

»» South America after the commodity boom – productivity worries are back

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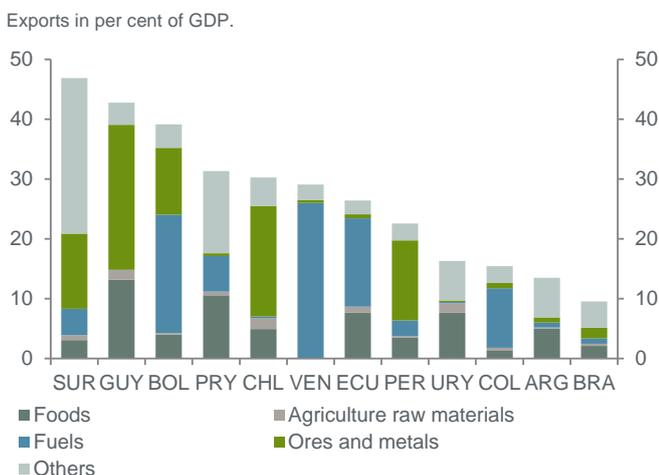
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South America is dependent on commodities and has a large service sector. Both are rather a liability for productivity and, thus, long-term growth. The continent's per capita GDP therefore was not really able to catch up with that of the USA as a benchmark for decades. During the commodity boom of the 2000s it made progress in productivity development and investments, resulting in strong growth performance. These developments came to a standstill with the end of the commodity boom. As a consequence, economic policy measures are required now again that encourage productivity gains and help to reduce misallocations.

South America keeps making business news owing to the deep recession in Brazil in 2015/2016, the severe economic crisis in Venezuela, and Argentina's return to the international capital markets. The entire region has been identified as a winner of the resources boom of the 2000s. Now that the boom is over, it has to redesign its growth model – despite all country-specific characteristics. Yet the countries of South America had already followed different notions in their economic policies in the past. In the 1950s and 1960s they pursued a strategy of industrialisation through import substitution in order to develop domestic manufacturing industries. In the 1970s the South American countries faced rapidly rising debt levels.

At the end of the 1970s, international lending criteria tightened and the Mexican debt crisis ushered in the "lost

Figure 1: South America's dependence on commodities exports



Sources: UNCTAD, IMF, own calculations

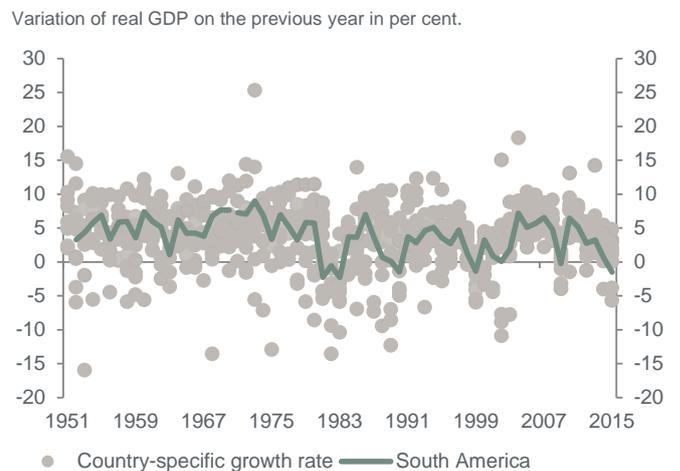
decade" of the 1980s for the countries of Latin America, which was marked by weak growth performance and poor productivity development. The structural reforms that were initiated since the mid-1980s prepared the ground for the growth surge of the 2000s, enabling the region to harness the benefits of the commodity boom. Now that it is over, new ways of strengthening potential growth have to be found. Creating the conditions for productivity gains in commodity-dependent countries with a relatively large service sector will be a challenge for economic policy.

