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Becoming roadworthy: improving innovation and labour productivity in Latin America and the Caribbean

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Executive Summary

Latin America and the Caribbean is a region fresh off a “demographic boom,” with a relatively large, young labour force. Despite significant strides made in poverty reduction and job creation at the turn of the century, economic growth has slowed down. Lack of productivity growth has the region is looking at a widening “productivity gap” between itself and not only developed nations but other developing regions.

This paper attempts to address the problem and give recommendations by exploring the root cause behind the underutilisation of human capital in the region and determining the skills necessary for the future of work. The paper also identifies key investments for integrating with global value chains, as well as the role small and medium enterprises play in a more competitive and productive region.

The potential impacts of higher productivity and more innovation within the region are also explored.

Background/diagnosis

Every nation aspires to achieve sustainable economic growth. The pursuit of this ideal, has largely been successful for developed countries and some regions around the world, such as Europe and East Asia. Recently, the journey has not been as pleasant for Latin America and the Caribbean (LAC). Despite the region considerably reducing poverty and creating jobs at the turn of the century, growth has been slower than in other emerging economies. This growth was driven by an expansion of the labour force, caused by a demographic boom and increased participation of women (Remes, et al., 2019). At surface level, the region's economic performance appears to be counterintuitive given the above phenomena. However, a look at the data gives a little insight into the predicament faced by Latin America and the Caribbean.

The region's "workforce grew by 66 million workers between 2000 and 2016, accounting for 72% of the region's overall growth in gross domestic product (GDP)" (Remes, et al., 2019, p. 18). Now that population growth has plateaued, labour force expansion will not be a strong driver of economic growth. Contrastingly, in China, Malaysia and Thailand, the absolute levels of workforce growth have been like those in Latin America and the Caribbean, however, expansion of the labour force only accounted for 11% of the increase in gross domestic product (Remes, et al., 2019, p. 18). These Asian economies experienced more robust growth because, rather than relying on labour expansion, they improved productivity. This dichotomy perfectly frames the Latin American and Caribbean challenge for the future -boosting productivity to achieve sustainable growth. Before providing solutions for improving productivity in Latin America and the Caribbean, the region's present condition must be properly diagnosed.

Latin America and the Caribbean has a youthful population with high potential for economic growth. This is in stark contrast with the ageing populations observed elsewhere. This "demographic bonus" should be an advantage for the region, it instead serves as a burden. "About a fifth of Latin America's young people – or nearly 30 million individuals – are "NEET", either not employed or not engaged in education or training"

(Acebuche, 2017). Of the remaining that do work, about one half are in the informal labour market (OECD/CAF/UN ECLAC, 2016). The situation is the same in the Caribbean.

Globally, human capital has become much like a natural resource, in the way nations and regions compete to produce and/or recruit highly skilled workers. This is most evident in China and the Southeast Asian countries like Malaysia and Thailand. The picture is much different in Latin America and the Caribbean. “In the 2017 edition of the Global Talent Competitiveness Index, INSEAD and The Adecco Group annual ranking of countries based on their ability to develop, attract and retain talent, the highest Latin American country featured is in 34th position – Chile. And the lowest ranked, Venezuela, brings up the rear in 105th out of 118 countries ranked globally” (Acebuche, 2017). The region is clearly operating well below optimal efficiency in the realm of human capital.

This problem naturally extends itself to the firms which operate in regional economies. Informality and unskilled or low-skilled labour affects the small and medium enterprises (SMEs), which are generally employ the largest share of a country’s human capital. These SMEs are also hamstrung by limited access to financing.” Only 12% of total credit in the region goes to these firms, compared to 25% in OECD countries” (OECD, 2012) This means that the current financial market has distortions that prevent SMEs from accessing funding that would help them grow and become more sustainable. “Meanwhile, 34% of small businesses in Latin America believe access to finance is a serious constraint. SMEs are often charged much higher interest rates than large firms by commercial banks, up to double the rate in several countries” (OECD, 2012) This sabotages the region’s primary hope for innovation and further confirms the presence of distortions.

