



STEG SYNTHESIS PAPER

STRUCTURAL TRANSFORMATION AND ECONOMIC GROWTH: 10 Policy Priorities for Africa in the Post-COVID World

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Contents

I. Introduction.....	1
Motivation: Why now? Why Africa?	1
Structure of the paper	2
II. STEG: A policy framework for dynamic gains, that are inclusive, sustainable and at scale.....	3
STEG: Strengthening the channels for productivity growth.....	3
Identifying policy priorities: How to – and how not to – bring in a sectoral lens	4
Has COVID changed everything?	7
III. Enabling foundations: Sound incentives for firm entry, private investment and hiring	9
i. Pay more attention to macro-fundamentals and governance	11
ii. Keep access to finance available	11
iii. Address new risks of market concentration.....	11
iv. Expand access to infrastructure that is resilient.....	12
IV. Pillar 1: Diversification: Producing new products.....	12
v. Rebalance focus on manufacturing to include more services.....	13
vi. Encourage rising demand for greening of products and processes	13
V. Pillar 2: Integration: Connecting to new markets	14
vii. Make more of services trade.....	15
viii. Prepare for restructuring of some global production for SSA firms to be included...	18
VI. Pillar 3: Upgrading: Adopting new technologies, especially digital	19
ix. Focus on “use” of technologies rather than “access” or “creation” for greater inclusion.....	20
x. Capture spillover benefits of new technologies on other productivity pillars	22
VII. Conclusion:.....	22
Bibliography	24
Appendix: Impact of trends varies across services and manufacturing subsectors	29

Structural Transformation and Economic Growth: 10 Policy Priorities for Africa in the Post-COVID World

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I. Introduction

Motivation: Why now? Why Africa?

Policy makers across Sub-Saharan Africa (SSA) rank the need to create better jobs for more people as a top priority (World Bank 2021a). Structural transformation that focuses on raising productivity, paying attention to longer term dynamics, and realizing change at scale, has to be at the center of delivering on this agenda. The appeal of finding a ‘silver bullet’ that can produce quick wins is understandable, but structural transformation is a process, not something achieved with an easy fix. This paper lays out a framework for how to identify key channels for enhancing productivity growth. At this time of recovery and adjustment, a significant focus of this paper is on how and why priorities may be shifting, and why it matters for SSA countries to move ahead now on this critical journey of structural reform.

This paper is organized around four channels that can increase productivity growth. Strengthening the enabling environment to provide sound incentives for investment are key to encourage firm entry, capital deepening and hiring. Expanding into new products offers opportunities to diversify. Accessing new markets can achieve greater scale and agglomeration benefits while raising competitive pressures. Upgrading with new technologies can raise efficiency and quality. This structural transformation and economic growth (STEG) reform agenda is not new. But the times are.

The COVID-19 crisis has greatly increased the need for growth and job creation. An unprecedented number of countries have experienced declines in income and increased unemployment (ILO 2021; World Bank 2022b). Poverty has risen systematically for the first time in a generation (Narayan et al. 2022). Projected growth in the region for 2022-23 is 3.7 percent. However, this is still nearly a full percentage point below its 2000-19 average. The recovery from the COVID19 crisis is also proceeding unevenly, with lower income countries and those less integrated into the global economy suffering more. Rising interest rates, rising inflation and growth expected to slow in higher income countries and China are dampening growth forecasts in development countries (World Bank 2022a). With rising needs and more limited means, options for public investment or public assistance are more constrained. The structural policy agenda must become the focus of recovery strategies.

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Beyond the extent of the economic downturn, what else is different? A new emphasis on resilience and the need to be more prepared for future shocks reinforces a need for more attention on the enabling environment. In addition, each of the three productivity pillars face new trends. There is a greater attention to sustainability that raises the bar on diversification and being carbon competitive. Second, new approaches to globalization could lead to a reorganization of GVCs that could limit SSA's ability to integrate into the global economy. Third, accelerating digitalization both expands opportunities and risks of greater inequality. The framework does not need to change. Rather, applying it to how the world is changing highlights how priorities need to respond.

This paper focuses on Sub-Saharan Africa (SSA). As a region, SSA has experienced relatively less structural transformation, with the highest share of the population in agriculture and many countries not having industrialized. With some of the highest fertility rates, it has a youth bulge that will keep job creation as a policy priority for years to come. Its countries are also experiencing continued declines in GDP per capita growth, with many expected to take years to regain their pre-COVID19 levels of GDP per capita (World Bank 2022a). The structural transformation agenda remains at the center of the development agenda for many African countries (Zeufack et al. 2021).

But if the traditional structural transformation agenda holds particular relevance for SSA, the global trends add urgency and show potential shifts in prioritization as countries in SSA could be disproportionately affected by them. Policy makers' decisions - including the decision not to pursue reforms - will shape how well the firms and workers in their country can pursue economic opportunities. In a time of change, inaction can be particularly costly.

Structure of the paper

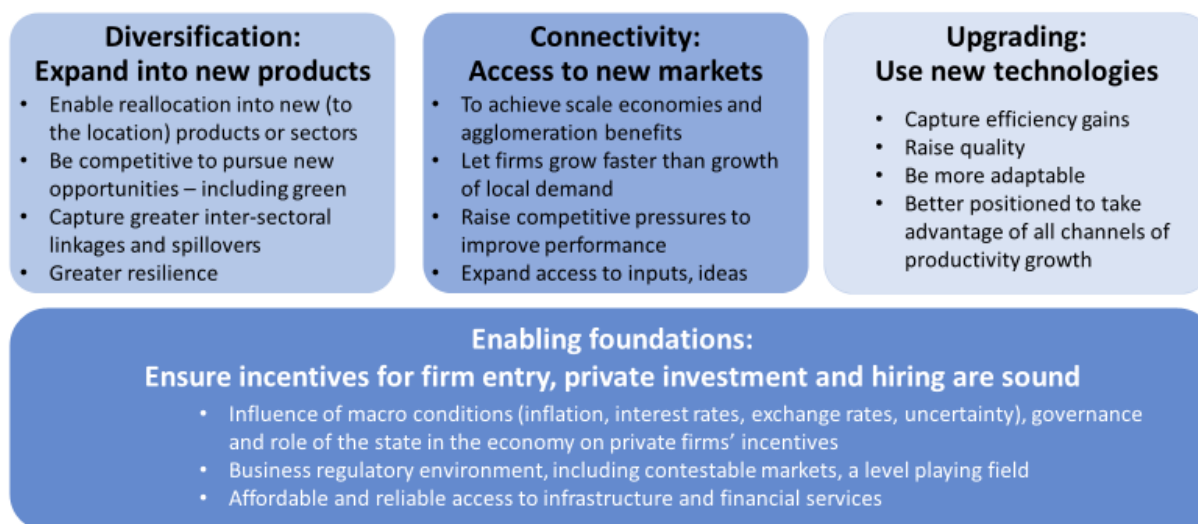
This paper argues for a greater emphasis on structural policy reforms, with priorities within it informed both by a country's structure and what is new in the global context. It is organized along four productivity channels. Within this productivity framework, it lays out 10 ways that current trends should inform and update priorities. Section 2 does three things. It summarizes the productivity framework for STEG and why structural reforms need to be at the center to achieve inclusive dynamic gains, sustainably and at scale. It then discusses how to prioritize recommendations within the framework. A country's structure should inform priorities. But sectors are not the focus per se; they matter in that the scope for different productivity channels vary across them. Third, it then identifies key global trends and why they are important for updating priorities in this agenda going forward. Sections 3-6 then look at how each of the productivity channels of the framework are being affected by these current trends. The discussion highlights the impact of COVID and its policy responses on an uneven recovery, but also the greater interest in resilience and sustainability, shifting approaches to globalization, and the acceleration of digitalization. Each section discusses implications for how the traditional structural transformation agenda can be updated to inform priorities for more countries to use this time of adjustment and recovery truly to build back better. Section 7 concludes.

II. STEG: A policy framework for dynamic gains, that are inclusive, sustainable and at scale

Raising productivity is at the heart of development (Lucas 1988; Krugman 1994).² What matters is expanding activities that can absorb labor and raise productivity over time – i.e. create better jobs for more people. To be a development strategy, it has to operate at scale, with sustainable gains that are widely shared (World Bank 2021). This has several implications for how to think about the ‘structural transformation and economic growth’ agenda (see Figure 1). It highlights four key channels for growth.

STEG: Strengthening the channels for productivity growth

Figure 1: Framework for structural transformation and economic growth



Source: Author, drawing on IDA20’s Jobs & Economic Transformation framework

First, to achieve scale and have sustainable, dynamic gains, it is critical to mobilize private sector investment. There can be a role for public investments to address market failures, but the volume of resources needed, the private sector has to lead. Focusing on private sector investment sharpens the focus on providing sound incentives to invest and hire as a foundational pillar of the framework. Pillar 1 captures these foundations – the role of sound macro-economic policy and governance, a business enabling environment that provides a level playing field and access to economic opportunities, and access to infrastructure and finance.

Second, the reallocation of resources to more productive uses is needed to achieve gains. Diversification or reallocation is a channel most commonly associated with structural transformation. With agriculture still representing a significant share of output and employment,

² The World Bank’s Productivity Project provides new data and research on ways to raise productivity in developing countries (<https://openknowledge.worldbank.org/handle/10986/30560>).

this is an important channel for many African countries. But ‘and economic growth’ widens the framework to include other productivity channels too.

Connectivity or greater integration into larger markets is another key dimension, one where Africa has lagged. This can be around expanding trade, greater integration into global or regional value chains, but greater firm linkages, urbanization or local integration that can expand scale economies or agglomeration effects.

Upgrading, improving the productivity within the same activities is the fourth channel. This has often received less attention when thinking of structural transformation – but as a source of productivity growth it is very important. Indeed, within firms productivity gains account for at least half of aggregate productivity growth (Cusolito and Maloney 1998). This is where technology adoption can be particularly important. It is an agenda that has had relatively less prioritization in Africa – an area where more attention could facilitate greater productivity gains and improve the ability to be competitive in larger international markets and to enter into new activities and growth sectors.

