Manufacturing in Structural Change: Patterns and Internal Reconfigurations

Yanis Bekhti‡

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Abstract. Industrial policies have regained prominence, prompting a renewed interest in exploring patterns of structural change in manufacturing. As such, this paper leverages a unique dataset at the manufacturing sub-sectoral level to explore *external* and *internal* trends in manufacturing shares. It specifically discusses the premature deindustrialisation hypothesis by examining the scale and timing of both industrialisation and deindustrialisation spikes. Drawing on employment and value-added data for twelve manufacturing activities in over 145 countries from 1963 to 2019, the results show a significant decline in manufacturing trends driven by South America, Europe, North America, and, to a lesser extent, Central America. In contrast, Asian countries are pulling ahead, being the fastest-growing industrialisation group. While most findings confirm that premature deindustrialisation is a genuine threat not sparing any specific industrial groups, the analysis also reveals some striking structural transformations ongoing within the manufacturing sector of many developing regions, especially in the Middle East and Africa. Overall, combining both the *external* and *internal* perspectives highlights the diversity of structural change patterns in manufacturing, thus calling for more tailored industrial policies.

Keywords: Deindustrialisation, manufacturing, structural change, economic growth.
JEL Codes: L60, O14, O50.

1 Introduction

In recent years, industrial policies have regained prominence in both policy circles and academic debates (Chang and Andreoni, 2020; Juhász and Lane, 2024). This resurgence has renewed interest in exploring patterns of structural change, particularly in assessing the extent to which developing countries are effectively reallocating production factors across sectors (Kruse et al., 2022; Nguimkeu and Zeufack, 2024). At the core of this focus lies one of the oldest and perhaps most influential tenets of the development literature: that economic development entails structural transformation, with industrialisation

‡ Catholic University of the Sacred Heart of Milan, Department of Economic Policy.
‡ Université Paris 1 - Panthéon-Sorbonne, CNRS, IRD, Centre d'Economie de la Sorbonne (CES).
• E-mails: yanis.bekhti@unicatt.it | yanis.bekhti@etu.univ-paris1.fr

being its pivotal stage (Kaldor, 1966; Kuznets, 1973; Allen, 2011). Historically, industrialisation has indeed underpinned the growth of today's advanced economies, with manufacturing's share of output and employment initially rising — as surplus labour shifted out of agriculture — and subsequently declining as countries developed and transitioned towards services (Clark, 1940; Lewis, 1954). Although each country's path to industrialisation reflected its unique structural and historical conditions, both early industrialisers (e.g., Great Britain, France, Belgium) and latecomers (e.g., Germany, Russia, Japan) ultimately reached high-income standards through a manufacturing-led growth strategy (Gerschenkron, 1962; Pollard, 1990; Szirmai, 2012).

However, recent empirical evidence suggests that many developing regions have increasingly diverged from these historical trajectories (M. Timmer et al., 2015). Specifically, in the aftermath of the Second World War, services have often expanded ahead of a sustained industrial base, while manufacturing has begun to decline at much lower income levels than in the past — a pattern now termed premature deindustrialisation (Palma, 2005; Dasgupta and Singh, 2007; Palma, 2014; Rodrik, 2016; Tregenna, 2016). In other words, the conventional hump-shaped relationship between income per capita and manufacturing appears to have shifted downward over time, leading to projected decreases in industrial employment and value-added shares at earlier stages of development. While this time-dependent pattern may indicate that manufacturing is a more difficult path to growth than before (Szirmai and Verspagen, 2015; Herrendorf et al., 2022), the absence of robust alternative convergence pathways underscores the need to closely monitor the evolving dynamics of industrial development[1] (Haraguchi et al., 2017).

As such, this paper aims to extend the work of Rodrik (2016) on premature deindustrialisation by providing a comprehensive and disaggregated analysis of manufacturing dynamics worldwide. Drawing on an unbalanced panel of 145 countries spanning 1963 to 2019, we examine cross-regional and cross-country trends in manufacturing shares. Particular attention is given to the timing and scale of industrialisation and deindustrialisation episodes. A central contribution of this study is to move beyond aggregate measures of (de)industrialisation by disaggregating manufacturing into twelve industrial activities, which are then grouped by technological intensity (OECD, 2003; Vu et al., 2021). This approach allows for a more granular analysis of manufacturing's role in the development process by exploring both its *external* and *internal* dynamics. The *external* dimension refers to the classical definition of (de)industrialisation, understood as the decline or rise of manufacturing's share in total employment and GDP (Rowthorn and Ramaswamy, 1997; Tregenna, 2009). The disaggregated lens, however, allows us to uncover within-manufacturing patterns by identifying the specific techno-

[1] One might argue that a growth strategy primarily focused on improving the *fundamentals* (i.e., human capital, institutions, etc.) could be sufficient. However, most developing countries cannot afford to settle for the low growth rates characteristic of advanced economies, as they must rapidly close the technological gap to achieve convergence (Rodrik, 2016). Furthermore, the tertiary sector appears ill-suited to play this role. Most services exhibit low productivity growth, while those with higher productivity — such as ICT activities — tend to depend on a highly skilled labour force and are, therefore, unable to absorb the large pools of low-skilled workers prevalent in emerging economies (Athukorala and Sen, 2015).

logical groups that have driven episodes of industrialisation and deindustrialisation across decades. In parallel, we examine the *internal* dimension of industrial trends by analysing the reconfiguration of manufacturing over time — that is, changes in the relative shares of some groups of activities within total manufacturing employment and output. This perspective has been largely overlooked in the literature despite its potential to reveal striking structural shifts within manufacturing that occur even when the sector's aggregate share in the economy remains stagnant or declines. Overall, this dual lens analysis seeks to provide a more nuanced understanding of the structural change patterns in manufacturing, highlighting the diversity of trajectories across countries and regions.

Extending the sample and conducting a sub-sectoral analysis are relevant for at least three reasons. First, previous studies testing the premature deindustrialisation hypothesis have shown sensitivity to country coverage. In particular, expanding the sample to include more Sub-Saharan African countries (SSA) substantially alters the observed trends, pointing towards a manufacturing renaissance rather than deindustrialisation (Kruse et al., 2022). When plotting the canonical inverted-U shape relationship between income per capita and manufacturing shares, there is mostly no evidence of intertemporal shifts — i.e., the shape of the curve remains stable across pre- and post-1990 periods (Nguimkeu and Zeufack, 2024). This is in line with the recent criticism that the premature deindustrialisation evidence is primarily driven by a selection bias towards countries with weak manufacturing performance because of failing industrial policies (Haraguchi et al., 2017; Lautier, 2024). By compiling and harmonising data for 145 countries, this paper aims to mitigate this bias, especially with the inclusion of several Asian countries known for the success of their industrial policy (Kim and Lee, 2014; Rodrik et al., 2017).

Second, premature deindustrialisation might be the feature of only some traditional manufacturing activities (e.g., food and beverages, textiles, etc.). If so, it might have disrupted the process of structural change in manufacturing — that is, the reallocation from low-tech to high-tech activities — in such a way that previous aggregate analyses may have concealed significant structural transformations. For instance, a sharp *external* decline in low-tech industries could account for much of the observed fall in manufacturing shares in some developing regions, thereby concealing ongoing industrialisation in more technologically advanced activities. This concern provides one of the central motivations for disaggregating manufacturing into twelve sub-sectors.

Third, the rapid expansion of the tertiary sector in the post-Second World War period has made sustained *external* manufacturing booms increasingly difficult to observe. It is particularly true in regions where it coincided with other structural and policy-related constraints that have limited the effectiveness of industrial strategies. Latin America offers a salient example (Baer, 1984; Bértola and Ocampo, 2010). On average, the region has experienced persistent deindustrialisation relative to the 1950s (Rodrik, 2016; Castillo and Neto, 2016), but this trend must be interpreted in light of the rapid growth of its service sector. By the mid-twentieth century, services already accounted for approximately 50% of the GDP, making it the most tertiarised region in the world

— surpassing even advanced economies (Szirmai, 2012). This early and rapid expansion of the service sector left structurally less room for manufacturing to increase its relative share. However, in the case of Latin America, the relative decline in overall manufacturing shares does not necessarily imply the absence of any significant *external* shifts across sub-sectors or any *internal* reconfiguration over time. Quite the opposite have happened since our results shows that, in South America, low-tech industries have strongly driven the *external* decline in aggregate manufacturing employment shares while paradoxically expanding their *internal* weight within the manufacturing sector. This result shows the importance of considering both perspectives as *external* and *internal* compositional changes are not necessarily aligned. While they may often move in the same direction, they can also diverge — as in South America — pointing toward scenarios that may hinder these countries' ability to catch up. This, in turn, implies policy responses that likely differ from those suited to regions undergoing more uniform structural transformation, highlighting the need to accurately depict each pattern in manufacturing.

Beside these practical motivations, many theoretical arguments support the idea that manufacturing is a crucial driver of economic development. First, manufacturing exhibits some specific inherent properties, including its propensity to concentrate capital and diffuse technological progress. Furthermore, industries benefit from a production function characterised by increasing returns to scale as these activities traditionally face high fixed but lower marginal costs (Young, 1928). Secondly, besides the *fundamentals* factors that drive economic growth in most neoclassical models, it has been widely acknowledged that shifting labour from agriculture to manufacturing (i.e. from low-to-high-productivity activities) also ensures catch-up by enhancing overall productivity (Lewis, 1954; Ranis and Fei, 1961). This stems from productivity differentials among sectors such that the reallocation of workers towards industries produces static and dynamic gains, allowing labour productivity in manufacturing to exhibit a tendency towards convergence unconditionally on countries' institutions[2]. These two factors, among others, have led some researchers to assert that labour productivity in manufacturing tends towards convergence, unconditional on the countries' institutions or policies (Rodrik, 2013). Third, most industrial activities generate productive interactions and positive externalities through the so-called learning-by-doing process as well as thanks to pulling effects fostered by backward and/or forward linkages (Rosenstein-Rodan, 1943; Hirschman, 1958). This implies that not only might the cumulative production of manufacturing be positively correlated with the growth rate of GDP (Kaldor's first law), but also that the contribution of industrial activities is likely greater than what can be measured throughout its contributions to growth (Kaldor, 1966). Last but not least, the dissimilar long-term trend prices between manufacturing and primary products — known as the deterioration of terms-of-trade — force devel-

[2]The manufacturing sector traditionally exhibits higher labour productivity than other sectors due to the intrinsic characteristics addressed in the first point. Transferring the workforce to industrial activities thus produces a positive static shift effect. Furthermore, productivity growth in manufacturing activities is also more rapid than in other sectors, providing a dynamic shift effect that accelerates aggregate growth (Szirmai, 2012).

oping countries to industrialise and not rely only on their comparative advantages on commodities (Prebisch, 1950; Erten and Ocampo, 2013). This *Prebisch-Singer thesis*, stemming from differential demand elasticities, has underpinned the state-led industrialisation strategy implemented in Latin America under the aegis of structuralists (Bulmer-Thomas, 1994; Bértola and Ocampo, 2010). Taken together, these arguments help explain why industrialisation remains, even today, a crucial strategy for several developing economies (Bresser-Pereira, 2020).

For our study, we leverage the recent publicly available version of the UNIDO Industrial Statistics database (Rev 3.1), which we combine with the Penn World Table and the Maddison Project Database (Feenstra et al., 2015; Bolt et al., 2018). The final sample spans 1963 to 2018, encompassing unbalanced employment and value-added data for twelve manufacturing sub-sectors across 145 countries. To our knowledge, this represents the most comprehensive coverage currently available, especially compared to related studies that traditionally rely on country-level data from the Economic Transformation Database, formerly known as the Groningen Growth and Development Centre (GGDC) 10-sector database (Kruse et al., 2022; M. Timmer et al., 2015). The contribution of this paper to the literature is, therefore, threefold. First, it updates and extends previous findings on country-level structural change patterns and manufacturing trends by covering a large sample of developed and developing countries over the long run. Second, it explores cross-sectoral heterogeneity according to technological groups to unveil potential structural transformations occurring within manufacturing, i.e., the *external* approach discussed earlier. Lastly, it examines and discusses changes in the *internal* composition of manufacturing, an aspect traditionally overlooked in the literature.

The rest of the paper is organised as follows. Section 2 discusses the database, and Section 3 presents descriptive analyses that foreshadow the main statistical evidence. Section 4 examines cross-country patterns in the share of manufacturing technological groups and investigates whether premature deindustrialisation holds when the sample is disaggregated. Section 5 shifts the focus to changes over time in the internal composition of manufacturing, while Section 6 presents specific country case studies to go beyond the regional analysis. Finally, Section 7 concludes.

2 Data sources

2.1 The UNIDO Industrial Statistics database

To document manufacturing dynamics and reconfigurations worldwide, the paper draws on national industrial surveys and representative censuses compiled by the United Nations Industrial Development Organization through the Industrial Statistics database — known as INDSTAT. It includes input and output data from 1963 to 2022, covers more than 180 countries and comes at different levels of aggregation under the International Standard Industrial Classification of All Economic Activities (ISIC),

Revision 3.1. For the purpose of this analysis, the paper focuses on employment and nominal value-added (in dollars) at the 2-digit level, encompassing manufacturing sub-sectors with ISIC codes ranging from 15 to 37.

While this dataset is particularly suitable for long-term analysis, various cleaning and harmonisation procedures must be applied ex-ante to ensure internal, intertemporal and international data consistencies (Pahl and M. P. Timmer, 2020). Firstly, data exhibit significant gaps across years and sub-sectors, many of which stem from changes in industrial activity standards classification. For example, manufacturing activities linked to leather products and the footwear industry were only distinguished from the wearing apparel industry in the early 1990s, thus resulting in the quasi-absence of historical data prior to this date for these activities, regardless of the national statistical institute. To mitigate these inconsistencies, manufacturing sub-sectors sharing similar characteristics are re-aggregated, resulting in a panel of 12 sub-sectors out of the 23 initially available (i.e. Table 1). Secondly, the classifications employed by statistical

Table 1: Re-aggregation of manufacturing activities and technological-intensity

ISIC codes	Description after aggregation	Technology
15 & 16	Food, beverages and tobacco products	LT
17, 18 & 19	Textiles, wearing apparels and leather products	LT
20	Wood products	LT
21 & 22	Paper products, printing and publishing	LT
23	Coke, refined petroleum products and nuclear fuel	MT
24	Chemicals and chemicals products	HT
25	Rubber and plastic products	MT
26	Non-metallic minerals products	MT
27 & 28	Basic and fabricated metal products	MT
29, 30, 31, 32 & 33	Machinery, equipments and electronics products	HT
34 & 35	Vehicles and other transports equipments	HT
36 & 37	Other manufacturing and recycling	HT

Note: The re-aggregation follows Pahl and M. P. Timmer (2020). The correspondence between each sub-sector and their technological intensity is derived from OECD (2003) and re-adapted by Vu et al. (2021). In order of appearance: LT = low-tech intensity, MT = middle-tech intensity and HT = high-tech intensity.

offices to report employment or nominal value-added often vary across years and countries, leading to unintended fluctuations within and between time series when such changes occur. For instance, employment may be reported as either the number of employees or number of persons employed, while nominal output can be expressed in basic prices, factor values, producer's prices, or under classifications that are not explicitly defined. To alleviate these inconsistencies, we slightly adjust Pahl and M. P. Timmer, 2020 harmonisation's procedure. In short, the cleaning begins by setting up an initial cross-section of employment and value-added for each country, i.e. the reference year. When possible, output expressed as basic prices is preferred over other configurations, and employment as the number of employees is always prioritised over the number of persons employed. From this baseline, raw and interpolated data are extrapolated backwards and forwards using reconstructed and combined growth rates

series, thus assuming consistency between the different classifications. Additionally, constant labour productivity is assumed to bridge minor gaps between aggregated growth rates, as each classification change mechanically introduces a break in either employment or value-added series. Such cases are limited up to four years.

Last but not least, it should be noted that this dataset is derived from surveys that traditionally exclude firms with fewer than five and sometimes ten employees, depending on censuses. This feature confines the analysis to formal and registered industrial activities, which is the trade-off for retrieving sub-sectoral data from a broad range of countries over an extended period. While this might lead to an underestimation of some industrial dynamics, some aggregated country-level evidence discussed in the next section shows similar variations to those found in previous works and whose estimates were based on datasets covering small businesses (Rodrik, 2016). This alignment might suggest that despite obvious differences in levels, this dataset remains representative of industrial dynamics — at least for some regions.

2.2 Other sources

The last stage of data cleaning involves retrieving shares, as deindustrialisation (or industrialisation) is understood as the decline (or the rise) in either manufacturing employment as a share of total employment and manufacturing value-added as a share of total GDP (Tregenna, 2009; Szirmai, 2012). Total employment figures were sourced from the Penn World Table (PWT version 10.0) — whose last update has improved labour force estimates for developing countries (Feenstra et al., 2015) — while the Gross Domestic Product, expressed in current dollars, were obtained from the World Bank. Additionally, traditional covariates, such as GDP per capita and population size, were taken from The Maddison Project (Bolt et al., 2018).

