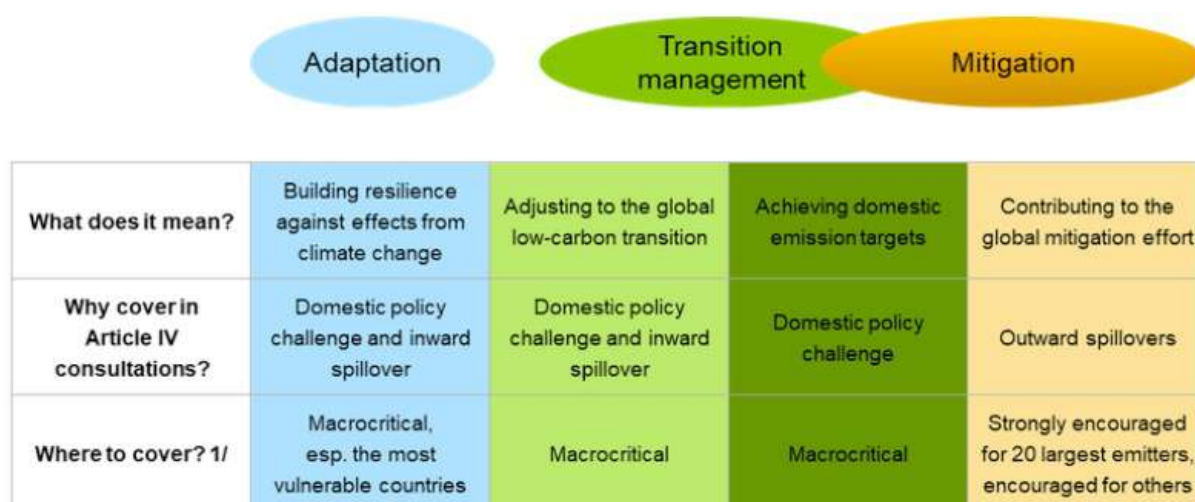
partners (Gallagher et al. 2021; Ramos et al. 2022; Volz and Ahmed 2020). Even by the IMF’s own admission, climate-related analyses were haphazard (IMF 2021a), while civil society has called out the organization’s delayed action on this front (Kentikelenis and Stubbs 2021a, 2021b; Kentikelenis, Stubbs, and Reinsberg 2022; Sward et al. 2021). To address these shortcomings and criticisms, the IMF recently announced an overhaul of its surveillance practices to foreground climate concerns.

According to its 2021 Comprehensive Surveillance Review (IMF 2021b), a new era dawns for the IMF’s engagement with climate change mitigation and adaptation in its analyses. First, the IMF committed to make strides in assessing how countries can manage the transition to a greener economy. This will entail specifying which revenue and expenditure policies are required, as well as the broader set of regulatory or institutional reforms that can aid this objective. Second, in line with the high-level commitments by Managing Director Kristalina Georgieva (IMF 2020), climate change mitigation measures will be covered regularly for the 20 largest greenhouse gas emitters. Finally, coverage of climate change adaptation and resilience would be undertaken for climate-vulnerable countries every three years, building on the IMF’s earlier acknowledgment of adaptation issues—especially for small-island economies and natural disaster-prone areas.

These developments represent a sea change in the practice of IMF surveillance. They reflect the organization’s broader acceptance that climate change issues are inherently critical for macro-economic performance (or “macro-critical” in the IMF parlance), and—therefore—covering them is well within the mandate of the organization. In turn, this commits the IMF to adopt a systematic approach to integrating climate-related risks into its surveillance over the coming three years (IMF 2021a).

Operationalizing these decisions, the IMF published a Staff Guidance Note in June

Figure 1. Coverage of climate change in Article IV consultations



1/ Coverage on a voluntary basis is always possible.

Source: IMF (2022a, 54)

2022 that spells out the priorities for IMF staff on which climate issues they should cover in surveillance missions (IMF 2022a). The first task is to adequately cover risks and vulnerabilities, with special reference to the potential trade-offs in policy design (e.g., the benefits of “investing in disaster-proof infrastructure at the cost of forgoing investment with more immediate benefits”). Second, IMF staff are expected to assess the economic sustainability of its members, and this includes coverage of climate change issues. Finally, staff are supposed to identify spill-over risks—both those for the evaluated country from developments abroad, and those that may emanate for third countries from developments in the evaluated country. These broad guidelines were schematized for operational purposes, as reproduced in Figure 1.

In short, recent developments on the IMF’s surveillance apparatus have added an important—and welcome—dimension to the remit of its evaluations, and have explicitly linked these with meeting the terms of the Paris Agreement and their operationalization in countries’ Nationally Determined Contributions (NDCs). So, to what extent is the policy advice in recent IMF surveillance reports consistent with enabling countries to

transition away from dependence on fossil fuels? Does it adequately address transition risks resulting from fossil fuel dependence? And is such advice aligned with a just transition that safeguards the rights and needs of the poorest in society?

2 | What does recent experience suggest?

In this report, we analyse the most recent IMF staff reports for the Article IV consultations in two countries: Indonesia and South Africa (IMF 2022b, 2022c, 2022d, 2022f, 2022e). These two G20 nations rely heavily on fossil fuels for energy and to generate foreign exchange reserves and government revenues from exports (Arinaldo and Adiatma 2019; Rumble and Sidiropoulos 2022). Global efforts to phase out coal and fossil fuels will directly impact Indonesia’s and South Africa’s energy mix and export markets, and will thus fundamentally alter the economic prospects and livelihoods of their inhabitants. For these reasons, the two countries present crucial cases for an early assessment of current practices in IMF surveillance and how they relate to a phasing out of fossil fuels, including coal, and a just transition. For each country, we first cover positive developments in their coverage of just green transition, subsequently treat

areas where IMF advice could hinder such objectives, and conclude by identifying missed opportunities.

In Indonesia, the IMF offered value through its in-depth coverage of green financing, which entails mobilizing private investment to finance Indonesia's adaptation and mitigation commitments. Further, the organization welcomed the Indonesian government's introduction of a carbon tax of 30,000 Rupiah (about \$2) per ton of carbon dioxide equivalent that will apply to coal-fired power plants and come into effect in 2022. The IMF demonstrated genuine consideration of climate mitigation in identifying key limitations of the scheme. For instance, it recognized that since the government provides energy subsidies and sets the price for fossil fuels and electricity, the carbon tax will ultimately not provide an incentive for end-users to transition to renewable energy and/or achieve greater energy efficiency. Further, the IMF endorsed a tax reform bill passed in 2021 to raise additional revenue, which included broadening of excise taxes to include plastic products and the introduction of carbon taxes.

However, the IMF's analysis still contained blind spots. On the fiscal policy side, the organization advocated for a budget deficit ceiling of 3% of GDP by 2023, despite the financing needed to achieve Indonesia's NDC targets alone amounting to 2.8% of GDP annually. Such ambitious targets represent a threat to Indonesia transitioning away from fossil fuel dependence and achieving its climate commitments, as investment on climate adaptation and mitigation measures need to be scaled up. Relatedly, the organization did not adequately reflect on the role of carbon-intensive sectors like coal, oil and gas, and palm oil in driving higher-than-expected revenue performance. These sources of government revenue cannot be relied on in the long-term as Indonesia and its trade partners transition towards a low-carbon economy, and may thus spell fiscal trouble in the medium- or long-term.

In addition, there were missed opportunities in the IMF's engagement, as the organization offered only negligible coverage of climate change risks and adaptation measures. More concerted attention to this issue may have resulted in a different approach to fiscal policy. For instance, social assistance spending is projected to be at 0.6% of GDP in 2023, which is 0.1% lower than it was in 2019. It is difficult to reconcile this cost projection with the expected increase in unemployment as coal production is phased out, or in terms of the anticipated greater frequency and severity of natural disasters—both implying a massive ramping up of social assistance spending. The IMF also did not consider the significant global spill-over transition risks linked to the Indonesian economy's external dependence on fossil fuels and on environmentally unsound extractive sectors such as oil palm production more broadly. China, for instance, is the main importer of Indonesian coal and has already introduced a national carbon pricing mechanism, which could plausibly decrease the country's demand for coal from Indonesia. Another notable absence was a discussion of risks to the banking sector from changes in carbon-intensive asset values. There is high potential for financial instability in the long-term and asset stranding given the country's ambitious NDC mitigation commitments and the centrality of coal phase-out to it.

Turning to South Africa, the IMF acknowledged how the pandemic made climate adaptation and decarbonization transition more challenging. On the one hand, it highlighted that the room for active government support of climate adaptation and decarbonisation transition had been constrained because many state-owned enterprises are highly exposed to carbon-intensive activities (e.g., coal-fired power plants, rail, and port infrastructure), which makes them vulnerable to a drop in demand from the decarbonization transition, with potential significant fiscal implications. On the other hand, the IMF outlined how the jobless pandemic recovery will mean

that the migration of low-skilled workers out of the coal value chain will be even more challenging, and that deficiencies in the country's education system further complicate the necessary workforce transition. To address these issues, the IMF advised South Africa to improve the quality of education, apprenticeships, and vocational training schemes to support displaced workers, and to design policies that could bridge the spatial divide between workers' living areas and places where new jobs are created.

In addition, the IMF was constructively critical of South Africa's policies on climate grounds. Its assessment of the country's Economic Recovery and Reconstruction Plan identified important inconsistencies with the aim of a low-carbon economic rebound. The financial system also faced significant physical risks related to natural disasters and transition risks related to coal-based energy generation, and the Article IV analysis included stress tests for how future climate-related policy developments might affect financial stability.