On the highway to the future, the region’s economies operate much like a derelict car, in desperate need of repair and vulnerable to circumstance. Meanwhile, the best performing economies perform like well-maintained cars, equipped with better systems and making more efficient use of available factors. If a paradigm shift does not occur soon, the region would have little chance of closing the gap to the leading economies. It would be illogical to wait for more men to be born to push the broken-down car any faster. It is time for Latin America and the Caribbean to make the necessary repairs and upgrades.

The overarching question for Latin America and the Caribbean is - “How do we build a more productive and innovative region?” The diagnosis presents sobering reality and a few pertinent questions. How do we address the existing “productivity gap?” “What skills must be cultivated for the future? What technologies and industries must be developed for us to better integrate with global value chains? What role should small and medium enterprises play in building a more productive and competitive region by 2030? How can the increase in productivity and innovation impact on the region? Each answer provides a component for the machine we are trying to fix. Time to begin production.

Analysis

What separates a cart from a car is efficiency, or productivity, for the sake of this argument. The solution is much more complex than merely replacing a cart with a car. The components of the car are what makes the difference. Therefore, analysing each of the faulty or missing components is key to addressing the existing gaps in the overall productivity of factors and labour productivity. The first faulty component is the gearbox.

Much like a gearbox adapts engine output to drive the wheels based on the chosen gear, the economic environment determines conversions of economic activity to economic growth. Unfortunately for LAC, an unfavourable economic environment seems to have the gearbox stuck in a low gear.

Basic economic theory regards competition as an important driver of productivity. Higher levels of competition generally lead to better productivity and more efficient use of resources among firms. In an increasingly globalised world, trade liberalisation is seen as a means of increasing competition within an economy. Latin America and the Caribbean have come a long way from being highly restrictive of external competition through high-tariffs and non-tariff barriers. Most countries in the region, with few exceptions, have gradually reduced tariffs over the years. There are multiple examples of countries which saw positive results. After liberalising trade in the late 1970s, Chile's manufacturing sectors that faced competition from imports saw productivity growth of up to 10% above sectors that were not exposed. Trade liberalisation also indirectly caused productivity increases. In Brazil, it allowed firms to "access better and more varied imported supplies, incorporating better foreign technology" (Toledo, et al., 2019).

These case studies present a strong argument for trade liberalisation in the region. However, Latin American and Caribbean countries continue to exhibit relatively high levels of trade restriction. Latin America had an average of 13.5% on the Overall trade restrictiveness index. This is more than the average in the European Union (9.7%) and double the restrictiveness of the United States (6.5%) (Toledo, et al., 2019). The high average is primarily due to non-tariff barriers that have persisted and, in some cases,

increased, despite the continuous reduction of tariffs. This is exemplified in countries like Peru, whose average tariff was below 3% in 2009, had an equivalent tariff (OTRI) of 10% (Toledo, et al., 2019).

Additionally, competition is weaker in Latin America and the Caribbean than in more developed regions. This is a direct result of the business environment in the region. CAF member nations in Latin America and the Caribbean had an average score of 58.97% on the World Bank's "ease of doing business index" for 2019 (World Bank Group, 2019). This score would rank around 118th among 190 countries, meaning that on average, these nations have some of the least efficient business environments and weakest legal institutions in the world. These findings are further supported by a 2019 CAF report which noted that "Latin America is the region of the world with the highest percentage of firms declaring that permits and licenses represent a moderate to severe obstacle [to market entry]" (Toledo, et al., 2019).

These barriers turn the economy into a zoo, where the lack of competition "allows low productivity firms to survive and even thrive." A better business environment trending toward perfect competition would look a lot more like the jungle, where the most productive firms survive, and low productivity firms are forced to exit. The inevitable result of this "natural selection" among firms, is improved productivity for the wider economy. This was observed in the United States, from 1985 to 1991 where total factor productivity growth rates were between 7 and 14 times higher in competitive markets than in regional monopolies (Gort & Sung, 1999). It is therefore no surprise to see that benchmark economies for productivity growth in 2019 like Thailand (27th) and China (46th) rank in the top 50 for ease of doing business (World Bank Group, 2019).

