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Manufacturing-led growth: driving and sustaining economies

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Abstract

Economic growth and development are positively associated with industrialization. This is supported by a large body of literature emphasizing the role of manufacturing as the key “progressive sector”. This policy brief provides new evidence on the manufacturing-growth nexus by examining “growth episodes” and the role that manufacturing has played in recent history in boosting a country’s economic growth. The analysis identifies all growth episodes in the last half-century and characterizes them along several dimensions, including their length, speed, cumulative growth in per capita incomes, and achievements of income graduation. Moreover, the analysis distinguishes growth episodes led by manufacturing industries and compares them with episodes led by other sectors. The results from the analysis are telling. The manufacturing sector led two-thirds of the growth episodes recorded in the last 50 years. Besides being more frequent, manufacturing-led growth episodes are qualitatively better than those led by other sectors.

Key Messages

1. Manufacturing industries are the main drivers of a country's economic growth: two-thirds of the growth episodes in the last 50 years were led by manufacturing.
2. Manufacturing-led growth episodes last longer and increase more incomes compared to other sectors.
3. Reallocating resources to the industrial sector reduces growth volatility and facilitates a transition from lower to higher income categories, thus offering a way out of the poverty and middle-income traps.

The revival of industrial policy and the engine of growth hypothesis

The idea that broad-based interventions to support industrial upgrading and diversification are crucial to facilitating structural transformation and spurring sustainable growth has gained momentum in recent years. Countries around the world are increasingly using targeted subsidies, tax incentives, and regulations to transform their economic structures and foster strategically important sectors.¹

One reason behind the revival of industrial policy is the increased recognition of industrialization in driving development. Notably, the manufacturing industries' growth-enhancing power stands out prominently compared to other sectors. The industrial sector exhibits increasing returns due to greater opportunities for learning and innovation, which, in turn, improve productivity and competitiveness. Additionally, the expansion of manufacturing industries

fosters positive spillovers to other sectors of the economy through backward and forward production linkages, increasing their productivity and accelerating aggregate economic growth. Moreover, tradability and high demand in global markets make certain manufacturing industries well-suited to create foreign exchange and reduce the balance of payments constraints.²

This brief examines the role of manufacturing industries in driving and sustaining economic growth over time. Focus is placed on so-called "growth episodes", which are defined as prolonged periods of sustained economic growth. Using a commonly accepted methodology, this analysis identifies all growth episodes observed in the last 50 years around the world and examines their salient features. A key finding is that manufacturing industries typically ignite growth episodes which yield better developmental results.

What are growth episodes, and why do they matter?