Despite these positive steps, other areas of the IMF's policy advice could potentially hamper green transition objectives. Most notably, the IMF endorsed expenditure cuts to reduce the fiscal deficit from -3.9% of GDP in 2021 to -1.8% by 2023. Such rapid fiscal consolidation can have adverse follow-on implications for economic growth and business activity, which in turn may limit the capacity of households and the private sector to adapt to and mitigate climate change.

In relation to South Africa's energy sector, the IMF argued that reforms to reduce rigidities in the economy are key to accelerate decarbonization of the power sector and transition away from coal. It criticized Eskom, the national power utility, which relies heavily on government transfers and favours large-scale projects in coal,

because the company had actively resisted new entrants into the sector by delaying the expansion of independent power producer programs that would allow for the growth of renewables. Nonetheless, the IMF fell short of recommending additional incentives for investors to enter the renewable energy market or for new forms of large-scale government investment in renewables (i.e., distinct from Eskom). The IMF also identified a need to expedite the authorization process to accelerate significant investments by several mining companies to generate their own electricity, and to reduce regulatory hurdles and tackle a backlog of mining licensing applications to attract investment in the mining sector. The promotion of mining sector investment is clearly counter to a green transition and, as a carbon-intensive activity, there is imminent risk that such investments will become stranded assets. Additionally, if mining company electricity generation is based on fossil fuels, then such advice may further entrench fossil fuel dependence.

More generally, the IMF provided insufficient recognition of long-term risk to public finances due to the ongoing low-carbon transition. This represents a glaring omission—especially so given that the IMF explicitly recognizes that South Africa's subpar economic performance over the last decade is the result of economic policies failing to adapt to the end of the commodity price boom of the 2000s. The impending drop in demand, and thus prices, for carbon-intensive commodities as South Africa's trade partners commit to decarbonization thus represents a level of urgency that warrants embedding in all projections and assessments of fiscal risk. Further, the IMF also did not evaluate the extent to which fiscal consolidation may impede the ability of the government to scale-up public investment to fulfil the climate adaptation and mitigation programs described in its NDC.

3 | Conclusions and recommendations

The IMF's economic surveillance activities have certainly moved beyond the past *modus operandi* of relative neglect—but is the glass half-full or half-empty when it comes to the organization's involvement in green transition issues? Our analysis of very recent surveillance reports for Indonesia and South Africa provides grounds for optimism. Coverage of climate change adaptation and mitigation issues appeared more consistent than ever before in Article IV reports (for an analysis of earlier reports, see Kentikelenis and Stubbs 2021a), and the recent Staff Guidance Note provides important directions towards scaling up such work. Further, the analytical work underpinning the climate-related analyses has become much more sophisticated compared to past highly cursory treatment of these issues.

However, there is still room for progress. This is most urgent in three areas:

☉ *Covering trade-offs vis-a-vis the green transition:* The IMF's analyses covered here tend to favour steep fiscal consolidation measures, without adequately considering how reduced government expenditure might impact medium- and long-term climate strategies, including the associated risks from not investing in adaptation and

mitigation measures now. The 2022 Staff Guidance Note provides clear guidance for expanding analyses of trade-offs and future reports can take that advice on board.

☉ *Moving beyond carbon taxes:* The IMF's climate mitigation policy advice tends to focus primarily on carbon taxes, but this does not reflect the horizon of policy imagination for government intervention with respect to phasing out fossil fuels, including coal. The IMF could consider additional incentives—such as producer subsidies—for investors to enter the renewable energy market, or for ambitious new forms of large-scale government investment and operations in renewables.

☉ *Systematizing the analytical framework:* As IMF staff increase coverage of climate issues in their analysis, this should be integrated into a systematic framework that covers the different types of economic risk (physical, transition, and spill-over). Such analyses would be consistent with the mission of Article IV reports and deliver on the IMF's promise of expanding the coverage of its risk assessments, in terms of both policy areas and timeframes under consideration.



INDONESIA

CASE STUDY I: INDONESIA

Economic Context

Indonesia is the world's fourth most populous country, with 274 million inhabitants, and is Southeast Asia's largest economy. Up until the Covid-19 pandemic, the country experienced rapid economic growth since overcoming the Asian financial crisis of the late-1990s, achieving its status as an upper-middle income country in 2019. Underpinning these growth rates is a large export sector, with coal (13.3% of 2018 exports), oil and gas (9.6%) and palm oil (9.2%) providing the highest trade value for the country (IMF 2019). Indonesia also made important gains in poverty reduction, reducing the share of the population at national poverty lines to 9% in 2019, down from 19% in 2000 (World Bank 2022c).

However, with its economy impacted by the pandemic, Indonesia regressed to a lower-middle income country status as of mid-2021. The pandemic also reversed some progress

in poverty reduction, rising to 10% of the population in 2020 (World Bank 2022c). The Indonesian economy is now recovering, with projected GDP growth of 5.1% in 2022 (World Bank 2022b), supported by growing commodity exports and an expansive fiscal policy response to the pandemic, at 5% of GDP in total or 3.5% net of budget reallocation (IMF 2021a). Indonesia's Covid-19 response efforts focused on support for healthcare, social assistance, and small businesses. While necessary to support vulnerable populations, reallocation of the budget nonetheless reduced the fiscal capacity of local governments in Indonesia to finance long-term climate goals (Climate Transparency 2021). And in spite of these measures, employment and worker incomes have still not returned to pre-pandemic levels, especially among vulnerable households (World Bank 2022a).

The government's Covid-19 economic response package also included an estimated \$6.5 billion in financial support

Table 1. Key economic indicators for Indonesia

			Estimate	Projection	Projection
	2019	2020	2021	2022	2023
Economic growth / Real gross domestic product growth (%)	5.0	-2.1	3.7	5.1	5.3
Primary budget balance (% of GDP)	-2.2	-6.1	-4.6	-4.0	-3.0
Government revenue (% of GDP)	14.2	12.5	13.6	13.2	13.2
Government expenditure (% of GDP)	16.4	18.6	18.2	17.1	16.2
...of which: Energy subsidies (% of GDP)	0.9	0.7	0.8	0.9	0.7
Foreign exchange reserves (months of imports)	9.7	7.9	7.4	7.3	7.1
Public debt (% of GDP)	30.6	39.8	42.8	42.9	42.9

Sources: World Bank (2022b) and IMF (2022a)

to the fossil fuel industry. This comprised bailout packages for the state-owned oil and gas company (Pertamina), the electric power generation and distribution company (Perusahaan Listrik Negara, or PLN), the national airline company (Garuda Indonesia), as well as support packages to reduce gas prices for industrial use and the three-month exemption on electricity bills for vulnerable consumers (Climate Transparency 2021).

Some green transition measures were also included, such as subsidies for the use of biodiesel fuels and the suspension of loan instalments to foster renewable energy deployment (Vivid Economics 2021).

Indonesia is the world's fourth largest producer of coal and Southeast Asia's biggest gas supplier (IEA 2022), as the country has large reserves of coal, gas, lignite, and crude oil (Gourdel, Monasterolo, and Gallagher 2022). The coal mining and production industry in particular plays a significant role in the foreign trade balance—it is, after all, the country's largest export sector—as well as in local economic development by providing domestic employment and stimulating further economic activity. New coal plants are still a major part of the country's medium-term economic roadmap, with over 40 coal plants at the preconstruction stage (Sward et al. 2021). While supported by a range of subsidies and other forms of government support (Arinaldo and Adiatma 2019), the fossil fuel industry also contributes a major share of the Indonesian government's revenues, accounting for 13.6% of total government revenues over the 2014-2016 period (Braithwaite and Gerasimchuk 2019).

Given the role of coal in energy production and in the economy, global efforts to phase out coal and other fossil fuels will have potentially catastrophic macroeconomic implications on Indonesia in the absence of policies and investments to smooth the low-carbon transition (Gourdel, Monasterolo, and Gallagher 2022). Beyond just thwarting efforts to move towards a low-carbon future,

expansion of the coal industry is especially problematic because it leaves the country vulnerable to the most immediate transition risks—the risk to macroeconomic stability, future government and business revenues, and the value of financial assets that stem from countries' responses to climate change, including but not limited to the imposition of carbon border taxes by major fossil fuel importers. In this context, there is an imminent risk that Indonesia's export coal mines will become stranded assets, potentially undermining the stability of the banking sector (Prasojo, Marciano, and Adiatma 2021). Ensuring a *just* transition in such a context will also be a significant challenge, as the low-carbon transition will fundamentally alter the economic prospects and livelihoods of Indonesians. It means considering how to support the country's efforts to protect vulnerable communities that currently depend on fossil fuel industries for employment, and on fossil fuel consumption subsidies to maintain their livelihoods, while phasing out fossil fuel—a crucial source of foregone government revenues that could otherwise fund social protection programs.

