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Enabling growth in the new economy: Industrial policy choices in a world of disruptive technological change

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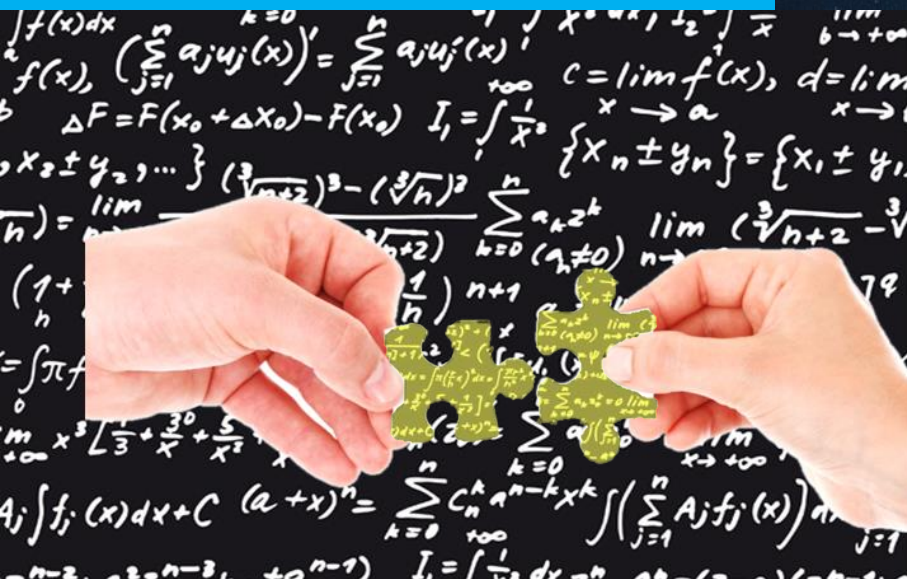
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Enabling growth in the
new economy: Industrial
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of disruptive
technological change



Simon Lacey

ASIA-PACIFIC RESEARCH AND TRAINING NETWORK ON TRADE

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ASIA-PACIFIC RESEARCH AND TRAINING NETWORK ON TRADE

WORKING PAPER

Enabling growth in the new economy:

**Industrial policy choices in a world of disruptive technological
change**

Simon Lacey¹

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Abstract

This paper examines recent technological developments and how they could impact efforts by policymakers and political leaders in developing countries to harness trade and investment liberalization to achieve economic development outcomes.

It begins by discussing some of the proven elements to moving up the development ladder but then warns that the tried and trusted methods and pathways could be closing in light of new technological developments such as automation and artificial intelligence, the impact of which on labor markets promises to be disruptive in the short to medium term.

The paper provides a set of policy prescriptions that governments could and should be contemplating in order to position their economies to benefit from the opportunities of the new economy but also to shelter their workforces from any possible downsides that these new and disruptive technologies may bring with them.

Perhaps the most important finding this report has to offer is that the most decisive factor in achieving genuine change and tangible development improvements is political will and the determination to override the resistance to change that will inevitably come from entrenched interests (including political and economic elites) that benefit from the status quo. This is about improving the state of economic governance in countries and can only be achieved by embarking upon serious and results-driven reform.

The report discusses some areas of reform that seem particularly important in light of the technological transformations unfolding, namely skills and education, empowering the private sector and embracing digitization. It was written before the global health pandemic and ensuing economic shocks unleashed by COVID-19, but its findings remain relevant and the urgency for implementing its recommendations has increased as a result of the many sudden and drastic changes the global economy has been forced to undergo as a result of this crisis.

Keywords: Economic governance, private sector reform, automation, artificial intelligence, LDCs, Fourth Industrial Revolution.

JEL codes: F13, L52, L88, O24, O38

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1. Introduction

This paper explores several technological trends shaping the new economy, particularly artificial intelligence, automation and digitization, with a view to examining the impact they are likely to have on policy space in the area of industrialization and economic development. It argues that the window of opportunity for following the classic export-led growth model, whereby economies move from agriculture to labour-intensive, lower value-added manufacturing and on to higher value-added manufacturing and services, may be closing rapidly, forcing policymakers and entrepreneurs to be more innovative and assertive in how they identify and leverage growth opportunities.

The paper also posits that in order to achieve inclusive and broad-based economic growth, political leaders and policymakers need to have the willingness and expertise to identify and eliminate any constraints holding back micro and small enterprises and stifling entrepreneurship in their economies more generally. Doing this will allow the private sector to grow and permit the most efficient firms to connect with regional or global supply chains, thereby enabling all kinds of positive feedback loops and allowing for the emergence of a flourishing private sector, together with all the other improvements in socio-economic development outcomes this underpins.

A rise in trade tensions combined with other external shocks is likewise exercising its own set of push and pull effects on production and consumption patterns, which create new opportunities for more agile and strategically placed developing countries that are in a position to capture parts of production processes and value chains as firms choose to relocate from those markets most affected by or at risk from trade tensions and other shocks. This applies in particular now as firms start pursuing supply chain diversification strategies to improve resilience and robustness and minimize the downside risk of potential future shocks.

A. Proven paths to export-led growth

The successful growth stories of such economies as Japan, Taiwan Province of China, Republic of Korea and more recently China, as well as earlier success stories such as the United Kingdom, Germany and the United States have all followed proven paths to prosperity that unfold across three broad areas of policy intervention (Studwell, 2013). The first involves maximizing output in the agricultural sector, particularly in staples

that can feed a growing workforce increasingly employed in (non-agricultural) productive activities. The second is to promote a growing manufacturing sector that can absorb excess labour from the countryside and put it to work in (at first) low-skilled jobs, with these skills ideally being then put on an upward learning curve towards greater productivity and thus increasing wages, including from exporting to world markets. The third step is to harness and co-opt the resources of the financial sector and keep them focused on medium to long-term development outcomes rather than short-term profits and more speculative investments.