Taken together, the framework underscores STEG is a process, not a hunt for magic bullets. There is not a single reform that once done, STEG will be realized. Rather, complementarities across dimensions of the agenda can be important. But, it is not the case that everything has to be done at once; the growth experience of countries demonstrates that perfection is not required. But a reform agenda that looks at sequencing, complementarities and commits to a continued reform journey is more likely to reap the gains.

Finally, to be inclusive, the process has to benefit firms across the size, skill and ownership spectrum. And it should benefit workers, to create better jobs for more people. As discussed below, this does not necessarily mean that activities have to always be labor intensive. Linkages across sectors can be important in broadening spillovers across more activities, including ones that are upstream or downstream that could be more labor intensive.

Identifying policy priorities: How to – and how not to – bring in a sectoral lens

The recommendations within each pillar are fairly well understood. What is often a bigger question is how to prioritize reforms within a given country. In this paper, I want to emphasize two dimensions: how to – and how not to – bring in a sectoral lens, and how current global trends are reshaping some of the productivity channels.

It should be noted the framework is not about any particular sector. This is intentional. The traditional view of structural transformation has emphasized the critical role of moving from agriculture to manufacturing, and then over time to higher value-added services. To date most of the structural transformation agenda has focused on industrialization, including for SSA (Rodrik 2016; Abreha et al., 2021). There are good reasons for this. Manufacturing has traditionally been able to absorb large numbers of workers and raise their productivity over time. Services, on the other hand, has received more limited attention in developing countries; some services are labor intensive, but seem as low productivity, while high productivity services are seen as

employing relatively few, high-skilled workers. Agriculture is then largely cast as an unproductive sector. However, these characterizations of sectors need re-examining.

Rather than look at the sector per se, understanding the nature of key characteristics of an activity help to explain its potential for productivity growth. Manufacturing has benefitted from producing storable goods that can be traded. This opens the potential for scale economies and using access to larger markets to be able to grow more quickly than local demand. Investments and innovation in physical capital also greatly raise labor's productivity. Many services, on the other hand, were not storable, were simultaneously consumed and produced so that the need for proximity made trade infeasible and scale economies limited. Physical capital also is less important in leveraging labor in most services sectors (transportation, real estate and accommodations being exceptions). However, these characteristics are shifting in the face of technological change.

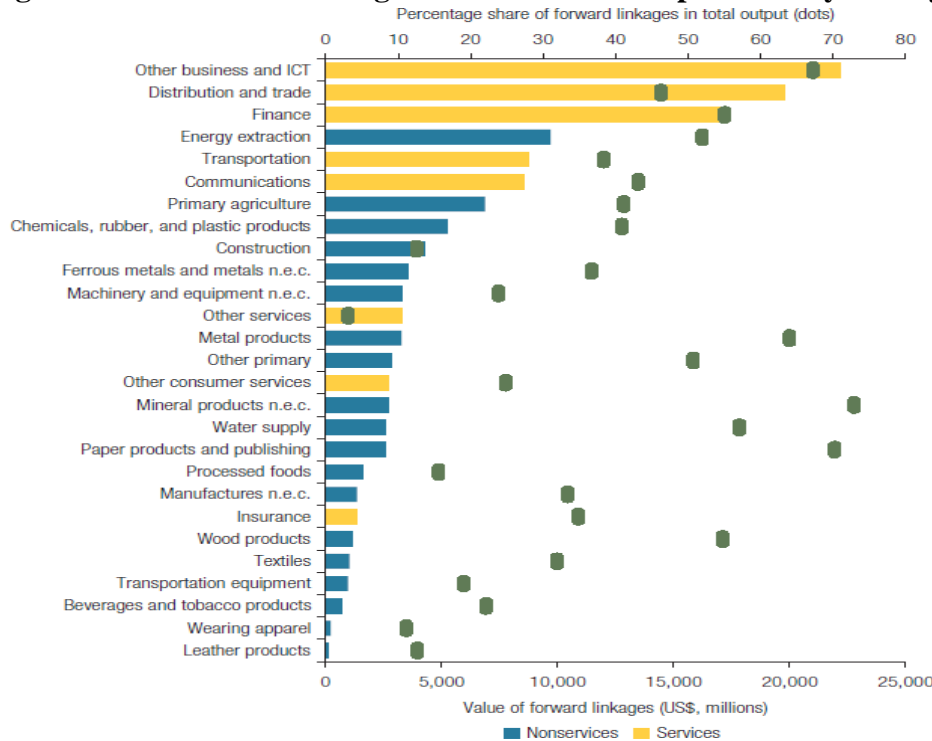
Manufacturing's ability to deliver on the joint objectives of absorbing labor and raising productivity is weakening in the face of greater automation and the significant scale economies of key players now in the market. The entry points today are not the same as they were 30 years ago. First, a lot of the specialization and division of production across locations has already happened. The growth of trade in the 1990s represented this 'great unbundling' and it is natural that once the adjustment had occurred, growth would then slow. Second, China is now a global powerhouse. China that went from producing less than 5% of global manufacturing in the early 1990s to 25% by 2018. Its wages are rising, but some production is moving to the interior rather than spawning a large wave of outbound FDI from China. There has been some diversification already, but the ecosystem represented in China will be hard to replicate. The success of earlier countries is making the entry of new players more challenging. There are still opportunities, but they are not likely to have the same degree of development impact as was true for the 'East Asian Miracle' countries that began this process decades years ago (Hallward-Driemeier and Nayyar 2018).

While countries in Africa may be experiencing 'premature deindustrialization' (Rodrik, 2016), this reflects that services sectors are growing relatively faster. Absolute growth manufacturing has increased in all but a dozen countries from 1994-2019 (Hallward-Driemeier and Nayyar 2018). However, looking at disaggregated data in Sub-Saharan Africa reinforces there is more of a dichotomy between rising productivity among larger firms – yet with limited employment growth. Rather, the entry of smaller firms provides more of they dynamism and new jobs (Diao et al., 2021; McMillan and Zeufack, 2022). It is not that manufacturing is not contributing to development, it is. It is just that the engine it represents is not the same as it had been.

At the same time, the potential for more services to raise productivity and create jobs is growing (Newfarmer et al. 2018, Hsieh and Rossi-Hansberg 2021; Baccini, L, M Fiorini, B Hoekman and M Sanfilippo, 2021). Firm-level data from developing countries from every region show that sector is a poor predictor for high growth firms; success cases can happen in any sector (Goswami, Medvedev and Olafsen, 2019). Even small services firms can be quite productive. Entry is also higher. But more importantly, many of the characteristics of traditional manufacturing activities are increasingly apparent in several services subsectors (Nayyar, Hallward-Driemeier and Davies, 2021). Digital technologies in particular are expanding the

scope for scale and tradability. Rather than requiring a simultaneity of production and consumption (e.g. student in the classroom with the teacher) far more services can be stored or traded digitally. The rise in importance of intangible capital, including data analytics, applies to services – indeed, a larger share of R&D is now spent in digital innovation. So services and digitalization are increasing drivers of innovation. Many services are also enabling sectors; their efficiency and quality gains have benefits for other sectors that use them – including other service sectors (see Figure 2).³

Fig 2: Contribution of linkages can be extensive – particularly for key services sub-sectors



Source: Nayyar, Hallward-Driemeier and Davies, 2021

The linearity of the traditional model of structural transformation also needs questioning – increasing numbers of people in SSA are moving from agriculture to services, contributing to productivity growth as they do so. Service sectors are able to grow, even in countries that haven’t industrialized. And, for those that have, services are playing a bigger role in value added of manufacturing. Linkages rather than linear paths of development promise greater spillover gains. In his most recent work Rodrik acknowledges that services are likely to play a larger role in Africa’s growth story going forward. He is not pessimistic, rather he argues for ‘curbing the level of enthusiasm’ as he sees sustained growth requiring greater complementary achievements across a range of policy issues and institutions to be able to get benefits at scale (Rodrik, 2018 and 2021).

³ Nayyar, Hallward-Driemeier and Davies (2021) explores in more detail the goals of raising productivity in lower-skilled services, as well how to shift more workers into higher productivity sectors. If LMICs had the same employment composition in services as HICs, their productivity would rise by a third.

If the aim is to understand where employment and growth opportunities lie, the agenda then should be less about industrialization per se, and more on where productivity gains can be realized and the policies that can expand the channels for more productivity growth across all sectors.

What is also clear is this same approach needs to be applied in a more disaggregated way too. ‘Agriculture’, ‘manufacturing’ and ‘services’ are not monolithic. The potential for different productivity channels to be relevant will vary at a more granular level; the enabling environment needed to be competitive, the scope for scale, innovation and spillovers varies within them. The Annex illustrates how characteristics associated with productivity channels vary across subsectors⁴, as well as how different trends can impact differentially across subsectors in manufacturing (see more detail in Hallward-Driemeier and Nayyar, 2018) and for services (in Nayyar, Hallward-Driemeier and Davies, 2021).

So in using this framework to identify key policies, sub-sectors need to be taken into account on two dimensions. One regards how the channels for productivity growth varies across subsectors; what is the potential for resilience, spillovers, scale and innovation. Second, is how much they are likely to be subject to global trends in terms of the extent of disruption they may face and whether their drivers of competitiveness are likely to change as result. This second dimensions will be taken up more below.

Has COVID changed everything?

The COVID-19 crisis has made restoring growth more challenging and has accelerated a number of trends. The framework helps to understand what is at stake, and how policy priorities may need to be updated as a result.

The economic crisis accompanying the COVID pandemic has been the biggest global shock in a century, with 95% of countries experiencing a decline in output (WDR 2022). It upended the policy agenda during the pandemic as health needs ballooned and as policies shifted to support firms, workers and households through lockdowns and the accompanying supply and demand shocks. The aim has been to reduce scarring and longer-term losses for when the shock is over.