Climate Mitigation

The Indonesian government has established a series of institutional arrangements to reduce the country's greenhouse gas emissions. Indonesia's first national strategy on climate change was developed in 2007 (Government of Indonesia 2007). This generated momentum for the 2011 National Action Plan for Reducing Greenhouse Gas Emissions in which Indonesia committed to reduce emissions by 26% on its own efforts by 2020 compared to the business-as-usual scenario, or up to 41% with international support (Government of Indonesia 2011). The 2014 National Energy Policy then set targets for the country to rely on renewable energy by at least 23% in 2025 and at least 31% in 2050, while reducing oil reliance to less than 25% in 2025 and less than 20% in 2050; gas is seen as a transition fuel, and reliance on coal is expected to still be at minimum 30% in 2025 and 25% in 2050

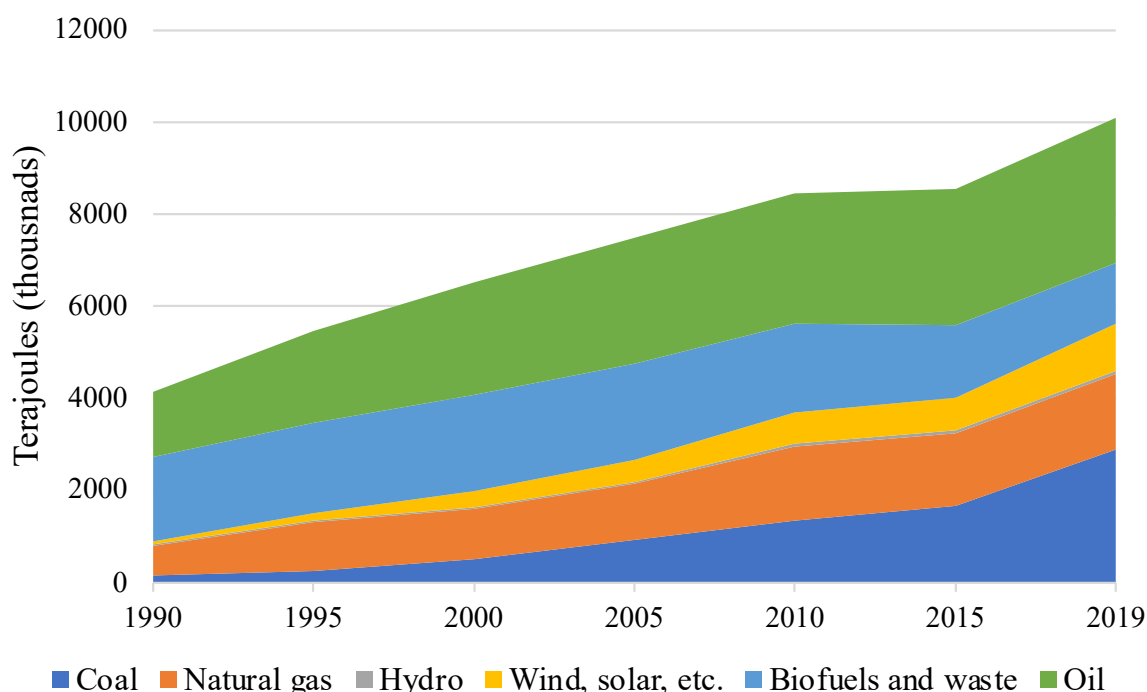
of the energy supply mix (Government of Indonesia 2014b). The government submitted its initial Nationally Determined Contribution in 2016, where it pledged to reduce emissions by 29% using its own resources and up to 41% with international support, against the business-as-usual scenario by 2030 (Government of Indonesia 2016). The update to this plan in 2021 did not substantively alter these climate ambitions, as the emission-reduction targets remained identical (Government of Indonesia 2021).

Key areas where the country intends to make progress is in mainstreaming climate in its development strategy (including through increased budget allocations for climate change adaptation, described below) and changing its energy use policy in line with the targets developed in 2014. Supporting these ambitions is also the recent Sustainable Finance Roadmap, prepared by Indonesia’s financial services authority (Otoritas Jasa Keuangan 2021). This plan includes the development of a green taxonomy to classify sustainable investments, changes to financial sector risk management in order to factor in and mitigate environmental risks, and innovation in financial products

with the aim of increasing sustainability. In 2021, the government also announced a moratorium on building new coal plants from 2023 onwards, with the state-owned electricity company PLN announcing it would invest in renewables with the aim of becoming carbon neutral by 2050 (Husaini 2021). Nonetheless, it is worth noting that this commitment does not include early decommissioning of existing plants, and more than 40 new plants will be constructed before this policy comes into effect (Jong 2021). In addition, the government committed to the implementation of biofuels in the transportation sector, where the main feedstock will be domestically grown palm oil (Government of Indonesia 2021); and proposed regulations to ban the sale of combustion engine motorcycles by 2040 and cars by 2050, to be achieved by scaling up electric vehicle usage and sustainable biofuels (Munthe 2021).

To put these ambitions in context, Indonesia contributed 3.9% of global greenhouse gas emissions in 2019 (the most recent year in which data is available), making the country the fifth largest emitter in the world (World Resources Institute 2022). These emissions

Figure 1. Total energy supply in Indonesia, by source



were dominated by land-use change and forestry at 48.9% and energy at 33.2%, followed by agriculture (9.0%), waste (6.9%), and industrial processes (2.0%). Indonesia's status as one of the world's largest emitters of land-use emissions comes as a consequence of deforestation and peatland fires to allow for agricultural expansion of oil palm plantations (World Bank and Asian Development Bank 2021).

In terms of the country's energy mix, Figure 1 shows that it is dominated by fossil fuels. In 2019, approximately 76% of Indonesia's energy needs were being met by fossil fuels, primarily from oil (31%), coal (29%), and gas (16%) (IEA 2022). Since 1990, the country increased energy production by 143% to become a major global energy producer. While the share of oil and gas consumption in the total energy supply has remained stable, the country has rapidly scaled up reliance on coal. Non-fossil fuel energy sources include 13% from biofuels and waste, although its share in the total energy supply has reduced considerably over the last three decades. In contrast, wind, solar, and geothermal energy sources have grown significantly since 1990, now representing a 10% share of the mix. In total, the share of renewable energy (which excludes traditional biomass) has reached 20% (Climate Transparency 2021).

Indonesia's power sector is also dominated by fossil fuels, with coal accounting for the highest share in electricity generation, at 62%, and renewable energy contributing to approximately 18% of the power mix, largely from geothermal and biomass sources (Climate Transparency 2021). Despite feed-in tariffs and tax incentives to support renewable energy projects, deploying renewable energy in the power sector remains challenging due to issues around harmonizing national and subnational policies (USAID 2017b). In addition, coal power is subsidised and the country is continuing to expand its coal capacity, despite the moratorium on building new coal plants from 2023 onwards. Indeed, based on the government's most recent ten-

year electricity procurement plan, Indonesia will add more coal capacity by 2030 than it plans to retire (Gourdel, Monasterolo, and Gallagher 2022). Without an increase on subsidies for renewables (or a reduction on subsidies for coal), it will be difficult for renewables to compete with coal on price.

Climate Adaptation

Indonesia ranks 100th of 182 countries in the ND-GAIN index, which measures exposure, sensitivity, and ability to adapt to the impact of climate change (Notre Dame Global Adaptation Initiative 2021). The country is highly vulnerable to the impact of climate change, including from extreme weather events like floods and droughts, rising sea levels, shifts in rainfall patterns, and increasing temperature (World Bank and Asian Development Bank 2021). With 81,000 km of coastline and 42 million people living on low-lying land of less than 10 meters above sea level, Indonesia's coastal population, infrastructure, and ecosystems are among the world's most vulnerable to sea level rise, with an estimated 5.9 million people annually expected to be affected by coastal flooding by 2100 (USAID 2017a). Indonesia also experiences frequent natural disasters, totalling 3,622 in 2019 alone, of which approximately 90% were hydrometeorological phenomena such as flooding and landslides that are expected to worsen as a result of climate change (World Bank and Asian Development Bank 2021). The country also experiences droughts, which have contributed to the escalation of manmade fires. The profound impact of such fires was underscored by the forest and peatland fires of 2015, which cost the economy \$16 billion in lost productivity and resulted in an estimated 90,000 excess deaths (Koplitz et al. 2016).

Given such vulnerabilities, the country has prepared periodic national action plans for climate change adaptation, starting in 2007 and gradually fine-tuning them (Government of Indonesia 2007, 2014a). The country's National Action Plan for Climate Change

Adaptation provides the current framework for adaptation initiatives, which has been mainstreamed into national development plans (Government of Indonesia 2019). Accordingly, the country's medium-term strategy is to reduce risks from climate change on all development sectors by 2030, primarily including agriculture, water, energy security, forestry, maritime and fisheries, health, infrastructure, and urban systems. The country's Updated Nationally Determined Contribution also commits to reduce impacts of climate change, envisaged through several programs to raise economic resilience (e.g., development of biomass energy and development and implementation of climate adaptive technologies), social resilience (e.g., development of information systems on vulnerability and improvement of human settlements), and ecosystem resilience (e.g., integrated watershed management and ecosystem restoration) (Government of Indonesia 2021).

In Indonesia, there is high variation in the potential impacts of climate change at the regional and local levels—and it is the poorest and most marginalized communities that are likely to experience significant loss and damage as a result of climate change impacts (World Bank and Asian Development Bank 2021). The country's urban poor are among the most vulnerable, largely due to their concentration in city peripheries where climate-resilient infrastructure supply is limited and of a low quality. High urban population growth rates, at 2.2% per year, have led to unplanned settlements in coastal areas that are susceptible to flooding and landslides— including an estimated 31% of the urban population living in slums (World Bank 2022c). The agricultural sector is also likely to struggle. Agriculture is a source of livelihood for 42% of the working population, including more than half of poor households (USAID 2017a). While approximately 15% of agricultural land is made up of larger plantations cultivating export crops, the majority of people working in agriculture operate with less than

a hectare of land (World Bank and Asian Development Bank 2021). Rice production is particularly vulnerable to climate change, as global changes in El Niño patterns are likely to impact the onset and length of the wet season and higher temperatures will reduce rice crop yields (World Bank and Asian Development Bank 2021). These changes also represent a threat to food security, since rice is Indonesia's staple crop and comprises about half of calories consumed nationally (USAID 2017a). In addition, fisheries, which represents another major employer in the Indonesian economy, will be impacted by increased ocean temperatures, resulting in a 29% decline in catch potential by 2050 (World Bank and Asian Development Bank 2021). As the primary source of protein in the national diet, fish declines represent threats both to the livelihood of Indonesians and their diets.