B. New technological trends

A number of technological trends are, however, conspiring to close the door to these proven growth paths. Both in agriculture and manufacturing we are entering a new era of smart-farming and IoT-led industrialization that is increasingly seeing the human element driven to the peripheries of both very low and very high value-added activities (Baldwin, 2019). The very low value-added activities threaten to trap agricultural workers in perpetual poverty, whereas the very high value-added activities could very well remain beyond the level of technical sophistication available on the vast majority of farms in developing countries and least developed countries (LDCs), because of the high levels of both capital and skills that smart farming requires.

On production locations across the world, including in low-labour cost countries such as Mexico and China, factory and production automation is increasingly starting to drive labour to the low and high-value add activities so that the only (human) workers left in the factory are the cleaning staff and robotic engineers. This trend is more pronounced in the manufacturing sector than it is in agriculture, where a lot of manual labour still remains to be done by humans, at least for the immediate future.

Low-skilled services are another area of economic activity that has provided hundreds of thousands of jobs in both developing countries and advanced industrialized economies. Think for example of the millions of people who earn a living driving a car, truck or other vehicle. The gradual but inevitable shift towards autonomous vehicles will spell the end of this avenue of employment. The same is true for the hundreds of thousands of people who work in call centers across the world, with new AI-based solutions emerging quickly to eliminate significant numbers of these jobs (Kerr and Moloney, 2018).

C. Reforms to enable entrepreneurship

The options for policymakers are limited, since there is little to no prospect of turning back the tide of technological change, particularly not in the interconnected world we live in today. And there are no easy solutions. What can be done involves a range of policy prescriptions that include upskilling working populations, providing seed capital and fiscal incentives to kick-start a broad-based and inclusive private sector and finally to dismantle any legal and regulatory barriers that have for too long acted as a constraint on entrepreneurship and have throttled economic development.

D. Repositioning in a world of shifting value chains

Another reality facing policymakers is that value chains are in the process of widescale reconfiguration. On the one hand, this is due to incremental but sustained increases in the level of protectionism across most economies since the onset of the Global Financial Crisis more than ten years ago (Evenett, 2019). This has resulted in a wave of reshoring or dismantling of the long and geographically expansive production and supply chains that emerged in the age of globalization. Another factor causing the shortening of supply and production chains is the increasing speed from one production cycle to another. Nowhere is this more evident than in the textiles and garments sector, where so-called “fast-fashion” originally saw a shortening of production cycles but which has now itself been superseded by increased levels of customization that have further heightened the pressure on garment producers (Robinson, Zhou, and Maulia, 2019). But this trend is also apparent in the technology sector, which has moved from a world where one iPhone was released per calendar year to a world where at least two new models are released in any given 12-month period. And this is a trend that has for the most part been repeated across the whole ambit of computers, tablets, smart-phones, smart-watches and gaming consoles. Finally, geopolitical tensions and the rise of China as an economic power have caused a large-scale rethink and has itself been the impetus for a sudden and very tangible realignment of value chains in sectors as diverse as technology, finance and rare-earth minerals.

These trends are without doubt disruptive in nature because they have turned the status quo on its head. They add further complexity to connecting firms and markets with regional and global value chains. Nevertheless, these trends also offer new

opportunities for policymakers and entrepreneurs that can recognize and harness them. The right mix of policy reforms can prime and empower both private and public sector actors to do just this, and some of these reforms will be discussed in this paper.

2. Harnessing trade to achieve growth

This section examines the linkages between trade and development, as well as retracing what we have learned from the successes and failures of countries' previous efforts to move up the development ladder. It ends with a summary of what policymakers need to know if they are to harness trade and investment liberalization in order to achieve development outcomes.

A. Trade, growth and adjustment

The linkages between trade and economic growth remain controversial, although there is general consensus among economists that open economies grow faster than relatively more closed economies, because (it is posited) economic openness positions an economy to more effectively benefit from both increasing returns to scale and greater specialization (Zahonogo, 2016). In addition to this, economists argue that economic openness facilitates technology transfer and the related productivity improvements this process drives. On the other hand, it has also been argued that trade's contribution to economic growth will be contingent on whether the forces that trade exposes an economy to (particularly comparative advantage) can be directed at activities conducive to long-run economic growth rather than more speculative or less productive economic activities (Studwell, 2019). This finding would support a more managed or interventionist approach to trade liberalization that carefully sequences any such opening so that the shock of adjusting to a new competitive environment do not overwhelm local firms in the short term, but instead affords them time to adjust to the new competitive realities.

Another set of issues to consider are the inherently distributional effects of trade liberalization, meaning that policy choices to open a given sector will create both "winners" and "losers" (World Trade Organization & United Nations Conference, 2013). "Winners" will be those firms and workers engaged in export-oriented sectors and consumers who benefit from more choice and greater price competition from increased imports. "Losers" include firms and workers in import-competing industries who must

bear the brunt of downward-pressure on prices and wages (*Bloom et al, 2019*). Governments considering further trade liberalization need to weigh up the costs and benefits and also develop and implement policies that mitigate the impact for the “losers” or which more evenly distribute the gains from trade liberalization enjoyed by the “winners” (*Bacchetta and Jansen, 2003*). Coming up with policy solutions that help firms and workers adapt to disruptive change is even more important in a world characterized by rapid technological innovation, which this report focuses on in more detail in subsequent sections.