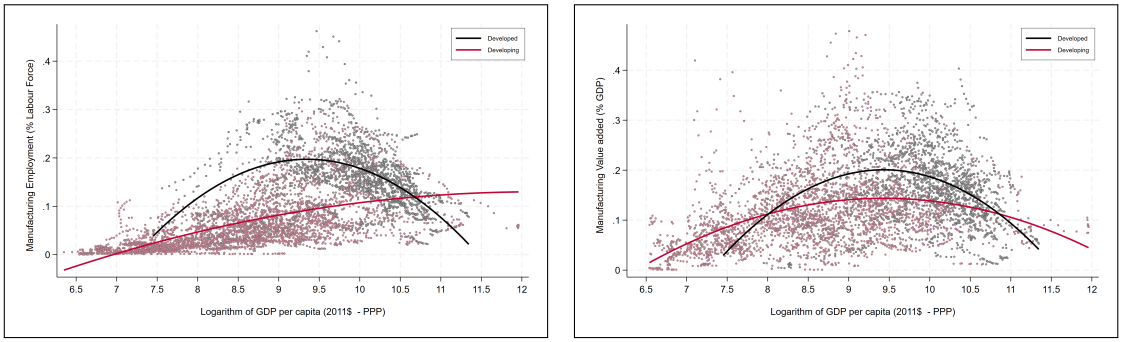
2.3 Final sample

Given the limited availability of certain country-level variables, the final sample comprises employment and value-added data for 145 countries out of the 180+ initially available. In the best-case scenario, the data series spans from 1963 to 2018 and covers the 12 manufacturing activities presented in Table 1. However, despite the harmonisation procedures, data availability varies widely across countries and sub-sectors. Table A1 provides an overview of these variations, detailing the time span of each country's employment and value-added series, along with the minimum and maximum number of sub-sectors available throughout the period. Note that, due to the cleaning process and how it was conducted, the time span indicated for each series in a given country implies that data are continuously available throughout the specified range. In other words, there are no complete breaks in the series (i.e., years without any observations), even if certain sub-sectors may appear or disappear over time.

Lastly, to investigate heterogeneity among geographical areas, the sample is further divided into ten country groups, namely North America, Central America, South America, Europe, Middle East & North Africa (MENA), Sub-Saharan Africa (SSA), Advanced Asia & Oceania, Emerging Asia & Oceania, West Indies & Other Islands, and the Post-Soviet states. One should keep in mind that in the subsequent sections, economies belonging to North America (excluding Mexico), Europe and Advanced Asia & Oceania are referred to as developed countries. In contrast, all remaining economies are classified as developing countries. Further details regarding the exact composition and construction of these groups are provided in Table A2.

3 Descriptive analysis

To motivate the analysis, we first present some graphical visualisation of the evolution of deindustrialisation across developed and developing countries, aggregating the dataset at the country level (initially omitting the sub-sectoral dimension). Figure 1 illustrates the relationship between manufacturing employment (as a share of the total labour force) and value-added shares (as a proportion of total GDP) as a function of the logarithm of GDP per capita.

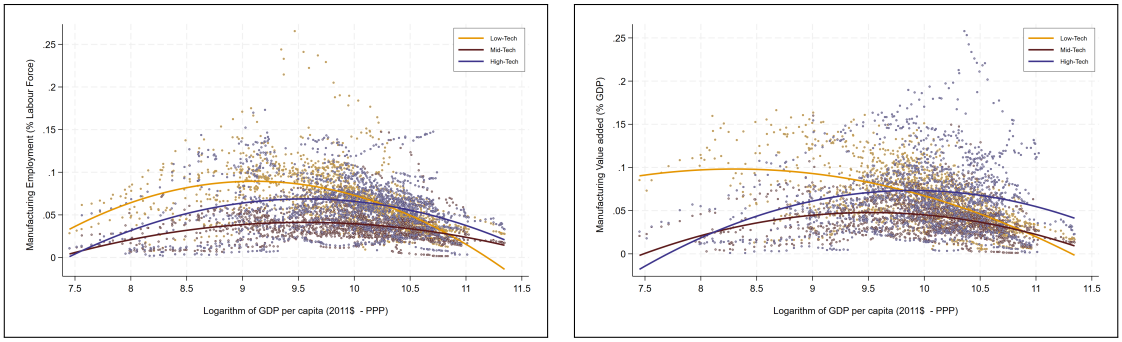


(a) Employment shares (b) Value-added shares

Figure 1: Scatter plots depicting manufacturing value-added shares and manufacturing employment shares as a function of the logarithm of GDP per capita (2011, dollars).

The fitted quadratic trend among developed countries (line in black) follows an inverted U shape, suggesting that these economies have deindustrialised as income has increased over the period. This relationship holds for both manufacturing employment and value-added shares. Evidence of deindustrialisation among developing countries is less clear-cut (line in red), especially when considering employment shares, which appear to have followed a somewhat increasing trend, whereas value-added shares exhibit a clear hump-shaped relationship. While this exercise is only purely descriptive, it may suggest a decline in manufacturing labour productivity in developing countries. Lastly, the peak in manufacturing value-added shares attained by developed countries is higher than that observed for developing countries, which may lend support to the premature deindustrialisation hypothesis — based on the assumption that the

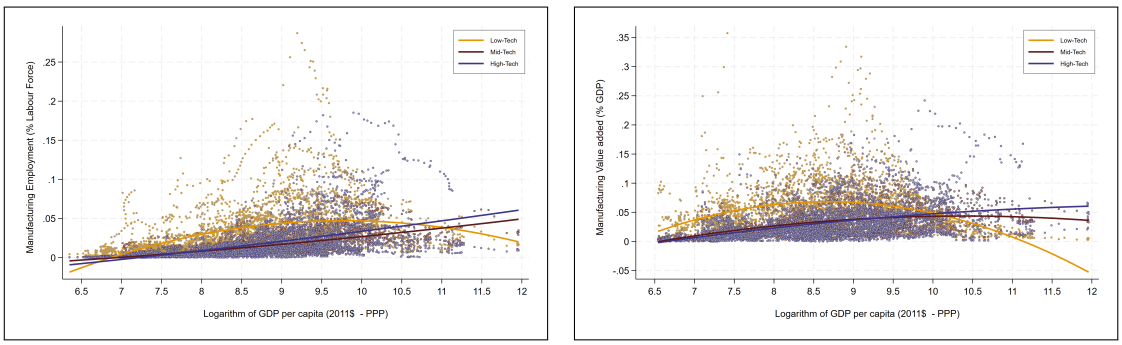
latter group started its industrialisation process at a comparatively later stage. This hypothesis will be formally examined in the subsequent sections.



(a) Employment shares (b) Value-added shares

Figure 2: Scatter plots depicting manufacturing employment and value-added shares in low-tech (in yellow), mid-tech (in brown) and high-tech activities (in blue) as a function of the logarithm of GDP per capita (2011, dollars). Covers developed countries only.

Disaggregating by technology group within manufacturing reveals some interesting, albeit descriptive, stylised facts. Figure 2 plots the quadratic fits for developed countries' low-tech, mid-tech and high-tech manufacturing shares. A quick eyeball suggests that any particular technological category does not drive the aggregated hump-shaped relationship identified previously, as each group experiences a decline in its shares after reaching a certain level of income per capita. As expected, the peak in low-tech manufacturing activities occurs at a lower level of income per capita than that observed for the other two groups, and these activities exhibit a much more pronounced decline in value-added shares than in employment shares. At later stages of development, high-tech sub-sectors reach a higher peak in manufacturing shares — especially in terms of value-added, as they tend to be more labour-saving — and ultimately decline when economies reach maturity.



(a) Employment shares (b) Value-added shares

Figure 3: Scatter plots depicting manufacturing employment and value-added shares in low-tech (in yellow), mid-tech (in brown) and high-tech activities (in blue) as a function of the logarithm of GDP per capita (2011, dollars). Covers developing countries only.

However, a completely different picture emerges when examining the same relationship in developing countries, as depicted in Figure 3. While low-tech manufacturing

sub-sectors also exhibit a clear hump-shaped relationship in terms of both employment and value-added shares, the quadratic fits for the other two groups either show no evidence of an inverted-U shape (value-added) or suggest a clear increasing trend (employment) with respect to the logarithm of GDP per capita. Although these observations are descriptive, they may suggest that developing countries undergo a structural transformation in their industrial structure, moving towards more sophisticated manufacturing activities as income increases. It highlights that deindustrialisation is not a uniform process across manufacturing sub-sectors and calls for a more refined statistical analysis that accounts for country heterogeneity, as one reasonably anticipates differing patterns across specific country groups.

4 Cross-regional trends in manufacturing shares (external)

4.1 Empirical strategy

To investigate patterns of industrialisation and deindustrialisation, we adopt an empirical model that closely follows the seminal work of Chenery (1960). This specification has become a standard empirical strategy in the literature and has been widely used in recent studies (Rodrik, 2016; Mensah, 2020; Kruse et al., 2022; Nguimkeu and Zeufack, 2024). The dependent variables ($man_{i,t}$) correspond to the share of total manufacturing employment in the labour force and the share of total manufacturing value added in GDP for a given country i and year t. Depending on the level of disaggregation, these variables may also be computed to reflect sectoral heterogeneity — specifically, as the share of employment or value added of a given technological group relative to the total labour force or GDP (i.e., as in Figures 2 and 3). Table 1 lists the sub-sectors included in each technological group. To examine manufacturing trends over time, we mirror Rodrik's initial idea (2016) by including a set of decade dummies corresponding to the 1970s, 1980s, 1990s, 2000s and 2010s. Accordingly, the estimated coefficients on these variables of interest (λ_T) gauge the effects of common shocks faced by manufacturing in each decade relative to the excluded pre-1970 years (i.e., 1963 to 1969). This enables us to assess whether industrialisation or deindustrialisation has accelerated in more recent decades.

$$Man_{i,t} = \alpha + \beta_1 Y_{i,t} + \beta_2 Y_{i,t}^2 + \beta_3 P_{i,t} + \beta_4 P_{i,t}^2 + \sum_T \lambda_T Decades_T + \sum_i \gamma_i C_i + \varepsilon_{i,t} \quad (1)$$

To control for confounding factors that may influence industrialisation levels, we also include the logarithm of income per capita ($Y_{i,t}$), the logarithm of population size ($P_{i,t}$), and their squared terms. Adding these quadratic terms allows us to test for non-linearity in manufacturing outcomes and simulate employment and value-added shares at different income levels. When discussing such non-linearities, we report the U-shape test proposed by Lind and Mehlum (2010), which provides a more robust method for identifying U-shaped or inverted U-shaped relationships than conventional reliance on coefficient signs and significance levels. Additionally, country-fixed effects (C_i) are

included to capture any time-invariant features that might influence industrialisation relative to baseline conditions. These fixed effects also account for residual level differences arising from price concepts and employment measurement following the cleaning procedure (Pahl and M. P. Timmer, 2020). The model is estimated using OLS with heteroskedasticity-robust standard errors.

Given the coverage of the dataset, this model will be estimated separately for the different regions and technological groups outlined in the data section (i.e., Table 1). However, one should keep in mind that, due to the unbalanced nature of the dataset, λ_T may reflect the idiosyncratic characteristics of countries with available data during the sixties rather than the current regional trend. To mitigate this selection bias, country groups were constructed such that at least 30% of the countries in each region have data for years prior to 1969, ensuring that the baseline against which each coefficient is compared remains more or less consistent. Table A3 provides more details and shows the number of countries per region with employment and value-added data for the sixties.

4.2 Empirical results

Empirical results from Equation 1 can be summarised as a set of stylised facts, beginning with more aggregated evidence and then discussing cross-regional and cross-technological trends.

• Fact 1: The world has been undergoing rapid deindustrialisation since the 1980s. Overall, developing countries experienced a lower peak in manufacturing shares than developed countries.

Results for the full sample, with the dependent variable aggregated across all subsectors, show a statistically and significant negative trend over time. Estimates from Table 2 suggest that the average country in the sample had a manufacturing value-added share that was around 10.6 percentage points lower after 2010 than in the 1960s and an employment share that was 7.6 percentage points lower. These results are broadly consistent with those of Rodrik (2016), yet two differences warrant discussion. First, estimates highlight that the negative trend began only in the 1980s, whereas his paper concludes that the worldwide trend was already underway in the 1960s. Although this discrepancy could come from the exclusion of different decades between the two studies, it is more likely to result from differences in sample composition, as recent research has shown that his estimates are highly sensitive to including additional countries (Kruse et al., 2022). Secondly, results highlight that worldwide value-added shares were significantly more affected than employment ones, contrasting with Rodrik's findings. Likewise, this discrepancy may reflect an intrinsic characteristic of the sample, which is biased toward formally registered businesses. However, we also acknowledge that employment trends may be underestimated due to the sampling criteria, which

exclude firms with fewer than five or ten employees. It is also worth noting that even though our sample aims to cover the most countries possible, it is important not to draw any conclusions regarding average labour productivity, as our nominal measure of output conflates price and quantity effects.

Table 2: Manufacturing trends through decades.

	Employment			Nominal Value Added		
	(1) World	(2) Developed	(3) Developing	(4) World	(5) Developed	(6) Developing
1970s	-0.001	0.010**	0.002	-0.003	0.004	-0.002
	(0.002)	(0.004)	(0.002)	(0.003)	(0.004)	(0.003)
1980s	-0.019***	-0.007	-0.005*	-0.019***	-0.014***	-0.014***
	(0.002)	(0.005)	(0.003)	(0.003)	(0.005)	(0.005)
1990s	-0.037***	-0.036***	-0.008**	-0.049***	-0.038***	-0.041***
	(0.003)	(0.006)	(0.003)	(0.003)	(0.007)	(0.006)
2000s	-0.058***	-0.058***	-0.021***	-0.081***	-0.065***	-0.070***
	(0.003)	(0.007)	(0.004)	(0.004)	(0.008)	(0.008)
2010s	-0.076***	-0.076***	-0.034***	-0.106***	-0.084***	-0.094***
	(0.004)	(0.008)	(0.004)	(0.005)	(0.009)	(0.009)
GDPpc	0.281***	0.425***	0.132***	0.339***	0.675***	0.213***
	(0.013)	(0.031)	(0.012)	(0.025)	(0.056)	(0.030)
GDPpc sq.	-0.015***	-0.022***	-0.006***	-0.017***	-0.035***	-0.011***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.003)	(0.002)
Pop	0.053***	-0.213***	0.023***	0.097***	0.030	0.053***
	(0.010)	(0.038)	(0.008)	(0.017)	(0.046)	(0.020)
Pop sq.	-0.000	0.008***	-0.000	-0.002**	-0.001	0.000
	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse
P-value	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
Turn. point	9.506	9.874	10.233	9.776	9.705	9.914
Slope min	0.093	0.152	0.050	0.119	0.233	0.076
Slope max	-0.072	-0.090	-0.022	-0.076	-0.157	-0.044
Obs.	5654	1684	3970	4746	1548	3198
FE	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.860	0.741	0.847	0.714	0.780	0.646

Notes: Regressions are run separately for each group. All the controls are in logarithm. To test the non-linearity of manuacturing shares on income, we follow the U-test procedure (Lind and Melhun, 2010). We retrieve the main results of the test including the turning point expressed in logarithm. Standard errors are in parenthesis. *p<0.1, **p<0.05, ***p<0.01.

When disentangling the results by developing and developed countries, we find that the former has experienced a decline in employment shares over time of about twice as much as the latter. In contrast, developing economies have experienced a more substantial decline in their manufacturing value-added shares than developed economies. This quite surprising finding stresses the importance of further disaggregating the sample to understand which country groups are driving these estimates. Lastly, all the specifications from Table 2 point towards a significant hump-shaped relationship between manufacturing and GDP per capita, as confirmed by the test by Lind and

Mehlum (2010). It contrasts with the not-so-clear quadratic fit discussed in the previous section for employment shares in developing countries (i.e., Figure 1).

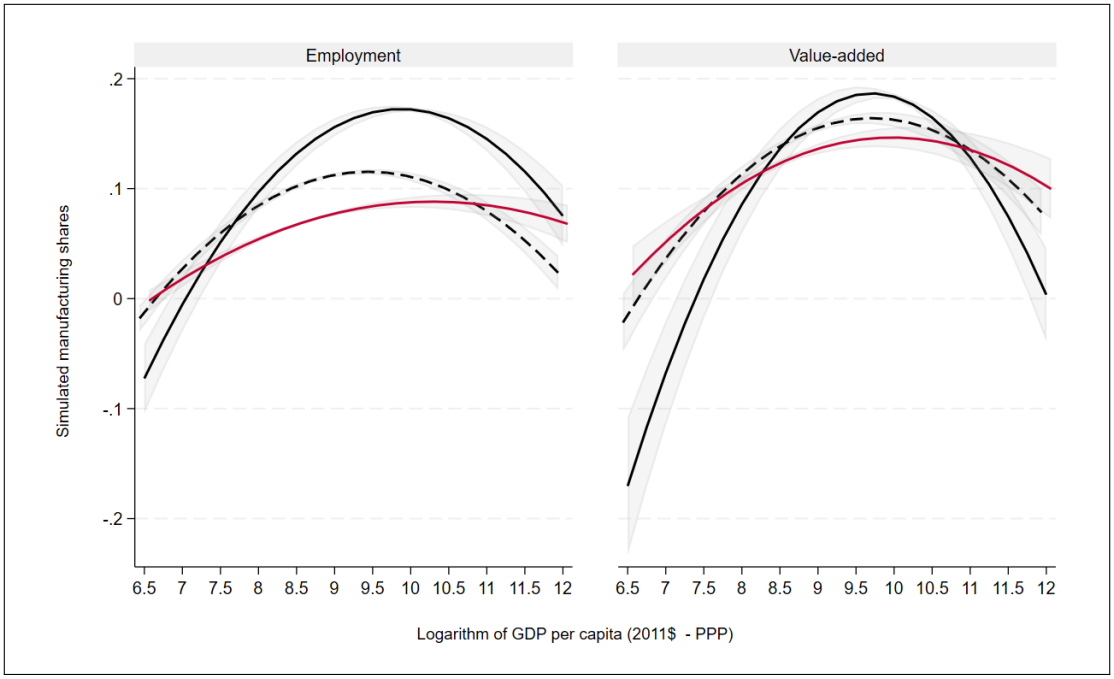


Figure 4: Simulated manufacturing shares at different income levels, between developed and developing countries.