Overall, it is estimated that by 2100, the impacts of climate change will cost up to 7% of the country's GDP, with the poorest bearing the brunt of this burden (Raitzer et al. 2015). While rapid economic growth has led to a reduction in poverty in recent decades—halving from 19.1% in 2000 to 9.4% in 2019 (World Bank 2022c)—high population density in hazard prone areas and dependence on the country's natural resource base make Indonesia extremely vulnerable to climate change. There is high potential of climate-driven increases in flood and drought frequency to increase the incidence of poverty in the country, as the costs of repair and declines in income sources thrust households below the poverty line (Fujii 2016). And increasing food prices due to harvest failure or fish catch reductions will also impact the poor, since it constitutes the bulk of their household budget.

IMF Surveillance and Recommendations

To what extent is the policy advice in IMF bilateral surveillance consistent with enabling Indonesia to transition away from dependence on fossil fuels, including coal? Does such advice adequately address

transition risks resulting from the country's fossil fuel dependence? And is such advice aligned with a just transition that safeguards the rights and needs of the poorest in society? We examine these questions based on analysis of the most recent staff report for the Article IV consultation and background documentation (IMF 2022a, 2022b), focusing on key climate-related policy areas.

Fiscal policy

Indonesia's progress on achieving its climate commitments and addressing transition risks will be affected by recommendations aimed at limiting the fiscal deficit. Presented as the first of four main policy recommendations in the Article IV report, the IMF advocates the restoration of a pre-pandemic budget deficit ceiling of 3% of GDP by 2023. To address the economic and social fallout of the Covid-19 pandemic, the Indonesian government had temporarily suspended a clause in their macroeconomic policy framework which meant it could not have a deficit larger than 3% or finance the budget directly through Bank Indonesia (Indonesia's central bank). This meant the government could increase their fiscal deficit from 2.2% in 2019 to 6.1% in 2020 and 4.6% in 2021 (see Table 1 above). The budget deficit target will thus be achieved by phasing out emergency Covid-19 support.

It is worth noting that the narrowing of the budget deficit in 2021 reflected stronger-than-expected revenue performance on the back of value-added and trade-related tax intakes lifted by global commodity prices (IMF 2022a, 12)—as much of Indonesia's exports are in carbon-intensive sectors like coal, oil and gas, and palm oil. These sources of government revenue cannot be relied on in the long-term as Indonesia and its trade partners transition towards a low-carbon economy, which is not explicitly recognized in the Article IV report. By failing to acknowledge the perverse climate implications of these revenues, the IMF implicitly encourages further reliance upon fossil fuels as a means to balance the budget.

Nonetheless, the IMF does recognize Indonesia's low government revenue intake compared to South East Asian comparators as a more general macroeconomic concern, and was instrumental in helping Indonesian authorities formulate a medium-term revenue strategy to increase tax revenues by 5% of GDP. To this end, the IMF endorses a tax reform bill passed in 2021 that raises additional revenue. It includes—inter alia—an increase of the standard value-added tax rate along with a reduction of exempted goods and services, a new personal income tax bracket for high-income earners, an increase in the corporate income tax rate, the broadening of excise taxes to include plastic products, and the introduction of carbon taxes (described below). Yet, the IMF does not consider the impact of this bill in a way that would constitute climate mainstreaming, such as reporting how expected revenues match-up against expected transition costs. When analysed through a climate lens, the appeal of the bill may be altered. For instance, changes to personal income and corporate tax represent progressive and equitable options to raise revenues for climate commitments, whereas the value-added tax places a greater burden on poorer households (Stiglitz 2010), and—by further reducing what limited resources they have available—could impede vulnerable communities from adapting to climate change.

The financing needed to achieve Indonesia's Nationally Determined Contribution targets alone amount to an estimated 2.8% of GDP annually (IMF 2022b, 56). At a time when expenditure on climate adaptation and mitigation measures thus need to be scaled up, fiscal consolidation represents a threat to Indonesia transitioning away from fossil fuel dependence and achieving their climate commitments. For instance, the IMF itself notes that the budget does not consider the implications of the recently approved law to move the capital city of Indonesia from Jakarta to Kalimantan, which was in part prompted by concerns over climate

change—Jakarta suffers from frequent flooding and is one of the fastest sinking cities in the world (The Quint 2022). Given these expected adaptation costs, it is unclear how the government will be able to keep to the deficit target or which expenditures would be reallocated to cover it. The IMF also notes in their discussion of risks that “climate change-related natural hazards ... could lead to more economic disruption and fiscal pressures” (IMF 2022a, 10). While the identification of such climate change issues is welcome, it is siloed into a separate ‘Risk’ section rather than being fully integrating into fiscal planning, as evident by the omission of discussion and/or analysis of how future climate expenditure commitments will intersect with the budget ceiling in the fiscal policy section of the Article IV report. The implications of fiscal targets for climate initiatives need to be explicitly considered by the IMF to constitute a mainstreaming of the climate agenda into development planning, as envisaged by Indonesia’s Nationally Determined Contribution.

According to the IMF, Indonesia has sound macroeconomic fundamentals including low public debt, a strong current account, adequate foreign exchange reserves, a flexible exchange rate, and well-anchored inflation expectations—that, in the IMF’s words, “will give them policy space to manoeuvre in a difficult external environment” (IMF 2022a, 11). Given this assessment, there was room for much greater ambition by the IMF vis-à-vis the coming climate crisis. For example, the IMF could deploy its expertise to analyse and consider the extent to which a more lenient fiscal deficit ceiling may have been appropriate, rather than endorsing the limited fiscal scope that hampers the ability to increase spending for climate adaptation and mitigation efforts. Nonetheless, the IMF does encourage the Indonesian government to update its medium-term fiscal strategy beyond 2023 by clearly laying out risks and contingency policies, which represents prudent advice that could result in a clearer fiscal pathway to

climate-proofing emerging, even if climate adaptation, mitigation, or transition costs are not overtly mentioned.

Energy sector policy

Another of the IMF’s main policy recommendations is to advance so-called ‘structural reforms,’ including carbon taxes. The IMF welcomes as a key first step on climate change mitigation the government’s introduction of a carbon tax of 30,000 Indonesian Rupiah (about \$2) per ton of carbon dioxide equivalent that will apply to coal-fired power plants and come into effect in 2022, as well as plans to establish an emission trading system by 2024.

However, the IMF does identify several limitations of the carbon pricing scheme. First, since the government provides energy subsidies and sets the price for fossil fuels and electricity (projected as 0.9% of GDP in 2022), end user prices are not affected by the carbon price measures. This acts at odds with the aims of carbon pricing, which is for energy end-users to internalize the costs of greenhouse gases by paying a higher price—thereby providing an incentive for end-users to transition to renewable energy and/or achieve greater energy efficiency. In response to these shortcomings, the IMF proposes measures in the energy sector that would jointly make carbon pricing more effective by raising costs to the end-user: energy price reform, which would align electricity and fossil fuel prices with the market price; and energy subsidy reform, which would target energy subsidies to a smaller group of consumers (IMF 2022b). Second, the IMF regards the carbon price as too low—one of the lowest in the world among countries where carbon taxes are currently in place (IMF 2022b)—and having too narrow coverage of the emissions sector. The Fund thus proposes a substantial rise in the carbon price and expansion of its coverage to the industry and transportation sectors. They also recommend a redesign to the current cap-and-tax pricing system—where the carbon price is only imposed

on greenhouse gas emissions exceeding a certain threshold. According to the IMF, this does not provide incentives for below-the-cap companies to reduce greenhouse gas emissions further.

These suggestions for the carbon tax represent a genuine consideration of climate mitigation by the IMF, as phasing out fossil fuel subsidies in this way and increasing the cost of carbon-intensive goods will help Indonesia expedite the energy transition. However, more engagement is needed in terms of the implications of extending and raising carbon prices, phasing out energy subsidies, and reforming the energy pricing mechanism on a just transition. While these reforms will make Indonesia's carbon price more effective in terms of enhancing its environmental credentials and improving revenue mobilisation, the poor will need to be cushioned from them. Indeed, increases in energy prices disproportionately impact poorer households because such goods constitute a large proportion of their spending (whereas higher-income households may be affected more in absolute terms). To that effect, the IMF notes that "savings from subsidy reform could be used to strengthen the social safety net" (IMF 2022a, 24) and that "carbon pricing revenues could be used to compensate people for the loss of income from higher energy prices" (IMF 2022b, 56). They cite a study conducted by IMF staff that shows a carbon price of \$25 would reduce greenhouse gas emissions by 16% but also generate revenues of 0.7% of GDP (Black et al. 2021). But there is no expansion beyond these statements, such as a detailed analysis of the fiscal and distribution implications, or of the political feasibility of the reforms. Indeed, a question that looms large is whether this would be enough to cover *both* social assistance to compensate for higher energy prices *and* the estimated 2.8% of GDP required annual to meet Indonesia's climate adaptation and mitigation agenda.

While the IMF provided extensive treatment on energy subsidies and pricing, what was

lacking in discussions on energy policy was coverage of the macroeconomic implications of the government's plans to dramatically increase the share of renewables in the energy mix. The phase out of coal capacity will require long-term macroeconomic planning that falls within the IMF's remit, as coal plays a significant role in the foreign trade balance, in government revenues, and in local economic development. More ambitious reforms to the energy sector also appeared to be overlooked because the IMF's recommendations—underpinned by statistical tables and figures—overemphasized short-term macroeconomic fundamentals, without fully considering climate concerns that will fundamentally impact the economy in the medium- and long-term. Indeed, such a broader view may improve the fiscal palatability of expanding incentives for renewable energy, which were not considered by the IMF.