Different approaches have been tried by different countries, including re-training, temporary income support, providing incentives and funding to help displaced workers start their own businesses (*Bacchetta, Milet and Monteiro, 2019; Cutler and Bell, 2018*). Although developing countries and LDCs may not have the fiscal capabilities to divert significant financial resources to initiatives such as these, there are a number of things they can do to ease the transition. One of these is by removing impediments and constraints that stand in the way of private entrepreneurs (discussed in more detail in Section 3). Another is by carefully extracting appropriate trade adjustment commitments from their trading partners as the quid-pro-quo for conceding to aggressive market access requests in the context of FTA negotiations or other trade negotiations (this is discussed in more detail in Section 4 of this paper).

B. Historical precedents for success and failure

In his seminal 2013 book *How Asia Works*, Joe Studwell deconstructed a lot of the fallacies surrounding the development histories of Asia’s major economies, dividing them into two distinct camps, namely those who had achieved long-run and sustained economic growth (“successes”) and those who had not (“failures”). According to Studwell, there are three set of policy interventions required to achieve success. The first is to maximize output from farming by essentially restructuring it as “highly labour-intensive household farming” producing the overall result of a “productive surplus that primes demand for goods and services”. The second is to re-orientate the economy towards manufacturing because this “makes the most effective use of the limited productive skills of the workforce of a developing country”. The third and last set of policy interventions requires forcing the financial sector to “focus capital on intensive,

small-scale agriculture and on manufacturing development” rather than on more speculative or short-term profits.

Studwell argues that a number of economies were successful in implementing the kind of agricultural reforms that were necessary to raise productivity in this sector, namely by implementing equitable and politically sustainable land redistribution policies and by providing meaningful and effective extension services to agricultural workers. Also necessary were accompanying investments in transport networks and market mechanisms that could ensure that surpluses could be sold on terms that incentivized production and that these surpluses could then be distributed to urban population centers without exorbitantly raising prices.

After agriculture the role of manufacturing in keeping countries on an upward development trajectory has been critical. This is because manufacturing typically allows large quantities of relatively low-skilled labour to be deployed in mechanized production that greatly increases the productivity of each individual worker and this after minimal training. Manufacturing requires less training and is more easily scalable than services. In addition to this, manufactured goods can be more easily traded than most services and this even in light of recent technological advancements that facilitate the cross-border supply of some services. This allows countries to use manufacturing to achieve export-led economic growth and thereby earn valuable hard currency with which to import more advanced machinery and in doing so to achieve vitally important technology transfer. In addition to this, manufacturing firms that (successfully) produce for export (meaning they are exposed to international competition) are inherently more efficient than those that produce and sell solely for the domestic market.

Finally, in terms of policy interventions that are needed in the financial sector, the first of these is to force banks to focus on less profitable areas in the short term in order to achieve more sustained growth outcomes in the long term. Also necessary is to restrict cross-border capital flows so that domestic capital can be directed at domestic industrial and development priorities and ensuring that unregulated foreign capital inflows don't disrupt development planning or otherwise destabilize domestic financial markets.

To summarize, Studwell so pointedly notes that “In Japan, Korea, Taiwan and China, governments radically restructured agriculture after the Second World War, focused

their modernization efforts on manufacturing and made their financial systems slaves to these two objectives”

These lessons need to be carefully born in mind when contemplating further trade and investment liberalization, as discussed immediately below.

C. What policymakers need to know

Any policymaker or political leader considering further trade and investment liberalization, whether it be in the form of a bilateral or regional FTA, WTO accession or even a domestic reform program should have a clear understanding of what the competitive strengths and weaknesses of the firms in his or her own economy are. In particular, this involves knowing how susceptible different industries are to the increased contestability of markets that will inevitably follow an increase in import competition. Some degree of attrition may even be desirable in sectors that play an important productivity enhancing role for the economy as a whole, such as information technology or education services or even steelmaking. These import-competing sectors comprise a country’s defensive interests and any potential losses suffered here should ideally be outweighed by potential gains to be achieved by export competing interests and the interests of consumers and import-consuming firms in the domestic economy.

Another important concept that policymakers and political leaders must get a solid grasp of is what are the industries in their economies that are capable of expanding their exports and what constraints potentially prevent this from happening, either at the domestic policy level or due to the policies and protectionist measures put in place by their trading partners. If these constraints are self-inflicted, policymakers and political leaders need to think about how they can go about removing them. If they are the result of policies in their trading partners, then this is an issue that has to be tabled for discussion in negotiations. This is the sort of thing that can only be understood by talking to the private sector, or at least making it easy for the private sector to bring its concerns to the attention of government.

Yet another important facet of engaging in market opening in the context of trade or investment negotiations is to know the rules. Large trading partners will be the first to affirm that smaller trading partners are acting outside of the rules by using certain industrial development policies. Such accusations may be true, but such policies can

also be reconceived in a way that is less likely to violate international trade rules (if one understands these rules). In any event the trading partner making such an accusation may be guilty of the same or a similar act, so that when confronted with this fact, it may decide to relent rather than press its case in an area where it is itself on shaky legal ground. Knowing the rules is equally important for policymakers and political leaders when contemplating domestic reforms or new policies intended to support the establishment or growth of a new or existing industry. Some policies are considered so egregious a violation of international trade rules that they are likely to elicit a swift response from trading partners (such as export subsidies, import-substitution policies, or blatant acts of discrimination against imports). Others are less likely to solicit a sudden or harsh response and may fall under the radar or be of only minor significance for the economic interests of a country's trading partners.