That recovery to date has been uneven – across locations, sectors and firms raises – does raise concern around longer run scarring (Cirera et al. 2021). Survey data on firms underscore the extent to which firms have faced reduced demand, concerns about falling into arrears and the extent to which uncertainty is complicating decisions about how best to move forward. Yet, only

⁴ Service sectors are differentiated across their ability to be exchanged remotely, their ability to be digitally delivered, the extent to which they are a source of innovation, their labor and skill intensity, and their linkages with other sectors. “Global innovator services” made up of professional services, ICT and financial services are highly tradable, can be digitally delivered, are more R&D and skill intensive and are highly linked with other sectors. “Low skilled tradables” include transportation and warehousing – are traded, and while digital technologies can help with matching and raising efficiency, these services are not delivered digitally. For manufacturing subsectors, goods can be traded so the relevant dimension are connectedness to GVCs, global concentration of production, capital and R&D intensity, ability to be automated, and linkages with services. Electronics is highly traded, automatable, R&D intensive and has growing links with services, including helping to embed services in ‘smart’ goods. Garments are also highly traded, but are not as amenable to automation, R&D is limited and fewer links with services.

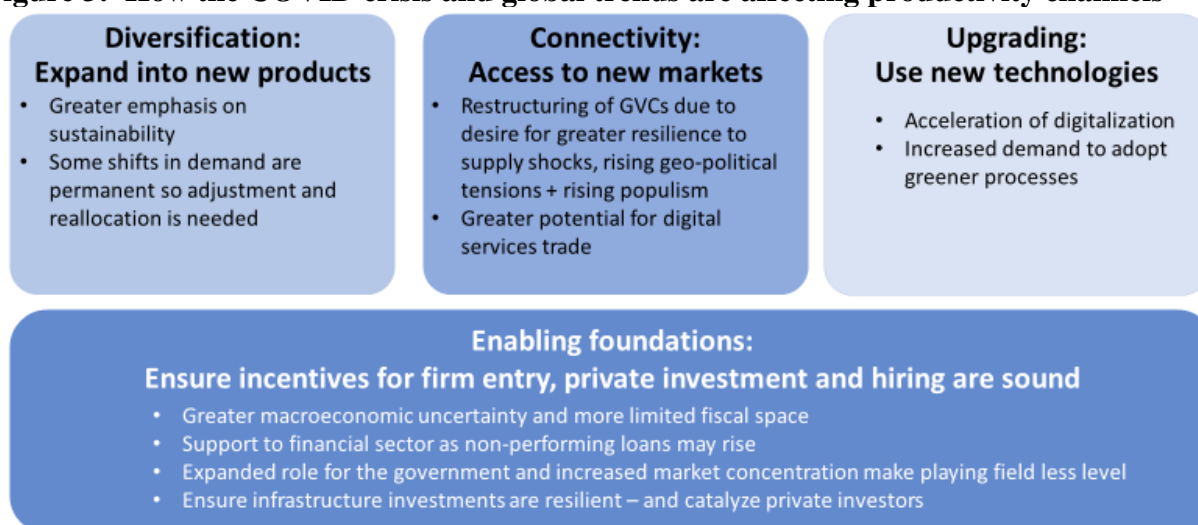
one in four businesses surveyed across 60 countries surveyed had received any type of public support, with the share varying from more than 50 percent in high-income countries to just over 10 percent for low-income economies (World Bank, 2021). Despite the need, the sheer resources needed to continue the support programs is not feasible for many lower income countries. And, some of the policies enacted to blunt the economic downturn are also raising new challenges for recovery – from greater indebtedness to greater market concentration and a larger role of the state in the economy.

An overarching change is the new emphasis on resilience that affects each dimension of the framework. With all the disruptions of the pandemic, there is now far greater recognition of the benefits of resilience – and of preparing for shocks. Resilience is changing what is produced towards greener products (diversification pillar), where (connecting to markets pillar) and how (technology pillar). Being prepared for other shocks, including taking climate change and the likelihood of extreme weather events into account, are getting far more attention and are being included in the assessment of investment opportunities (the foundations pillar). Resilience will feature more in development strategies. However, with a development lens, the aim should not be to maximize resilience but rather to incorporate its risks and benefits in assessing investment and hiring decisions. Raising resilience should not be in tension with growth, but rather be seen as part of what it will take to grow successfully.

Three other trends are being highlighted. One is the increased emphasis on sustainability. This raises pressure to diversify out of carbon-intensive goods and opens opportunities to expand into greener goods. A second is a shift in the approach to globalization and an adjustment to how production patterns across locations may change. Geo-political tensions and rising populism – along with the interest in resilience – may reshape many GVCs. Some reshoring is seen as more attractive. If lead firms are looking for more new places to produce, SSA countries may benefit. However, if the interest is building up a wider set of existing hubs, some SSA countries may find it harder than ever to get linked into GVCs. The third shift is the acceleration of digitalization. Expanding digital technologies holds promise for efficiency gains and expanding access to markets. But the uptake and use has been uneven across locations and across types of firms. More attention is needed to ensure it offers inclusive opportunities.

Looking forward, has the longer run agenda changed? When thinking about structural transformation and economic growth now, it is not so much that a different approach is needed, but rather the urgency and relative priorities have to adjust in the face of the pandemic and three global trends. Figure 3 summarizes their impacts on the productivity channels. The next sections look at each the productivity channels in the STEG framework in turn, and discusses the implications of these trends in setting priorities.

Figure 3: How the COVID crisis and global trends are affecting productivity channels



III. Enabling foundations: Sound incentives for firm entry, private investment and hiring

Strengthening the enabling foundations have long been heralded as key foundations for growth (World Development Report 2005). Macro-economic stability, strong governance, an enabling business regulatory environment, and access to infrastructure and finance are all important in shaping incentives to invest and hire. Indicators show that many countries in Sub-Saharan African counties have considerable scope for improvement in these areas. Risk premium on government bonds provide an indicator of how the macro-economic framework is perceived. Global Governance Indicators provide relative measures on six dimensions of governance. The Doing Business ‘distance to frontier’ measures show the extent of regulatory burdens compared to the time and costs of compliance in the countries with the most streamlined processes.⁵ Multiple indicators on infrastructure – availability of power, paved roads, access to ICT – show the considerable gaps that remain. The depth and sophistication of financial markets also lag – from credit to the private sector as a share of GDP to the share of households with bank accounts. The agenda can be daunting, but it is also true that making progress itself strengthens the incentives facing private investors.

In part because the agenda can seem overwhelming, there remains an interest in whether targeted approaches – targeted to a geographic area (e.g. special economic zones or industrial parks) or to a sector – can help jump start the growth process. The appeal is clear. And there are examples of success – and many examples of expensive failures in SSA (Farole 2011). There are lessons on how to assess the viability of targeted approaches, including identifying the market failure(s) that are being addressed, dynamic governance concerns, the importance of links to local labor and input markets to capture spillover benefits, and whether the incentives offered have the

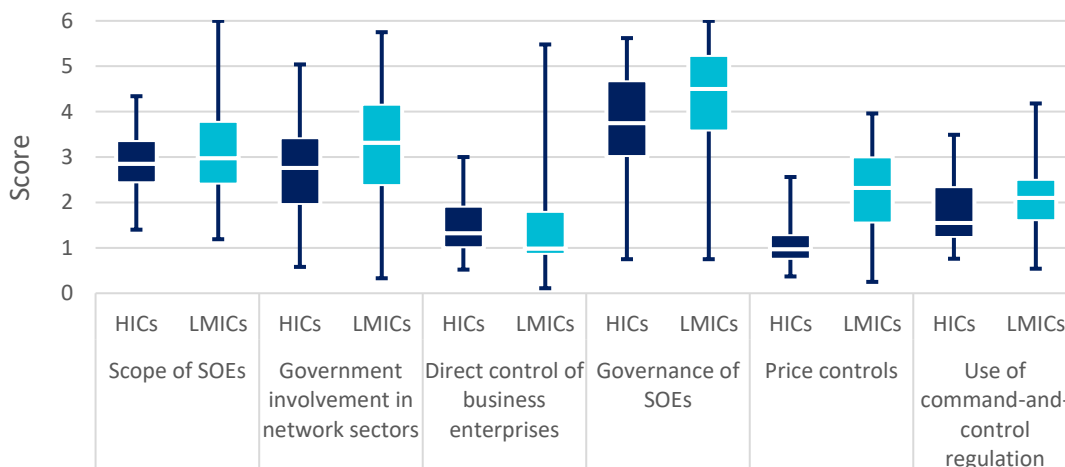
⁵ Doing Business was discontinued in September 2021. New indicators are being compiled, but the historical data remains available. Care should be used in interpreting any ranking of countries; the aim here is give a measure of how much more progress could be made to simplify various regulatory procedures.

consequence of encouraging more capital intensive projects that create fewer jobs (Maloney and Nayyar, 2018; Grover, Lall and Maloney, 2022). It also remains true that while operating conditions within a zone can be improved, the broader costs associated with the country’s investment climate still matter – exchange rate regimes can still distort prices, costs to get goods to and through ports can add delays.

Some of the indicators capture areas where progress involves institutional deepening, a process that can take time. Some capture areas where reforms would not be hard to implement – if there was the political will. Making progress in this broader area thus needs to pay attention to political economy factors and that many regulatory practices reflect interests that are protected – some justified with public good interests in mind but where the consequences on longer run dynamism and inclusive growth need to be faced. And the priority should be on reforms that can make a difference, ones that represent binding constraints – and ones that could have larger cascading benefits.

Product Market Regulations indicators collected by the OECD and World Bank show the extent of regulatory barriers across a range of sectors, many of which are enabling sectors for wider areas in the economy. Figure 4 compares the distribution of several measures for services sector; sectors where regulatory barriers are far more prevalent than in goods. Restrictions tend to be higher in LMICs, with considerable variation across countries and sub-sectors. The role of SOEs is particularly noteworthy for countries in Africa where they are far more prevalent – not only in sectors that may be natural monopolies. The prominent role for SOEs limits competition, and through linkages, affects the competitiveness of other sectors in the economy. Reforms in these areas tend not to be frequent, but they represent areas where greater competition could deliver larger gains. When looking for reform priorities, these are areas that deserve more attention.