Resources are peculiar

South America is an important source of natural resources for the global economy. Seven of the 12 countries of the region¹ are classified as rich in non-renewable resources and 11 of them as important exporters. This applies in particular to the deposits and the extraction of metals and oil, but also to agricultural raw materials such as soya beans. None of the South American countries is listed by UNCTAD as a major exporter of manufactured goods. Even if Brazil is not on any of the two lists, the country now has more proven oil reserves than Mexico and the same level of oil production. It is also a major producer of iron ore and other metals such as tin. Thus, every country of South America is in principle dependent on natural resources.

The relationship between a country's economic wealth and its resource wealth is quite complex. Export and production structures are often determined by natural resources, and

Figure 2: South America's growth performance



Sources: IMF, Feenstra, R. C., Inklaar, R. and M. P. Timmer (2015), The Next Generation of the Penn World Table, American Economic Review, 105(10), 3150–3182, www.ggd.net/pwt.

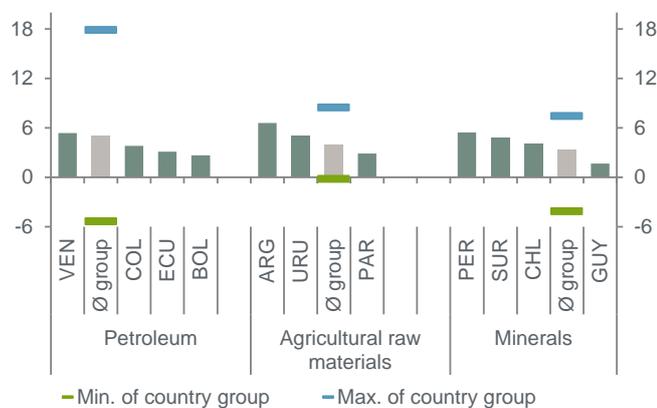
public revenue depends on them. In South American countries this is evident for the relevant group of resources, both for oil exporters such as Venezuela or Colombia and for ore exporters such as Peru or Chile, as well as for exporters of agricultural raw materials such as Argentina or Uruguay (see Figure 1). Prior to the oil price decline in 2014, the share of public revenue from non-renewable resources in public revenue ranged from around 6% in Brazil to 47% in Venezuela.

Resource wealth must not necessarily promote growth. The reason is that natural resources are characterised by particular features that determine how they are exploited.²

- First, the profit from the extraction of minerals such as ores, oil and natural gas in particular is higher than an economy's normal investment returns. That makes investments in commodity sectors particularly attractive, potentially putting other sectors at a disadvantage when it comes to making investment decisions. It may also promote poor governance, especially when resources are extracted by state-owned entities.
- Second, revenues from resource production fluctuate even in the short term because commodity prices are relatively volatile. The resulting price fluctuations increase the uncertainty in the entire economy which can negatively impact investment. Furthermore, the high up-front investments that are necessary for extraction combined with long and uncertain repayment periods reduce the incentives for private investors, so that state-owned enterprises often dominate the resources sector. Variations in commodity prices therefore result in volatile government revenues.
- Third, natural resources are susceptible to overexploitation when they are a public good, and their extraction can have negative environmental and social impacts. As deposits are often geographically concentrated, the problems resulting

Figure 3: Per capita GDP growth

Variation on the previous year in per cent, 2003–2008 average.



Important commodity exporters identified by UNCTAD depending on a) the share of commodities in the country's exports and b) the share of global exports.

Source: UNCTAD

from extraction are also concentrated on the relevant countries.

In order to employ the finite mineral reserves as well as oil and natural gas deposits for long-term economic growth, the resources must be transformed into other forms of capital such as a well-educated population, modern machinery and equipment, and infrastructure. Only then can the resource wealth benefit future generations as well. In order for this to be done successfully, an economy must meet a variety of criteria, including having institutions of adequate quality. The latter should help resist any short-term pressure on public expenditure in favour of long-term investment and growth strategies. Even if the final verdict is still out as to whether resources are a blessing or a curse, with regard to the South American countries it is evident that their resource wealth so far has not provided any particular sustained impetus for their economic development.