Climate risk and green transition

If IMF surveillance is to facilitate green transition and just recovery priorities, it will need to consider the physical risks of climate change and transition risks associated with a low-carbon future. An area where the IMF offered value in this regard was in its coverage of green financing, which entails mobilizing private investment to finance the 2.8% of GDP annually needed to fulfil Indonesia's adaptation and mitigation commitments. In this regard, the IMF provided an analysis of Indonesia's green bond market, which accounts for about 0.5% of GDP and is dominated by government bonds (IMF 2022b, 56–59). However, care must be taken to ensure this is accompanied by transparency provisions and adequate safeguards for the state's involvement, as private sector involvement has been linked to practices that can be harmful for the environment (Witt, Prasetyo, and Moulvi 2021).

Beyond what has already been mentioned above, the Article IV report contained only negligible coverage of climate risks. A

single paragraph on climate change risks states “Indonesia is among the countries most susceptible to climate change-related natural hazards, which could lead to more economic disruption and fiscal pressures. It also faces transition risks on the path to a greener global economy, including risks of stranded assets, given the significance of rents from coal, and deforestation in the economy” (IMF 2022a, 10). In addition, the risk assessment matrix records natural disasters related to climate change as a domestic source of risk that has a 10% to 30% likelihood of occurrence and low expected economic impact, described as “disruption in economic activity in the affected region; slower economic growth accompanied by a decline in portfolio inflows” (IMF 2022a, 55). The policy recommendation for the risk is to “prioritize expenditure to the affected region” (IMF 2022a, 55), rather than endorsing *preventative* expenditures described in the country’s comprehensive set of adaptation strategies. Some reference to the economic costs of previous instances of environmental disasters could have also provided much-needed context to the risk analysis in terms of estimating the potential financial needs.

Coverage of climate adaptation measures was also scant in the Article IV report, standing in contrast to the more detailed treatment received on climate mitigation, especially in relation to energy sector reforms. Indeed, adaptation is referred to on a single occasion: “Finally, continuous progress in the monitoring and execution of adaptation plans would be desirable in view of Indonesia’s high exposure to natural hazards, including a rising sea level” (IMF 2022a, 23). More concerted attention to this issue would have been more consistent with the government’s commitment to mainstream climate change adaptation in its development strategy, including through increased budget allocations. It may have also resulted in a different approach to fiscal policy described further above. For instance, social assistance spending is projected to

be at 0.6% of GDP in 2023, which is 0.1% lower than it was in 2019. It is difficult to reconcile this cost projection in the face of the expected increase in unemployment as coal production is phased out, or in terms of the anticipated greater frequency and severity of natural disasters—both implying a massive ramping up of social assistance spending. While the IMF has elsewhere claimed that labour dislocations in the mining and electricity sectors can be absorbed in green technologies or other industries (IMF 2021b), these proposals are not appropriately tailored to the specificities of the country, as the regions that currently host many industrial activities do not fully overlap with those that are home to mining operations.

Although there was no serious engagement with transition risks, IMF staff did directly consider these issues in a chapter of the background documentation to the 2020 Article IV consultation (IMF 2021b)—which was referenced in a footnote of the current Article IV report. There, the IMF explains that Indonesia’s economy might face an early transition risk due to accelerated decarbonization initiatives. In particular, as multilateral and private banks and investment managers commit to coal divestment, this major export of Indonesia may face lower demand, which would impact the viability of coal companies, the domestic energy mix, and—by extension—the broader economy. An assessment of the shortcomings of the proposed policies is available elsewhere (Kentikelenis and Stubbs 2021).

However, the IMF has not considered throughout the significant global spill-over transition risks linked to the Indonesian economy’s external dependence on fossil fuels and on environmentally unsound extractive sectors such as oil palm production more broadly. As an increasing number of countries commit to decarbonization, potential trade partners may impose carbon border taxes, impacting the potential earnings from such exports.

This is a surprising omission given that the IMF demonstrates keen awareness of spillover effects from other policy jurisdictions. For example, the IMF notes that “monetary policy surprises in advanced economies, notably the United States, could prematurely tighten domestic monetary conditions and bring corporate solvency risks to the forefront. If such surprises materialized, Indonesia could face increased risks of disruptive capital outflows, exchange rate depreciation, and higher financing costs, especially for rupiah-denominated debt” (IMF 2022a, 10). In similar spirit, the IMF could consider the realistic possibility of climate policy ‘surprises’ coming from major economies. China, for instance, is the main importer of Indonesian coal and has already introduced a national carbon pricing mechanism (Nogrady 2021), which could plausibly decrease the country’s demand for coal from Indonesia. A shock on Indonesian coal demand from China would significantly impact Indonesia’s trade balance, with negative implications on public finances through lower revenue intake and follow-on effects on bond spreads and debt sustainability; lower profitability of coal enterprises would also affect the economy in the form of lower investment, higher unemployment, and lower economic growth, which would also have a negative feedback effect on government revenues (Gourdel, Monasterolo, and Gallagher 2022).

Another notable absence that is well within the IMF’s remit is a discussion of risks to the banking sector from changes in carbon-intensive asset values. There is high potential for financial instability in the long-term and asset stranding given the country’s ambitious Nationally Determined Contribution mitigation commitments and the centrality of coal phase-out to it (Prasojo, Marciano, and Adiatma 2021). As a result of decarbonisation efforts occurring at a more accelerated pace than anticipated, financial actors exposed to coal producers and their

supply chain would need to adjust asset prices and firms’ credit risk, in turn contributing to increasing enterprise financing costs and a higher potential for non-performing loans (Gourdel, Monasterolo, and Gallagher 2022). Furthermore, the debt sustainability analysis did not include any climate-related stress tests, even though the IMF is capable of delivering them (e.g., IMF 2021c), thereby failing to quantify benefits of environmental policy measures vis-à-vis the country’s debt profile. Finally, the presentation of quantitative data and indicators also represented an area where climate change could have been considered but was absent. The Article IV report displays economic data in key tables that are meant to provide a quick overview of the economic situation of Indonesia (e.g., IMF 2022a, 26–44). These did not contain any data that conveyed economic and financial risks related to climate change or that otherwise signalled the magnitude of climate challenges.

Conclusion

The IMF’s policy advice to Indonesia offers cautious optimism about the role of the organization in helping countries engineer a green transition. On the positive side, the organization placed emphasis on green financing, prioritized climate change mitigation, and supported climate-friendly tax policies. However, these suggestions came against a backdrop of advocating extensive new austerity measures—which can directly and indirectly impede the green transition—and did not fully spell out what phasing out fossil fuels would mean in economic terms or how it would intersect with fiscal targets and broader economic stability in Indonesia. Coverage of climate risks and adaptation measures was also not attempted. In short, Indonesia’s early experience with the revamped, ‘greener’ economic surveillance reveals that the IMF is scaling up its engagement with climate issues, but this is still not adequate for achieving a socially-just green transition.



SOUTH AFRICA

CASE STUDY II: SOUTH AFRICA

Economic Context

South Africa is an upper-middle income country of 60 million inhabitants, and is Africa's third largest economy. While the country made strides to improve wellbeing and achieve stable economic growth following the end of the Apartheid regime in the early-90s, progress has stagnated since 2010. Low economic growth for over a decade has been accompanied by high levels of unemployment, at 29% in 2019. Poverty levels have tracked economic performance, with the percentage of the population below the national poverty line falling from 66.6% to 53.2% between 2005 and 2010, before trended upwards to 55.5% in 2014 where it roughly remained up until the Covid-19 pandemic (World Bank 2022b, 2022a). In 2019, the economy grew by only 0.1%, partly as a result of electricity outages associated with operational and financial difficulties at the national power utility, Eskom (News24 2019; World Bank 2020). South Africa also has one of the highest persistent inequality rates in the world, perpetuated by a legacy of exclusion and the dominance of economic activities that do not meaningfully contribute to poverty reduction, such as mining. Indeed, this sector constitutes over half of all South African merchandise exports, including platinum group metals, gold, iron ore, and coal (World Bank 2021b).

The challenges facing South Africa—decade-long economic stagnation, high unemployment, and vast income inequality—have been exacerbated by the pandemic. The South African economy initially contracted by 6.4% in 2020. In response to the ongoing health and economic carnage, the government implemented a significant Covid-19 stimulus plan in April 2020, the Economic Reconstruction and Recovery Plan, totalling almost 10% of GDP, or \$26 billion, of which about one-tenth was allocated to social assistance (Government of South Africa 2020b). The South African economy is now recovering, having reached GDP

growth of 4.9% in 2021. Growth was driven largely by high global commodity prices (especially metal), with the mining sector growing by 11.8%, and has also supported improvements in the trade balance and fiscal revenues (World Bank 2022a). However, the recovery has been jobless. There were 1.9 million less people employed at the end of 2021 compared with the quarter before the pandemic, with unemployment reaching 34.4% among the working-age population and 64.4% for youths aged between 15 and 24 (Rumble and Sidiropoulos 2022). Consequently, poverty rates have risen further since the Covid-19 crisis began. This social hardship translated into waves of civil unrest in July 2021, causing significant economic damage and adding pressure on the government to increase social support. Yet, South Africa's public finances are also besieged, as revenue increases from high commodity prices are expected to be temporary and are counterbalanced by expenditure pressures from financially distressed state-owned enterprises, social protection needs, and debt service costs—the latter of which is the fastest growing spending category and representing 15% of total government spending (World Bank 2022a).

South Africa's Covid-19 stimulus plan explicitly aimed to incorporate "green economy interventions", such as energy efficient retrofits of existing building, but it also included targets to expand mining and natural gas infrastructure (Vivid Economics 2021). Furthermore, the country's 2020 Medium Term Budget included a \$641 million bailout for South African Airways unconditional on any climate measures, and another \$300 million to an unspecified energy supplier (Climate Transparency 2021). These payments piggy-back on subsidies handed out over the past decade to support the production and consumption of petroleum and coal. In 2019 alone, the government spent \$4.3 billion on fossil fuel subsidies (Climate Transparency 2021).