Notes: Margins are plotted using the estimated coefficients from the six specifications in Table 2. As in the previous descriptive analysis section, the solid black line represents developed countries, while the plain red line regroups developing economies. The black dashed line refers to the entire sample. The 95% confidence interval is shown by the light grey shading.

Specifically, when simulating manufacturing shares at different income levels, Figure 4 demonstrates that the peak in employment and value-added shares reached by developed countries is consistently and statistically higher than those of developing countries. Yet, the turning point strangely occurs at a higher income level for developing countries than developed ones. While this evidence tends to contradict the literature, it is partly explained by the artificially high GDP of oil-exporting countries (Nguimkeu and Zeufack, 2024). Indeed, when they are removed from the sample[3], the turning point for developing countries falls below that of developed countries.

• Fact 2 : South America, Europe and North America led worldwide deindustrialisation. They have never surpassed the level of industrialisation achieved during the sixties. In contrast, most Asian economies are pulling ahead, being the fastest-growing industrialising group in the sample.

To explore cross-regional heterogeneity in manufacturing trends, we estimate Equation 1 separately for the ten country groups outlined in the data section (i.e., Table A2). The

[3]Namely, Kuwait, Qatar, Bahrain, the United Arab Emirates, Oman, Saudi Arabia, and Trinidad and Tobago.

dependent variable is aggregated across all sub-sectors and all controls remains the same. Figures 5 and 6 provide a visual representation of the estimated coefficients for the period dummies, along with the 95% confidence intervals. For ease of interpretation, estimates relying on the full sample (from Table 2) are also plotted in the bottom right corner to simplify comparisons between regional and world trends. Note that post-Soviet states and the West Indies and Other Islands have been excluded from the graphical representation and are omitted from most interpretations. Nevertheless, all results are available in the appendix (i.e., Tables A4 and A5).

Overall, the estimation results reveal two distinct patterns across regions. First, there are groups of countries that never surpassed the level of industrialisation achieved in the 1960s and subsequently experienced a significant decline in both manufacturing employment and value-added shares — something referred to as "twin" deindustrialisation. This pattern is observed in South America, North America, Europe, and Central America. Nevertheless, some differences between these regions must be noted as some began their deindustrialisation in different decades relative to the 1960s and, more critically, experienced it at distinct paces. For instance, North America experienced a decline in both manufacturing outcomes as early as the 1970s. In comparison, deindustrialisation in South America started in the 1970s/1980s, depending on the measure, while Europe faced a waning of its manufacturing sector from the 1980s/1990s onwards. In the 2000s, Central American countries also initiated their deindustrialisation process. Among these regions, however, South America, Europe and, to a lesser extent, Central America stand out for the magnitude and persistence of this contraction, with South America being the world's most deindustrialised region relative to the sixties. For these three regions, and regardless of the outcome variable (employment or value-added), each successive decade has intensified the process of deindustrialisation, such that by the 2010s, the share of manufacturing value-added and employment in South America had decreased by 20 and 12 percentage points, respectively, compared to the 1960s. Europe's corresponding declines were about 10 and 9 percentage points by 2010 relative to the excluded decade. Conversely, the decline in manufacturing shares in North America remained relatively stable from the 1980s onward, with employment and output shares averaging around 5 and 7 percentage points lower in the 2010s than fifty years ago. The second pattern observed from results relates to groups of countries that experienced "twin" industrialisation or, more commonly, an increase in either manufacturing employment or value-added shares — relative to the excluded decade, namely the 1960s. It comprises Sub-Saharan Africa (SSA), Advanced Asia & Oceania, and Developing Asia & Oceania. Four observations can be made. First, none of these regions has experienced significant deindustrialisation relative to the baseline, suggesting that their manufacturing sector has not yet reached maturity stages. Second, only Sub-Saharan Africa (SSA) has undergone a "twin" industrialisation, with manufacturing employment and value-added shares increasing by about 1 and 3 percentage points in 1970s, respectively. Achieving sustained growth in both employment and value-added for an entire decade therefore, seems to be rather an exception than the

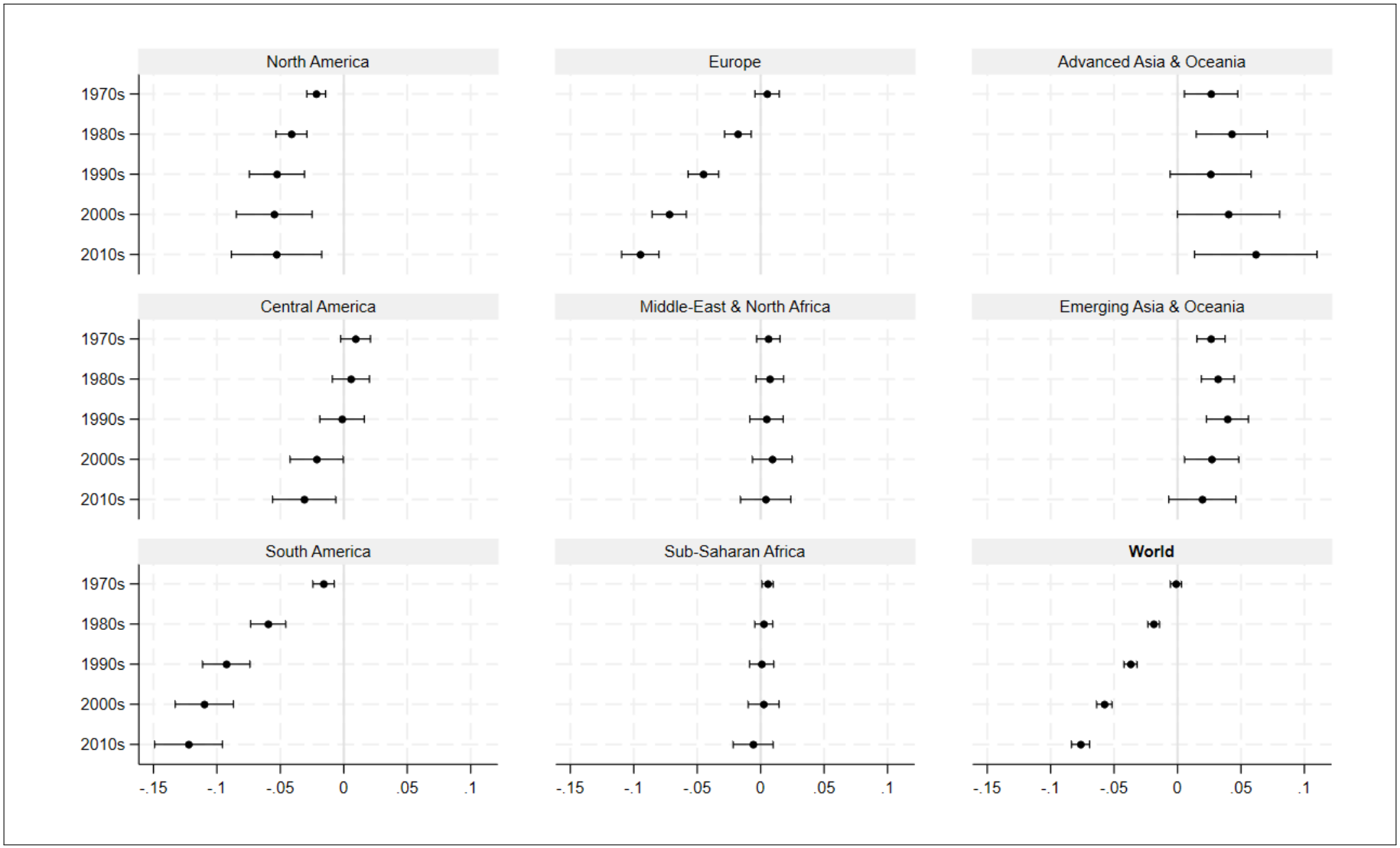


Figure 5: Manufacturing trends in employment shares relative to the sixties (% pts), by regions.

Notes: Coefficients for each decade dummies are plotted when breaking down Equation 1 across several regions. As stated in the empirical strategy section, coefficients must be interpreted with respect to the excluded decade, i.e., the sixties. The complete table can be found in Table A4. For the World's results displayed in the bottom right corner, refer to Table 2. The dependent variable is the share of manufacturing employment over total labour force, with all subsectors aggregated. Refer to Table A2 for the list of countries included in each region.

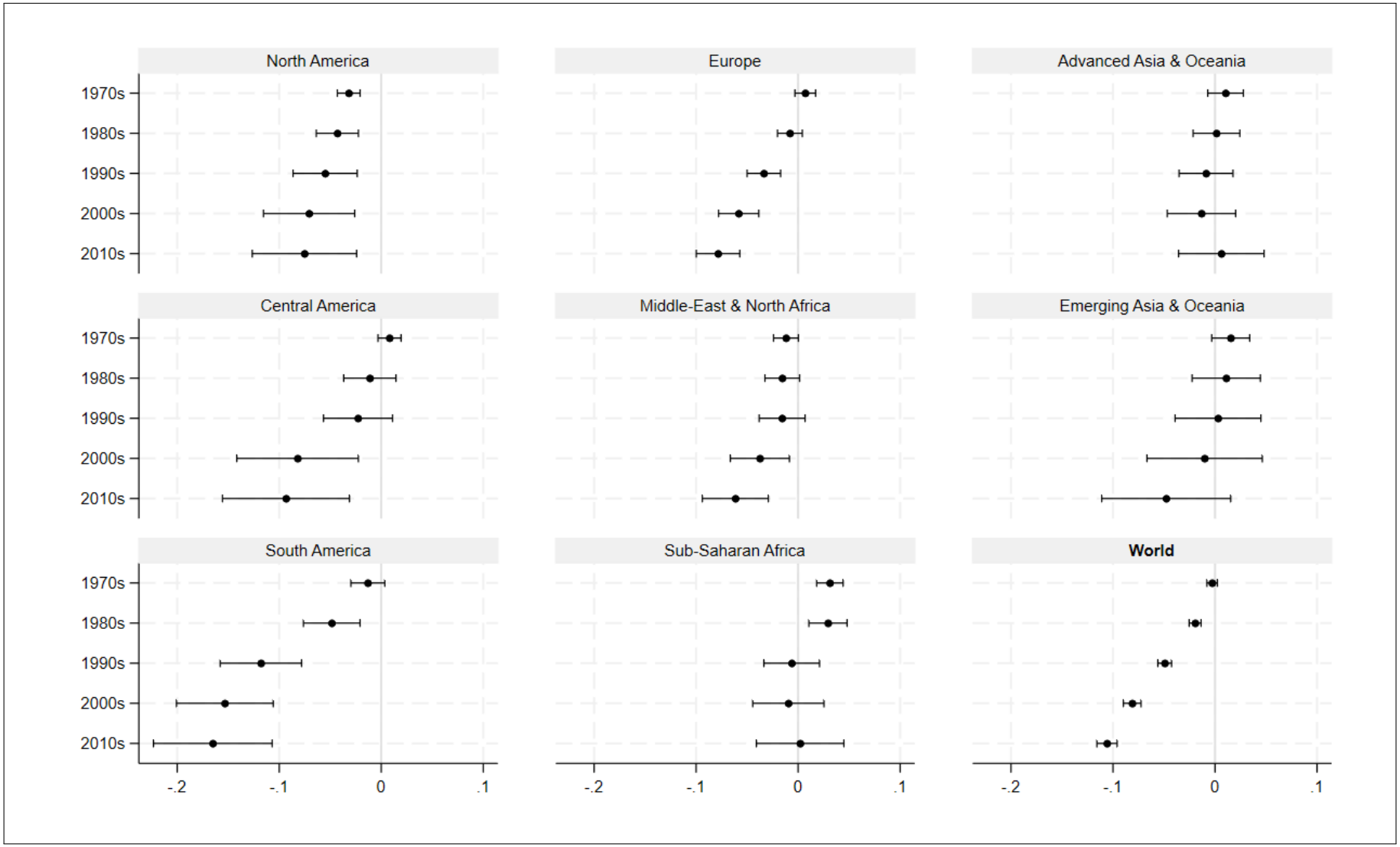


Figure 6: Manufacturing trends in value added shares relative to the sixties (% pts), by regions.

Notes: Coefficients for each decade dummies are plotted when breaking down Equation 1 across several regions. As stated in the empirical strategy section, coefficients must be interpreted with respect to the excluded decade, i.e., the sixties. The complete table can be found in Table A5. For the world's results displayed in the bottom right corner, refer to Table 2. The dependent variable is the share of manufacturing value added over GDP, with all subsectors aggregated. Refer to Table A2 for the list of countries included in each region.

norm. Third, except for Sub-Saharan Africa in the 1970s and 1980s, no industrialisation spikes have led to increased value-added shares. Instead, all other industrialisation episodes have resulted in an increase in employment shares and have been confined to Asia, which brings us to the last observation. Asia is the region that pull ahead, being the fastest-growing industrialising group in the sample. Indeed, both Advanced Asia & Oceania and Emerging Asia & Oceania have almost consistently experienced an increase or sustainment in manufacturing employment shares relative to the 1960s, except for the 2010s for the latter and the 1990s for the former.

Lastly, little can be said about the Middle East and North Africa region (MENA). No significant changes have occurred in their employment shares, while value-added shares have been decreasing since the 2000s, relative to the sixties.

Additionally, we provide a graphical representation of the projected manufacturing shares across different income levels by region. Simulated margins are based on previous estimates (i.e., Tables A4 and A5) and are summarised in Figure 7. Note that caution is warranted when interpreting some of these curves, particularly for regions where simulated values are extrapolated far below (or far beyond) the observed income range of countries during the 1963-2018 period. In such cases, the fitted line may not reflect correctly the underlying relationship within the country group. Graphical results are nonetheless interesting as they always point towards an inverted U-shape between manufacturing shares and income per capita, whatever the country group. This is confirmed by the Lind and Mehlum (2010) test provided in Tables A4 and A5. Although one may find this evidence puzzling, given some positive and insignificant trends observed previously, it is important to note that these simulations are essentially a long-term relationship that captures how manufacturing shares evolve with income per capita, whatever the reference point. In contrast, the decade-based analysis carried out before shows the historical tends and current positioning of specific country groups relative to the sixties. As such, positive or insignificant decade-specific trends indicate that most countries within a given region are currently positioned well before the turning point. Meanwhile, other higher-income countries within the same regions have already started deindustrialising, generating the curve's downward-sloping segment. Taking the example of Emerging Asia, on average, most of these countries have faced industrialisation across decades regarding value-added shares, implying that they remain predominantly positioned on the ascending part of the inverted U curve. Yet, a smaller subset of countries belonging to these groups has already crossed the income threshold (turning point), initiating their downward trajectory and thereby shaping the overall inverted-U pattern observed in simulations. Overall, the turning point and the peak reached tend to vary significantly across regions, with Asian countries exhibiting the highest turning point in dollars (Emerging Asia) and reaching the highest manufacturing peak (Advanced Asia) ahead of Europe and North America. In contrast, Sub-Saharan countries have experienced the lowest turning point. More details can be found in Tables A4 and A5.