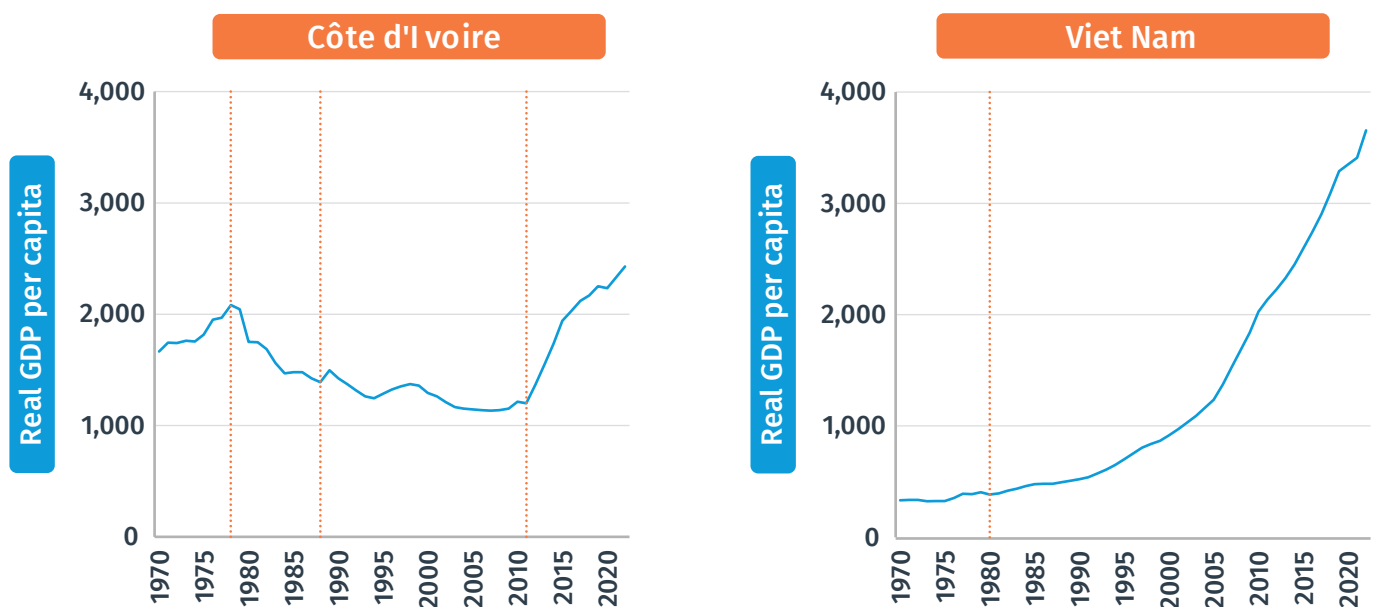
The analysis of growth episodes provides a more complete picture of a country's development path compared to traditional approaches that exclusively examine the average growth rates of GDP per capita, and overlook the volatility of growth trajectories.³ Overlooking the fluctuations in per capita growth rates over time can lead to

misleading conclusions, particularly concerning the sustainability and persistence of economic growth. By contrast, the examination of growth episodes acknowledges that the erratic nature of growth patterns is often characterized by periods of rapid expansion, abrupt downturns, and intermittent plateaus.⁴

The differences between growth patterns become clear when comparing the experiences of two countries that experienced very different trajectories in previous decades (see Figure 1). Côte d'Ivoire's growth path is characterized by a series of booms and busts in the economy. Two growth episodes can be observed (one in the 1970s and another in the 2010s), and both are relatively short and separated by periods of recession and stagnation. These episodes did

not lead to significant economic progress, leaving Côte d'Ivoire stuck in the same income category (lower-middle incomes, as defined by the World Bank) for the last five decades. In contrast, Vietnam's growth experience since 1980 has been marked by a single, stable, and sustained growth episode. This growth rate resulted in substantial income gains, a longer duration of continuous growth, and a successful transition from a low-income to a middle-income status.

Figure 1. Contrasting growth trajectories: Comparing Côte d'Ivoire and Viet Nam



Source: Authors elaboration based on [UN National Accounts Main Aggregates \(AMA\) Database](#).

The comparison among country trajectories highlights that growth episodes can have different characteristics and deliver different developmental results. Overall, the quality of an episode can be broadly defined by its length, total income generated and the ability to lead to income graduations.⁵

What determines the quality and quantity of growth episodes? In this brief, we argue that growth episodes and their quality depend on the economic sector that is driving the economy.

Identifying growth episodes

Growth episodes were identified by examining the evolution of GDP per capita in each country and determining all instances when “structural breaks” (changes in the overall trajectory) took place.⁶ Hereafter, growth episodes were defined as segments within two significant structural breaks in

which the real GDP per capita⁷ grew at least 2 per cent per year, for at least eight consecutive years.

This approach was applied to analyse the GDP per capita of 220 countries and economies covered by the UN National Accounts Main Aggregates (AMA)

Database⁸ from 1970 to 2020. In total, **213 growth episodes were identified**. Table 1 summarizes the main characteristics and trends in the growth episodes. The average yearly growth rate of episodes is 4.9 per cent and the average growth duration is 16.3 years.

Significant variations are observed across different income categories and geographical regions.