Most importantly policymakers and political leaders need to do their homework and must have a plan on getting their economies to a developed state. Introducing protectionist measures to satisfy the entreaties and concerted lobbying of a domestic industry only makes sense if this is in the long-term development interests of the economy as a whole and is not likely to result in unjustifiable rents to inefficient producers with no incentive to become more efficient. Doing one's homework is likewise about understanding the offensive and defensive interests of trading partners before negotiations start and knowing what requests are to be resisted (as well as formulating a strategy for doing this). Serious planning in the context of negotiating with an advanced industrialized trading partner also means formulating a list of Aid for Trade commitments that should be sought and how they should be anchored into any final agreement in terms that are actionable and enforceable.

3. Assessing the impact of new technologies

This section looks at a number of technological innovations and how they are affecting production processes and value chains in different sectors of importance to developing countries. It ends with a discussion of how capital and know-how - which have always been important - are becoming even more so in the new economy, and what implications this has for policymakers and political leaders in developing countries.

A. Production processes becoming smarter

How crops are grown, and goods are produced is undergoing rapid transformation thanks to the advent of technologies such as the Internet of Things (IoT), 5G and Artificial Intelligence (AI). In California, almond growers use sensors in the soil that collect and upload information on factors such as water density and mineral composition to the Cloud, where algorithmic software analyses this data and sends commands back to switches on fertilizer dispensers and irrigation hoses so that the almonds receive the optimal amount of water, combined with the right chemicals at the best possible time (The Economist, 2016). Similar applications exist in aquaculture, where ultra-high-resolution cameras can film schools of fish and upload video to the cloud where big data analytics software uses advanced pattern recognition to assess the health of individual fish based on any abnormal coloring in their scales. A fish thus identified can be removed from the school and treated so that any identified pathogens can be stopped from spreading. In mining and surveying, x-ray cameras can be fitted to the undercarriage of autonomous vehicles where they can be deployed to take high-resolution x-rays of different patches of soil. These x-rays are then uploaded to the cloud, where again, advanced pattern recognition is used to identify the most likely places where mineral deposits can be found.²

In manufacturing, many examples abound of companies relying on different IoT technologies to increase efficiency and cut costs. For example, German carmaker Daimler is one of several manufacturers that uses Computer Assisted Design (CAD) and supercomputers to simulate crash-testing on prototypes, which saves it millions of dollars in materials, labour and time because it no longer first needs to build and then crash car prototypes (King, 2015). IoT technologies also play an important role in increasing efficiencies on the factory floor, though such innovations as predictive maintenance, part and process traceability, no longer having to rely on sampling for quality control but instead knowing exactly which parts and components are underperforming (Nathan, 2019) And this is in addition to the changes that have already been wrought and continue through robotic automation (Tilley, 2017).

² These last three examples are from the author's direct experiences working as an executive with Huawei Technologies.

But it's not just in primary industries like agriculture and mining, or manufacturing that we are seeing disruptive technologies transforming the way things are produced. In the services sector too, big changes are afoot. Call centers have been a significant source of employment in a number of developing countries such as the Philippines and India. However, starting in 2017, Vodafone, an international provider of telecommunications services, with 500 million customers and 60,000 – 70,000 call center agents began using different AI technologies to move customer interactions online and to replace human call center operators with intelligent chatbot agents (Kerr and Maloney, 2018).

B. Value chains becoming shorter

The textile industry has long been a staple of low-skilled manufacturing and employment creation for developing countries with several economies starting their climb up the manufacturing value chain in this industry, particularly Taiwan, Vietnam and China. The business model that prevailed until recently was to locate production where labour costs were low and to ship raw materials in and then transport finished products to consumer markets (Robinson, Zhou and Maulia, 2019). The production cycle was largely governed by big retailers and established seasons, which meant that the time from designing an item of clothing to producing it to selling it in a store was typically 120 days. However recent trends have imposed much tighter timelines on this process, reducing it to 60 days or less.

Different technological developments have driven this trend, including automation and digitization. Today, consumer preferences are changing faster as social media, internationally televised sporting events and the fashion choices of globally recognized celebrities all force retailers to adapt quickly to fashion trends that come and go in a matter of weeks. One example of this is demand for an item of clothing, a photo of which has gone viral on Instagram. Another example of this is how international demand for a football team's jersey will depend on how they perform in the World Cup. In yet another example, several instances of celebrities being photographed wearing a particular tracksuit had a discernible impact on demand, forcing the factory that produced them to scale up production at short notice.

In addition to this the interplay of different factors is conspiring to move production closer to markets where products are consumed. These factors are labour becoming

more expensive in markets such as China, production processes becoming increasingly automated thereby reducing the demand for labour, and finally geopolitical tensions making trade costs more unpredictable thus rendering geographically expansive supply chains more of a liability. It is now cheaper to make a pair of jeans in Mexico and ship them to the US for sale than it is to import them from South East Asia. This shortening of value chains will have a profound effect on location decisions by the major clothing brand owners, and so policymakers and political leaders need to be acutely aware of the relative precariousness of their economy's position in being able to continue to attract and retain production in low-skilled manufacturing more generally.

C. Capital, skills and intellectual property gaining in importance

The trends described under the previous two headings have important implications in terms of the relative importance of capital, skills and intellectual property versus labour and how these different components are valued both in economic terms but also by society as a whole. To be sure, significant asymmetries have always existed in this regard, but over the last few decades, thanks both to legal and institutional reforms that have seen taxes lowered on capital but maintained on labour, and a perceivable decline in the power of collective bargaining, as well as the indelible march of technological progress, these asymmetries have become exacerbated to such a point that the resulting income inequality is starting to threaten the societal fabric of even Western liberal democracies (Oxfam, 2018).