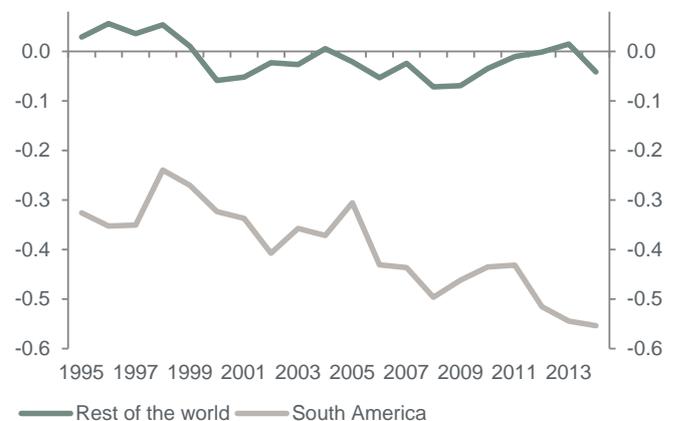
The end of the resources boom is weighing on growth performance

The latest resources boom of 2003 to 2008 has been the most comprehensive and longest lasting yet for the countries of South America. Before that, short term peaks were more common, such as the oil price booms of the 1970s. At the same time, that period was also marked by relatively identical growth performance (average real GDP growth of 5.2%).

The region has grown more slowly from year to year since 2010 because of an unfavourable external environment and falling commodity prices (see Figure 2). Real GDP growth for 2016 is expected to be around -2% because of individual countries being in recession that together account for around 70% of the region's economic output (especially Brazil, Argentina and Venezuela). The assessment must consider the following:

Figure 4: Economic complexity

Index of Economic Complexity.



Simple average of country-specific indices; South America: Argentina, Brazil, Chile, Bolivia, Paraguay, Peru, Ecuador, Colombia, Venezuela, Uruguay; rest of world: 114 countries.

Source: The Atlas of Economic Complexity, <http://atlas.cid.harvard.edu/rankings/country/2014/>

- Growth rates in South America have dropped by comparable rates in the past, for example from 5.8% in 1980 to -2.3% in 1983, and from 7% in 1986 to -1.5% in 1990. Both episodes fall into what is known as "South America's lost decade". That period of debt crises was accompanied by falling real commodity prices that settled on a significantly lower level in the second half of the 1980s than in the decades before.
- In the 2000s rising commodity prices, strong global growth and favourable financing conditions supported growth in South America. The improvement of the rate of exchange between exports and imports (terms of trade) as a result of rising commodity prices were extraordinary. Moreover, production generally became more efficient during this period, so that total factor productivity now reached a somewhat higher level than at the beginning of the 1950s. Despite the unusually good external environment and productivity gains, per capita output of Latin America's petroleum exporters did not grow as fast as that of other regions, and their growth performance remained rather in a midfield position (see Figure 3). South American exporters of agricultural commodities and minerals tended to perform better within their groups.
- Over a longer-term observation period, the countries have become rather more vulnerable to commodity price fluctuations; their net commodity exports are currently higher as a percentage of GDP than at the beginning of the 1970s (10 to 6%), especially for energy and metals.³ The range of export goods has diversified since the beginning of the 1970s, but that trend reversed in part during the 2000s. At the same time, exports are less complex – because of the focus on natural resources – than the global average, and the distance to the rest of the world in economic complexity is growing (Figure 4). A country's economic complexity is higher the more unique its products are and the more diverse its

product range is. This is determined by how many other countries have the ability to make the same product and how many products a country has the ability to produce.