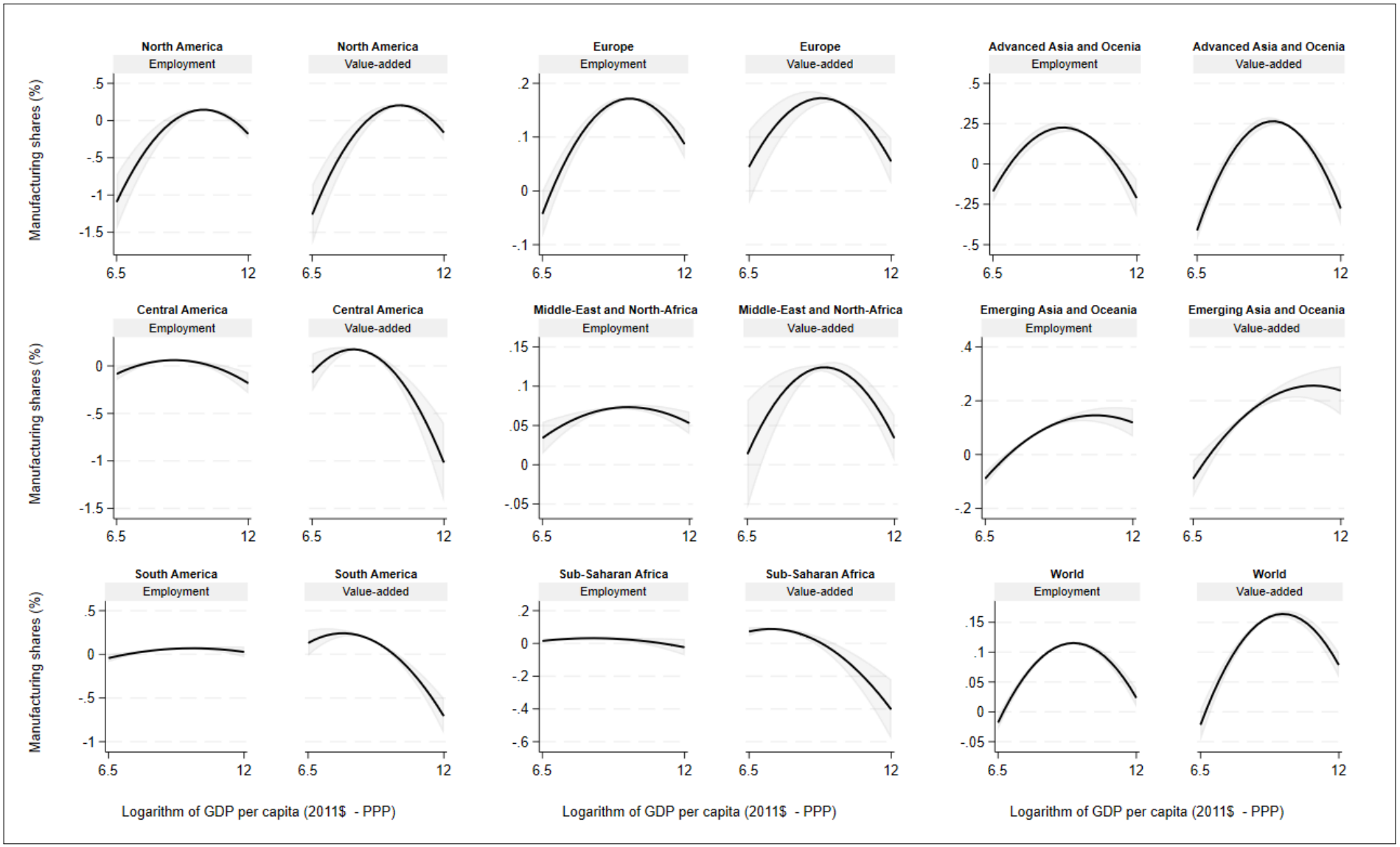


Figure 7: Simulated manufacturing shares at different income levels, by regions.

Notes: Margins are plotted using the estimated coefficients from each specification in Table A4 and Table A5. The 95% confidence interval is represented by the light grey shading. Simulated shares for the world area (bottom right corner) correspond to the dashed line in Figure 4 using Table 2 estimates. Refer to Table A2 for the list of countries included in each region.

• Fact 3 : Globally, each technological group declines relative to the 1960s. In Europe and North America, deindustrialisation trends are driven mainly by high-tech activities, while in South America the wanning of industries is led by low-tech. In contrast, industrialisation trends in Asia are mostly driven by low-tech and mid-tech.

While breaking down estimates across country groups has revealed striking regional differences in manufacturing trends, these dynamics may carry distinct implications depending on the nature of industrial activities that are declining and/or expanding. To unveil potential structural transformation occurring within manufacturing, we thus rely on Equation 1 with the dependent variable now being the share of employment or value added of each technological group relative to the total labour force or GDP, respectively. Said differently, this allows us to assess whether the industrialisation or deindustrialisation trends observed in each region are driven by any specific technological groups. All the coefficients are reported in Appendix where Table A6 present estimates for the full sample, while Tables A7, A8, A9, A10 and A11, A12, A13, A14 report results for employment and value-added shares respectively. For ease of interpretation we report the estimated coefficients for the period dummies in Figures 8 and 9, along with a 95% confidence interval. Overall, when looking at results for the full sample, we find that the low-tech sector has experienced the most significant decline in both employment and value-added shares, followed by the high-tech sector. Point estimates suggest that the average country in our sample had a level of employment shares in low-tech and high-tech activities that stood respectively 3.1% and 2.9% points lower after the 2010s than in the 1960s. The corresponding decline for manufacturing value-added shares in low-tech and high-tech sectors was about 5.6% and 3.9% points, respectively. Note that middle-tech sectors tend to decline the least relative to the baseline, either when looking at value-added or employment shares (respectively 1.2% and 1.7% points).

First, among country groups experiencing "twin" deindustrialisation, North America has witnessed a decline in all manufacturing activities regardless of their technological intensity and the outcome considered. Nearly the same pattern has been ongoing for the average European country whose manufacturing employment and value-added shares have declined in all technological groups except for the output of middle-tech activities. Another striking similarity between these two regions is the extent to which high-tech activities have declined over time, being the group that has experienced the sharpest cumulated drop relative to the 1960s — either in terms of output or employment shares. However, the magnitude of the decline is quite different between these two areas. While North America succeeded in stabilising the decline of manufacturing, including in high-tech sectors, deindustrialisation in Europe has steadily intensified over the years, mainly affecting high-tech and low-tech sectors. This dynamic was already at stake at the more aggregated level (i.e. fact 2) and calls into question the effectiveness of the industrial policies implemented in Europe. More specifically, point estimates suggest that, for Europe in the 2010s, the share of manufacturing employment and va-

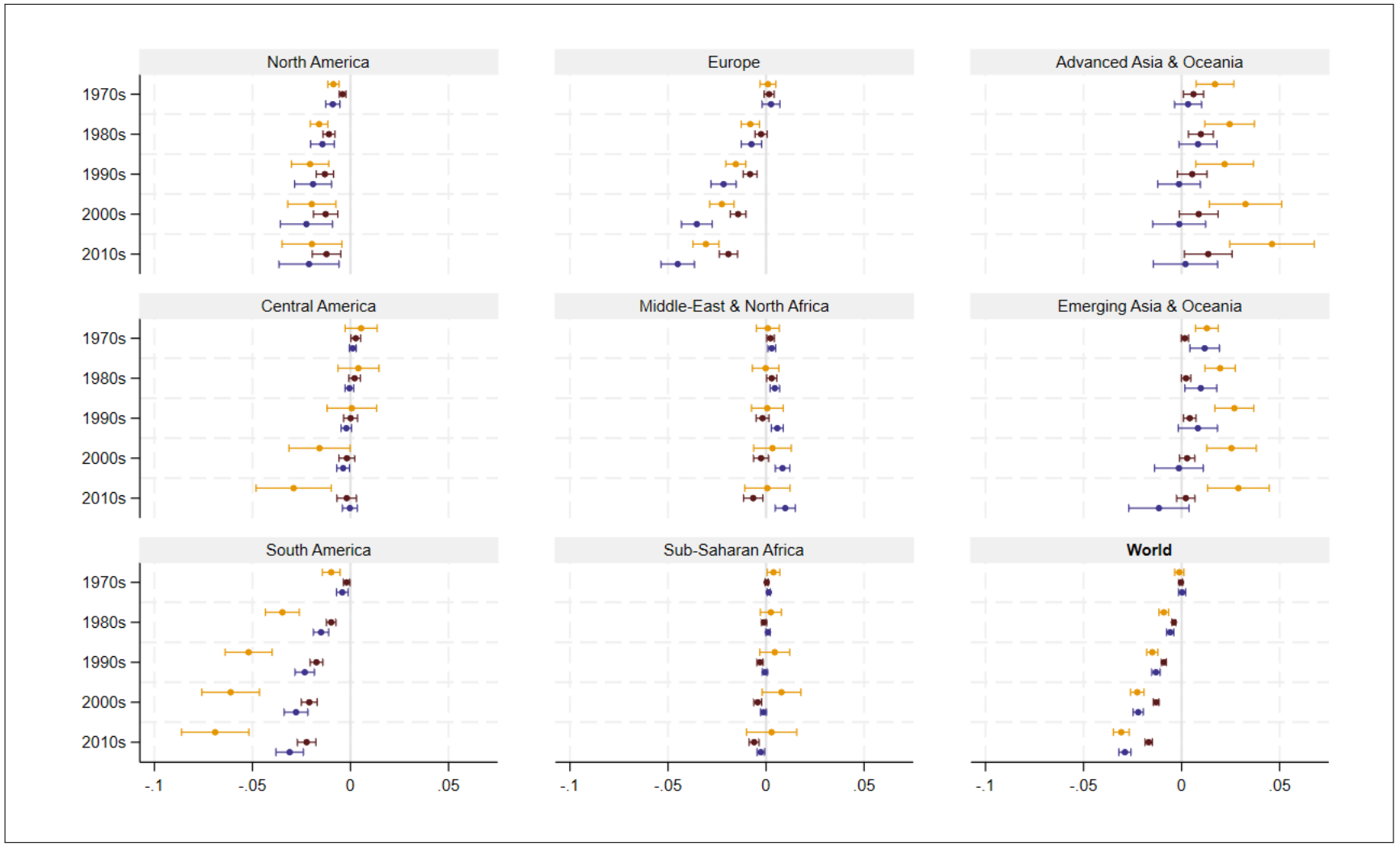


Figure 8: Manufacturing trends in employment shares relative to the sixties (% pts), by regions and technological groups.

Notes: Yellow estimates represent the variation in the share of low-tech manufacturing employment over total labour force relative to its level in the 1960s — holding constant other covariates. Red estimates correspond to middle-tech activities, while blue ones reflect changes in high-tech sub-sectors. Coefficients are estimated from equation 1 along with a 95% confidence interval. Coefficients for the world (entire sample) are reported in Table A6, while those by regions and technological groups can be found in Tables A7, A8, A9 and A10. Refer to Table A2 for the list of countries included in each region, and to Table 1 for the list of sub-sectors included in each technological group.

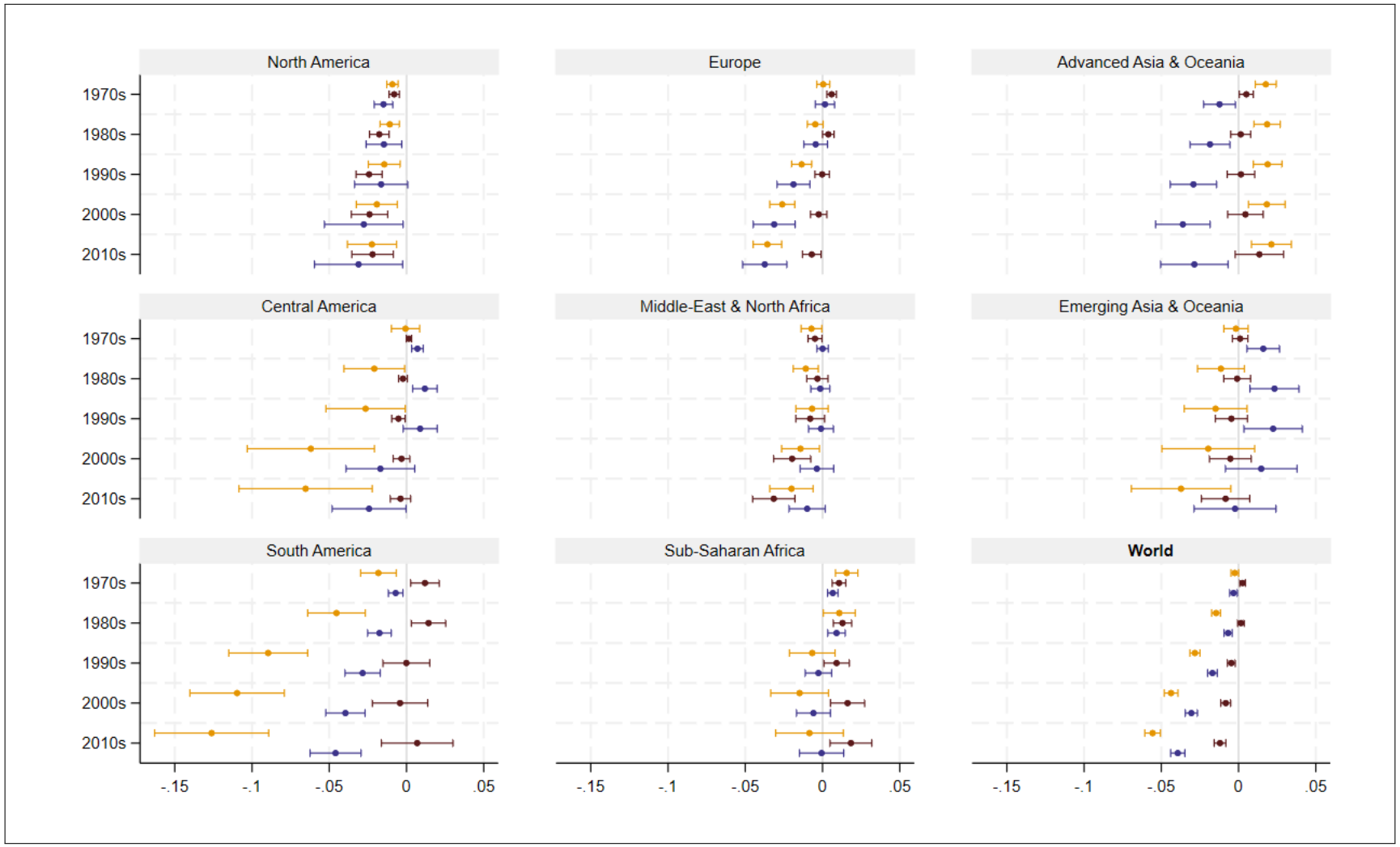


Figure 9: Manufacturing trends in value added shares relative to the sixties (% pts), by regions and technological groups.

Notes: Yellow estimates represent the variation in the share of low-tech manufacturing value-added over total GDP relative to its level in the 1960s — holding constant other covariates. Red estimates correspond to middle-tech activities, while blue ones reflect changes in high-tech sub-sectors. Coefficients are estimated from equation 1 along with a 95% confidence interval. Coefficients for the world (entire sample) are reported in Table A6, while those by regions and technological groups can be found in Tables A11, A12, A13 and A14. Refer to Table A2 for the list of countries included in each region, and to Table 1 for the list of sub-sectors included in each technological group.

lue-added in high-tech activities was 4.5 and 3.7 percentage points lower, respectively than in the1960s. The corresponding declines for North America were approximately 2.1 and 3.1 percentage points.

For Central America, the "twin" deindustrialisation process that began in the 2000s seems to have been driven exclusively by low-tech manufacturing activities. Indeed, there is no significant evidence of any decline in middle-tech or high-tech sectors in the 2000s or 2010s relative to the 1960s, whether in terms of employment or value-added shares. Last but not least, the "twin" deindustrialisation of South American economies was mainly led by the sharp decline in low-tech and high-tech activities, with the former being the most pronounced. As in Europe, the decrease in shares has been persistent and has intensified over the decades. For instance, the share of manufacturing value-added in low-tech and high-tech activities was about 12.6 and 4.6 percentage points lower in the 2010s than fifty years ago. As for the world trend, middle-tech sub-sectors in South America tend to exhibit, on average, more resilience, especially when considering nominal value-added shares, for which no significant decline has been observed over the decades relative to the 1960s.

Second, we discuss country groups having not experienced any deindustrialisation in their aggregate trends relatives to the sixties (i.e., see fact 2). In Advanced Asia & Oceania, industrialisation in manufacturing employment shares was primarily driven by low-tech industries, which consistently increased their employment share across all decades. This trend persisted even during the 1990s — the only decade in which the region did not experience significant industrialisation spikes relative to the 1960s (i.e., Figure 5). A similar pattern characterized Emerging Asia & Oceania, where low-tech sectors persistently increased their employment shares relative to total labour force. Point estimates suggest that in the 2010s, employment shares in low-tech activities were respectively 4.6 and 2.9 percentage points higher in Advanced Asia and Emerging Asia than during the sixties. Another similarity between these two Asian groups is the extent to which mid-tech activities have increased employment shares. In Advanced Asia, four out of the five decades correspond to episodes of industrialisation in these sub-sectors, while Emerging Asia experienced a significant increase in three out of the five decades — namely, the first three (the 1970s, 1980s, and 1990s). Lastly, high-tech activities in both regions also exhibited modest and intermittent increases in employment shares. Nevertheless, these trends were confined only to the period prior to the 1990s. Interestingly, distinct patterns emerge across groups when examining value-added shares, even though the aggregate trends were previously insignificant (i.e., Figure 6). In Advanced Asia and Oceania, the share of value-added from low-tech sub-sectors increased in the 1970s and remained relatively stable over time, remaining significantly higher than in the 1960s. However, this industrialisation spike has been largely offset by a substantial decline in high-tech activities, which have been consistently decreasing since the 1960s. Combined with the insignificant change in mid-tech activities, this helps explain the overall insignificant trend in value-added shares observed in Figure 6. This situation contrasts with Emerging Asia and Oceania, where any observable trends

in low-tech activities point more toward a decline — particularly in the 2010s — while increases in high-tech shares were limited to the period prior to the 1990s.

When disentangling the brief "twin" industrialisation experienced by Sub-Saharan African countries during the 1970s, it appears to have been primarily driven by low-tech activities. However, employment shares in these sectors quickly returned to their 1960s levels, while employment in middle- and high-tech activities began to show slight declines from the 1990s to 2000s — still relative to the 1960s. These shifts were accompanied by notable changes in value-added shares. From the 1980s onward, there was a relative increase in value-added from middle-tech activities. However, this rise did not translate into a significant industrialisation surge, as the value-added shares of the other two groups remained statistically insignificant, with point estimates being negative.