Countries that want to use manufacturing to pull themselves up the value chain need to think very strategically about how to encourage resources to move towards higher value-added activities, through a “stick and carrot” approach that uses both gentle coercion and effective incentives (Rabinovitch, 2011).

The value of intellectual property has also increased disproportionately so that, to remain with the example discussed above of the global textile industry, it is the brand owners that have the power to dictate production schedules and prices to those further down the production chain. This trend is also on display in all areas of the digital economy, where content has become king, driving vertical integration between distribution channels and production houses, so that Netflix now makes an increasing

share of the content it streams, and Disney has transformed itself from a production company to an online streaming service.

The implications for labour are obvious, namely that skills become increasingly valuable, so that by the same token, the opportunity costs of not having skills likewise becomes increasingly high. For policymakers and political leaders, this means pivoting towards a relentless focus on empowering their citizens to be able to go out and acquire the skills they think they need and which the market dictates are the most valuable at any given time and place. This also calls for a rethink in the traditional approach to education, with a new emphasis on life-long learning and the agile acquisition of new skills sets, accompanied by a renewed focus on vocational training. This paper discusses how to address the skills gap in more detail in the next section.

One obvious lesson from China is the impact that dedicated policies directed at incentivizing the creation of intellectual property can have. Chinese companies now figure among the biggest spenders on research and development, and China overtook both the US and Japan several years ago in terms of global patent filings, even though the qualitative gap between the vast majority of patents filed in China and those filed in the US and Japan still needs to be closed (WIPO, 2020). Although China's approach to intellectual property and technology transfer has been criticized by some of its trading partners, there are, nevertheless some valuable lessons to be learned from other developing countries on how to stimulate and incentivize local firms to generate their own high-value intellectual property.

4. Empowering the private sector

The next section looks at the importance of finding ways to support the private sector. This is no longer about picking winners but rather implementing policy interventions that benefit entrepreneurs and firms as a whole. This is then followed by a discussion on addressing the skills gap that is quickly emerging as a result of the rapid advance of new technologies, before finally identifying those policy interventions that are likely to have the biggest impact when trying to achieve these two policy objectives.

A. Constraints on entrepreneurship

The private sector's contribution to creating jobs, alleviating poverty, promoting gender inclusion, and achieving many of the Sustainable Development Goals (SDGs) more

generally is now well recognized (Abshagen *et al*, 2018). This means that policymakers and political leaders in developing countries and particularly LDCs have a significant interest in creating and supporting a business environment that enables the private sector and allows entrepreneurs to fulfill their role as the primary means of achieving economic growth. This requires an understanding of the private sector that goes beyond formally registered companies with headcounts upwards of 5 employees (Suri and Dorval, 2019)³. A holistic understanding of what constitutes the private sector and a whole-of-government approach in devising and implementing policy reforms to support it are required in order to produce tangible and sustained reductions to poverty. Governments need to be committed to minimizing the burden on and maximizing the contribution of the thousands of informal firms, family-run businesses, farmers and other self-employed men and women doing business in developing countries.

Numerous intergovernmental organizations, national governments, charitable foundations and even individual philanthropists are working hard to support development outcomes and provide guidance to businesses and policymakers in developing countries. There is an abundance of sound business and policy advice to be had, in addition to some (albeit not unlimited) financial resources that can be tapped into in the form of overseas development aid budgets and project financing from philanthropic foundations and organizations. But the most important contributing factor capable of deciding whether a pro-poor agenda can achieve its intended outcomes is the political will of leaders in developing countries to seize upon and implement the necessary reforms. For example, the OECD's Task Team on Private Sector Development advocates a number of policy reforms such as lowering the risks and costs of doing business, including by removing barriers to formalization (OECD, 2007). Another more recent (2019) study by the International Growth Center of the London School of Economics that relied on evidence gathered by survey found that barriers such a procedural requirements and high costs to starting a business, difficulties in registering property, high tax burden and high numbers of overly complex procedures for paying tax, frequent and prolonged power cuts, long distances to surfaced roads, access to affordable and reliable internet, the high cost of exporting products in terms of compliance procedures, and difficulties in obtaining access to credit, were all areas

³ This is the number of employees a firm must have to be captured by the World Bank Enterprise Surveys (WBES).

that entrepreneurs felt hindered their ability to start companies, do business and grow their companies' size (Suri and Dorval, 2019). Almost all of these areas are ones in which domestic governments can and do play a significant role and thus have the regulatory sovereignty to act and implement enabling reforms.

There are many examples of governments successfully implementing some or all of these reforms, and not just from developed countries. Take for example implementing reforms to make it easier and cheaper to start a business. Macedonia has continually implemented reforms to make it easier to start a business, such as eliminating the paid-in minimum capital requirement (2008), reducing the time and number of procedures to start a business by updating the one-stop shop system to carry out the full range of business start-up processes (2009), integrating and improving procedures at its one-stop-shop (2010 and 2011), simplifying the process for obtaining a company seal (2013), making online registration free of charge (2013), introducing compulsory online registration carried out by certified agents (2016) (World Bank, 2019). In the area of making it easier for small businesses to obtain credit, Cameroon stands out as having made a number of important policy reforms, starting with the regional public credit registry providing online access to information for banks, simplifying the task of filing and retrieving information in the public registry and allowing expanded coverage of borrowers (2009), amendments to the OHADA Uniform Act on Secured Transactions that broaden the range of assets that can be used as collateral (including future assets), extend the security interest to the proceeds of the original asset and introduce the possibility of out-of-court enforcement (2012), improving its credit information system by passing regulations that provide for the establishment and operation of a credit registry database (2015), launching a new credit registry (2018), establishing the framework through the Economic and Monetary Community of Central Africa for the licensing and operation of credit bureaus (2020) (World Bank, 2020).