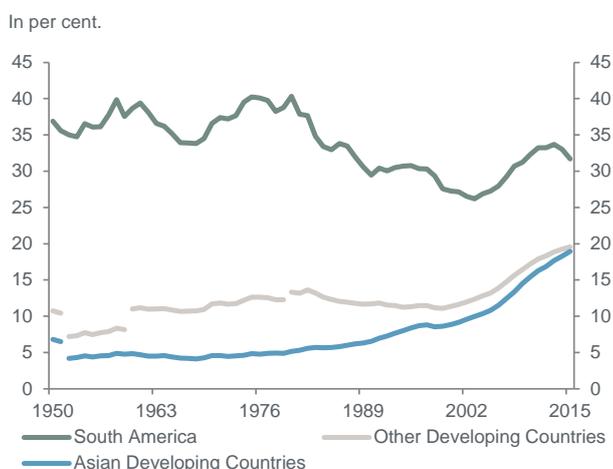
A sobering productivity trend

Because of the relatively low diversification and complexity of their export goods, South American countries are missing the opportunities to transfer knowledge between sectors and enterprises and thereby to produce more efficiently and more flexibly overall. This ultimately impairs per capita GDP growth, even if diversification and complexity play a more important role for countries that are poor in natural resources. But that does not invalidate the argument that an excessively narrow economic basis and high dependence on commodity exports, along with slow advances in increasing the complexity of products and expanding into sectors with high value added have negative impacts. After all, the distance of South America's average real per capita GDP to the generally applied benchmark US had grown since the early 1980s up until the commodities boom of the 2000s (see Figure 5). Although South America was able to catch up during the commodities boom, it lost ground again after it ended.

The development of per capita income is also reflected in the disappointing labour productivity growth rate (see Figure 6). It was not until the commodities boom that labour productivity increased again at higher rates than in the US, after stagnating on average in the 1980s and 1990s.

- First, the development of labour productivity is fed by a growing capital stock. However, the investment rate of the South American countries has hovered around the 20% mark on average since the beginning of the 1970s, while it rose by four percentage points during the commodities boom.⁴ But the upward trend has fizzled out again. In the often cited comparison with South and East Asian developing countries, South America scores poorly because these

Figure 5: Per capita GDP compared with the US



From 1952 incl. China, from 1960 incl. Russia, from 1980 incl. the former Soviet republics; based on per capita GDP in 2015 US dollars, converted to the 2015 price level with updated 2011 purchasing power parities.

Source: The Conference Board. 2016. The Conference Board Total Economy Database, May 2016, <http://www.conference-board.org/data/economydatabase/>.

Figure 6: Productivity development



Labour productivity per hour worked or per worker, depending on data availability, South America without Paraguay, Suriname and Guyana.

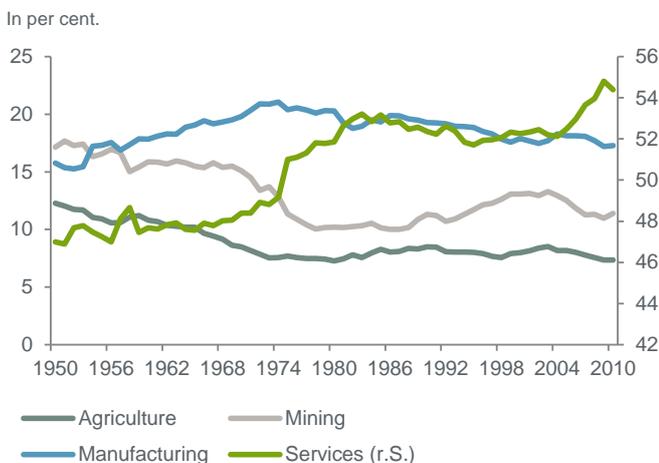
Source: Feenstra, R. C., Inklaar, R. and M. P. Timmer (2015), The Next Generation of the Penn World Table, American Economic Review, 105(10), 3150–3182, www.ggdnc.net/pwt.

countries have been able to increase their investment rate during the same period by more than 10 percentage points – not least because of China – to more than 30% of GDP.