Figure 4: Product Market Regulations in services are higher in developing countries



Source: Calculations based on data from the 2013 OECD PMR database and the 2013 – 2017 WBG–OECD PMR database. *Note:* The product market regulation (PMR) score for each indicator of state control ranges from 0 (the most competition-friendly regulatory regime) to 6 (the least competition-friendly). White areas across bars indicate the median. Error bars indicate the range of annual average country scores.

In terms of how this agenda is evolving, two trends serve to raise the importance of this agenda. On the one hand, automation is making labor costs a relatively smaller consideration in choosing where to invest. Broader considerations of the cost and competitiveness on the enabling environment matters all the more. Second, given current economic conditions post-COVID19, the case that deeper reforms have to be a critical tool for recovery is all the stronger. There are still compelling needs in terms of public investments in infrastructure, in education and in health. However, with fiscal space far more constrained, far more attention needs to be on reforms that do not require significant resources but that can have significant impact. And the case for reform is not just due to the economic shock of the crisis itself. Several of the policy responses – while important in the short run – open new concerns for STEG going forward. Four are highlighted here:

i. Pay more attention to macro-fundamentals and governance

The level of indebtedness was high pre-COVID. With urgent needs for health care, social assistance and support to keep firms and sectors afloat, the levels of debt are even higher. Indeed, the worst-case economic scenarios were largely avoided due to the public response that extended support to many firms and households. Going forward, resources for firms support programs or for public investments are tighter. Many support programs have been rolled back or will be shortly. As small firms and informal sector enterprises were hit hard, ensuring that opportunities are inclusive is going to be critical. Addressing debt levels, particularly as the US and other high-income countries raise interest rates, will be important. Where inflation is rising significantly, monetary policy will need to respond too (World Bank 2022a; World Bank 2022b). Avoiding exchange rate distortions also rises in importance, particularly if seeking to attract international investors or to access international markets.

Fragility and conflict concerns are also rising in SSA, with several coups in recent months and continued concern with violence and high numbers of displaced persons. Addressing fragility is a core development objective; a pre-condition for any growth. Before structural reforms are likely to have much impact, this foundational dimension has to be stable.⁶

ii. Keep access to finance available

Access to finance is important to enable firms to take advantage of any of the productivity channels – from capital deepening to creating new products to connecting to new markets or using new technologies. The health of financial systems is itself an areas of uncertainty; the unprecedented use of regulatory forbearance has served to keep firms and banks operating during the crisis but reduces transparency on the true nature of non-performing loans and how vulnerable the financial system is once such measures are withdrawn (see World Development Report 2022 for an in-depth discussion of this agenda and recommendations).

iii. Address new risks of market concentration

⁶ Addressing FCV is an agenda on its own and beyond the scope of this paper.

Many countries need to strengthen contestability and competition as the playing field has become more uneven. In many countries the role of the state in the economy has expanded. The public support to firms to avoid scarring or the loss of systemically important firms or sectors, has given the government greater say in the allocation of credit or procurement contracts, expanded government ownership of businesses and strengthened the position of SOEs. Rolling back the state's involvement may be more challenging, particularly as public opinion is looking more favorably on how the state can direct and lead some activities (Freund and Pesme, 2021; World Bank forthcoming).

Related, market concentration has been rising as many large incumbents have expanded market share during the pandemic. Firms with deeper pockets and a greater ability to negotiate with suppliers to obtain inputs in disrupted supply chains have benefitted. Several large tech companies have seen enormous jumps in their business. Smaller firms in smaller locations have been hit far harder.

If recovery is to be inclusive, SMEs need to be able to access markets on fair terms. This has both a de jure and a de facto dimension. The rising strength of bigger players reinforces the importance of regulatory enforcement to ensure a level playing field in practice. The evidence shows a large variation in the application of regulations, particularly for LICs and MICs (Hallward-Driemeier and Pritchett 2015). If the aim is to have inclusive opportunities, tackling both what is on the books and how regulations are enforced in practice will matter.

iv. Expand access to infrastructure that is resilient

Access to electricity, transportation and ICT remain far from widespread. What is new is the emphasis on mitigation risks that could discourage closing these gaps. What is also true is that the risk of stranded assets can be avoided by moving directly to more renewable sources of energy. Given the funding needed to address infrastructure gaps, two dimensions need emphasis. One is updating procurement guidelines and priorities to invest in resilient infrastructure (World Bank 2021a). Second, updating PPP frameworks to better harness private capital. Fried and Lagakos (2020) look at general equilibrium effects of not addressing power outages. While the short-run, partial equilibrium effects of outages are relatively small, taking into account the effects of creating idle resources, depressing the scale of incumbent firms and reducing entry of new firms, the impacts are large. And if SSA countries are likely to be exposed to more extreme changes in temperature and precipitation, the resilience of infrastructure will be important in maintaining, let alone growing, firm productivity.

Taken together, with limited fiscal space and pressing needs for growth, structural reforms need to get more attention if countries want to expand the set of opportunities for private investors. Questions of political will remain; the experience so far has been relatively muted. Those countries that do undertake reforms could thus stand to gain all the more.

IV. Pillar 1: Diversification: Producing new products

The discussion above has already argued for looking at productivity drivers of sectors and sub-sectors. COVID has underscored two shifts. One is the role of digitalization and the expanding

set of services that can be delivered or augmented digitally. The other is the new emphasis on resilience, and diversifying across products and locations in preparing for shocks. Among new growth areas, there is far more interest in the potential to move into greener products and services. Digital services and green products are not new agendas, although neither have had much attention in SSA. They deserve more. Both offer opportunities for diversification that can raise productivity and create jobs.

v. Rebalance focus on manufacturing to include more services

The case for more emphasis on services was already made above. What the pandemic response has brought how is how much digitalization expands the scope for many services subsectors. It also reinforces the dangers of just looking at aggregate sectors. Tourism has been hit hard, e-commerce and professional services have surged. The desire to expand the set of activities that can be done – and done safely – spurred the digitalization of services. Remote learning and telemedicine are two areas that expanded considerably.

One possible concern is that those sub-sectors that create the most jobs do not offer the same productivity gains, and those that are most productive tend not to be as labor intensive. The rising importance of intangible capital, however, can raise productivity in a wider set of sub-sectors. Data analytics are being harnessed to improve efficiency in restaurants to hospitals, retail to transportation networks. And the expanding linkages across sectors means that spillover gains can broaden the impact, including to more labor intensive, lower-skilled workers (Nayyar, Hallward-Driemeier and Davies, 2021).

Many services sectors have some of the highest degree of linkages- to manufacturing and industrial sectors, but also to agriculture and to other services. So more productive services sectors can help manufacturing to grow, as well as other services. One policy question is whether there should be a targeted approach to developing service subsectors, an ‘industrial policy for services’. Removing distortions in upstream services, such as telecommunications and finance, can provide cascading benefits across many downstream sectors. In many countries, regulations in the trucking industry are notorious for stifling competition and raising costs. In India, the productivity of downstream manufacturing firms increased following the liberalization of transportation services in the 1990s (Arnold et al. 2016). Liu (2020) explores the reverse effects, whether targeted support in upstream sectors could be effective when downstream sectors are more distorted, providing too little demand for the upstream sectors to develop. While manufacturing sectors have been seen as critical in generating the demand for higher-productivity services, new evidence shows that manufacturing doesn’t play such a disproportionate role. All sectors, including other services sectors, can drive increased demand for services and deliver greater spillover benefits (Nayyar et al 2021). The benefits of lowering constraints to services deserve more attention (and are discussed below in the context of expanding access to larger markets below).

vi. Encourage rising demand for greening of products and processes

Rising concerns about climate change is bringing more attention to switching to renewable energy as well as greener goods and services. In this context, diversification, particularly for

countries that are fossil fuel exporters, is more important than ever. There are several policy implications. First, it is important to stop incentivizing dirty over clean energy, and brown goods over green goods. Subsidies to fossil fuels still remain widespread, with damaging environmental impacts as well as being a regressive policy. Similarly, tariff barriers on green goods are often higher than on brown goods; they need to be lowered or removed. Shapiro (2021) estimates that the implicit global subsidies to carbon dioxide are several hundred billion dollars a year. Eliminating the bias to dirty sectors would not only reduce emissions, his general equilibrium model shows little impact on global real income.

More can also be done to incentivize markets for green goods and services and expanding the circular economy. Helping accredit firms that produce green goods or use greener processes should reward firms that are helping expand into these new areas. Supplying information on the benefits of switching, helping address potential coordination failures and addressing constraints in financial markets to ensure credit for green investments all can address market failures. Environment standards and carbon pricing may also serve to curb dirtier sectors.

Distributional issues also need to be assessed, along with the cost benefit impacts of change. This has both an international and a domestic dimension. SSA has accounted for a very small share of global emissions. Yet changes to temperature and precipitation, and the likely frequency of extreme weather events are expected to disproportionately affect countries in SSA. This global distribution of adjustment costs has been discussed, with progress made at COP26, but more remains to be done. The investments needed are substantial and come at a time when public resources are more limited. Incentivizing private actors will be critical. Resilience needs to inform infrastructure investments – public and private. At the same time, the goals on mitigation need to be balanced with growth; the goal should not be to maximize the green benefits but rather to ensure growth strategies take their impacts on the environment into account (Gill, 2021).

How much of this agenda will be driven by the public vs private sector will depend in part on consumer awareness and how quickly demand for greener products and process rise, particularly among African consumers. Regulations in high income countries will also be a factor; lead firms in GVCs will be responsible for ensuring the carbon footprint of their whole supply chain to sell into key markets. Firms that want to participate will need to meet these standards, regardless of the standards in their own location. Carbon competitiveness is a dimension that will feature more in investment decisions going forward.

V. Pillar 2: Integration: Connecting to new markets

Realizing scale economies is key source of productivity gains. Connecting to and accessing larger markets also has the benefits of raising competitive pressures and helping diffuse new technologies and ideas. Yet countries in Africa are relatively less integrated into larger markets through trade or GVCs. Exports tend to be in relatively unprocessed commodities, simple manufactured goods or, for some countries, tourism services. Expanding access to larger markets, including through increased integration in regional and global value chains represents a

real opportunity. The ratification of the African Continental Free Trade Agreement in 2021 represents a big opportunity for countries in the region.