A competitive business landscape also increases productivity among firms by reallocating factors of production to more productive firms and industries. Industries with higher market concentration tend to have worse factor allocation. The World Bank Enterprise Survey 2017 revealed that high market concentration in the region was related to low productivity as a result of bad allocation of factors within sectors. This means that "the

productivity gains that could be obtained from boosting competition in the region are substantial” (Toledo, et al., 2019).

Innovation is also incentivised by a more competitive environment. In theory the “competition escape” effect is observed as firms seek to reap the benefits of being the leader of innovation. Conversely, if innovators are unable to gain much from innovating, competition can be detrimental to innovation. The natural conclusion would be to introduce a robust intellectual property protection framework. Interestingly, this is not always observed in practice. The intellectual property system needs to “have an adequate balance between the freedom to use existing ideas and the incentives to create new ones” (Toledo, et al., 2019).

All the above cases present public policy issues for the region. Competition law will play an important role in improving the regional economic environment. Closing the gap to the leading economies requires a removal of the hindrances that keep the economy stuck in a low gear.

The car of tomorrow needs a dynamic power source. This power source is none other than the human capital of the region. As noted earlier, LAC has no shortage of human capital. However, the potential of the human capital is artificially limited by a few factors, informality and lack of skills being two of the most significant.

Today, the region is plagued with a high level of informality. There is great variation in levels of informality across countries in the region. However, the degree of informality for every country is significantly higher than in the United States. In the median LAC country about 40% of the GDP is produced informally and around 70% of the labour force is estimated to be informal (Loayza, Serven, & Sugawara, 2009). Also consider that “in any category of firm size, in any sector, the average output per worker in the informal sector is close to 35 percentage points lower than in the formal sector, even when excluding self-employment” (Toledo, et al., 2019). This is a clear indication that Latin American and Caribbean economies are hamstrung by informality. It is also worth noting that informality is both a symptom and a cause of low productivity, meaning that the informal economy is a continuous cycle serving as a hindrance to sustainable growth.

Imagine trying to keep up in a race where your car has two soft tyres and less than a quarter-tank of gas. Hopeless isn't it? This informality problem is made persistent by the widening mismatch between the skills demanded by the current labour market, and the skills of workers seeking employment. Now, place an unskilled driver behind the wheel. If nothing changes, every lap, ground will be lost. As the world continues to advance technologically, low-skilled labour loses value. Economic disparities within regional economies will widen as will the productivity gap to developed economies. The only way to avoid this outcome and mitigate the negative impact is to prepare.

First, we must understand the global and regional job trends. The World Economic Forum Identified four technological advances; ubiquitous high-speed mobile internet, artificial intelligence, widespread adoption of big data analytics and cloud technology as drivers of business growth in the next three years. Unsurprisingly, most firms are seeking to incorporate these new technologies to improve their productivity. Most companies are increasing their adoption of big data analytics, the internet of things, app- and web enabled markets as well as cloud computing. Robot adoption is another significant trend with 37% to 23% of companies planning this investment, depending on the industry (World Economic Forum, 2018).

These trends will inevitably result in future tasks being done by machines and jobs being split between humans and machines. By 2022 most total working hours for specific tasks, especially information search and transmission, will be performed by machines and algorithms (World Economic Forum, 2018). The hours spent by humans using physical and manual skills are estimated to reduce by 14%, while 15% drop is predicted for basic cognitive skills by the year 2030 (Manyika & Sneader, 2018). Higher cognitive skills, social and emotional skills and technological skills are expected to be of increasing importance. The most notable increase is anticipated for technological skills at 55% (Manyika & Sneader, 2018). This evidence makes it clear that future work environments will be characterised by increasingly digital workspaces, automation and machine assisted labour. However, let's analyse regional trends for the future of work to make a more informed conclusion.

The emerging job roles for Latin America and the Caribbean are in high level management, finance, sales, as well as software development and data analysis, to name a few. These jobs are all heavily predicated on the application of one or more of the skills listed above as trending upward for the future. Therefore, Latin American and Caribbean countries must focus primarily on the skills that are trending upward, in demand presently and not under threat from machines.