- Second, labour productivity increases when workers are better trained, for example through higher school education or on-the-job training. It is true that human capital in South America and Mexico has grown roughly at the same rate as in East Asia, according to Mendez-Guerra (2015).⁵ At the same time, the South American countries' scores on the Human Capital Index of the World Economic Forum show potential for further improvements.⁶ Although the countries of East Asia and the Pacific are also in midfield, education for young people in Latin America lags behind their peers in South Asia while their older age cohorts score significantly higher. South America obviously needs to be careful not to fall behind.
- Labour and capital continue to be the main drivers of growth. But during the commodities boom the general efficiency of their input (total factor productivity) rose on average in South America (by around 1% per year between 2003 and 2008), and in the Latin American countries it was a main driver of improved growth performance between 2003 and 2012. However, this was preceded by a long period of poor performance. Beginning in the early 1980s, factor productivity developed significantly more poorly than in the US, which is usually used as a benchmark.

Total factor productivity also depends on how labour and capital are distributed among the enterprises of an economy. When there are a few highly productive enterprises and many with very low productivity, as is the case in Latin America, average productivity in the manufacturing sector is correspondingly low. If the more productive enterprises were to gain market share and employ more labour and capital that would lead to productivity gains.⁷ These would be

Figure 7: Share of sectors in value added



Value added in constant prices. Proportions shown as simple averages. Argentina, Bolivia, Brazil, Chile, Colombia, Peru, Venezuela.

Source: Timmer, M. P., de Vries, G. J. und K. de Vries (2014), Patterns of Structural Change in Developing Countries, GGDC research memorandum 149.

considerable, even if limited to the period of transformation towards a more productive composition of the business sector. An alternative dividing line for productivity can be drawn between sectors. For developing countries the distance to U.S. total factor productivity is considerable in construction, food production and equipment and machinery especially, but significantly shorter for services.⁸

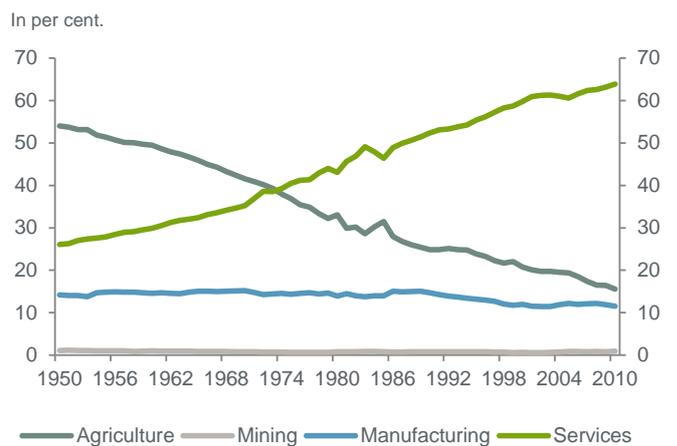
Premature deindustrialisation

Besides unproductive enterprises, structural change is another reason for South America's poor performance in productivity development. Structural change is a normal process for an economy, in which manufacturing strengthens first over time before the service sector gains importance.

This also applies to South America and can be seen both in value added and in employment (see Figures 7 and 8). For Latin America, however, a premature deindustrialisation has been observed.⁹ It is evident that the proportion of manufacturing in employment and value added reached its highest level at a significantly lower per capita income level and, hence, stage of development than was the case in today's industrialised countries. Even the highest proportion itself is lower.

Value added per worker in the manufacturing sector in South America and Mexico combined has remained nearly unchanged since 1960, while it has fallen in the service sector.¹⁰ Accordingly, the structural change towards the technologically less dynamic service sector is slowing labour productivity growth.¹¹ Between 1950 and 1975, on the other hand, not only did productivity growth within the sectors make positive contributions to labour productivity, but so did structural change itself.

Figure 8: Share of sectors in employment



Countries. Argentina, Bolivia, Brazil, Chile, Colombia, Peru, Venezuela.

Source: Timmer, M. P., de Vries, G. J. und K. de Vries (2014), Patterns of Structural Change in Developing Countries, GGDC research memorandum 149.