Table 1. Key economic indicators for South Africa

			Estimate	Projection	Projection
	2019	2020	2021	2022	2023
Economic growth / Real gross domestic product growth (%)	0.1	-6.4	4.9	2.1	1.5
Primary budget balance (% of GDP)	-1.1	-5.5	-3.9	-2.6	-1.8
Foreign exchange reserves (months of imports)	8.4	6.6	5.9	5.6	5.2
Public debt (% of GDP)	56.3	69.4	69.9	74.5	77.7

Sources: World Bank (2022a) and IMF (2022d)

South Africa's economy is one of the most coal-dependent in the world. The coal mining sector employs over 90,000 workers, concentrated in regions with high unemployment levels, and millions more are connected to the coal value chain, such as transport, electricity generation, and petro-chemical production (Rumble and Sidiropoulos 2022). This renders the achievement of a *just* transition to a low-carbon future especially difficult—though there are few viable alternatives with South Africa expected to lose \$84 billion by 2035 from falling prices and demand as a result of other countries' transitions to a low-carbon economy (Huxham, Anwar, and Nelson 2019). Investments by Eskom and other carbon-intensive sectors of the economy will also become exposed to asset stranding, with significant flow-on effects for the broader economy (Burton et al. 2016).

Climate Mitigation

South Africa has developed a series of institutional arrangements to mitigate greenhouse gas emissions, including the Green Transport Strategy of 2018, the Integrated Resource Plan of 2019, and the Carbon Tax Act of 2019 (Government of South Africa 2018a, 2019b, 2019a). The government initially described its plans for a long-term transition to a climate resilient and lower carbon economy in its 2004 National Climate Change Response Strategy and then in its 2011 National Climate Change

Response Policy (Government of South Africa 2004, 2011). In the 2016 Intended Nationally Determined Contribution submitted in compliance with the reporting requirements of the Paris Agreement (Government of South Africa 2016), the government presaged its target by highlighting the significant rigidity of its economy given the historical development pathway of its energy sector, as well as an "overriding priority to address poverty and inequality". It defined its mitigation target according to a peak, plateau, and decline trajectory. Accordingly, emissions will peak between 2020 and 2025, plateau for a decade, then decline in absolute terms, ranging between 398 and 614 metric tons of carbon dioxide equivalent between 2025 and 2030. The First Nationally Determined Contribution, submitted in 2021, moderately increased its ambition, committing to a range of 398 to 510 metric tons of carbon equivalent by 2025 and 350 to 420 by 2030, which represented a 32% reduction in the upper end of the target range in 2030 and 12% reduction in the lower range (Government of South Africa 2021). The Climate Change Bill, which has been under consideration by both houses of Parliament since 2018, is planned to be finalised in 2022, and as framework legislation, will provide a legal basis for further action.

A key area where the country intends to make progress is in the electricity sector through

its Renewable Energy Independent Power Producer Procurement Programme (REI4P) which, as of March 2020, had approved 112 renewable energy projects, attracted \$13 billion in investments (of which 80% was domestic and 20% foreign), and created 51,000 job-years (Government of South Africa 2021). However, the government notes that further shifts away from coal will require international support in the form of transition finance and associated technology and capacity-building. In March 2021, a subsequent round of renewable energy procurement under the REI4P was announced and the license threshold for embedded generation projects was increased one-hundred-fold (from 1MW to 100MW) in order to attract more investment for wind and solar project (Climate Transparency 2021). On the surface, the recently implemented carbon tax also represents an ambitious attempt to reduce greenhouse gas emissions. The tax covers the sources of approximately 80% of domestic emissions—including all types of fossil fuels across industry, power, buildings, and transport sectors—and charges at about \$9 per ton of carbon dioxide equivalent. However, present allowances and exemptions reduce the effective tax rate by between 60% and 95% (Climate Transparency 2021).

To put these ambitions in context, South Africa contributed 1.1% of global greenhouse gas emissions in 2019 (the latest year with available data), making the country the seventeenth largest emitter in the world (World Resources Institute 2022). These emissions were dominated by energy at 84.9%, followed by agriculture (5.1%), waste (4.5%), industrial processes (4.3%), and land-use change and forestry (1.2%). As shown in Figure 1, about 91% of South Africa's energy needs are currently being met by fossil fuels, primarily from coal (72%) and oil (16%) (IEA 2022). The contribution of coal to the energy mix grew from 74% in 1990 and peaked at around 78% in 2005, before slowly declining. Despite this, the overall share of fossil fuels in the total energy

supply has kept growing over the last three decades, from 86% in 1990 to 91% in 2019. Non-fossil fuel energy sources include 6% from biofuels and waste (which has declined significantly from its 12% share in 1990), 2% from nuclear, and 1% from wind and solar. In total, the share of renewable energy (which excludes nuclear and some biofuels) has only reached 5% (Climate Transparency 2021).

Coal is the mainstay of the South African power sector, accounting for more than half of the country's coal consumption (USAID 2016). In 2020, South Africa produced 87% of its electricity from coal, thus ranking first in the world in terms of the share of coal in electricity generation (World Resources Institute 2022). The remaining power generation came from nuclear, at 5%, and renewables, at 8% (Climate Transparency 2021). Yet, even this picture is rosy, as the renewables estimate includes 2.5% from pumped hydropower used for storage, which is typically charged by coal-fired power plants. The 2019 Integrated Resource Plan set a long-term diversification of the power mix that would lighten the carbon footprint of the energy sector, in which renewable energy sources are expected to account for about 36% of installed capacity by 2030 (Government of South Africa 2019b). But the affordability of a diversified electricity supply to lower income groups represents a potential constraint (IEA 2022). Moreover, although the plan proposes a 400% expansion of renewable energy capacity and decommissioning of some older power plants by 2030, it also includes procurement of new coal capacity. Meanwhile, the near-monopoly national power utility, Eskom, faces persistent criticism for its outdated and poorly maintained coal power plants, which have led to economically debilitating rolling-blackouts—known locally as 'loadshedding'—since 2008 that continue to the present as it struggles to keep pace with growing demand (Cohen and Burkhardt 2022). Indeed, outages hit record levels in 2022, with the country experiencing 87 days of power cuts as of early-August (Sivele 2022).

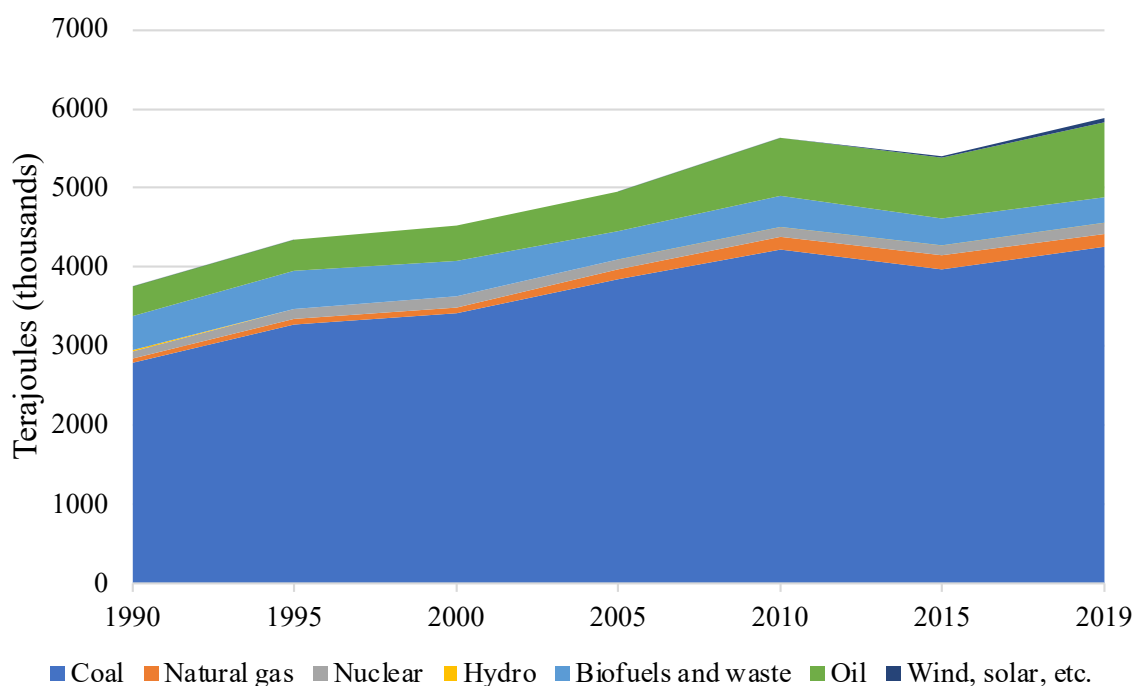
Climate Adaptation

South Africa ranks 96th of 182 countries in the ND-GAIN index, which measures exposure, sensitivity, and ability to adapt to the impact of climate change (Notre Dame Global Adaptation Initiative 2021). The country is especially vulnerable to the impact of climate change due to its high dependence on rain-fed agriculture and natural resources, high levels of poverty—particularly in rural areas—and low adaptive capacity (World Bank 2021a). South Africa has observed, and is projected further trends of, temperature increases, rainfall variation, rising sea levels, and an increasing frequency of extreme weather events like droughts, floods, and wildfires—which already cost \$160 million a year in damages (World Bank 2021a). The hotter and drier climate will exacerbate soil erosion, desertification, and land degradation, and has also placed significant stress on urban water services in many South African cities (Climate Transparency 2021). In this context, food and water insecurity represent particular challenges (Government of South Africa 2016). South Africa is located within a ‘drought belt’ and is the fifth most water scarce country in sub-Saharan Africa,

with approximately 50% of the country classified as arid or semi-arid. Changing precipitation patterns in such areas could expose these communities to crop failures and reduce the productivity of rangelands. For instance, the agricultural sector—dominated by maize cultivation—represents a critical component of the South African economy, employing more than 860,000 people and contributing significantly to food security and export revenues (World Bank 2021a). Climate change will have adverse effects on cereal production, high-value export agricultural production, and animal husbandry (although sugarcane may be positively impacted unless gains are offset by greater pest diversity).