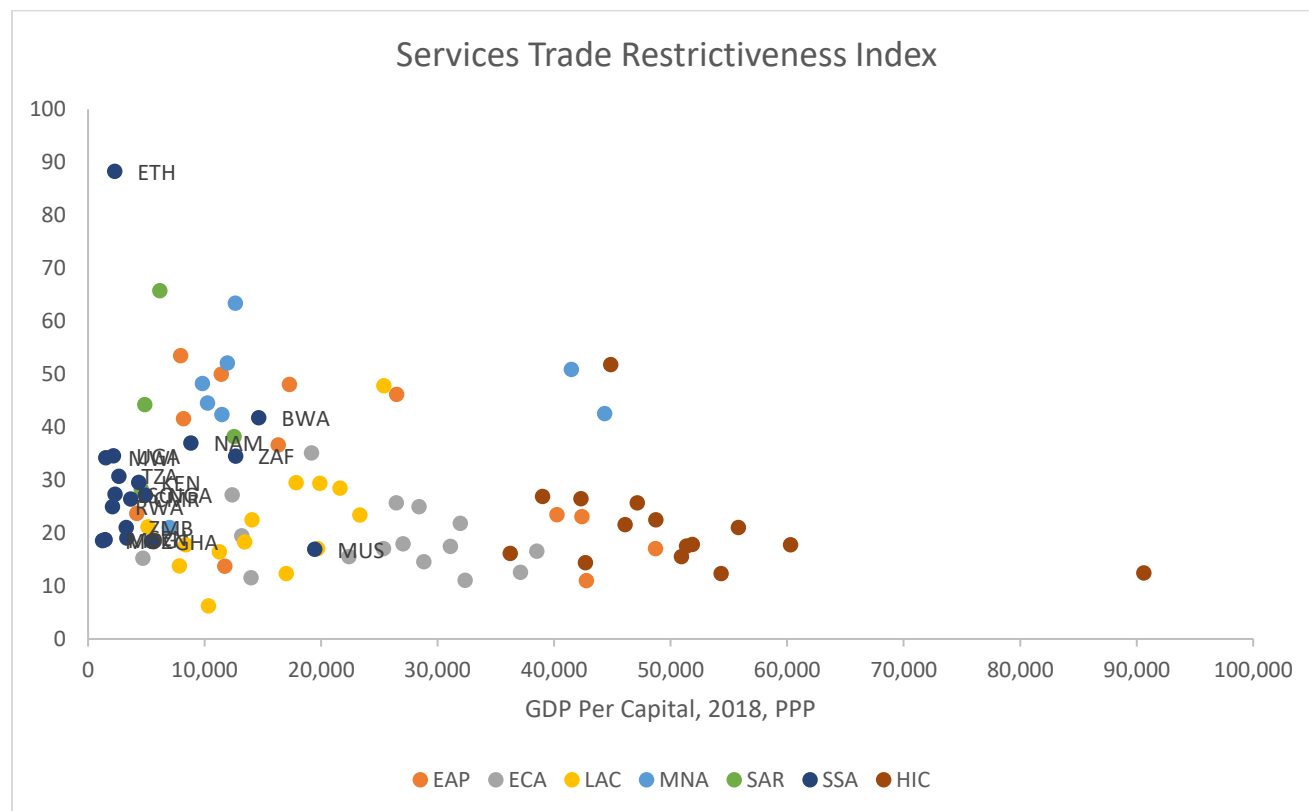
Two ways this agenda is shifting are the focus here. First, within the trade liberalization agenda, a dimension that has not received as much attention are the benefits of expanding trade liberalization to more services sectors. As discussed above, services represent growing opportunities, particularly those that can rely on digital modes of delivery.

Second, at this time of adjustment, there are bigger questions on how much diversification there may be in several GVCs across locations. Seeking greater resilience – to supply shocks, to political disruptions, to extreme weather events – is leading to a reevaluation of a narrow focus only on efficiency gains. With FDI having stalled in many regions, where investments will flow going forward will reshape production patterns. A critical question is how much African countries will position themselves to take advantage of this window of opportunity.

vii. Make more of services trade

Much of the trade liberalization agenda has focused on goods trade. However, the gains from liberalizing services trade could be even bigger (Hoekman 2006). Countries such as Ghana, Nigeria, and Senegal are relatively open. On the other hand, several LMICs, have some of the most restrictive policies (see Figure 5). The starting level of protection is higher in services trade, so the extent of reforms could be greater. And that many service sectors are enabling sectors with linkages to other sectors means that the gains would have larger spillovers. These intersectoral linkages means that trade in goods would also benefit - and vice versa (Ariu et al, 2020). However, the evidence also points to the gains being larger for larger economies (Anderson et al. 2018).

Figure 5: Services Trade Restrictions Show Considerable Variation, with SSA tending to be somewhat less restrictive than SAR or MNA, but more so than LAC, ECA or EAP.
Services Trade Restrictiveness Index by country income level

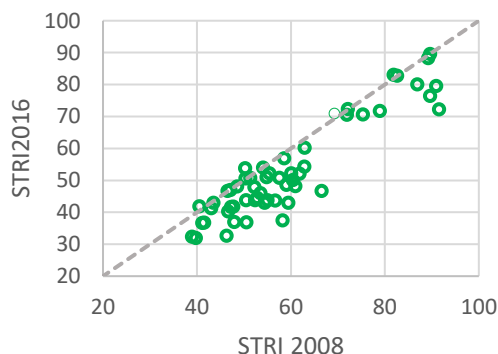


Source: Calculations based on Borchert, Gootiiz, Magdeleine, Marchetti, Mattoo, Rubio and Shannon (2019) and World Development Indicators.

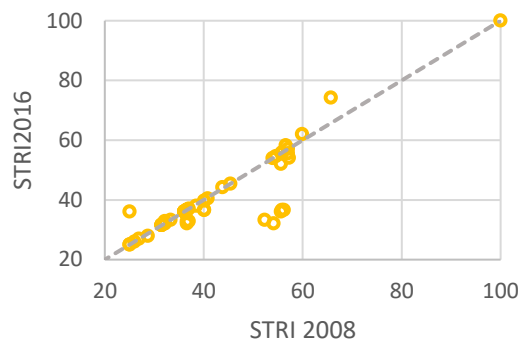
Services subsectors also vary considerably in trade restrictiveness. Professional, scientific, and technical services are among the most protected in both high-income countries and LMICs, reflecting in part national licensing requirements and a reluctance to recognize other countries’ accreditation. Of the 73 countries with data available from 2016 to 2019, 62 have scores above 40 (on a 1–100 scale), and in 63 countries, the professional services restrictiveness score exceeds the national average for all the sectors for which data are available Borchert et al. (2019). So while the potential for trade is high as there is less need for physical proximity, the actual trade of professional services remains among the lowest of any services sub-sector. Looking at the extent of progress over time shows that it is possible – but slow.

Figure 6. Trade restrictions have declined on professional services but not on retail services

a. STRI, professional services, by country, 2008 and 2016



STRI, retail services, by country, 2008 and 2016



Source: Calculations based on Borchert, Gootiiz, Magdeleine, Marchetti, Mattoo, Rubio and Shannon (2019).

What is true for services is that much of the liberalization agenda is about addressing domestic regulations. As such it overlaps with the ‘foundations’ pillar and the Product Market Regulations data illustrated there. It also means progress on the agenda would have benefits for improving efficiency and investment domestically and not just for international trade. Some of the regulations address public interests in quality or safety standards. But licensing requirements can also serve as entry barriers. Some can be explicit in restricting foreign entry; others serve the same purpose implicitly, e.g. requiring accreditation from a domestic educational institution. The enforcement of regulations can also be discretionary, opening significant gaps between formal requirements and what firms face in practice – often to the detriment of smaller or less politically connected firms (Hallward-Driemeier and Pritchett 2015).

The estimates of the gains from liberalization are encouraging, and vary by sectors too. Evidence from countries that have reformed their retail sector to allow the entry of larger foreign food chains have found productivity increased, better quality jobs were created by these stores, but with some displacement of jobs in traditional stores. The introduction of Walmart in Mexico finds limited evidence for net job creation (Neumark et al. 2008; Haltiwanger et al. 2010), but supplying Walmart encourage innovation and wages rose in larger upstream firms, although those smaller firms less likely to supply Walmart saw a decline in wages (Iacovone et al. 2013).

Liberalization in the financial sector could benefit lower income countries more; Mattoo et al. (2006) find that LMICs could see growth increase by 2.6 percent and 1.2 percent for HICs. Similarly, liberalization of telecommunications is associated with higher growth – with gains greater for lower income countries (El Khoury and Savvides 2006; Eschenbach and Hoekman 2006; Mattoo et al. 2006).

What is true is that the benefits are likely to be greatest for sectors most heavily relied upon by other sectors in the economy, especially transportation and logistics as well as financial and

banking services (Hofmann et al 2019, Borchert and Di Ubaldo, forthcoming). Research on India's reforms in the banking, transportation, insurance and telecommunication sectors found that a one standard deviation improvement in services liberalization was associated with a 11.7 percent increase in productivity for domestic firms and a 13.2 percent increase in productivity for foreign firms (Arnold et al. 2016).

Within trade policy issues, a new dimension that is appropriately getting more attention is the regulations governing the flow of data. Data flows can help with the coordination of different actors in a value chain, making them more efficient – and as underscored with recent supply chain disruptions – facilitating greater adaptation to shocks. Data flows are also increasingly important for the growing digital delivery of services (Nayyar et al. 2021; Ferracane, Kren and van der Marel 2020).