The higher management roles would require workers to have good leadership skills and the ability to responsibly use social influence. The abundance of data in present and future work environments demands excellent critical thinking and analytical skills. Machines may be able to capture and summarise data with far superior efficiency to humans, but the application of that data to make decisions in complex life situations remains primarily human. The WEF report listed some other emerging skills for the region. These include reasoning, problem solving and ideation as well as technology design and programming. The report also notes that future workers will have to re-skill more frequently than at present, because specific technical and vocational skills will become more important.

These findings make it clear that the future is for the highly skilled, tech savvy, lifelong learners. The economy of the future is going to be powered by a hybrid engine and steered by technical skills. Man, and machine will be working together in virtually every sector.

There is no car without the chassis and body. The technologies, industries and sectors of an economy serve a similar function - acting as the foundation on which the economy is built. Remove the technologies or industries that support an economy and everything else will fall apart. If the region is to become more productive and competitive, integrating with global value chains (GVC) is paramount. Ironically, developing a competitive industry appears to be a prerequisite for successful GVC integration. In their current state, many firms within LAC will be unable to properly integrate with GVCs. This is due to a combination of firm-level deficiencies, poor infrastructure and a lack of a supporting policy framework. All this must be considered as we assemble the chassis.

The first technologies, industries and sectors that require focus are those that improve productivity and market access for firms. South and South-East Asian countries provide an excellent model of GVC integration for the region to follow. In these Asian countries, infrastructure along with the logistics and transport sector were considered the foundation for GVC integration. The underlying logic is based in fundamental economics. Good logistical and transport infrastructure reduces delivery times, inventory cost and handling costs. These developments are advantageous for domestic suppliers and attractive to potential foreign investors, a twofold boost to GVC integration.

Logistics and transport make up one of the key areas where LAC lags more developed nations. The comparative cost of logistics provides a good indication of this. “Logistics costs in LAC are double that of the Organisation for Economic Cooperation and Development (OECD) nations” (Moreira, Volpe, & Blyde, 2008) One of the primary causes for this the efficiency of ports within the region. In fact, “40% of the disparity in international freight between Latin America and the European Union is explained by differences in the quality of port and airport infrastructure” The same Inter- American Development Bank (IDB) report mentions that it takes on average between two and three days in LAC to process border documentation for exporting, compared to less than a day in Europe, the United States or Canada. Delays like this are costly for local firms and simultaneously act as a deterrent for foreign investors as the port and surrounding infrastructure offers little to no benefit to them. Upgrading equipment and training workers can only go so far. What often hinders these ports from optimal function, is limited data processing capabilities.

This is where automation alongside information and communication technologies (ICT) can help to make regional ports more efficient. Once again, developing economies in Southeast Asia provide a good example. In 2018 Vietnam announced that automated customs systems would be introduced at all airports and seaports. The system is designed to help import and export companies simplify paper procedures for transport firms and customs agencies. “The system enhances the quality of [Vietnamese customs] operations, thus reducing the time needed for customs clearance as well as costs to be paid by exporters and importers” (An, 2019). More importantly, “it assists customs officials

in closely monitoring imports and exports, and in preventing fraud and smuggling” (Vietnam Colors, 2019).

These are only the most apparent uses of technology for port logistics. With current technologies there are even more ways in which ports can be made more efficient. Developed nations have already begun to utilise advanced technology for their port operations. The Dutch port of Rotterdam aims to host autonomous ships by the year 2030. In order to achieve this, “IBM and Cisco have integrated their Watson IoT system and Kinetic IoT platform, respectively, to improve data processing and intelligence at the network edge and enable a path to autonomous shipping and logistics” (Blackman, 2019).

It is clear what direction logistics is heading by observing the investments made by developed nations like the Netherlands and developing nations like Vietnam. LAC countries cannot afford to fall behind. Ports in LAC countries can also be turned into “smart ports.” “Using big data and predictive analytics, ships can be notified electronically of any delays and advised on best arrival times, and sensors help identify port maintenance issues in early stages” (Opertti, 2019). Such developments are key to reducing the cost of trade and improving productivity in LAC.

These developments, particularly at the firm level require high levels of initial investment, however, the long run benefits to trade and productivity are undeniable. This brings to the fore, a sector that is sometimes overlooked in discussions about GVC integration. The financial sector is important in determining which firms get financing for growth and innovation. This sector acts as the engine control unit, determining how ‘fuel’ (capital) is allocated and consumed.