Low-income countries (LICs) experienced the longest growth episodes, averaging at 17.3 years, with the highest growth rate of 6.0 per cent per year. Lower-middle-income countries (LMICs) had the highest number of growth episodes (90) and the highest probability of being in a growth episode (45 per cent). Upper-middle-income countries (UMICs) saw growth episodes lasting 16.9 years on average, with a growth rate of 4.6 per cent per year, while high-income countries (HICs) had shorter growth episodes (14.5 years), with the second highest growth rate (4.9 per cent per year).

Looking at the geographic differences (between 1970 and 2020), **Asia-Pacific stands out**. The continent experienced, on average, the largest number of growth episodes (68), the highest probability of being in a growth episode (42 per cent), the longest growth episode duration (18 years), and the highest yearly growth rate (5.3 per cent). Africa also shows good performance and experienced 52 growth episodes, with an average growth episode lasting 15 years with a 5.2 per cent yearly growth rate. However, Africa's probability of experiencing a growth episode is almost 30% lower than Asia-Pacific's. Europe had 46 growth episodes, lasting an average of 15.7 years, with a 4.7 per cent yearly growth rate. North America had the fewest growth episodes (3) and the lowest yearly growth rate (3.0 per cent). In contrast, Latin America and the Caribbean had 44 episodes, all averaging 16.2 years with a yearly growth rate of 4.1 per cent.

Table 1. Key characteristics of growth episodes in the last 50 years

	Number of episodes	Average number of years	Average yearly growth rate	Probability of being in a growth episode
World	213	16.3	4.8%	37%
By income level				
LICs	44	17.3	6.0%	37%
LMICs	90	16.2	4.4%	45%
UMICs	48	16.9	4.6%	44%
HICs	31	14.5	4.9%	20%
By geographical region				
Africa	52	15.0	5.1%	30%
Europe	46	15.7	4.6%	39%
Asia-Pacific	68	18.0	5.3%	42%
North America	3	15.0	3.0%	25%
LAC	44	1.2	4.1%	38%

Note: Growth episodes are defined as a period of at least eight years in which real GDP per capita grew more than 2 per cent a year. The probability of being in a growth episode is defined as the ratio of the number of years a country experiences a growth spell to the total number of years observed. LICs = Low-income countries; LMICs = Lower-middle-income countries; UMICs = Upper-middle-income countries; HICs = High-income countries; LAC = Latin America and the Caribbean.

Source: Authors elaboration based on [UN National Accounts Main Aggregates \(AMA\) Database](#).

Assessing the role of manufacturing

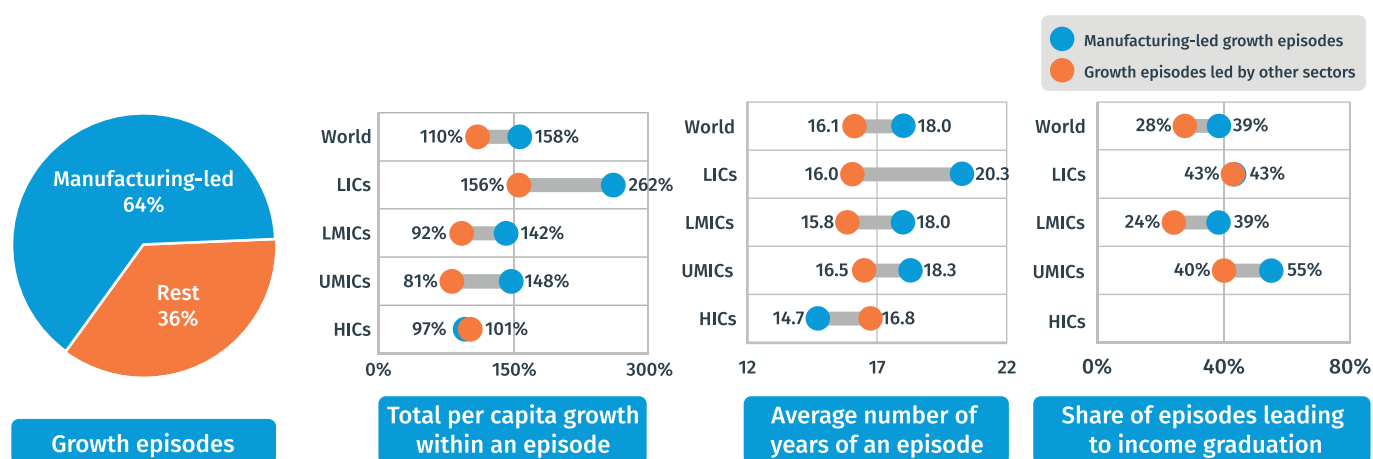
A key component of the analysis aimed to assess to what extent the manufacturing sector contributed to the identified growth episodes. This was done using the sectoral composition of GDP provided by the AMA database. Manufacturing-led growth episodes were defined as those when manufacturing value added grew faster than the rest of the economy during the first quarter of the growth episode.⁹ Using this definition, 137 growth episodes are found to be led by manufacturing. This accounts for more than two-thirds of all growth episodes, underscoring the central role of the manufacturing industry in driving economic growth.