The regulations regarding data flows also interact with regulations on the types of data that can be collected in the first place and how they can be used. Ferracane and van der Marel (2020b) characterize the data regimes of 116 countries to test how approaches to cross-border data flows and domestic data processing regimes affect cross-border services trade. Sharing a similar approach to domestic data flows is associated with higher international flows between partner countries in both open and conditional transfer models. However, countries with permissive sharing domestically and data localization requirements, such as China, suffer doubly, with fewer countries willing to send their data and, of course, with data not flowing out.

viii. Prepare for restructuring of some global production for SSA firms to be included

A big lesson from all the supply chain disruptions of the current crisis is the drive for efficiency is likely to be balanced with more considerations for resiliency going forward. Lockdowns have been a source of disruption at this time, but extreme weather events or natural disasters raise similar concerns. Some components have multiple producers and multiple buyers enabling the overall availability of the goods to remain resilient. But where there are only a few producers or buyers and they are disrupted, the repercussions are much bigger. Scale economies in specialized components that get made in a very small number of large production sites has certain efficiencies. But if those sites are off-line – due to a natural disaster or a fear of a COVID outbreak – the costs are enormous.

The desire to reconsider the global footprint of production also has political dimensions. On the political front, two trends are undermining globalization. First, the growing tensions between China and the US are raising the specter of more trade restrictions but also of a 'great decoupling'.⁷ The tensions over Russia's invasion of Ukraine opens another axis for decoupling. Second, the political success of a number of parties touting economic nationalism or populism are seeking to reshore certain activities (or discourage off-shoring or even trade). Both are serving to undermine the liberal, rules-based, multilateral system on trade. With the US continuing to refuse to appoint members to its appellate body, the WTO is unable to fill its role of adjudicating trade disputes. With important areas for trade negotiation are in more sensitive

⁷ China's role in the global economy is also shifting as it turns towards domestic diversification and addresses challenges within its real estate sector that could have larger impacts on investor confidence and the financial sector. For SSA, China is likely to be investing less and modifying its role as a key importer of commodities and goods.

areas of domestic regulations and standards, access to procurement opportunities and data governance, the prospects for much progress are dim. The WTO is still providing a forum for such negotiations, but bilateral and regional trade agreements are likely to be how agreements are reached (Hoekman and Sabel 2021; Dhingra et al 2020).

So seeking greater resilience, as well as economic populism and the growing tensions with China and the US, are further reinforcing the desirability of some geographic diversification. Predictions of extensive re-shoring by high income countries are likely overblown, but whether countries want to control their access to key goods, initially PPE and pharmaceutical goods, but also key electronics components is being debated more seriously in a number of countries.

One question is whether new automation technologies will lead to more reshoring and less opportunities for developing countries to participate in GVCs. In manufacturing, automation is raising efficiency but also reducing the role of labor and thus the importance of wages in overall costs. There are concerns that it will reduce the incentive to off-shore production – or even that it would enable more reshoring. The capital intensity of automating manufacturing goods is reinforcing production in many established hubs and in larger firms. At the same time, evidence shows that automation in high income countries is associated with continued off-shoring – albeit at a declining rate for some sector-country pairs (Hallward-Driemeier and Nayyar 2019). Automation is also associated with greater rather than less trade (Artuc, Bastos and Rijkers, 2018; Freund, Mulabdic and Ruta, 2020)

Climate change - and climate change policies - are also influencing location decisions. On the one hand, there is a concern of a ‘race to the bottom’ that dirty production facilities will flock to locations with the most lax environmental standards. On the other, trade itself can raise the efficiency of production overall by rewarding those that are most carbon competitive; the emissions created in moving goods from efficient producers to consumers is lower than the emissions of less efficient producers. To date, the evidence for trade contributing to a more carbon efficient distribution of production is promising (Javorcik and Wei, 2003; Brenton and Chemutai, 2021) The use of Carbon Adjustments at the Border Mechanisms or other types of carbon pricing can also keep carbon-intensive producers from being able to compete in larger consumer markets. To the extent requirements fall onto lead firms to demonstrate compliance, this internalizes the need to comply regardless of the local requirements of all the input producers.

If some repositioning of international production centers is thus likely, what does it mean for developing countries? If some GVCs diversify across locations, some will gain while others will not. A critical question for countries in Africa is whether they are positioned take advantage of this window of opportunity to attract such investments. There is added urgency for countries seeking to strengthen their growth agendas.

VI. Pillar 3: Upgrading: Adopting new technologies, especially digital

Upgrading is an important driver of productivity gains across all sectors. However, the adoption of new technologies is happening more slowly in SSA than in a number of other regions (Comin

and Mestieri. 2018; Cirera et al. forthcoming). While the structural transformation agenda often emphasizes the gains from leaving agriculture, there are important gains that can still be achieved by raising productivity within agriculture. Some new technologies do reward scale, but some can also raise the productivity and incomes of small holder farmers. With climate change, this agenda will be critical in helping adapt more agriculture to new weather patterns. However, the gaps in developing and supporting the adoption of new agricultural products and processes remains significantly under-funded (Fuglie et al., 2020). Programs to support upgrading are commonly featured in manufacturing sectors, with instruments geared to capital improvements and incentives to lower their costs. When thinking about services, the tools and outreach need to shift as investments are often needed in intangible capital that is not collateralizable and where access to finance may not be the biggest obstacle (Cirera et al. 2020; Cirera and Cruz, forthcoming).

Among new technologies, digitalization is getting a lot of attention, rightly. It has accelerated with COVID, allowing more activities to be performed remotely – and safely – while also facilitating solutions to a range of problems. The use of digital technologies can raise efficiency, expand access to markets and improve adaptability. They can also be inclusive, raising the productivity of lower skilled workers and entrepreneurs. Newer technologies can also be more sustainable. Both mitigation and adaptation emphasize the importance of adopting greener technologies and upgrading.

To make the most of the opportunities technological upgrading can provide implies two things. First, the use of new technologies is uneven. Gains can be more dynamic and inclusive if more firms and workers use new technologies. And as adoption is accelerating in other countries, if domestic use is low, it affects the ability to compete for global investments and customers. Expanding the use of new technologies should be a bigger priority. Second, to take full advantage of these opportunities requires taking into account the spillover benefits and complementary policy areas in the other productivity channels.

ix. Focus on “use” of technologies rather than “access” or “creation” for greater inclusion

To date, much of the focus has been on expanding access to ICT. However, what is key for realizing economic benefits is that the technologies are actually adopted and used in practice. And this is not automatic. There is a huge push in extending access to affordable and reliable ICT. It is indeed a necessary prerequisite. The arrival of internet cables in Africa is shown to expand economic opportunities, predominantly benefitting services firms through spurring market entry and boosting productivity (Hjort and Poulsen (2019)). With the COVID-19 pandemic, there has been an expansion of tasks that can be performed and delivered digitally, such as remote learning, e-health, and professional services. Internet access among the wider population has been crucial to enable such home-based work (Avdiu and Nayyar 2020; Bloom 2020).

However, access to ICT is not sufficient to ensure update and use of digital applications for economic transactions. The share of firms that have a website or use email to communicate with suppliers or customers varies considerably, but is below 20 percent in many lower income

countries. In Kenya, pre-COVID, of firms that had access to digital payment technologies, only 5% actually accepted them (Cirera and Cruz, forthcoming). Most digital businesses – including African ‘unicorn’ startups that reach a market valuation above \$1 billion – still rely on cash-on-delivery. Beyond just access to ICT other complementary dimensions also need to be present. As the ‘Digital Economy for Africa’ strategy emphasizes, to achieve a vibrant and inclusive digital economy access to ICT is just the first building block. Access to digital financial services, digital platforms, digital entrepreneurship and digital skills are needed – supported by regulatory frameworks that address new sources of market failures and risks for data governance (see <https://www.worldbank.org/en/programs/all-africa-digital-transformation>).

The creation of new technologies or technology-based businesses gets a lot of attention in the media and by politicians – but requires significant investments, high levels of human capital and a high tolerance for risk given many attempts at innovation do not pan out. Break-through discoveries at the frontier tend to be concentrated in high-income countries, or even within certain regions or larger firms in high-income countries (Balland and Rigby 2017). However, using technologies doesn’t necessarily require too much investment or skills, particularly with some digital technologies. Certainly the use can vary in sophistication, but for SSA, it is important that many applications can be accessed with simple phones, with SMS messages or simple apps that can be driven by icons that require limited digital skills to implement (see Choi, Dutz and Usman, 2020).

Focusing on use will also ensure that outcomes are more inclusive. Information services and platforms can greatly expand access to markets for small firms and farms. If the rules on the platform itself are fair and inclusive, the evidence shows that such technologies are associated with smaller productivity gaps between large and small firms, and between larger and smaller economic centers (Hallward-Driemeier et al. 2020). The regulation of digital markets affects these incentives and ability to use technologies. The potential scale and network effects of digital platform businesses raise new challenges for competition authorities. To ensure a level playing field for firms using digital platforms, it is critical to update data and competition policies (Hallward-Driemeier et al. 2020; World Bank 2021b).

Countries also need to strengthen the capabilities of a wider set of workers to use technologies – or to deepen the skills that complement digital technologies (interpersonal and socio-emotional skills, creativity etc.). There are also concerns that digital businesses will contribute to inequality by being skill biased. It is true that it takes strong digital skills to develop new technologies. However, for many the skills needed to use them are much lower.

Management skills are also important determinants of firms’ ability to adopt and use new technologies effectively (Bloom, Sadun, and Van Reenen 2012). However, the prevalence of the management practices associated with adopting technologies tend to be lower in lower income countries – and more concentrated in manufacturing rather than services firms. More attention to outreach efforts and use of tools appropriate to services firms should help broaden these benefits (Cirera et al., 2020).

The focus here has been on new digital technologies. However, the adoption of greener processes is going to be an area of increasing importance going forward. And this fits into a

framework of technology adoption more broadly. Many of the lessons regarding the adoption of digital technologies are likely to apply – from the need to overcome informational barriers, uncertainty on the returns to investments, financial constraints to finance the transition, coordination failures in adopting new standards.

- x. Capture spillover benefits of new technologies on other productivity pillars

New technologies upgrade the efficiency and quality of firms – but they also can contribute to expanding other channels for productivity. These broader benefits should be captured too for wider gains. At the same time, the nature of new technologies may also have implications for how the regulatory enabling environment may need to be updated to address new risks. The acceleration of digital technologies is the most pronounced, but there are lessons for green technologies too.