Addressing the many barriers that impede private sector development is well within the mandate of federal, state or municipal governments in developing countries and although seen on aggregate they may represent a seemingly overwhelming and large set of policy reforms, they can certainly be achieved by a government that has made up its mind to implement them and is prepared to work with but also against vested interests in driving these reforms to their successful implementation. As mentioned

above, the decisive factor in achieving success in promoting a pro-poor agenda is political will.

B. Addressing the skills gap

Most of the literature on addressing skills gaps in the new economy focuses on the priorities and needs of firms rather than on what governments can be doing to ease the transition to new forms of work and to protect those workers most at risk of redundancy (World Economic Forum, 2018; European Development Finance Institutions, 2016). It is equally true that the organizations best placed to identify where the gaps lie are those closest to the needs of the market, i.e. firms. Formal education institutions, although adept at the task of imparting knowledge and providing teaching, often exist and operate under a government mandate and within regulatory frameworks that in many countries render them subject to extensive government oversight and supervision. This can place limits on their agility in adapting to rapidly changing needs in the labor market. This section of the report therefore examines what some experts are recommending firms should do in order to address skills gaps, and then extrapolates back from those recommendations to provide policy advice to governments in developing countries on how they can best support firms in their efforts to train and upskill their workforces so as to meet the changing demands forced upon them by technological transformation.

First of all, companies seem to be inadequately incentivized or rewarded for providing advanced training to their employees, since there remains a substantial risk that such employees will take the new skills they have learned and sell them to the highest bidder. Governments can help reduce the costs of providing training borne by firms by offering tax incentives for doing so, such as making every dollar spent on equipping staff with new skills tax-deductible. Although this is an approach that has been favored primarily in advanced industrialized countries, there is no reason developing countries cannot implement schemes such as these, since they are likely to be revenue-neutral (Cedefop, 2009).

Another way governments can promote re-skilling is to link employer representatives with education service providers (particularly universities and vocational training centers) and to encourage them to work together when designing learning curricular. The *quid pro quo* here would be graduates that are better suited to the needs of firms

on the one hand, with commensurate commitments to be extracted from firms to hire such graduates at least on a time-limited basis so that the effectiveness of the new curricula can be evaluated and so that graduates can get some real-world experience after they leave formal education. Such commitments by firms can likewise be accompanied by tax incentives or direct grants from governments to lower the costs to firms of hiring new graduates (Otuki, 2015; Rappa, 2012)⁴

Governments can also lighten the regulatory burden on education service providers, while at the same time taking steps to ensure no lowering of standards, thereby protecting students. This could be done for example, by experimenting with ways for education service providers to fast-track the approval and adoption of new curricular if such curricular were designed in collaboration with employer organizations or other private sector representatives and are specifically aimed at bridging skills gaps. This would allow education institutions to be considerably more agile in addressing fast-changing workplace skills requirements (OECD, 2013)⁵

C. High-impact interventions

Spending on education sadly does not figure among the top budget line items in the vast majority of developing countries, with a number of notable exceptions (World Bank Dataset)⁶. However, the availability of skilled labour ranks among one of the most important factors for location decision for investors which should give policymakers and political leaders a more than adequate indication of its importance for the establishment and flourishing of the private sector (Mercer, 2019). This means that any intervention governments can conceive of and successfully implement that will lead to an increase in skills on the local labour market is going to be an investment worth making.

By the same token, it is also important to make it easier for firms to hire (as well as fire) local talent, which means labor laws have to be conceived with a view to giving firms an effective level of flexibility. Of course, workers need to be protected, but this can be achieved by mandating reasonable severance terms that firms have to provide to laid-

⁴ Kenya is one country that has trialled such an incentive program. Certain States in the US have also been considering this for several years.

⁵ There is some evidence this approach has been successful in Kazakhstan in the ICT sector.

⁶ For example, in 2009, Botswana reported spending 9.6% of its GDP on education, in Belize, in 2017, the figure was 7.4%, and in Cuba in 2012, the figure was 12.8% based on World Bank and UNESCO data, see: <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS>.

off workers, as well as by supporting redundant workers to transition to new employment opportunities. Governments also have to embrace the inevitable reality of the gig economy and provide firms with the flexibility to hire workers on this basis, as long as this is not done solely to circumvent legislative measures intended to protect workers, but rather as a genuine and characteristic feature of new and evolving business models. This means labor laws have to be updated in many countries that discriminate against forms of work that do not conform to the conventional full-time model. Governments can start the process of initiating the needed legislative changes and ensure equitable outcomes by soliciting input from representatives of both organized labor and business associations (B20 Task Force, 2017).

Another high-impact intervention is **promoting digitization** across all areas of the economy, but particularly in government. Any frontline agency that deals directly with citizens should be compelled to devise and implement a strategy for moving the entirety of its services online within an ambitious but achievable timeframe (between one to two years). This one policy intervention can have a measurable impact on the quality of service delivery, support governments' efforts to reduce the size of the formal economy, reduce arbitrary decision-making and thus the potential for rent-seeking behavior at the agency level, and provide policymakers with valuable data that can be used to conceive of and implement future policy reforms. Most governments have recognized the importance of digitizing and moving services online, but there are still significant pockets of regulatory resistance that are holding back countries from achieving even greater economic progress. Policymakers and political leaders need to make this a policy priority and minimize the incidence of exceptions.

The next and final section of this report provides readers with a limited set of policy recommendations to support governments to transition their economies and their populations to the new economic realities of the Fourth Industrial Age.