Lastly, although the Middle East & North Africa region was not discussed extensively due to predominantly insignificant results in the aggregated trends (figure 5 and 6), some notable changes arise when decomposing among the three technology groups. Regarding manufacturing employment shares, low-tech industries show no significant change relative to the sixties, while high-tech activities exhibit a slight increase in shares. In contrast, middle-tech industries experienced a decline in employment levels in the 2010s compared to the 1960s. In terms of value-added, shares for high-tech activities remain unchanged across decades. However, the decline in low-and middle-tech activities from the 2000s onward contributed to the deindustrialisation observed in figure 6.

Additionally, Figure 10 provides a graphical representation of the projected manufacturing shares across different income levels, disentangling by regions and technological groups. Simulated shares are based on previous estimates and all the details of the U-Test by Lind and Mehlum (2010) are reported in Tables A6, A7, A8, A9, A10, A11, A12, A13 and A14. Overall, most results suggest a hump-shaped relationship for nearly all regions and technological groups[4] and reveal substantial variation around the turning points. Overall, worldwide projections (i.e. full sample) in the bottom right corner of Figure 10 shows that the turning point occurs earlier for low-tech activities than for mid-tech and that mid-tech declines earlier than high-tech sub-sectors — both in terms of employment and value-added. Said differently, low-tech industries tend to dominate the early stages of industrialisation, while more technologically intensive activities persist longer and start to decline at later stages. This pattern underscores a structural change within manufacturing that unfolds alongside economic development. Interestingly, despite declining earlier, low-tech activities exhibit the highest peak in employment shares, reaching a maximum contribution of approximately 5-6 percentage points of the total labour force. This suggests that low-tech manufacturing remains the primary entry point for industrial employment in developing economies, reflecting its

[4]There are a few exceptions. In MENA, employment shares in mid-tech do not seem to experience any non-linearity, as do the value-added shares in high-tech activities. The same happens for employment shares in mid-tech activities in Emerging Asia and in high-tech in South America. More details can be found in Tables A6, A7, A8, A9, A10, A11, A12, A13 and A14.

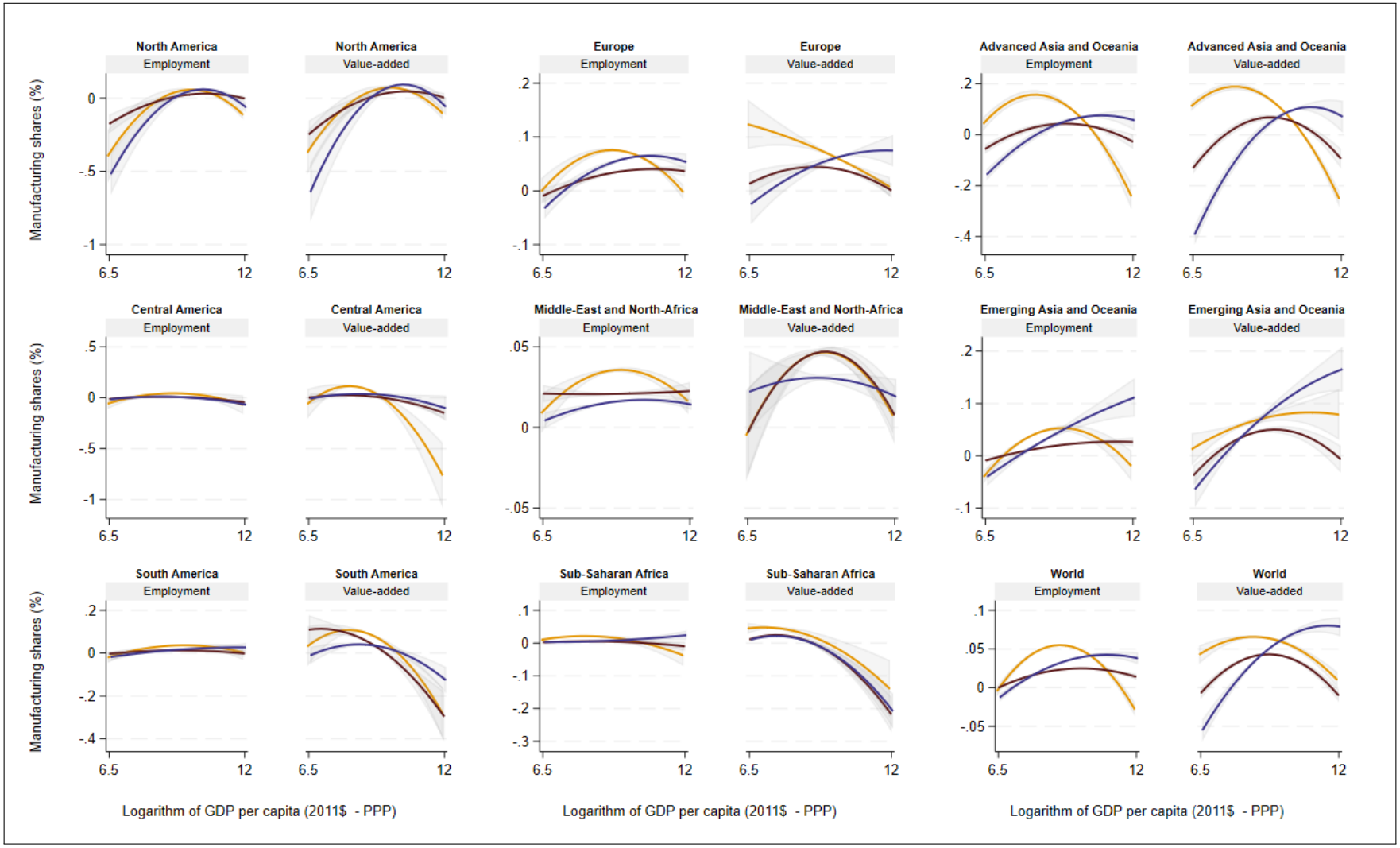


Figure 10: Simulated manufacturing shares at different income levels, by technological groups and regions.

Notes: Margins are plotted using the estimated coefficients from each specification in Tables A6, A7, A8, A9, A10, A11, A12, A13 and A14. The yellow curve corresponds to the projected manufacturing shares of low-tech activities, the brown curve to mid-tech activities, and the blue curve to high-tech activities. The 95% confidence interval is represented by the light grey shading. Refer to Table A2 for the list of countries included in each region, and to Table 1 for the list of sub-sectors included in each technological group.

labour-intensive nature — even if it does not persist at higher income levels. In terms of value-added, this pattern is reversed, with high-tech activities exhibiting the highest peak at his turning point.

When disentangling by region, the variety of patterns among country groups makes it challenging to summarise all findings succinctly. Nonetheless, several notable points stand out. In Europe and North America, the highest turning point emerges in either mid-tech or high-tech activities, whereas, in both Asian groups (i.e., Advanced and Emerging), high-tech activities consistently exhibit the highest turning point relative to the other two industry groups. However, in Advanced Asia, the highest peak in both employment and value-added shares is attained by low-tech activities, whereas, in Emerging Asia, high-tech sub-sectors consistently achieve the highest peak. Lastly, the projected shares in value-added in Sub-Saharan Africa and South America are worrying as the turning point happens at a very low level of GDP. In this aspect, Middle-East and North African countries tend to perform better, although the very low-turning point for high-tech activities highlights that these activities have failed to play a prominent role. Regarding employment shares, there is more room for optimism in Sub-Saharan Africa, MENA and South America, as most of these countries are still on the ascending side of the curve, at least in mid-tech and/or high-tech activities. More details can be found in Tables A6, A7, A8, A9, A10, A11, A12, A13 and A14.

• Fact 4 : Premature deindustrialisation poses a genuine threat across most regions and does not appear to spare specific industrial groups.

Lastly, we formally investigate whether the premature deindustrialisation hypothesis holds on a global scale and whether it is a feature affecting only certain regions or specific technological groups. To this end, we use Equation 1 to simulate employment and value-added shares across different income levels, comparing the periods before and after the 1990s. Formally, the logarithm of GDP per capita is interacted with itself (thereby introducing a squared term to capture non-linearity) and further interacted with a post-1990 dummy variable. This triple interaction allows the relationship between income and manufacturing shares to vary across the two periods, capturing both non-linear effects and structural shifts before and after 1990. Otherwise, the rest of the specification is exactly the same. Note that although selecting 1990 as a threshold is somewhat arbitrary, it ensures a sufficient distribution of observations on either side and act as a marker in which globalisation has intensified. Moreover, this choice enables direct comparisons with the literature and findings of Rodrik (2016) and Kruse et al. (2022). We present only the graphical results in Figures 11, 12, and 13 to avoid overloading the paper with additional tables and tests.

Figure 11 presents the simulated manufacturing shares, with the dependent variable aggregated across all subsectors. The solid black line corresponds to projected shares before the 1990s, while the dashed line represents the post-1990s period. Several findings emerge. First, not all the curves follow an inverted U-shape relationship —

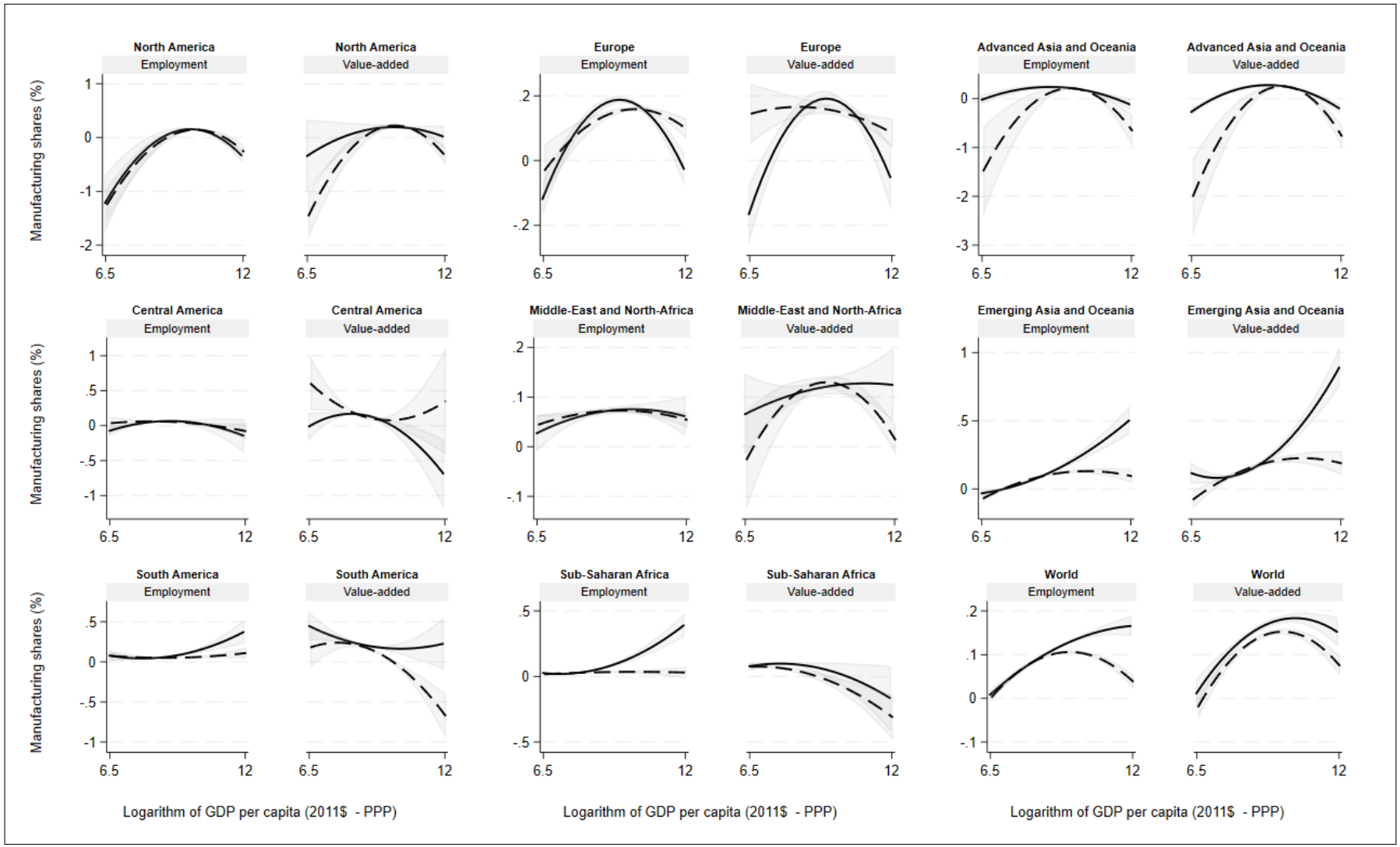


Figure 11: Simulated manufacturing shares at different income levels and before/after the 1990s, by regions.

Notes: Projected employment and value-added shares, before and after the 1990s. We rely on Equation 1 where the logarithm of GDP per capita is interacted with itself (i.e., introducing a squared term to capture non-linearity) and further interacted with a post-1990 dummy variable. Otherwise, the rest of the specification is the same. Refers to Rodrik, 2016 and Kruse et al., 2022 for more details on the methodology. Note that we only provide the graphical representation to avoid overloading the paper with new tables. The plain black line correspond to projected shares before the 1990s while the dashed line simulates shares for the post-1990s period.

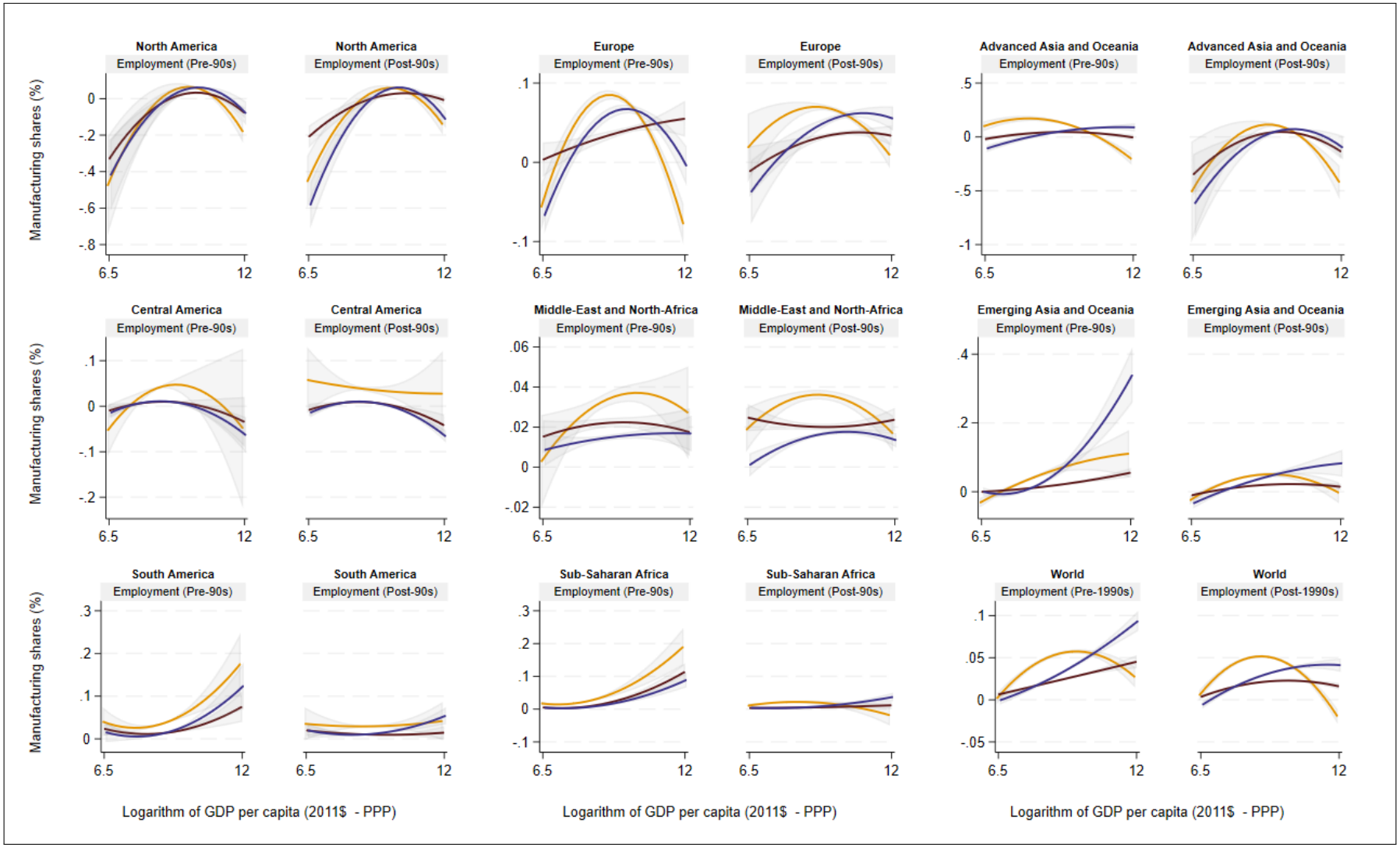


Figure 12: Simulated manufacturing employment shares at different income levels and before/after the 1990s. By regions and technological groups.

Notes: Projected employment shares before and after the 1990s across technological groups and regions. The yellow curve corresponds to the projected employment shares in low-tech activities, the brown curve to mid-tech activities, and the blue curve to high-tech activities. All other observations and remarks provided in the previous note apply equally to this figure.