- a. *Update the enabling environment to deal with issues raised by new technologies:* The rise of digital platforms and data-driven businesses has also underscored the need to update regulations surrounding competition, contestable markets and a level playing field. Network effects, ‘zero’ marginal cost, ‘free’ services, hyper-customization and winner-take-most dynamics raise new risks of abuse of dominant positions. The governance of data, including balancing of privacy and security, have implications for competition, innovation and inclusion.
- b. *Encourage diversification into new products technologies can create:* Digital technologies open up an array of new services, but also make it possible to embed more services in manufactured goods. This reinforces the linkages between sectors – with implications for what it takes to be competitive and the scope for larger growth and employment impacts. The evidence shows it is possible to be successful in services separately from industrialization, but increasingly to be successful in manufacturing, countries need to have complementary services that are embodied and embedded in the goods they make.
- c. *New technologies can shift access to larger markets.* As discussed above, this is particularly for digitally delivered services. Digitalization opens the ranges of services that can be traded. Extending the trade agenda to include trade in services and the international flow of data are critical here in realizing this potential. Markets for green technologies, inputs and outputs are all expected to grow significantly. Addressing distortions from subsidies, tariffs and regulatory standards can strengthen the incentive and abilities for more firms in SSA to participate and gain from them.

VII. Conclusion:

The dramatic economic slowdown and uneven recovery associated with the COVID pandemic are at the forefront of policy makers’ and the broader development community’s agenda. They should be. But in moving to recovery and adjustment, the policy agenda needs to shift.

For recovery and adjustment, the structural policy agenda needs to be center stage. With recovery gains still uneven, facing larger global growth headwinds and limited fiscal space domestically, reforms that expand opportunities for productivity growth offer the best chance to deliver the economic gains that are desperately needed. The agenda is ambitious, but more is at stake than usual.

Policy makers need to pay attention to what is new – particularly trends with longer term implications. Three have been highlighted here – greater emphasis on resilience and sustainability, shifting approaches to globalization and accelerating digitalization. They have significant implications for what it will take for developing countries to be competitive, to take advantage of new opportunities and to mitigate risks.

Rather than focus on particular sectors, the focus should be on addressing drivers of productivity growth. Where sectors should come in is recognizing how the scope for productivity channels vary by activities – the scope for innovation, scale and upgrading – and how exposure to trends can vary across sub-sectors (e.g. digitalization is happening faster in professional services than in personal services).

As with any change, it is important to address distributional impacts. However, given the nature of how the COVID shock and initial policy responses the dynamics are a bit different. Going forward it is not just about assisting losers, but ensuring the benefits are not concentrated among a few large winners.

STEG is a process, and reforms to strengthen and expand the productivity channels should be prioritized based on country context – benchmarking performance taking into account economic structure and exposure to the different trends. There isn't a silver bullet, but nor does everything need to be done at once.

If policy makers and the development community aim to raise inclusive growth and to 'build back better', clear priorities to address these sources of change are needed to ensure productivity gains are realized, and realized in ways that are inclusive. At this time of adjustment, there is a window of opportunity to pursue new opportunities. More policy makers in SSA should engage in the reform agenda to take advantage of it.

Bibliography

Abreha, Kaleb G., Woubet Kassa, Emmanuel K. K. Lartey, Taye A. Mengistae, Solomon Owusu and Albert G. Zeufack. 2021. *Industrialization in Sub-Saharan Africa: Seizing Opportunities in Global Value Chains*. Washington, DC: World Bank Group.

Ariu, Andrea, Florian Mayneris, and Mathieu Parenti. 2020. “One Way to the Top: How Services Boost the Demand for Goods.” *Journal of International Economics* 123: 103278.

Arnold, Jens Matthias, Beata Javorcik, Molly Lipscomb, and Aaditya Mattoo. 2016. “Services Reform and Manufacturing Performance: Evidence from India.” *Economic Journal* 126 (590): 1–39.

Artuc, Erhan, Paulo Bastos, and Bob Rijkers. 2018. “Robots, Tasks and Trade,” Policy Research Working Paper Series 8674, The World Bank.

Avdiu, Besart, and Gaurav Nayyar. 2020. “When Face-to-Face Interactions Become an Occupational Hazard: Jobs in the Time of COVID-19.” *Economics Letters* 197: 109648.

Baccini, L, M Fiorini, B Hoekman and M Sanfilippo. 2021. “Services, Jobs and Economic Development in Africa”, CEPR Discussion Paper 16924 (forthcoming in *World Bank Research Observer*).

Bloom, Nicholas, Erik Brynjolfsson, Lucia Foster, Ron Jarmin, Megha Patnaik, Itay Saporta-Eksten, and John Van Reenen. 2019. “What Drives Differences in Management Practices?” *American Economic Review* 109 (5): 1648–83.

Bloom and van Reenen. 2007. “Measuring and Explaining Management Practices across Firms and Countries.” *Quarterly Journal of Economics*.

Brenton, Paul and Vicki Chemutai, 2021. *The trade and climate change nexus: the urgency and opportunities for developing countries*. World Bank Publications.

Choi, Jieun; Mark Dutz and Zainab Usman. 2020. *The Future of Work in Africa : Harnessing the Potential of Digital Technologies for All*. Africa Development Forum. Washington, DC: World Bank.

Cirera, Xavier, and William F. Maloney. 2017. *The Innovation Paradox: Developing-Country Capabilities and the Unrealized Promise of Technological Catch-Up*. Washington, DC: World Bank.

Cirera, Xavier, Jaime Frias, Justin Hill, and Yanchao Li. 2020. *A Practitioner's Guide to Innovation Policy : Instruments to Build Firm Capabilities and Accelerate Technological Catch-Up in Developing Countries*. Washington, DC: World Bank.

Cirera, Xavier, Marcio Cruz, Arti Grover, Leonardo Iacovone, Denis Medvedev, Mariana Pereira-Lopez, and Santiago Reyes. 2021. *Firm Recovery during COVID-19: Six Stylized Facts*. World Bank Policy Research Paper No. 9810. Washington D.C.: The World Bank.

Cirera et al. Forthcoming. *Bridging the Technology Divide*. World Bank.

Comin, Diego, and Martí Mestieri. 2018. “If Technology Has Arrived Everywhere, Why Has Income Diverged?” *American Economic Journal: Macroeconomics* 10 (3): 137–78.

Cusolito, Ana Paula and William F. Maloney. 2018. *Productivity Revisited : Shifting Paradigms in Analysis and Policy*. Washington, DC: World Bank.

Deb, P, D Furceri, J Ostry, and N Tawk. 2021. “Creative destruction during crises: An opportunity for a cleaner energy mix”, CEPR Discussion Paper 16819.

Dhingra, Swati, Rebecca Freeman, and Hanwei Huang. 2021. “The Impact of Deep Trade Agreements on Trade and Welfare.” Discussion Paper 1742, Centre for Economic Performance, London School of Economics and Political Science.

Diao, Xinshen, Mia Ellis, Margaret S. McMillan, and Dani Rodrik. 2021. “Africa's Manufacturing Puzzle: Evidence from Tanzanian and Ethiopian Firms”. NBER Working Paper No. 28344.

Farole, Thomas. 2011. *Special Economic Zones in Africa: Comparing Performance and Learning from Global Experience*. *Directions in Development*. Washington DC.: World Bank.

Ferracane, Martina Francesa, and Erik van der Marel. 2020. “Regulations on Personal Data: Differing Data Realms and Digital Services Trade.” Background paper for World Development Report 2021: Data for Development. Washington, DC: World Bank.

Francois, Joseph, and Bernard Hoekman. 2010. “Services Trade and Policy.” *Journal of Economic Literature* 48 (3): 642–92.

Freund, C.L., Mulabdic, A. and Ruta, M., 2020. Is 3D Printing a Threat to Global Trade? The Trade Effects You Didn't Hear About. *World Development Report*.

Freund, Caroline and Jean Pesme. 2021. “Supporting firms in restructuring and recovery.” Washington, DC: World Bank Group.

Fried, Stephanie and David Lagakos. 2020. “Electricity and firm productivity: A general-equilibrium approach” (No. w27081). National Bureau of Economic Research.

Fuglie, Keith, Madhur Gautam, Aparajita Goyal and William F. Maloney. 2020. *Harvesting Prosperity : Technology and Productivity Growth in Agriculture*. Washington, DC: World Bank.

- Gelb, Alan, Vijaya Ramachandran, Christian J. Meyer, Divyanshi Wadhwa, and Kyle Navis. 2020. “Can Sub-Saharan Africa Be a Manufacturing Destination? Labor Costs, Price Levels, and the Role of Industrial Policy.” *Journal of Industry, Competition and Trade* 20 (9): 335–57.
- Grover Goswami, Arti, Denis Medvedev and Ellen Olafsen. 2019. *High-growth firms: Facts, fiction, and policy options for emerging economies*. Washington D.C.: World Bank.
- Grover, Arti, Somik Lall, and William F. Maloney. 2022. *Place, Productivity, and Prosperity : Revisiting Spatially Targeted Policies for Regional Development*. Washington, DC: World Bank.
- Hallward-Driemeier, Mary, and Gaurav Nayyar. 2018. *Trouble in the Making? The Future of Manufacturing-Led Development*. Washington, DC: World Bank.
- Hallward-Driemeier, Mary and Gaurav Nayyar. 2019. “Have Robots Grounded the Flying Geese?: Evidence from Greenfield FDI in Manufacturing.” *World Bank Policy Research Working Paper*, (9097).
- Hallward-Driemeier, Mary, Gaurav Nayyar, Wolfgang Fengler, Anwar Aridi, and Indermit Gill. 2020. *Europe 4.0: Addressing the Digital Dilemma*. Washington, DC: World Bank.
- Hallward-Driemeier, Mary, and Lant Pritchett. 2015. “How Business Is Done in the Developing World: Deals versus Rules.” *Journal of Economic Perspectives* 29(3): 121–40.
- Hjort, Jonas, and Jonas Poulsen. 2019. “The Arrival of Fast Internet and Employment in Africa.” *American Economic Review* 109 (3): 1032–79.
- Hoekman, Bernard. 2006. “Liberalizing Trade in Services: A Survey.” Policy Research Working Paper 4030, World Bank, Washington, DC.
- Hoekman, Bernard M. and Charles Sabel, 2021. *Plurilateral cooperation as an alternative to trade agreements : innovating one domain at a time*. Robert Schuman Centre for Advanced Studies, European University Institute.
- Hsieh, C and E Rossi-Hansberg (2021), “The Industrial Revolution in Services”, Center for Economic Studies Working Paper CES-21-34.
- International Labor Organization, 2021. “ILO Monitor: COVID-19 and the World of work” Seventh edition. Geneva: ILO.
- Irwin, Douglas A. *Does Trade Reform Promote Economic Growth? A Review of Recent Evidence*, NBER Working Paper 25927 National Bureau of Economic Research, Cambridge, MA, June, 2019.
- Javorcik, B.S. and Wei, S.J., 2003. Pollution havens and foreign direct investment: dirty secret or popular myth?. *Contributions in Economic Analysis & Policy*, 3(2).