South Africa’s National Climate Change Adaptation Strategy of 2020 serves as the country’s overarching policy instrument in which adaptation objectives are articulated across all sectors of the economy (Government of South Africa 2020a). It builds on principles included in the National Climate Change Response Policy (Government of South Africa 2011), National Development Plan (Government of South

Figure 1. Total energy supply in South Africa, by source



Africa 2012), as well as sectoral adaptation plans and provincial and municipal adaptation strategies; and will be given a legislative basis once the Climate Change Bill comes into fruition, expected later in 2022. Reflecting these policies, the country's Nationally Determined Contribution prioritises key adaptation efforts in water (e.g., enhanced water security), agriculture (e.g., climate-smart agriculture), health (e.g., early warning systems for climate-induced disease), biodiversity (e.g., monitoring of climate change impacts), and human settlements (e.g., urban planning that incorporates climate risk) (Government of South Africa 2021). The projected costs of adaptation interventions required for the implementation of the adaptation strategy for the period 2021 to 2030 are \$4 billion, while overall adaptation needs are costed at between \$16 and \$267 billion by 2030 (Government of South Africa 2021). Upon reflection of the costs, the South African government noted that 89% of the \$2.4 billion per year previously provided in climate was in the form of loans rather than grants, and the overwhelming majority of this pot was provided for mitigation projects rather than for adaptation. They subsequently aim to achieve at least \$8 billion per year in climate financing by 2030, with resources to be equally distributed between adaptation and mitigation.

Because the poor are more exposed to climate risks and have fewer resources with which to adapt, they are more vulnerable to climate change. South Africa is no exception to this rule. Although South Africa is an upper-middle income country, it ranks as the most unequal country in the world, with a Gini coefficient of 63.0, and still faces extremely high levels of poverty, at 55.5% of the population based on the national poverty line (World Bank 2022b). South Africa's informal settlements are particularly susceptible to the effects of climate change. A growing number of the country's cities and towns will be exposed to weather-induced hazards, disproportionately affecting the

urban poor, who are more vulnerable due to inadequate construction materials, potentially hazardous locales (e.g., flood-prone areas), combined with a lack of income to invest in adaptation measures. Small-scale rural farmers will also be more sensitive to the impacts of climate change, since they too have limited resources with which to influence and increase adaptive capacity (World Bank 2021a). Overall, climate change is expected to severely hamper economy growth, job creation, and inequality (Government of South Africa 2018b).

IMF Surveillance and Recommendations

To what extent is the policy advice in IMF bilateral surveillance consistent with enabling South Africa to transition away from dependence on fossil fuels, including coal? Does such advice adequately address transition risks resulting from the country's fossil fuel dependence? And is such advice aligned with a just transition that safeguards the rights and needs of the poorest in society? We examine these questions based on analysis of the most recent staff report for the Article IV consultation and background documentation (IMF 2022d, 2022e, 2022f), focusing on key climate-related policy areas.

Fiscal policy

IMF advice on fiscal policy has the potential to impact South Africa's progress on achieving climate commitments and addressing transition risks. Government expenditures surged due to Covid-19-related challenges, and the budget deficit widened significantly as a result, reaching 5.5% of GDP in 2020. While the deficit then narrowed to 3.9% of GDP in 2021, this was on the back of stronger-than-expected revenue performance linked to rises in global commodity prices—as much of South Africa's exports are in carbon-intensive sectors like metals, coal, and other minerals—and is unlikely to be sustained (IMF 2022d, 10). The IMF thus endorses expenditure cuts described in the government's medium-term budget policy statement to reduce the fiscal

deficit to -1.8% of GDP by 2023 in order to contain public debt—expected to rise to 77.7% of GDP by 2023—as the government had been borrowing to maintain the deficit. As has become a platitude in IMF advice, such consolidation effort is to coincide with “protecting well-targeted social spending and investment” (IMF 2022d, 16).

Concrete fiscal consolidation measures proposed to reign-in public debt include containing public sector compensation, streamlining tax expenditures, better targeting of education subsidies, and rationalizing transfers to SOEs. Each of these measures has the potential to impact on a green and just transition, but are not recognized as such by the IMF. First, IMF staff advised below-inflation cost-of-living adjustments, reform of allowance and pay progression, and the introduction of an “evidence-based approach to pay-setting” in order to achieve cost savings of 2% of GDP in the public sector (IMF 2022d, 16). This advice is premised on the fact that South Africa’s government wage bill is among the highest in emerging markets, at about 13.9% of GDP, and is driven by high average compensation levels rather than high headcount levels of government employment; the public sector also has a considerable wage premium over the private sector (IMF 2022d, 84). However, public sector wage reductions are typically tracked by the private sector where South Africa’s more vulnerable workers are employed (Kerr and Wittenberg 2017), both because of the diminished power of labour in wage bargaining and because of dwindling demand for low-wage services by middle-class civil servants as disposable incomes decline. In turn, income reductions decrease the ability of households—especially poorer ones—to adapt to climate risks.

Second, the IMF advised that spending cuts of 1% of GDP could come from “expenditure efficiency and limiting tertiary education subsidies to only vulnerable households [and that] the government should exercise

caution with its social assistance program, by fully offsetting any increases with credible cuts in other budget areas” (IMF 2022d, 16). Appropriately identifying the groups to be targeted by tertiary education subsidies entails difficult and expensive administrative tasks; and comparative experience has shown that bureaucratic attempts at targeting tend to lead to the exclusion of many credible potential beneficiaries due to excessively stringent eligibility criteria or administrative hurdles (Mkandawire 2005)—this is especially likely to be the case in a context where unemployment has reached 64.4% of the youth population. In relation to climate risk, subsidized tertiary education provision frees up resources to households to adapt to the consequences of climate change, and to support workers displaced by the decarbonization transition via reskilling and upskilling. There are also clear breaches of achieving a just transition in this regard. As the IMF itself recognizes in an appendix to the Article IV report, “High education spending reflects the government’s objective of making up for the injustices of the past. The 1994 post-apartheid Reconstruction and Development Program set education as a leading pillar to a new and equitable South Africa” (IMF 2022d, 94). In addition, the wisdom behind offsetting any increase to the social assistance spending—currently at 3% of GDP and comprising social pensions and targeted cash transfers (IMF 2022d, 49)—must also be questioned. With one million jobs at risk connected to the coal value chain (IMF 2022f, 38), joblessness may well increase if employment in renewable energy schemes do not materialize or are significantly mismatched in terms of job location, quality, and qualification needs (Burton, Marquard, and McCall 2019), leaving households without resources to adapt to climate change.

Third, among revenue measures, the IMF recommends removing tax exemptions related to selected sectors and special economic zones—which includes several carbon-intensive sectors such as car

manufacturing—and increasing carbon and excise tax rates in order to facilitate consolidation. The IMF notes that these “would also help reduce emissions to meet international commitments” (IMF 2022d, 16). While such measures are indeed beneficial to achieving decarbonisation objectives by disincentivizing carbon-intensive economic activity, the IMF’s emphasis on the green credentials of the reforms misrepresents the motivations behind them—in what has elsewhere been referred to as a retrofitting of fiscal consolidation measures as climate policy (Stubbs and Kentikelenis 2022).

Fourth, the IMF estimates savings of 1.5% of GDP by limiting state-owned enterprise operating costs so that subsidies and other transfers from the National Treasury could be reduced, including from adjustments to Eskom (described further below).

More generally, the Article IV report provided insufficient recognition of long-term risk to public finances due to the ongoing low-carbon transition, both domestically and abroad. Indeed, the IMF’s recognition of the temporary nature of favourable commodity prices is not informed by low-carbon transition factors, but by the unique impact of the pandemic on metals and other mineral exports (e.g., Stuemer and Valckx 2021). This represents a glaring omission—especially so given that the IMF explicitly recognizes that subpar South Africa’s economic performance over the last decade is the result of economic policies failing to adapt to the end of the commodity price boom of the 2000s, significantly eroding living standards and macroeconomic fundamentals (IMF 2022d, 4). The impending drop in demand, and thus prices, for carbon-intensive commodities as South Africa’s trade partners commit to decarbonization—including Eskom’s international power sales among Southern African neighbours as well as major coal importers India and Pakistan (Nicholas 2019, 2021)—thus represents a level of urgency that warrants embedding in all projections and assessments of fiscal risk.

Finally, the IMF does not evaluate the extent to which fiscal consolidation may impede the ability of the government to scale-up public investment to fulfil the climate adaptation and mitigation programs described in its Nationally Determined Contribution.

Energy sector policy

The IMF notes that restructuring the national electricity company, Eskom, is critical to ensure energy security, reduce fiscal risks, and transition away from coal powered energy. As an aside, it is worth remembering that Eskom has received extensive historic support from the IMF’s sibling institution, the World Bank, in order to become a major energy player in the country. Although there was limited engagement on energy sector policy in the Article IV report itself, the IMF directly considered it in a chapter of the background documentation (IMF 2022f, 31–39). There, an IMF staff member from the African Department described how structural reforms to the power sector can support the climate ambitions of South Africa. While such documentation is intended to accompany the main Article IV report and is considered during discussions at the IMF’s Executive Board, better integration of these considerations into the main report could further increase the prominence of climate change issues for the broader audiences of Article IV reports.