5. Transforming good intentions into outcomes

This section offers three broad sets of policy recommendations for governments interested in seriously tackling some of the challenges identified in this report. The main thing to keep in mind, and that has been stated at various points above, is that the right policy prescriptions are no longer much of a mystery. The real thing standing in the way of achieving outcomes is the requisite political will by leaders in developing

countries and the ability to transform good intentions into outcomes by enlisting the support of skilled and determined reformers, particularly from the business community and the professional civil service. Once these two sets of actors are on board, and the political will exists to overcome any obstacles to reform in order to achieve outcomes, there is very little that cannot be achieved.

A. Recommendation 1: Devise a roadmap to development

Governments need to conceive of and implement a plan when it comes to engaging in future rounds of trade and investment liberalization, as well as when embarking on unilateral opening as part of domestic policy reforms. Moreover, this plan needs to be communicated to the public, in order to increase the accountability of those embarking on the process as well as the legitimacy of the ultimate outcomes. This plan involves identifying the long-term development interests of the economy and how they are to be achieved. This is essentially about governments doing their homework with respect to their own economies as well as understanding the offensive and defensive interests of trading partners. The roadmap for getting to development also involves formulating a list of Aid for Trade commitments that should be sought from more developed trading partners, as well as a wish-list of development outcomes that multilateral development agencies such as the World Bank and the regional development banks can assist in obtaining.

B. Recommendation 2: Become “smarter”

The Fourth Industrial Revolution is upon us and many countries are deeply engaged in the process of implementing policies to help them become “smarter”. Developing countries need to embrace this reality and start developing blueprints for policy interventions that will allow firms across the whole economy to become “smarter”, i.e. in agriculture and mining, in manufacturing, and in services. This means supporting the build-out of the underlying infrastructure by adopting policies in the areas of spectrum allocation, laying fiber and deploying network equipment such as mobile base stations. This also entails keeping costs low for firms operating in this space, by minimizing data localization requirements and other restrictions on cross-border data flows. This also means implementing any data-related regulations in a way that is minimally trade restrictive. Policy interventions that impact firms in the digital economy, which has the potential to contribute significantly to poverty alleviation, need to be

carefully considered and preceded by careful consultation with affected firms and other stakeholders.

C. Recommendation 3: Take the task-force approach

Establish three separate high-level task forces at the highest level of government (Office of the President or the Prime Minister). The first to identify and eliminate the top five impediments to private-sector growth; the second to identify and eliminate the top five impediments to the complete digitization of government services; and the third to identify and implement the top five policy interventions to promote the adoption of new skills in the domestic economy. Task these bodies with identifying and eliminating or implementing the top five impediments or policy interventions identified within a clearly identified period of time (six to eighteen months), and then have them draw up a new list and new set of timelines for identifying the next set of top five impediments or interventions. The task forces should be equipped with naming and shaming powers to publicly identify and expose those agencies or actors that actively seek to prevent or obstruct reforms. In order to promote both a “stick” and “carrot” approach, the task forces should also be able to incentivize and reward those agencies and actors who most strongly support their respective reform agendas (maybe through an annual award or prize-giving ceremony presided over by the country’s top political leaders). Co-opt the national media into following, reporting on and supporting these processes. These bodies should work together with representatives of the international donor community and relevant intergovernmental organizations that have produced policy guidance on the three areas of domestic reform.

6. Conclusion: Change is never easy

In his celebrated bestselling discourse on economic history *False Economy*, Alan Beattie, then as now a highly respected economic editor for the *Financial Times*, dedicates an entire chapter to the phenomenon known as path dependence (Beattie, 2009). In this chapter, Beattie illuminates how difficult it is for countries, societies and economies to fundamentally change the principles upon which they operate, such as introducing democratic governance to countries that have never known it, or implementing market-based economic reforms to places that had long been governed by a planned economic model. Likewise, economic reforms that strike at the very heart of the balance of power underlying the stasis in which a given country finds itself can

prove disruptive and disconcerting for the many who have become accustomed to the status quo, particularly those who may derive some benefit from leaving things more or less the way they are. Similarly, however, most leaders will appreciate that in a world that is both moving and changing so quickly, the idea that standing still is somehow the best way to manage events is equally preposterous. Most good leaders will instinctively sense that the current moment in history is about “riding the wave” and this requires a deft sense of precision timing as well as momentum. Change is the new normal, and those countries that can manage change and which prove agile enough to adapt to quickly flowing developments will be those that can benefit the most from the many profound changes taking place today, several of which have been discussed in this paper.

This paper has also provided some recommendations on how to initiate, oversee, and implement some of the changes that are likely to be necessary in order to achieve necessary reforms. Of course, there are no one-size-fits-all solutions, so that leaders and policymakers will need to experiment with approaches, keeping what works and discarding what doesn't. As has been emphasized repeatedly above, the most important factors to success include political will and an outcomes-based approach that is genuinely pro poor. Coopting and incentivizing vested interests (who can be more status quo than reform oriented) to embrace and support reform is one of the key tasks to ensuring their success.

Although current technological and other geopolitical trends present many obstacles and challenges, good leaders will be able to recognize that they also harbor important opportunities for achieving breakthroughs that in more static and conventional times would have been inconceivable and highly improbable. This paper is a call for action to leaders and policymakers in developing countries to seize the initiative and start playing the economic development “game” in a way that brings maximum benefits to the maximum number of citizens, thereby making the “pie” or “cake” of national prosperity big enough for everyone to be better off. This is the very essence of what inclusive growth means.

