Cautious optimism:

How IMF economic surveillance can foster the green transition

Indonesia Case Study

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Published by: Recourse and Trend Asia

November 2022

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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

What does it mean?	Building resilience against effects from climate change	Adjusting to the global low-carbon transition	Achieving domestic emission targets	Contributing to the global mitigation effort
Why cover in Article IV consultations?	Domestic policy challenge and inward spillover	Domestic policy challenge and inward spillover	Domestic policy challenge	Outward spillovers
Where to cover? 1/	Macrocritical, esp. the most vulnerable countries	Macrocritical	Macrocritical	Strongly encouraged for 20 largest emitters, encouraged for others

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.

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

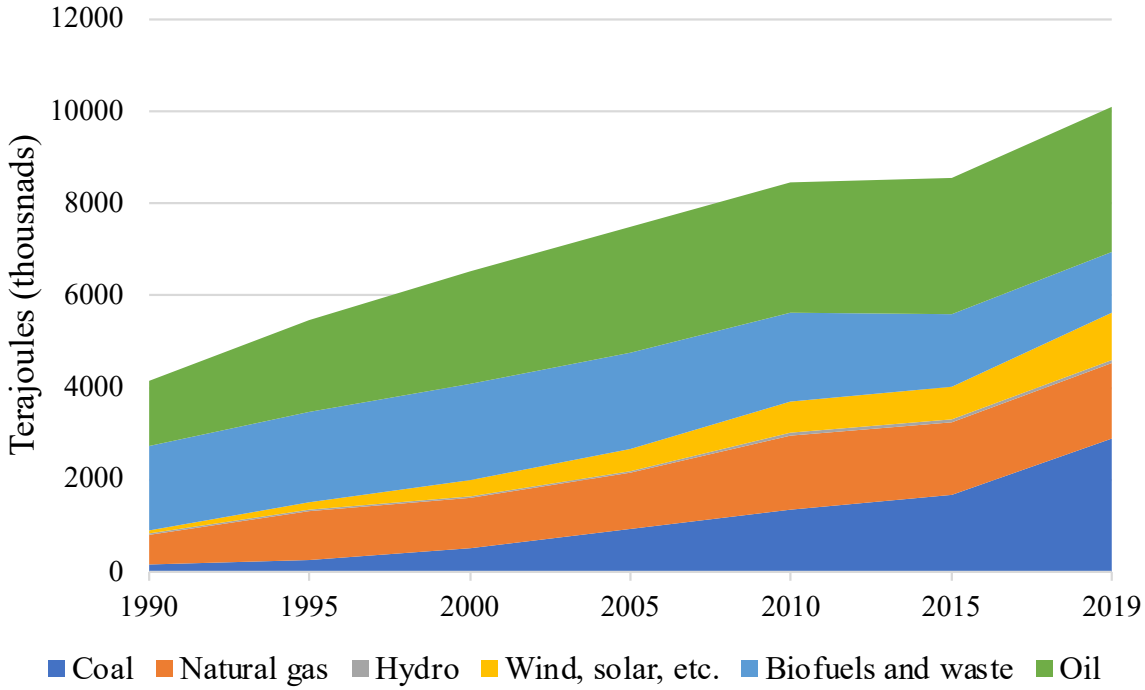
The Indonesian government has established a series of institutional arrangements to reduce the country's greenhouse gas emissions. Indonesia's first national strategy on climate change was developed in 2007 (Government of Indonesia 2007). This generated momentum for the 2011 National Action Plan for 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 hamstrings 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, Prasetiyo, 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 spill-over 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.

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