Whether premature deindustrialisation and concentration on natural resources are having negative impacts on growth prospects ultimately depends on whether value added in manufacturing has the same growth effects as value added

in the resource or service sector. The verdict is still out on the resource sector. On the one hand, natural resources have lower economic complexity. On the other hand, the World Bank argues that innovation and diversification are also possible in the natural resources sector, with relevant positive effects on productivity in other sectors as well.¹² For the service sector, the verdict is quite clear. In South America it is lagging behind the technological frontier and has little dynamism.¹³

Conclusion

It is becoming more difficult for the countries of South America to narrow the wealth gap on the industrialised countries. First, the growth impetus generated by the commodities boom petered out when the cycle ended. Second, in an economy that depends on natural resources the requirements are generally high for economic policy to ensure that resource wealth can be translated into broad wealth across

present and future generations. Third, manufacturing has a low share of economic output, so the region can benefit only inadequately from the strong technological progress made in these sectors.

With the structural transition towards the service sector and concentration on natural resources, solutions for strengthening production potential are not easy to find. Positive factors for increasing productivity growth include investments in education and a stable political system. South American countries have already reformed their economies considerably in the past decades. A major portion of the reform potential in trade and the capital markets is exhausted. Taxation, privatisation and, most of all, the labour market are the areas with the highest reform backlog. Reforms required to improve the allocation of labour and capital might start by addressing taxation and regulation of the corporate sector, social insurance, competition law and labour market regulation. ■

¹ In the following, South America encompasses Argentina, Bolivia, Brazil, Paraguay, Uruguay, Chile, Peru, Ecuador, Colombia, Venezuela, Suriname, and Guyana.

² Sinnott, E., Nash, J. and A. Torre (2010), *Natural Resources in Latin America and the Caribbean Beyond Booms and Busts?*, Weltbank. Venables, A.J. (2016), *Using Natural Resources for Development: Why Has It Proven So Difficult?*, *Journal of Economic Perspectives*, 30 (1), 161–184.

³ Adler, G. and S. Sosa (2011), *Commodity Price Cycles: The Perils of Mismanaging the Boom*, IMF Working Paper 11/283.

⁴ Source: UCTAD, *Gross domestic product: GDP by type of expenditure, VA by kind of economic activity, total and shares, annual, 1970–2014*

⁵ Mendez-Guerra, C. A. (2015), *On the Development Gap between Latin America and East Asia: Welfare, Efficiency, and Misallocation*, *Forum of International Development Studies* 45 (3), 39–62.

⁶ World Economic Forum (2016), *The Human Capital Report 2016*.

⁷ Busso, M., Madrigal, L. and C. Pagés (2012), *Productivity and Resource Misallocation in Latin America*, *The B.E. Journal of Macroeconomics*, 13 (1), 903–932.

⁸ Herrendorf, B. and Á. Valentinyi (2012), *Which sectors make poor countries so unproductive?* *Journal of the European Economic Association*, 10 (2), 323–341.

⁹ Rodrik, D. (2015), *Premature Deindustrialization*, NBER Working Paper No. 20935.

¹⁰ Calculated according to Timmer, M. P., de Vries, G. J. and K. de Vries (2014), *Patterns of Structural Change in Developing Countries*, GGDC research memorandum 149.

¹¹ McMillan, M. S. and D. Rodrik (2011), *Globalization, Structural Change and Productivity Growth*, NBER Working Paper No. 17143, Timmer, M. P., de Vries, G. J. and K. de Vries (2014), *Patterns of Structural Change in Developing Countries*, GGDC research memorandum 149.

¹² Sinnott, E., Nash, J. and A. Torre (2010), *Natural Resources in Latin America and the Caribbean Beyond Booms and Busts?*, Weltbank.

¹³ Timmer, M. P., de Vries, G. J. and K. de Vries (2014), *Patterns of Structural Change in Developing Countries*, GGDC research memorandum 149.