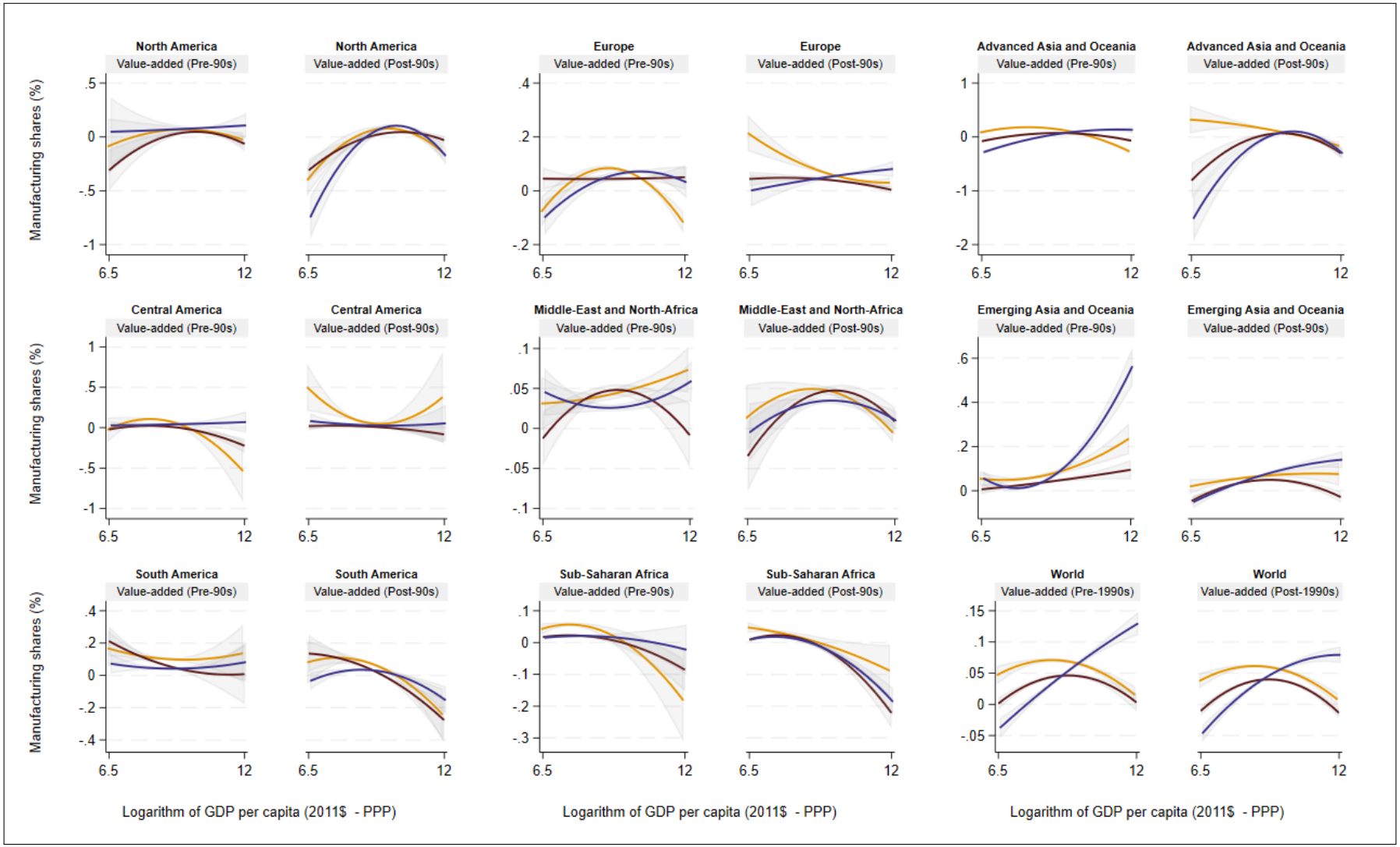


Figure 13: Simulated manufacturing value-added shares at different income levels and before/after the 1990s. By regions and technological groups.

Notes: Projected value-added shares before and after the 1990s across technological groups and regions. The yellow curve corresponds to the projected value-added shares of low-tech activities, the brown curve to mid-tech activities, and the blue curve to high-tech activities. All other observations and remarks provided in the previous note apply equally to this figure.

particularly those reflecting pre-1990s projections. This finding is somewhat consistent with the previous analysis with decade dummies highlighting industrialisation spikes in some parts of the world. Second, when examining the results for the full sample (bottom right corner), the post-1990s curve shifts toward the origin relative to the pre-1990s simulations. In other words, the peak and the turning point occur at lower levels than in the pre-1990s. This evidence aligns with findings from Rodrik (2016), even when increasing the number of countries in the sample. Third, except for specific cases, all regions appear to experience a flattening of their curves after 1990 compared to the earlier period. Sometimes, this flattening accompanies a curve shift toward the origin, but this is not automatic. In other words, depending on the regions, the turning point or the manufacturing peak (or both) have declined relative to the pre-1990s projections. The magnitude of these shifts is also region-specific, with advanced economies typically exhibiting a more moderate change (Europe, North America and Advanced Asia) than emerging regions (Emerging Asia, Sub-Saharan Africa, South America). One particularly notable pattern emerges in Emerging Asia, where the post-1990s curve has reversed from a U-shape to a humped shape relationship, suggesting that the manufacturing sector has lost momentum. This contrasts with Sub-Saharan Africa, South America, and MENA, where the overall shape of the curve remains unchanged (i.e., it retains an inverted U-shape), yet a comparable flattening is still observed in these regions. Overall, these findings support the conclusion that most developing countries are operating within a narrower window to reap the gains associated with industrialisation.

Breaking down these projections by technological groups (i.e., Figures 12 and 13) helps explain the patterns observed in Figure 11. Crucially, it does not suggest that any particular technological group is more resilient to this time-dependent pattern of structural change. Instead, all groups appear to experience a flattening of their curves when comparing pre- and post-1990s simulated shares and turning points. For instance, in the worldwide projections, the shift toward the origin of the aggregated curves has been primarily driven by the sharp decline in high-tech activities. A similar pattern emerges for Emerging Asia, where all three technological groups transition from a U-shape relationship before the 1990s to a more pronounced hump-shape afterwards. Once again, the sharp decrease in all the turning points, especially the one of high-tech activities, suggests that these sectors are not spared from premature deindustrialisation.

5 Cross-regional trends in manufacturing shares (internal)

The previous section focused on industrialisation and deindustrialisation trends by looking at the percentage point change in the share of manufacturing employment or value-added in the overall economy, i.e., over the total labour force or GDP. Although this approach captures the relative change in the importance of manufacturing and certain technological groups within the broader economic structure, it does not account

for the internal composition of the manufacturing sector or its evolution over time. Specifically, a given group of industries (e.g., low-tech activities) may experience a reduction in its share relative to economywide indicators while simultaneously expanding internally which might raises some potential concerns in the case of a premature deindustrialisation. This section thus aims to explore these internal reconfigurations patterns across regions. First, we present a small theoretical framework to understand the conditions under which a given manufacturing group could grow internally while decreasing externaly (and vice versa). Then, we provide a descriptive analysis of the internal composition changes across regions.

5.1 Small framework considering employment shares

Let L_t denote the total labour force in a given country at time t. For the sake of simplicity, let's consider that the economy is composed by two sectors: manufacturing (m) and non-manufacturing (r). Let $l_{m,t}$ represent the number of workers employed in manufacturing and $l_{r,t}$ those engaged in non-manufacturing. For the purpose of the framework, we also define $l_{m_i,t}$ that denotes the amount of labour engaged in each manufacturing sub-sector i. Hence, we have:

$$L_t = l_{m,t} + l_{r,t} = \sum_{i=1}^{N} l_{m_i,t} + l_{r,t}.$$

To assess the relative weight of each sector in the labour force, we define the employment shares as:

$$s_{r,t} = \frac{l_{r,t}}{L_t}, \quad s_{m,t} = \frac{l_{m,t}}{L_t}.$$

By definition, the employment share of manufacturing relative to total employment can be further decomposed among the N manufacturing sub-sectors, each accounting for its relative weight in the total labour force:

$$s_{m,t} = \sum_{i=1}^{N} s_{m_i,t} = \sum_{i=1}^{N} \frac{l_{m_i,t}}{L_t}.$$

For the purpose of the model, we also define $\tilde{s}_{m_i,t}$ as the intra-manufacturing share (or "internal share") of each sub-sector i, representing its relative size within the manufacturing sector:

$$\tilde{s}_{m_i,t} = \frac{l_{m_i,t}}{l_{m,t}}, \quad \text{where} \quad l_{m,t} = \sum_{i=1}^{N} l_{m_i,t}.$$

Given that the framework aims to explicit under which circumstances industrial dynamics and manufacturing reconfiguration cohabit, let's consider a discrete change from t to $t+1$. As a result, sectoral and labour force growth rates can be expressed as follows:

$$g_{L,t} = \frac{L_{t+1} - L_t}{L_t}, \quad g_{m,t} = \frac{l_{m,t+1} - l_{m,t}}{l_{m,t}}, \quad g_{r,t} = \frac{l_{r,t+1} - l_{r,t}}{l_{r,t}}.$$

By construction, the labour force growth can also be viewed as a simple weighted average of the sectoral employment growth rates, with weights given by the sectoral shares. The same logic applies to the growth rate of manufacturing employment which can be seen as the weighted average of the growth rates of each sub-sector. Hence, we have:

$$g_{L,t} = s_{m,t} \cdot g_{m,t} + s_{r,t} \cdot g_{r,t}, \quad \text{where} \quad g_{m,t} = \sum_{i=1}^{N} \tilde{s}_{m_i,t} \cdot g_{m_i,t}.$$

Having expressed growth rates, future labour quantities can be derived as:

$$L_{t+1} = L_t(1 + g_{L,t}), \quad l_{m,t+1} = l_{m,t}(1 + g_{m,t}), \quad l_{r,t+1} = l_{r,t}(1 + g_{r,t}).$$

As a result, when focusing on the variations in manufacturing employment shares over the labour force (between t and $t+1$), we end up with the following relation. It depends on the growth rates of manufacturing employment and the total labour force:

$$\Delta s_{m,t} = s_{m,t} \left[\frac{g_{m,t} - g_{L,t}}{1 + g_{L,t}} \right] \quad \text{where} \quad g_{m,t} = \sum_{i}^{N} \tilde{s}_{m_i,t} \cdot g_{m_i,t}. \tag{2}$$

Conversely, when focusing on the intra-variations within manufacturing, we end up with a relation that logically mirrors the previous one:

$$\Delta \tilde{s}_{m_i,t} = \tilde{s}_{m_i,t} \left[\frac{g_{m_i,t} - g_{m,t}}{1 + g_{m,t}} \right]. \tag{3}$$

As a result, according to equation 2, industrialisation classically occurs when $\Delta s_{m,t} > 0$, requiring the growth rate of manufacturing employment to exceed the growth rate of the labour force, i.e., $g_{m,t} > g_{L,t}$. By extension, this relationship also suggests that industrialisation could still be observed even in cases where manufacturing employment and labour force growth rates are contracting, provided that the decline in manufacturing employment occurs slower than the decline in the total labour force. Conversely, a deindustrialising occurs ($\Delta s_{m,t} < 0$) when manufacturing grows slower than the economy-wide average ($g_{m,t} < g_{L,t}$). Once again, this might happen even if the manufacturing sector is expanding in absolute terms, provided it growing at a lower growth rate than the total labour force.

From equation 3, we can derive the conditions under which a sub-sector i gains internal weight within the manufacturing sector. This requires $\Delta \tilde{s}_{m_i,t} > 0$, which implies that $g_{m_i,t} > g_{m,t}$. In other words, a sub-sector is industrialising when its growth rate is higher than the average growth rate of the manufacturing sector. On the opposite, a sub-sector is deindustrialising when $\Delta \tilde{s}_{m_i,t} < 0$, meaning that $g_{m_i,t} < g_{m,t}$. This can happen even if the sub-sector is expanding in absolute terms, provided it is growing at a lower growth rate than the manufacturing sector as a whole.

We can derive four possible scenarios when mixing conclusions from equations 2 and 3. First, a given sub-sector or group of activities i can experience a faster employment growth rate than the manufacturing sector and the labour force, implying that these

activities are industrialising relative to the broad economic structure and gaining internal weight. On the opposite, if a sub-sector faces a negative growth rate relative to the manufacturing sector and the labour force, it is deindustrialising and losing internal weight. In these two cases, the employment growth rate of a given manufacturing sub-sectors ($g_{m_i,t}$) has to be either strictly lower or higher than the overall manufacturing employment growth rate ($g_{m,t}$) and the total labour growth rate ($g_{L,t}$). Intuitively, these situations might cover most cases, as one would expect that when $g_{m_i,t}$ outperforms the total labour force growth, it also likely exceeds the overall manufacturing growth. The same reasoning applies to a sub-sector underperforming. These two cases can be formally written as:

$$\begin{aligned} &\text{Situation 1:} \quad g_{m_i,t} < g_{m,t} < g_{L,t} \\ &\text{Situation 2:} \quad g_{m_i,t} > g_{m,t} > g_{L,t} \end{aligned} \tag{4}$$

However, two other scenarios might also occur as the growth rate of a given manufacturing sub-sectors (m_i, t) might lie exactly *in-between* the growth rate of manufacturing as a whole – g_{m_t} — and the entire labour force — g_{L_t}. If the growth rate of a given sub-sector i is higher than the manufacturing sector growth rate but lower than the overall labour force growth rate, these activities are gaining internal weight but deindustrialising relative to the broad economic structure. Conversely, if the growth rate of a given sub-sector i is higher than the overall labour force growth rate but lower than the manufacturing sector growth rate, this group is industrialising relative to the broad economic structure but losing internal weight likely because another subsector outperforms. These two last cases can be formally written as:

$$\begin{aligned} &\text{Situation 3:} \quad g_{m,t} > g_{m_i,t} > g_{L,t} \\ &\text{Situation 4:} \quad g_{m,t} < g_{m_i,t} < g_{L,t} \end{aligned} \tag{5}$$

Overall, this small framework provides a simple way to understand the conditions under which a given manufacturing sub-sector or group of activities could grow internally while decreasing relative to the total labour force (and vice versa). Since the same logic applies to value-added, previously estimated manufacturing trends may conceal shifts in the composition of manufacturing that occur independently and are worth exploring.

5.2 Empirical results

To explore manufacturing reconfigurations over time, we rely on the same model as in the previous section to make our results comparable (i.e., Equations 1). Dependent variables account now for the manufacturing share in a given technological group over total manufacturing employment and total value added. Results are presented in Figures 14 and 15, where the estimated coefficients per decade are plotted alongside their respective 95% confidence interval. For ease of interpretation, we exclude Post-Soviet States and West Indies and Other Islands from the graphical representation, but

present results for the overall sample in the bottom right corner. All the coefficients are reported in Appendix in Tables A15, A16, A17, A18, A19, A20, A21, A22 and A23

• Fact 5: Worldwide, the composition of the manufacturing sector has remained relatively stable regarding employment shares. However, low-tech activities account for way less output nowadays than in the sixties. It has benefited mid-tech sub-sectors.

The average country in the sample experienced a slight increase in employment shares for middle- and high-tech industries during the first two decades, relative to the 1960s. However, these shares returned to earlier levels, with high-tech sub-sectors slightly declining from the 2000s onwards. Yet, one would note that despites this minor changes the composition of manufacturing employment has remained quite stable over the decades relative to the 1960s. In contrast, significant internal shifts occurred in value-added shares: low-tech industries, despite stable employment shares since the 1980s, lost considerable weight in total manufacturing value-added, while middle-tech industries gained significantly in value-added shares despite little change in their employment shares.

• Fact 6: Despite having deindustrialised, Europe and North America experience few internal changes in employment. Yet, middle-tech activities gains internal weight in VA shares in Europe at the expense of low-tech actitivies.

Europe and North America show few significant changes in their manufacturing employment configuration. The only notable change occurs in Europe, where the share of employment in technology-intensive industries declines from the 2000s onwards, benefiting low-tech industries. However, value-added shares reveal more dynamic shifts. In North America, initial changes lack persistence over decades, while in Europe, a clear reconfiguration has been ongoing since the 1970s, favouring middle-tech industries at the expense of low-tech ones. For instance, estimates shows that during the 2010s, the share of manufacturing value-added in middle-tech activities was 7.4 percentage points higher than in the 1960s, while the share in low-tech industries had fallen by 8.9 percentage points.

• Fact 7: South America and Central America face two differents patterns, with South America experiencing a clear reconfiguration towards low-tech activities in terms of employment shares.