Ideally, investments are made in the most productive firms, ultimately resulting in higher productivity and higher aggregate income. In contrast, a poorly functioning sector can lead to an excess of unproductive micro enterprises, an inflation of the informal sector and reduced innovation. The strength of the financial sector alone, has much to do with income and productivity levels among countries. These institutions have the power to determine whether a firm will be able to develop and integrate with GVCs.

Yet again the broken-down and well-maintained car comparison can be made between the level of the financial sector in LAC countries and developed nations around the world. The underperformance of this sector is linked to the lower levels of productivity in the region. “For example, domestic credit to the private sector as a percentage of GDP is 50% in Latin America, while in OECD countries it is 147%. The upside of this situation is that the potential for improving the financial systems' performance is enormous: some authors estimate that if Latin America adopted the best financial practices, productivity in the region would increase by 18% and production by 88% (OECD, 2012).” This sector requires urgent attention, not just for its effect on general productivity, but for its effect on the ‘engine’ of the economy.

Small and medium enterprises (SMEs) should become the engine of a more competitive and productive region by 2030. In all the developed economies of the Organisation for Economic Cooperation and Development (OECD), SMEs play a critical, “engine-like” role. They account for 99% of the enterprises and 70% of the jobs in most OECD countries (OECD, 2017). SMEs contribute to the economy in many ways, however, for 2030 SMEs in LAC should be able to solve some of the problems currently facing the region.

For LAC by 2030, SMEs should be the leading source of formal job creation within the economy. Given LAC’s present struggle with an extremely high level of informality, SMEs are the best option to address this by providing opportunities for formal employment to those in need. They are the companies caught in the volatile combustion chamber that is the business market. The continuous entry and exit of firms serve as a litmus test for current SMEs. Only a few of these will become high-growth firms that create a significant number of jobs.

SMEs can also be a source of competition within the economy for LAC countries. Even in difficult business environments, SMEs can compete with larger companies by reaching markets that are often neglected by larger firms. It is usually impossible for SMEs to succeed with a best-cost strategy, as larger firms have bigger budgets and benefit from economies of scale. However, smaller firms can compete by delivering high quality

products and/or services that are customisable, based on the customer's specific tastes. SMEs that employ this strategy tend to be more sustainable

The Config Team, a 20-employee company based in the United Kingdom has been able to secure itself in the field of logistics and management information systems. The market is led by giants like Accenture or IBM, however, the generalist nature of the services [these industry giants] provide, has created opportunities for SMEs like 'The Config Team,' which specialises in custom enterprise software solutions (Coleman, 2013)

This isolated story may seem to only help to prove that SMEs can compete, however it shows much more. The companies served by The Config Team are all companies seeking to improve their efficiency by incorporating enterprise systems, however, they are unable to afford the solutions offered by larger companies like IBM. Here we can see the potential impact of SMEs with strategic market positioning. The ability of this company to fill a market need that larger firms could not, has a ripple effect. The firms that make use of the service become more efficient and are better able to serve their customers.

Consequently, SMEs can stimulate productivity growth, not only through competition with other firms, particularly the larger ones. Collaboration is another means through which productivity growth within an economy can be stimulated. Innovation, competition and job creation are most commonly touted as the means through which SMEs contribute to productivity growth. Collaboration is the missing cylinder for the economic engine that SMEs are expected to be for LAC by 2030. SMEs can share skills and serve each other's needs through collaboration. Building linkages can also establish and fortify local and regional value chains.

Production is complete. The proverbial car has been built to specification. It is time for a test drive. However, this time we do not have a test track, we have a test question. How can the increase in productivity impact the region?

Theoretically, a more productive region means that the cost of labour will reduce, increasing the demand for labour and encouraging firms to expand their workforce. The innovation will also boost productivity and create new industries, which also translates

to more job creation. The overall higher levels of productivity and employment, potential GDP increases. The general picture is positive for LAC countries. However, a more comprehensive analysis of the implications of the increase in productivity and innovation is necessary.