Comparing manufacturing-led growth episodes with those led by other sectors reveals interesting qualitative differences (see Figure 2). Manufacturing-led growth episodes resulted in a higher total per capita growth, longer duration, and a greater likelihood of income graduation (i.e., transitioning to a higher income category). Specifically,

manufacturing-led growth episodes achieved a higher average total per capita growth of 158 per cent, compared to 110 per cent for episodes led by other sectors. This pattern is consistent across different income levels, with LICs experiencing the most substantial gains. It reverts only in the case of HICs, where episodes led by other sectors (such as modern services) have, on average, slightly higher growth rates.

The average duration of the manufacturing-led growth episodes lasts 18 years compared to 16.1 years for other sectors. The extended duration of growth episodes indicates a more sustained and stable growth trajectory. Furthermore, manufacturing-led episodes are more likely to lead to income graduation. Globally, 39 per cent of manufacturing-led growth episodes resulted in income graduation, compared to 28 per cent from other sectors. This trend is particularly noticeable in UMICs and LMICs, where the difference is most pronounced.

Figure 2. Manufacturing-led growth episodes are more common and yield better developmental results than the rest



Note: Growth episodes are defined as a period of at least eight years in which real GDP per capita grew more than 2 per cent a year. The average income-level results are based on each country's income category at the beginning of the growth episode. The income categories are taken from Lavopa and Szirmai (2018). Income graduation refers to transitioning to a higher income category during the growth episode. LICs = Low-income countries; LMICs = Lower-middle-income countries; UMICs = Upper-middle-income countries; HICs = High-income countries.

Source: Authors elaboration based on [UN National Accounts Main Aggregates \(AMA\) Database](#).