The IMF explained that reform efforts to reduce rigidities in the economy are key to accelerate decarbonization of the power sector and transition away from coal. They focused their attention on Eskom in particular, which relies heavily on government transfers to continue with an “outdated business model, which favours large-scale projects in coal and nuclear, and supports the mining value chain” (IMF 2022f, 37). The IMF notes that Eskom has actively resisted new entrants into the sector by delaying the expansion of independent power producer programs that would allow for the growth of renewables; and in 2017, Eskom publicly resisted providing

transmission facilities to renewable projects, with the government intervening on the regulatory front to help protect demand for Eskom's electricity by delaying permits for businesses with their own generation capabilities (Makgetla 2017). To address this, the IMF recommends efforts to "improve Eskom's efficiency [to] help guard investment in the grid infrastructure, which is needed to integrate renewable energy sources," as this has become a constraint to further lowering the cost of renewable energy procurement (IMF 2022f, 37).

These events may well inform the IMF's more general calls for "a streamlined and transparent regulatory environment that encourages competition and entrepreneurship" throughout the economy (IMF 2022d, 21). Although deregulation has historically resulted in an upsurge of pollutive actions by energy sectors elsewhere (Neves, Marques, and Patrício 2020; Samet and Burke 2020), in the South African context the IMF's advice seems prudent if renewable energy is to blossom. As the IMF sniped in its assessment of Eskom: "The greatest obstacle to the transformation of the energy sector has been insufficient reform efforts rather than lack of financing. ... Access to green finance is available to South Africa as long as the country can demonstrate a commitment to private sector-led renewable energy production and a full operational overhaul of Eskom—both focused on transforming the country's energy sector. Otherwise, meeting the financing demands of Eskom could be perceived as providing it with resources to maintain its current unsustainable and inefficient operations, and could in fact reduce incentives for green investment and financing by the private sector" (IMF 2022f, 37). Nonetheless, the IMF fall short of recommending additional incentives for investors to enter the renewable energy market or for new forms (i.e., distinct from Eskom) of large-scale government investment in renewables, which may be a missed opportunity. There are also fears among civil society groups that the Eskom

restructuring is an initial step towards its privatization under the guise of improving efficiency. Consequently, several groups are calling for a 'New Eskom' that generates its own renewable energy (350 Africa 2022; Eskom Research Reference Group 2020).

While advice to abolish regulatory constraints to expand access to new players may be sensible in relation to the energy sector, the implications of the same advice applied to the mining sector are less certain. The IMF identifies a need to expedite the authorization process to accelerate significant investments by several mining companies to generate their own electricity, and to reduce regulatory hurdles and tackle a backlog of mining licensing applications to attract investment in the mining sector (IMF 2022d, 22). The promotion of mining sector investment is clearly counter to a green transition and, as a carbon-intensive activity, there is imminent risk that such investments will become stranded assets. Moreover, if mining company electricity generation is based on fossil fuels, then such advice may further entrench fossil fuel dependence.

Climate risk and green transition

If IMF surveillance is to facilitate green transition and just recovery priorities, it will need to consider the physical risks of climate change and transition risks associated with a low-carbon future. In the Article IV report, a section titled "contributing to a green and digital transition" expended three paragraphs to describe potential climate risks, one of which was a summary of the domestic authorities' views (IMF 2022d, 24). In the initial paragraph, the IMF recognizes that "South Africa's climate challenges include both the likely increase in the frequency and severity of extreme weather events and the high carbon-intensity of the economy due to its dependence on coal, particularly in the energy sector." It then notes that a stable macroeconomic environment and coherent set of actions to encourage private-sector participation and develop green finance will help build a climate-resilient economy. In the

subsequent paragraph, the IMF states that “the achievement of decarbonization while ensuring a just transition hinges crucially on more dynamic product and labor markets.” Reforms to product markets are described above in relation to mining and energy. With regard to labor reforms, the IMF’s advice favours greater labor market flexibility to support greater private sector participation in the economy—ultimately a political position in favour of market-based solutions which may not necessarily be economically optimal (Freeman 2005). Their rationale is based on supply-side economics, which posits that firms invest more when labour markets are flexible and when the costs associated with labour protections are low. The IMF explains that South Africa has a relatively high trade union density and relatively centralized bargaining system with “insufficient” representativeness of employers, and that this prevents the delivery of high and stable employment (IMF 2022d, 91–92). Accordingly, it calls for firm-level flexibility in the collective bargaining system, a streamlining of employment protection legislation, and the introduction of sub-minimum wages for certain categories of workers (e.g., the youth) (IMF 2022d, 92–93). Such measures are known to reduce wages and curtail the right to decent working conditions, as well as having pernicious effects on health and inequality (Forster et al. 2019, 2020). They are certainly not in the spirit of a *just* transition.

In the background documentation, the IMF provided greater coverage of physical climate and transition risks faced by South Africa. In particular, the IMF demonstrated substantive engagement with the ways in which the pandemic made climate adaptation and decarbonization transition more challenging (IMF 2022f, 33–35). The analysis focused on three key areas: public finance constraints, labor market characteristics, and trade-offs of the Covid-19 stimulus plan. First, the IMF highlighted that the room for active government support of climate adaptation and decarbonisation transition had been constrained both by growing public debt

and because many state-owned enterprises are highly exposed to carbon-intensive activities (e.g., coal-fired power plants, rail, and port infrastructure), which makes them vulnerable to a drop in demand from the decarbonization transition, with potential significant fiscal implications. Second, the IMF explained how the jobless pandemic recovery will mean that the migration of low-skilled workers out of the coal value chain will be even more challenging, and that deficiencies in the country’s education system further complicate the necessary workforce transition. Third, the IMF described how measures in the country’s Economic Recovery and Reconstruction Plan were often incompatible with a low-carbon economic rebound, such as a published list of preferred bidders under the Risk Mitigation Independent Power Procurement Program showing that most of the 2 GW of energy procured uses carbon-intensive gas technology. Later in the document (IMF 2022f, 38–39), the IMF promoted measures to improve the quality of education, apprenticeships, and vocational training schemes to support displaced workers, and to design policies that could bridge the spatial divide between workers’ living areas and places where new jobs are created, such as geographical mobility subsidies—although such advice stands in contradiction to the cuts in education subsidies envisaged in the main Article IV report.

In additional background documentation, the IMF provided a report based on its Financial Sector Assessment Program (FSAP), which aims to identify financial sector vulnerabilities as well as opportunities for the sector to contribute to broader development objectives (IMF 2022e). The FSAP report contained extensive engagement with climate issues, as it was recognized that the financial system faced significant physical risks related to natural disasters, as well as transition risks related to coal-based energy generation. The IMF team conducted an in-depth climate change risk analysis which found that banks already assign significantly

higher probabilities of default to sectors more vulnerable to water shortages. They also conducted stress tests based on two scenarios: one focusing on a technological transition to green energy which estimates the incremental increase in expected default frequency and defaulted debt from permanently higher electricity prices; and another estimating the increase in production costs resulting from a carbon tax increase, absent any pass-through to end users. Their results suggested that a shift away from coal-based energy production could contribute to sustained price hikes that could increase credit risks (IMF 2022e, 20). Overall, the FSAP yielded 22 key recommendations, four of which had explicit green credentials: in relation to vulnerability analysis, to “Further strengthen analytical tools, including for solvency and liquidity stress tests and climate risk analysis, and incorporate results in risk-based supervision”; in financial sector oversight, to “Improve climate risk oversight”; and in green finance, “Finalize the taxonomy of ‘green’ economic activities and start monitoring flows”, and “Finalize guidelines on climate-related financial disclosures” (IMF 2022d, 89).

While transition risks resulting from the country’s fossil fuel dependence are addressed in background documentation, excluding it from the main Article IV report risks compartmentalizing climate issues rather than mainstreaming it into the general analysis. This fallacy is evident on several occasions where there were obvious omissions of climate-related considerations. First, the section on outlook and risks had no coverage of climate risks, despite covering medium-term performance and areas that climate change and low-carbon domestic and spill-over transition risks plausibly apply—such as the current account, economic growth, fiscal deficit, and public debt (IMF 2022d, 12–14). Key downside risks instead included prospective Covid-19 waves and travel restrictions, a drop in commodity prices, tightening of external

financing conditions, delays or reversals in reform implementation, and social instability. Second, an opportunity to quantify benefits and drawbacks of policy measures vis-à-vis the environment was missed in the debt sustainability analysis. While six standardized stress tests (primary balance shock, real interest rate shock, real GDP growth shock, real exchange shock, contingent liability shock, and combined shock) were simulated, climate-related stress tests were not, thereby failing to quantify benefits of environmental policy measures vis-à-vis the country’s debt profile. (IMF 2022d, 74–83). Finally, the risk assessment matrix failed to record natural disasters related to climate change or South Africa’s decarbonization transition as a domestic sources of risk, or global spill-over transition risks linked to the South African economy’s external dependence on fossil fuels (IMF 2022d, 72–73).

Conclusion

The IMF’s bilateral surveillance on South Africa offers a mixed picture in relation to green transition goals. Advice pertaining to energy sector policy was compatible with the country’s objective of phasing out fossil fuels, including coal—where the IMF recommended restructuring of Eskom and deregulating the power sector to promote accelerated entry of renewables. Transition risks resulting from the country’s fossil fuel dependence were also considered in background documentation, especially in relation to the financial sector, even if more effort could have been expended to mainstream these considerations into headline analyses. However, the IMF’s fiscal consolidation plans, such as the containment of public sector compensation and better targeting of education subsidies, fell short of the ambitions set out in South Africa’s NDC in relation to adaptation objectives and a just transition, thereby revealing that there is still some way to go for the organization in fully incorporating green transition objectives in its surveillance missions.

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