- Jensen, J. Bradford. 2013. “Tradable Business Services, Developing Asia, and Economic Growth.” In *Developing the Service Sector as an Engine of Growth for Asia*, edited by Donghyun Park and Marcus Noland, 148–76. Manila: Asian Development Bank.
- Krugman, P. R. 1994. *The Age of Diminished Expectations: U.S. Economic Policy in the 1990s*. Cambridge, MA: MIT Press.
- Liu, Ernest. 2019. “Industrial Policies in Production Networks.” *Quarterly Journal of Economics* 134 (4): 1883–1948.
- Lucas Jr, R.E., 1988. “On the Mechanics of Economic Development”. *Journal of monetary economics*, 22(1), pp.3-42.
- Maloney, William F., and Gaurav Nayyar, 2018. “Industrial Policy, Information, and Government Capacity.” *World Bank Research Observer* 33 (2): 189–217.
- Mattoo, Aaditya, Nadia Rocha, and Michele Ruta. Forthcoming. “Why Deep Trade Agreements May Shape Post-COVID-19 Trade.” in *The Economics of Deep Trade Agreements*, edited by Ana M. Fernandes, Nadia Rocha, and Michele Ruta. Washington, DC: World Bank.
- Mattoo, Aaditya, Robert M. Stern, and Gianni Zanini, eds. 2008. *A Handbook of International Trade in Services*. New York: Oxford University Press.
- McMillan, Margaret and Albert Zeufack. 2022. Labor Productivity Growth and Industrialization in Africa. *Journal of Economic Perspectives*, 36(1), pp.3-32.
- Narayan, Ambar; Cojocaru, Alexandru; Agrawal, Sarthak; Bundervoet, Tom; Davalos, Maria Eugenia; Garcia, Natalia; Lakner, Christoph; Mahler, Daniel Gerszon; Montalva Talledo, Veronica Sonia; Ten, Andrey; Yonzan, Nishant. 2022. *COVID-19 and Economic Inequality: Short-Term Impacts with Long-Term Consequences*. Policy Research Working Paper 9902. Washington, DC: World Bank.
- Nayyar, Gaurav, Mary Hallward-Driemeier and Elwyn Davies. 2021. *At Your Service? The Promise of Services-Led Development*. Washington D.C.: The World Bank.
- Newfarmer, R, J Page and F Tarp, eds. (2018), *Industries without Smokestacks: African Industrialization Revisited*, Oxford University Press.
- Rodrik, Dani. 2016. “Premature deindustrialization”. *Journal of Economic Growth*, 21(1), pp.1-33.
- Rodrik, Dani. 2018. “An African Growth Miracle?” *Journal of African Economies*, Volume 27, Issue 1, pp. 10–27.
- Shapiro, Joseph S. The Environmental Bias of Trade Policy. *The Quarterly Journal of Economics*, Volume 136, Issue 2, May 2021, Pages 831–886

Van der Marel, Erik, and Martina F. Ferracane. 2021. "Do Data Flows Restrictions Inhibit Trade in Services?" *Review of World Economics*. Published ahead of print, April 29, 2021.

World Bank, 2004. *World Development Report 2005: A Better Investment Climate for Everyone*. Washington, D.C.: The World Bank Group.

World Bank 2020. *World Development Report 2020: Trading for Development in the Age of Global Value Chains*. Washington, D.C. : World Bank Group.

World Bank 2021a. "IDA20 Special Theme Jobs and Economic Transformation: Enabling Better Jobs for More People Through a Green, Resilient and Inclusive Recovery." Washington, D.C.: The World Bank Group.

World Bank Group. 2021b. "Supporting Firms in Restructuring and Recovery." *Equitable Growth, Finance and Institutions Insight*. World Bank, Washington, DC

World Bank Group. 2021c. "*World Development Report 2021: Data for Better Lives*. World Bank, Washington, DC

World Bank, 2022a. *Global Economic Prospects January 2022*. Washington, D.C.: The World Bank Group.

World Bank, 2022b. *World Development Report 2022: Finance for an Equitable Recovery*. Washington, D.C.: The World Bank Group.

World Bank, forthcoming: *Role of SOEs in Developing Countries*. Washington, DC.: World Bank.

WTO (World Trade Organization). 2019. *World Trade Report: The Future of Services Trade*. Geneva: WTO.

Zeufack, Albert G., Cesar Calderon, Megumi Kubota, Vijdan Korman, Catalina Cantu Canales and Alain Ntumba Kabundi. 2021. *Africa's Pulse, No. 24, October 2021 : An Analysis of Issues Shaping Africa's Economic Future*. Washington, DC: World Bank.

Appendix: Impact of trends varies across services and manufacturing subsectors

Mapping of trends in services subsectors

Impact of future trends				Priority within 4Ts agenda				Subsectors likely affected in this combination of policy priorities
Reduced proximity (scope for home-based work)	Potential for automation (suitability for machine learning, ^a data analytics)	Intangible capital (expenditure per worker on software and R&D)	Intersectoral linkages (share of forward linkages in total output)	Trade (if H/M in reduced proximity)	Technology (if H/M in increased automation)	Training (if H/M in intangible capital)	Targeting (if H/M in sectoral linkages)	
High	High	High	High	Yes	Yes	Yes	Yes	ICT, finance, and professional services
High	Medium	Medium	Low ^c	Yes	Yes	Yes	No	Education services
Medium ^b	High	Low	Low ^c	Yes	Yes	Yes	No	Health services ^d
Medium ^b	Medium	Low	High	Yes	Yes	No	Yes	Transportation, wholesale trade, and administrative and support services
Low	High	Low	Low	No	Yes	No	No	Accommodation and food; retail trade; arts, entertainment, and recreation; and other services

Source: Elaborations based on chapters 3, 4, and 5.

Note: H/M = high or medium. ICT = information and communication technology.

a. Most services subsectors have similar scores on the suitability for machine learning (SML) index, which reinforces the relative evenness of SML scores across occupations (Brynjolfsson, Mitchell, and Rock 2018). figure 0.16, administrative and support services and education stand out as being notably lower on the SML index than all other services subsectors. Here, however, these subsectors are classified as “medium” instead of “low” because the manufacturing sector has a distinctly lower SML score (as shown in the full volume, chapter 3).

b. Some portions can be done remotely (through platforms that facilitate matching and telemedicine), but final delivery has more of a need for proximity.

c. Linkages will be there in the longer run with more-educated, healthier workers.

d. Health services is already a high-skill sector, and so training is relevant despite the “low” level of intangible capital. This categorization might reflect the fact that health-related R&D is either captured in pharmaceutical manufacturing or in universities (included under education services).

Source: Nayyar, Hallward-Driemeier, Davies, 2021

Table 6.1 Impact of Automation, Trade Concentration, and Services Intensity on Feasibility of Manufacturing Subsectors and on 3C Agenda Priorities

Scenario ^a	Extent of impacts of new technology and globalization				Priorities within 3Cs agenda			Subsectors likely to be in this scenario ^b
	Increasing concentration of international production	Traded	Use of robots or 3-D printers	Use of Services	Competitiveness	Capabilities	Connectedness	
1	High	High	High	High	Yes	Yes ^c	Yes	Transportation; electronics; pharmaceuticals; electrical machinery
	High	High	High	Low ^e				Machinery and equipment; manufacturing n.e.c.
2	High	High	Low	Low	Yes	..	Yes	Textiles, garments, and leather products
3	Low	Rising	High	Low	..	Yes ^d	..	Rubber and plastics; fabricated metals
4	Low	Low	Low	High	Yes	..	..	Food processing; chemicals; coke and refined petroleum
5	Low	Low	Low	Low	..	..	..	Wood products; paper products; basic metals
	High	Low ^f	Low	Low	..	..	..	Nonmetallic minerals

Note: 3Cs = competitiveness, capabilities, and connectedness. Shading of rows (from dark to light) designates the breadth of agenda items that would likely need to be addressed. n.e.c. = not elsewhere classified. "Competitiveness" consists of the ease of doing business, the rule of law, and the use of mobile technologies to complete financial transactions. "Capabilities" comprises information and communication technology (ICT) use, tertiary school enrollment rates, and the share of royalty payments and receipts in trade. "Connectedness" combines the dimensions of logistics performance, restrictions on trade in manufactured goods, and the restrictions on trade in professional services.

a. "Scenario 1" refers to high trade concentration—highly automated. "Scenario 2" refers to high trade concentration—not very automated. "Scenario 3" refers to low trade concentration—highly automated. "Scenario 4" refers to low trade concentration-not very automated—services intensive. "Scenario 5" refers to low trade concentration—not very automated.

c. If adopting new technology, capabilities must be high; if instead competing using older technologies, capabilities need not be as high, but competitiveness must be that much higher.

d. If competing using traditional technologies, high competitiveness will be needed.

e. Although the need for services is lower, these subsectors' openness to trade and concentration in trade makes competitiveness important.

f. Although the trade concentration is higher, nonmetallic mineral products is the least traded subsector. At most, competition issues are raised.

Source: Hallward-Driemeier and Nayyar, 2018.