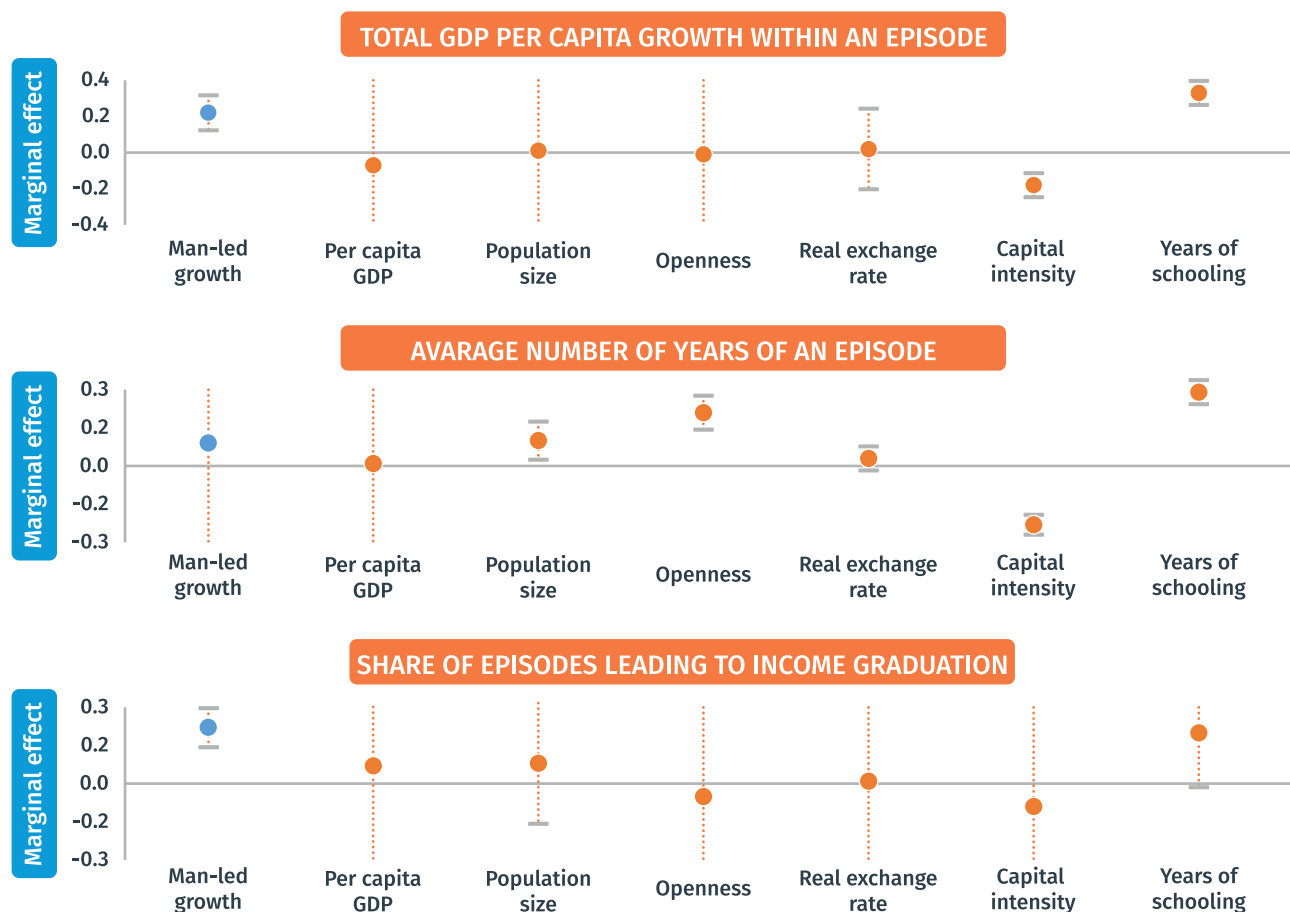
A more refined analysis using econometric techniques to confirm results

The descriptive analysis of growth episodes highlights the critical role of manufacturing industries in driving economic growth. When considering descriptive statistics, other factors are at play. To account for possible limitations, the analysis was extended using a concise econometric framework. This framework examined the determinants of the three key characteristics of growth episodes analysed in the previous section (total income creation, duration, and income graduations). Using this framework allowed the control in the analysis for country-specific characteristics at the beginning of each episode, such as income per capita, population size, trade openness, macroeconomic conditions, capital investments per worker and

years of schooling. All these factors are important determinants of economic growth. The central question this analysis tried to address was whether the income created, length and probability of graduation are still significantly affected by the sectoral composition of growth, after controlling all the country-specific factors. To answer this, a dummy variable was included in the framework to identify manufacturing-led episodes.

The results of this econometric exercise confirm significant qualitative differences between growth episodes led by manufacturing industries and growth episodes led by other sectors (see Figure 3). Specifically, the coefficient for the

Figure 3. Determinants of quality in growth episodes



Note: The figure depicts coefficients (dots) and confidence intervals (at 95 per cent) (lines) for the average marginal effects of the variables of interest (columns) on the corresponding dimension. A linear model with cluster-robust standard errors was implemented.