List of references

Abshagen, M.-L., Cavazzini, A., Graen, L. & Obenland, W., 2018. *Highjacking the SDGs? The Private Sector and the Sustainable Development Goals*, Berlin (DE): Brot für die Welt, German NGO Forum on Financing for Development, Unfairtobacco, Global Policy Forum, MISEREOR.

B20 Task Force, 2017. *Open, Dynamic and Inclusive Labor Markets: Harnessing the Potential of Technological Change and Creating a Global Level Playing Field*, Berlin (DE): B20 Germany.

Bacchetta, M. & Jansen, M., 2003. *Adjusting to trade liberalization: The role of policy, institutions and WTO Discipline*, Geneva (CH): WTO.

Bacchetta, M., Milet, E. & Monteiro, J.-A., 2019. *Making Globalization more Inclusive: Lessons from Experience with Adjustment Policies*. Geneva (CH): World Trade Organization.

Beattie, A., 2009. *False Economy: A Surprising Economic History of the World*. London (UK): Penguin Books.

Bloom, N., Handley, K., Kurman, A. & Luck, P., 2019. *The Impact of Chinese Trade on U.S. Employment: The Good, The Bad, and The Debatable*, Cambridge (MA): NBER.

Cedefop, 2009. *Using tax incentives to promote education and training*, Luxembourg (LU): European Center for the Development of Vocational Training.

Cutler, W. & Bell, J., 2018. *Adjusting to Trade: Asia-Pacific Approaches to Assisting Displaced Workers*, New York (NY) and Washington (DC): Asia Society Policy Institute.

EDFI, 2016. *Bridging the skills gaps in developing countries: A practical guide for private-sector companies*, Brussels (BE): European Development Finance Institutions.

Evenett, S. J., 2019. Protectionism, state discrimination, and international business since the onset of the Global Financial Crisis. *Journal of International Business Policy*, p. 9–36.

Kerr, W. R. & Moloney, E., 2018. *Vodafone: Managing Advanced Technologies and Artificial Intelligence*, Cambridge (MA): Harvard Business School.

King, A., 2015. *The Future Of Crash Testing Is Digital, And This Is How It Works*. [Online]

Available at: <https://jalopnik.com/the-future-of-crash-testing-is-digital-and-this-is-how-1747788970>

King, A., 2019. *Auto Makers Are Improving Operations With Help From Industrial IoT*. [Online]

Available at: <https://www.forbes.com/sites/vinaynathan/2019/03/29/the-iiot-is-driving-results-for-the-automotive-industry/#78833ae034ad>

Mercer, 2019. *The Four Key Factors Companies Consider When Relocating*. [Online]

Available at: <https://www.mercer.com/our-thinking/the-four-key-factors-companies-consider-when-relocating.html>

OECD, 2007. *Promoting Pro-Poor Growth: Policy Guidance for Donors, DAC Guidelines and Reference Series*, Paris: OECD Publishing.

OECD, 2013. *Enhancing Skills through Public-Private Partnerships in Kazakhstan's Information Technology Sector*, Paris (FR): OECD Publishing.

Otuki, N., 2015. *Employers get tax break to hire fresh graduates*. [Online]

Available at: <https://www.businessdailyafrica.com/news/Employers-get-tax-break-to-hire-fresh-graduates/539546-2748726-ehok03/index.html>

Oxfam, 2018. *Reward Work not Wealth*, Oxford (UK): Oxfam.

Rabinovitch, S., 2011. China labour costs soar as wages rise 22%. *Financial Times*, 26 October.

Rappa, J., 2012. *Incentives for Hiring or Retaining Recent College Graduates*, Hartford (CT): Office of Legislative Research (Connecticut).

Robinson, G., Zhou, M. & Maulia, E., 2019. *How the death of fast fashion is transforming Asia's garment industry*. [Online]

Available at: <https://asia.nikkei.com/Spotlight/Cover-Story/How-the-death-of-fast-fashion-is-transforming-Asia-s-garment-industry>

- Studwell, J., 2013. *How Asia Works*. New York (NY): Grove Press.
- Suri, T. & Dorval, L., 2019. *Constraints to entrepreneurship: Findings from pilot studies in Kenya and Uganda*, London (UK): International Growth Center.
- The Economist, 2016. Technology Quarterly: The Future of Agriculture. *The Economist*, 9 July.
- Tilley, J., 2017. *Automation, robotics, and the Factory of the Future*, Ny (NY): McKinsey&Company.
- WEF, 2018. *The Future of Jobs Report*, Geneva (CH): World Economic Forum .
- William, K. R. & Emer, M., 2018. *Vodafone: Managing Advanced Technologies and Artificial Intelligence*, Cambridge (MA): Harvard Business School.
- World Bank, 2019. *Business Reforms in Starting a Business*. [Online]
Available at: <https://www.doingbusiness.org/en/reforms/overview/topic/starting-a-business>
- World Bank, 2020. *Business Reforms in Getting Credit*. [Online]
Available at: <https://www.doingbusiness.org/en/reforms/overview/topic/getting-credit>
- World Intellectual Property Organization (WIPO), 2020. *China Becomes Top Filer of International Patents in 2019 Amid Robust Growth for WIPO's IP Services, Treaties and Finances*. [Online]
Available at: https://www.wipo.int/pressroom/en/articles/2020/article_0005.html
- World Trade Organization and United Nations Conference on Trade and Development, 2013. Chapter 6: Analysing the distributional effects of trade policies. In: *A Practical Guide to Trade Policy Analysis*. Geneva (CH): WTO & UNCTAD.
- Zahonogo, P., 2016. Trade and economic growth in developing countries: Evidence from sub-Saharan Africa. *Journal of African Trade*, pp. 41-56.



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