In Central America, in terms of employment, the manufacturing sector has reconfigured very recently (2010s) towards middle and high-tech industries at the expense of low-tech ones. This decline in low-tech employment shares is mirrored by a similar decline in value-added shares, primarily benefiting high-tech activities (in 1970s, 1980s, 1990s)

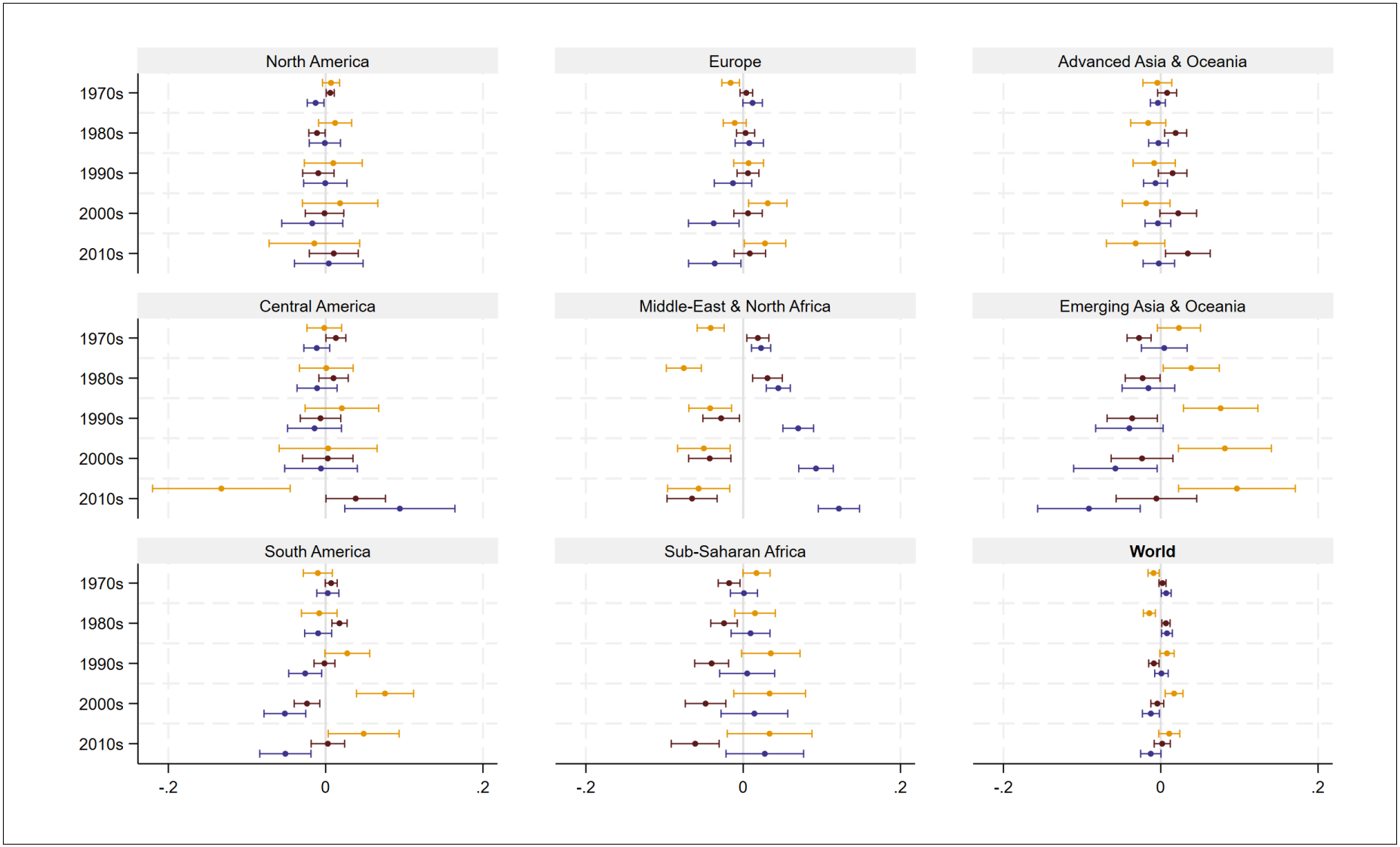


Figure 14: Recomposition trends in employment shares relative to the sixties (% pts), by regions and technological groups.

Notes: Yellow estimates represent the variation in the internal share of low-tech manufacturing employment over total manufacturing employment relative to its level in the 1960s — holding constant other covariates. Red estimates correspond to middle-tech activities, while blue ones reflect changes in high-tech sub-sectors. Coefficients are estimated from Equation 1 along with a 95% confidence interval. All the coefficients are reported in Appendix in Tables A15, A16, A17, A18 and A19.

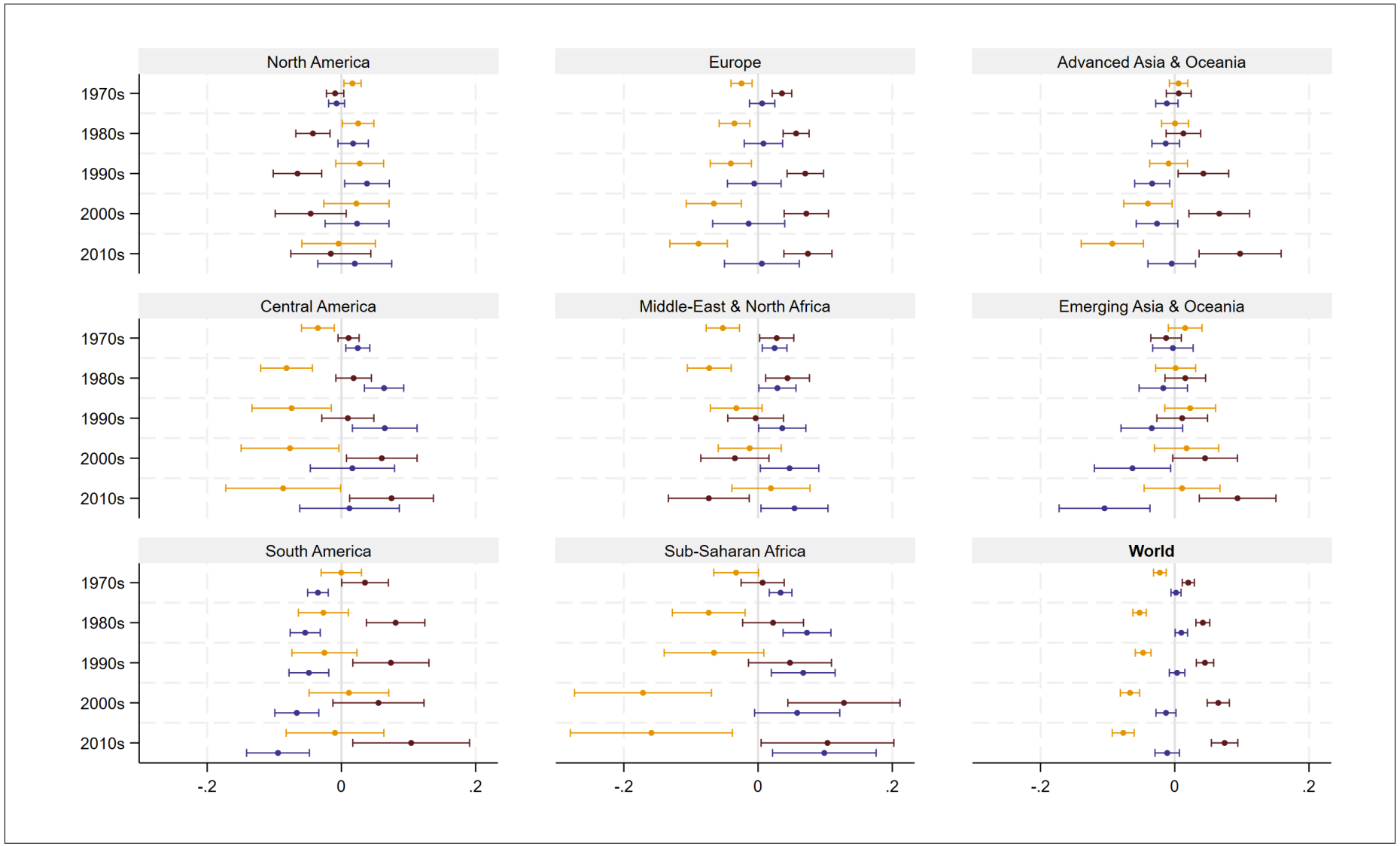


Figure 15: Reconfiguration trends in value added shares relative to the sixties (% pts), by regions and technological groups.

Notes: Yellow estimates represent the variation in the internal share of low-tech manufacturing value-added over total manufacturing GDP relative to its level in the 1960s — holding constant other covariates. Red estimates correspond to middle-tech activities, while blue ones reflect changes in high-tech sub-sectors. Coefficients are estimated from Equation 1 along with a 95% confidence interval. All the coefficients are reported in Appendix in Tables A15, A20, A21, A22 and A23.

and then middle-tech ones (2000s, 2010s). In other words, middle and high-tech sub-sectors account for more employment and larger value-added shares than in the past — this shift being at the expense of low-tech sectors. Interestingly, the pattern experienced by South America is the exact opposite, even though both regions were facing a "twin" deindustrialisation led by low-tech activities. Indeed, the region has shifted back toward low-tech activities since the 1990s, with employment shares in these industries being 7.6 and 4.8 percentage points higher in the 2000s and 2010s, respectively, compared to the 1960s. This shift is at the expense of high-tech activities whose employment shares were 5.1 percentage points lower in the 2010s than in the sixties. In terms of value-added, high-tech activities have experienced a significant decrease in their internal weight, while the increased employment shares in low-tech industries have not translated into higher value-added shares. Say differently, even though South America has faced a deindustrialisation led by low-tech sectors, these activities nowadays account internally for much more employment than during the sixties, but this has not translated into higher value-added shares relative to the sixties. Additionally, high-tech sectors significantly account for fewer employees and less value-added shares than during the industrialisation era fifty years ago.

• Fact 8: Advanced Asia experienced significant structural transformations within its manufacturing sector, shifting from low-tech to mid-tech activities. In Emerging Asia, employment shares strongly shifted from high-tech to low-tech.

As a reminder, Advanced Asian countries were facing significant industrialisation spikes with respect to manufacturing employment share during nearly all the decades except the 1990s (Figure 5) — a phenomenon primarily led by low-tech activities followed by the middle-tech ones (Figure 8). When looking at the internal reconfiguration of the region, not much changes occurred in employment, except during the 1980s and 2010s, when middle-tech activities succeeded in accounting for more labour shares than during the sixties. However, in terms of value-added shares, these middle-tech activities have considerably gained in internal weight, with this shift being at the expense of low-tech manufacturing sub-sectors. This might suggest that the region experience structural transformations within the manufacturing sector, with middle-tech activities gaining internal weight at the expense of low-tech ones.

Interestingly, the pattern of Emerging Asia & Oceania is quite different. In short, this country group experienced industrialisation spikes in terms of employment shares during the first four decades, episodes mostly led by low-tech sectors (Figure 8). This pattern is reflected very clearly in the composition of their manufacturing sector, as low-tech sub-sectors account for a larger share of employees than in the past. It happens at the expense of high-tech sectors accounting for a smaller employment share than during the sixties. An average country in the region had a manufacturing employment share in low-tech subsectors in the 2010s that was about 9.7 percentage points higher than during the 1960s. However, despite this great increase, the share of total manufacturing

value added accounted for by these activities has remained stable over the decades. In fact, very few changes have occurred when looking at how internal value-added shares have evolved. The only exception being middle-tech industries during the last two decades that have succeeded in increasing their shares at the expense of high-tech sub-sectors.

• Fact 9: Middle-East and Sub-Saharan Africa experienced significant structural transformation withtin their manufacturing sector.

While there was no significant "twin" deindustrialisation (nor industrialisation) in Middle-East & North Africa (MENA), the manufacturing sector's composition has drastically changed over the decades. Compared to the sixties, high-tech accounts for much more employment than in the past, significantly reducing the labour share absorbed by both low-tech and middle-tech activities. The manufacturing employment share in high-tech sub-sectors during the 2010s was about 12.2 percentage points higher than during the 1960s, while low-tech and middle-tech activities respective shares were around 6.5 percentage points and 5.7 percentage points lower than fifty years ago. This shift towards high-tech sectors is logically mirrored by an increase in their share of total manufacturing value added — +7.3 percentage points in the 2010s compared to the 1960s. This increase in value-added shares from high-tech initially came at the expense of low-tech (1970s, 1980s, 1990s) but seems to be nowadays more detrimental to middle-tech activities (2010s).

Lastly, the Sub-Saharan African region faces few changes in its manufacturing sector's internal composition, especially when looking at how labour shares evolve. The "twin" industrialisation during the 1970s — mostly led by low-tech activities — seems to slightly affect the share of these activities in the 1970s such that they accounted for more employees than in the 1960s. Nevertheless, this only lasts for a single decade. The only significant and persistent reconfiguration over time concerns middle-tech activities whose employment shares decrease continuously. In the 2010s, employment share in middle-tech sub-sectors during the 2010s was about 6.1 percentage points lower than during the 1960s. Yet, in terms of value-added shares, the reconfiguration is striking suggesting structural transformation. While middle-tech accounted for less labour than before, they tend to produce a higher value-added than during the 1960s, so as high-tech activities (whose employment shares variation were insignificant). This comes at the expense of low-tech activities, whose shares were around 15.9 percentages points lower in the 2010s than in the 1960s.

• Fact 10: Simulated internal manufacturing shares at different levels of income per capita show that only South America and, to a lesser extent, Central America would remain predominantly dominated by low-tech industries at high stages of development. In all other regions, including Sub-Saharan Africa and the MENA countries, low-tech give way to either mid-tech or high-tech at later stages of development.

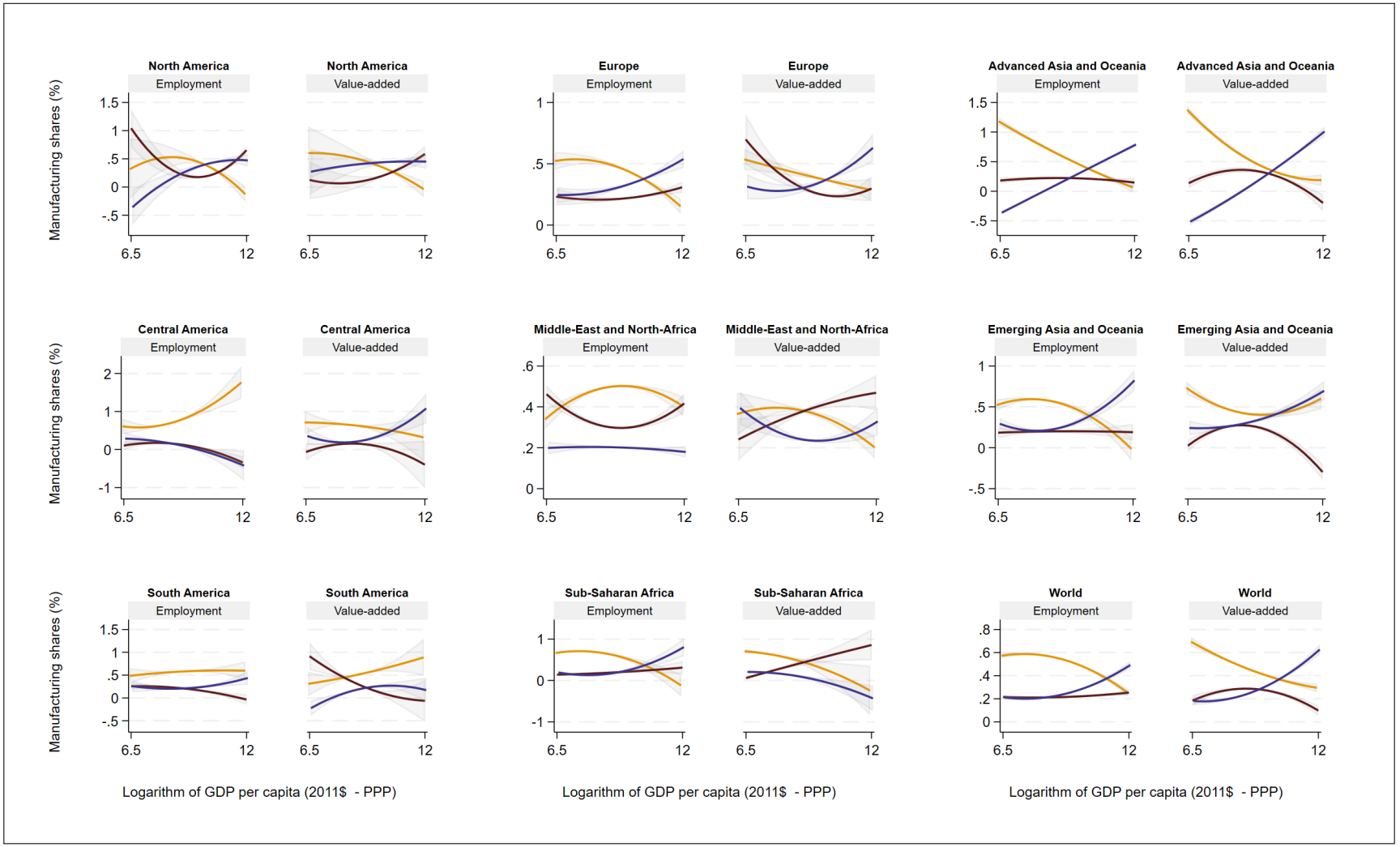


Figure 16: Simulated internal manufacturing shares at different income levels, by technological groups and regions.

Notes: Margins are plotted using the estimated coefficients from each specification in Tables A15, A16, A17, A18, A19, A20, A21, A22 and A23. The yellow curve corresponds to the projected internal manufacturing shares of low-tech activities, the brown curve to mid-tech activities, and the blue curve to high-tech activities. The 95% confidence interval is represented by the light grey shading. Refer to Table A2 for the list of countries included in each region, and to Table 1 for the list of sub-sectors included in each technological group.

Another way to observe these changes within manufacturing is to simulate the internal shares of each technological group at different levels of income per capita. Margins are presented in Figure 16. Overall, all regions except South America and, to a lesser extent, Central America would experience a shift from low-tech to either mid-tech or high-tech activities at later stages of development. This means that, when extrapolating current dynamics, low-tech activities in South America would still account for the largest share of manufacturing employment and value-added at high levels of income per capita. The same pattern is observed in Central America in terms of employment shares (although margins are estimated beyond the scope of our actual data range), but not in terms of value-added, where high-tech activities would ultimately account for the largest share at high levels of income per capita. Combined with results from the previous section, this raises questions about the ability of South American countries to converge towards the standards of more advanced economies.