Source: Authors elaboration based on [UN National Accounts Main Aggregates \(AMA\) Database](#) and [Penn World Table](#).¹⁰

manufacturing-led episodes (first column) is positive and statistically significant for both total income growth and income graduations, suggesting that manufacturing-led growth episodes are associated with better developmental outcomes. The coefficient is positive for the length of the growth spell as well; however, it is not statistically significant (i.e., the dotted line crosses the horizontal axis).

Most control variable coefficients remain stable across specifications, confirming the robustness of the analysis. The GDP per capita, population size, openness, real exchange rate, capital intensity, and years of schooling largely maintain their effects. Population and openness significantly influence the length of growth spells in countries,

Policy implications

The sudden revival of industrial policy is not coincidental. It stems from the recognition that supporting the industrial sector yields better developmental outcomes in the medium and long term. By focusing on a specific aspect of development, namely economic growth, this brief confirms that, over the past 50 years, industrial development is a major engine of sustained growth. The findings presented suggest that re-allocating resources to the industrial sector reduces growth volatility and facilitates a transition from lower to higher income categories, thus offering a way out of the poverty and middle-income traps.

while capital per worker and years of schooling consistently affect the length and the total income generated by the growth episodes. This stability enhances the reliability of the findings related to the impact of manufacturing-led spells on economic outcomes.

Overall, these econometric results align and complement the findings highlighted in the previous section. The analysis refined and sustained the previous conclusions by adding further controls for country-specific characteristics and year-specific fixed effects. The results also align with other analyses that conclude that higher manufacturing shares and a more diversified productive structure contribute to lengthening growth episodes.¹¹

However, merely supporting the industrial sector is not enough. In today's context of highly fragmented cross-border production and rapid technological change, countries risk being confined to basic tasks along industrial global value chains, such as fabrication or assembly. Therefore, modern industrial policies should aim at fostering innovation and sustaining the continuous industrial upgrading and diversification of sectors which exhibit higher potential for productivity gains and the creation of quality jobs.

Endnotes

1. See Santiago, F., N. Haraguchi and A. Lavopa (2024). "[Global Trends and World Order: Implications for New Industrial Policies in Developing Countries](#)". Journal of Industry, Competition and Trade, 24 (5), 1-27.
2. See Dosi, G., F. Riccio, and M. E. Virgillito (2022). "[Specialize or diversify? And in What? Trade composition, quality of specialization, and persistent growth](#)". Industrial and Corporate Change; and Lavopa, A. and A. Szirmai (2018). "[Structural modernisation and development traps. An empirical approach](#)". World Development 112: 59–73.
3. Jones, B. F. and B. A. Olken (2008). "[The anatomy of start-stop growth](#)". The Review of Economics and Statistics 90(3), 582–587.
4. Pritchett, L. (2000). "[Understanding Patterns of Economic Growth: Searching for Hills among Plateaus, Mountains, and Plains](#)". The World Bank Economic Review 14(2), 221–250.
5. Income graduation is defined in this brief as the change in the income-level status of a country (i.e., from low- to middle-income and from middle- to high-income). This type of graduation can be taken as an indication that a country is not stuck in a developmental trap (i.e., poverty or middle-income trap).
6. The identification of structural breaks is done following the approach proposed by Kar, S., L. Pritchett, S. Raihan, and K. Sen (2013). "[Looking for a break: Identifying transitions in growth regimes](#)". Journal of Macroeconomics 38, 151–16.
7. Real GDP per capita is defined as the GDP of a country at constant 2015 prices divided by the total population.
8. <https://unstats.un.org/unsd/snaama/>
9. That is, if the episode lasted 16 years, we look at the average growth of manufacturing vis a vis the rest of the economy during the first four years. Other ways of defining manufacturing-led growth episodes were also explored yielding similar results.
10. Feenstra, R. C., R. Inklaar and M. P. Timmer (2015). "[The Next Generation of the Penn World Table](#)". American Economic Review, 105(10), 3150–3182.
11. See, for instance, Foster-McGregor, N., I. Kaba, and A. Szirmai (2015). "Structural change and the ability to sustain growth, Inclusive and Sustainable Industrial Development". Working Paper Series (UNIDO), 19/2015.



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