One of the most significant potential impacts of the increase in productivity and innovation is the improvement in the quality of work available for citizens. Better quality work and higher wages means that the trend of poverty reduction will continue and possibly occur at a faster rate. This would also assist the “more than one-third of the region’s population [that] lives on less than \$11 per day, based on purchasing power parity, including 152 million people in the “vulnerable” category of \$5 to \$11 per day” (Remes, et al., 2019)

The citizens who are lifted out of poverty and “vulnerable” status will become members of the middle class of society. This would be an indicator of reducing social inequalities. Concurrent to the increase in productivity and the widening of the middle class would most likely be an increase in consumption. Whereas currently the bottom 90% of the income distribution in Latin America only accounts for 64% of domestic consumption (Remes, et al., 2019), A more productive Latin America would see the consumption levels rise nearer to those of more developed regions.

As domestic consumption rises, new markets for products and services will be open for SMEs to exploit. The open market will be very attractive for investment, as domestic and international firms see the opportunity to tap into the rising disposable incomes. This creates a growth cycle which works to perpetuate sustainable economic growth.

The McKinsey Global Institute provided a quantitative look at how the increase in productivity and innovation could impact on the region.

Using a macroeconomic simulation that assumes conservative growth in productivity is matched by increased labour shares and consumption in line with more inclusive countries... such a growth cycle could lift GDP in the region in 2030 by 50 percent above a baseline scenario that factors in current trends, including reduced labour force expansion. That would amount to an increase per person of

more than \$1,000 per year, or a \$1 trillion incremental boost to GDP in 2030.
(Toledo, et al., 2019)

The potential benefits of increased productivity and innovation are apparent. The necessary action must be taken to maximise these benefits.

Conclusions and recommendations

Virtually every case study, statistic and comparison tell the same story about LAC. The region is full of potential but lags in performance. It is quite literally a dilapidated car attempting to compete on the global circuit. The “productivity gap” between LAC and more developed regions (like OECD nations or East Asia) is as a result of the compounding of several deficiencies that are common throughout the region. The lack of a competitive market for businesses, poor physical and technological infrastructure and lack of proper policy planning and control are some of the key deficiencies responsible for LAC’s economic underperformance. All these factors culminate in the region’s underutilisation of human capital.

While the region’s reality may greatly diverge from its more optimistic prospects. The analysis revealed some key areas and points that produced some potentially useful recommendations.

First regional education must begin catering to the jobs and skills of the future today. The many youth that constitute the “demographic bonus” at present, can easily become a “demographic bomb” if they are not equipped and properly prepared for the future of work. Technical and vocational skills training need to be made readily available and affordable, in order to reduce the number of persons who are currently NEET.

Many of the issues regarding productivity, especially surrounding business financing and the competitive environment presented public policy deficiencies. Governments within the region must adopt the best practices if the region is to grow efficiently. Parity in the financial sector must be achieved for SME’s to access financing. Competition law must also be robust and enforced to introduce and preserve optimal fairness in regional business markets. This includes policy for trade liberalisation, which is one of the primary hindrances to competition in LAC countries. These policies must be coordinated across the region as much as possible, in order to create a good policy environment for regional business.

Development of the region’s human capital was established as an extremely important for the future. To this end, Intra-regional linkages for knowledge exchange would be

useful. LAC nations can have exchange programs at the university level or even the firm level where knowledge is shared in order to improve each other's capabilities. Following the theme of regional integration, there is room for more intra-regional trade and cooperation. Before large firms or SMEs within regional economies seek to integrate with global value chains, there should be pre-existing regional value chains.

The only way these regional value chains can be established is through infrastructure development. Not only modernisation of existing ports and facilities as described in the essay, but also the construction of connective infrastructure linking LAC nations through as many transportation mediums as possible. Transportation and shipping costs within the region must be reduced before more profitable economic cooperation occurs.

International connections must be made for technological advancement and for educational advancement within the region. All the skills and knowledge the region needs, does not exist within the region exclusively. Hence, the necessary programmes or business and political negotiations must occur.

Latin America and the Caribbean is a region that does not lack natural or human resources. The factors of productivity are present and abundant, how they are managed and utilised will determine whether the region can achieve long-term sustainable economic growth through productivity and innovation.

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