By contrast, an average country in the remaining regions will ultimately see its manufacturing sector undergo significant internal transformations, with low-tech activities losing their initial dominant position in favour of either mid-tech or high-tech activities. In Sub-Saharan Africa, low-tech activities are projected to decline, giving way to high-tech in terms of employment, and to mid-tech in terms of value-added at later stages of development. In the MENA region, the loss of internal weight would be in favour of mid-tech activities in both employment and value-added shares, although low-tech would still account for a relatively high share of employment compared to other regions. In Asia, the dominance of high-tech activities at later stages of development is clear, regardless of the outcome considered. Interestingly, low-tech activities in total manufacturing output would still account for a relatively high share in Emerging Asia, which might reflect the current prominence of the textile sector in these countries. Finally, in Europe, high-tech activities are also expected to prevail in the long run, while not much can be said about North America, as confidence intervals are quite wide, though they tend to indicate a higher share in mid-tech or high-tech activities at later stages of development.

6 Country level analysis (external and internal view)

We conclude this paper with a small country-level analysis combining the last two sections to deepen our understanding of structural change in manufacturing. Two main reasons motivate adopting this perspective. First, it allows us to explore the heterogeneity underlying the previous regional estimates, which may account for some observed patterns. Second, countries differ significantly in skill availability and natural resource endowment, so exploiting these contextual nuances for robust conclusions and policy implications is crucial. To this end, we adjust Equation 1 by introducing an interaction term (δ) between each country and decades dummy such that we can estimate the average marginal effects of each country in the sample. The dependent variable alternates between two perspectives to capture both *external*

and *internal* variations in specific manufacturing groups across countries. Precisely, $Man_{i,t}$ is measured either as the share of each technological group relative to the total labour force and GDP (i.e., *external* change) or as the share of each group relative to total manufacturing employment and output (i.e., *internal* change). Apart from these adjustments, the model controls for the same confounding factors ($X_{i,t}$) as in the previous sections and is estimated using OLS with heteroskedasticity-robust standard errors. The model can be expressed as follows:

$$Man_{i,t} = \alpha \; + \; X_{i,t}\beta + \sum_{i}\sum_{T}\delta_{i,T}\left(Decade_{T} \times C_{i}\right) + \; \varepsilon_{i,t} \tag{6}$$

Average marginals following the interaction are presented in Figures 17 and 18. Note that some caution is warranted when interpreting these coefficients as we acknowledge that the statistical power of the estimates may be limited by the constrained number of observations. Nonetheless, the goal is to provide only simple descriptive evidence highlighting the extent to which each country, within the same time span, followed distinct trajectories in the process of structural change in manufacturing. We thus plot the average marginal effects for each country in the sample for the last decade, such that δ represents the *external* or *internal* variation in manufacturing employment and value-added shares of a given technological group in the 2010s, relative to itself in the 1960s (the excluded decade). Given that the baseline corresponds to the sixties, note that all countries without data prior to 1969 are excluded from the analysis. The same applies if a given country does not have any data points in the 2010s. As such, the results are not entirely comparable with those from the two previous sections, which also captured all countries joining and leaving the sample. Although different approaches could be considered to maximise the number of countries included, the logic of retaining only countries with data points across all decades ensures that countries are compared over the same time span.

Margins are plotted in two quadrant plots in Figures 17 and 18. Each quadrant represents a different combination of *external* and *internal* variation. The first quadrant (top right) represents countries that have experienced both *external* and *internal* growth in a given technological group. The second quadrant (top left) represents industries in countries that have experienced *external* growth but *internal* decline, while the third quadrant (bottom left) represents countries that have experienced both *external* and *internal* decline. Finally, the fourth quadrant (bottom right) represents countries that have experienced *internal* growth but *external* decline. These four scenarios correspond to the four cases discussed in the theoretical framework (i.e., Equations 4 and 5). The shape of the dots represents a given technological group, while the colour of the dots indicates the region to which the country belongs. Note that all margins for each country and technological group can be found in the Appendix, in Table A24.

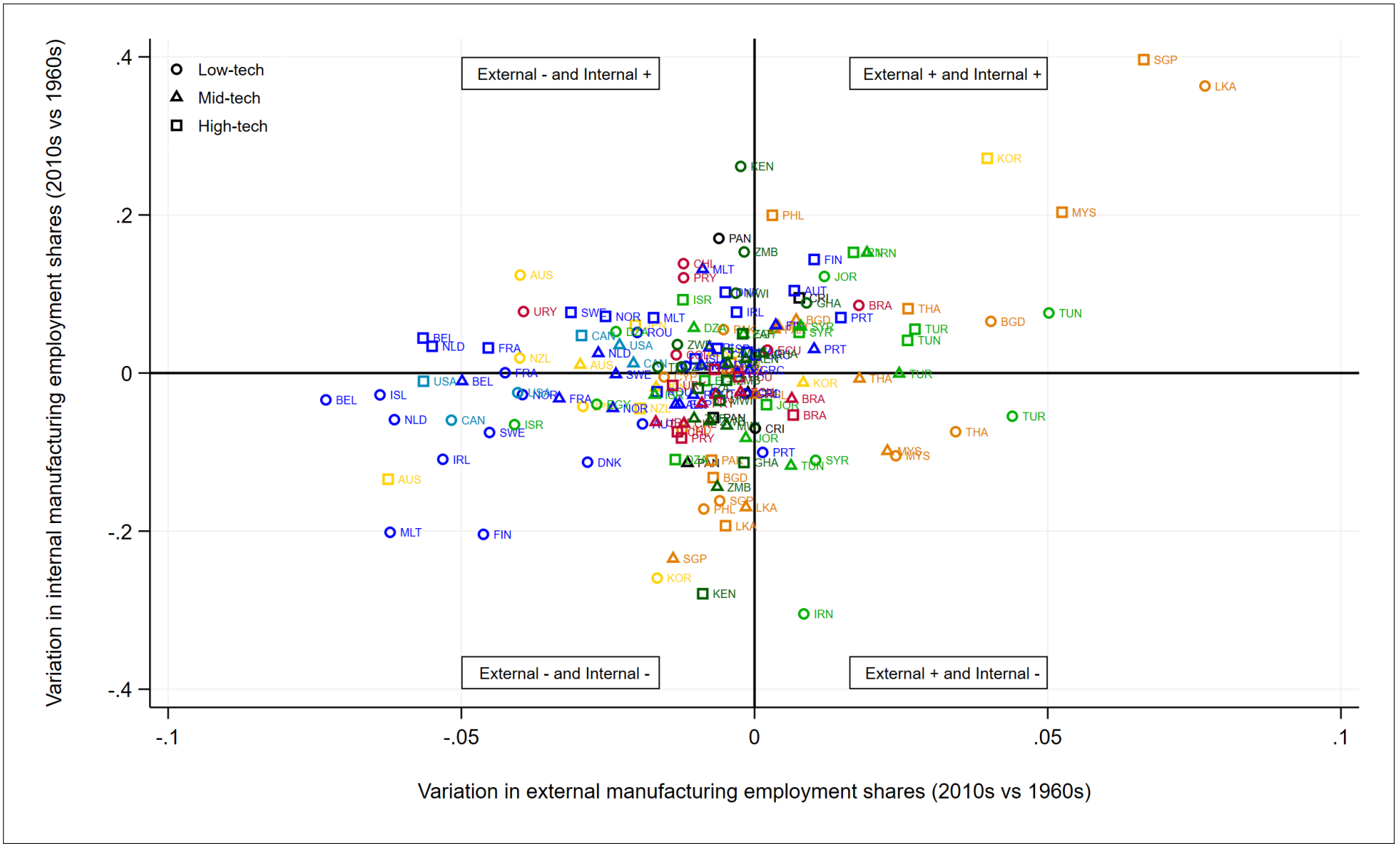


Figure 17: Quadrant plot showing the external and internal variation in manufacturing employment shares (% pts), by country.

Notes: Based on Equation 6. All the average marginal effects are calculated at the mean of the covariates. Margins are available in Table A24.

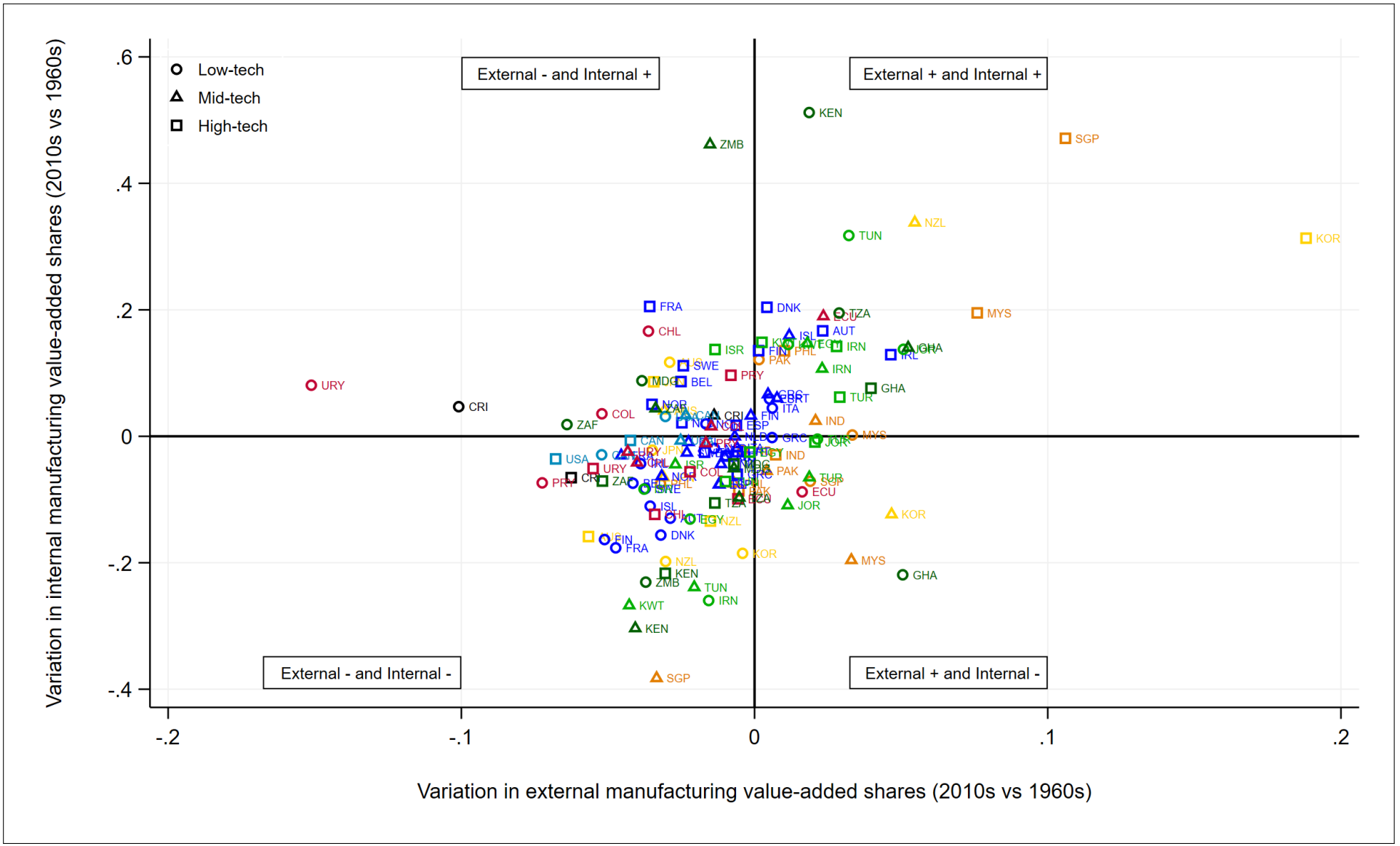


Figure 18: Quadrant plot showing the external and internal variation in manufacturing value-added shares (% pts), by country.

Notes: Based on Equation 6. All the average marginal effects are calculated at the mean of the covariates. Margins are available in Table A24.

• Fact 11: There are as many patterns of structural change in manufacturing as there are countries, with dots appearing in all four quadrants. South Korea is a clear example of a successful shift from low-tech to high-tech industries from both internal and external perspectives, while most South American countries exhibit a reversal of the structural change process.

Several comments could be made depending on each country's cases. Yet, we will not go into details here, as the goal is to illustrate the diversity of structural change patterns in manufacturing and to discuss only some striking results. First, all four quadrants are indeed filled with dots showing that all the four scenarios discussed in the theoretical framework have occurred. In other words, countries can experience different combinations of external and internal variation in their manufacturing sectors, even though some situations are more common than others. Second, the cases where manufacturing follows a strictly linear development path — with low-tech industries declining both internally and externally, and high-tech industries rising both internally and externally over time — are relatively rare. When such patterns appear, they are mostly confined to Asian economies and, to a lesser extent, a subset of MENA and European countries. South Korea is perhaps one of the most striking cases, whether examining employment or value-added shares. In the 2010s, employment shares in low-tech activities relative to the total labour force (external change) were 1.7 percentage points lower than in the 1960s. Over the same period, low-tech activities accounted for 25 percentage points less of total manufacturing employment (internal change) than in the 1960s. Simultaneously, employment shares in high-tech activities relative to the total labour force were 4 percentage points higher in the 2010s than in the 1960s, while, internally, they accounted for 31.3 percentage points more of total manufacturing employment. Similar dynamics are observed when examining South Korea's value-added shares.

By contrast, several countries in South America (marked in red) have exhibited the opposite pattern: their external shares across all technological groups have decreased, while low-tech industries have increased their internal shares in the 2010s relative to the 1960s. In terms of employment shares, this reversal of the structural change process is striking in Chile, Paraguay, Uruguay, and Colombia. In terms of value-added, Chile, Colombia, and Uruguay still conform to this scenario, while Paraguay undergoes an internal reconfiguration in favour of high-tech activities despite their external shares declining. The two exceptions in this region appear to be Brazil and, to a lesser extent, Ecuador, which seem to have industrialised across most technological groups relative to the 1960s. However, once again, internal gains mostly benefit low-tech industries, at least in terms of employment shares. Finally, in Europe (marked in blue), there is considerable heterogeneity within the region, making it difficult to identify a single pattern when examining value-added shares. Yet in terms of employment, one pattern is striking: every technological group tends to decrease externally, while internal reconfiguration is strongly in favour of high-tech activities — a pattern somewhat expected for advanced economies. Some cases diverge, such as

Portugal, which experiences industrialisation in employment terms driven by high-tech sectors, along with an internal shift in their favour. Yet this may be partially explained by the fact that we fixed the sample to the same period while mixing countries that began with very different levels of industrialisation and GDP per capita. Overall, this evidence highlights the diversity of trajectories across countries and regions, and reaffirms the success of some Asian countries, even when considering the internal dimension. Conversely, some patterns observed in South America are concerning, as they point to a reversal of the expected structural change in manufacturing — that is signs of deindustrialisation combined with an internal reallocation towards lower-tech activities.

7 Conclusion

This paper sets out to investigate the evolution of manufacturing trends across a broad sample of countries from 1963 to 2018, with a particular focus on whether recent deindustrialisation is both widespread and premature, and on how technological composition within manufacturing may shape these trends. Relying on a newly harmonised dataset, the study combines country-level evidence with a sub-sectoral perspective to capture both the *external* (relative to the whole economy) and *internal* (relative to total manufacturing) industrial dynamics of low-tech, mid-tech, and high-tech activities. Its broad coverage and disaggregated lens synthesise fifty years of structural change in manufacturing and constitute one of the study's main contributions.

Overall, our main findings suggest that deindustrialisation has intensified worldwide, with developing countries generally experiencing lower peaks in manufacturing shares compared to developed economies. However, the evolution of manufacturing is markedly heterogeneous: while some regions, such as Europe and North America, exhibit pronounced declines driven by a fall in high-tech sub-sectors, many Asian economies have sustained industrialisation through continued growth in low- and mid-tech manufacturing — albeit with substantial variation in turning points and peak shares across technological groups. In contrast, South America has experienced the most rapid deindustrialisation. However, focusing exclusively on *external* manufacturing trends conceals important *internal* rebalancing, revealing that some developing regions, such as Sub-Saharan Africa or the Middle East and North Africa, have been able to undergo structural transformation.

Taken together, these findings suggest that premature deindustrialisation remains a genuine concern that does not spare specific industrial groups. However, the heterogeneity observed across regions and technological groups underscores the importance of examining both the overall scale of industrialisation and its composition. By distinguishing among different manufacturing activities and comparing shifts both within manufacturing and relative to the broader economy, this study highlights the complex pathways countries experience as they move through stages of industrial development. The results further suggest that policymakers should tailor industrial strategies to each

region's specific pattern to foster more resilient and inclusive manufacturing growth. While this synthesis likely raises more questions than it answers, it points to the need for further research into the drivers of these divergent patterns, as well as a deeper investigation into the consequences of each of the scenarios discussed. This is particularly true for South America, whose trajectory points to a reversal of the expected structural change in manufacturing.

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8 Appendix

Table A1: Employment and Value-Added Series Summary

		Employment			Value-Added		
Country	**ISO**	Time Span	Min	Max	Time Span	Min	Max
Albania	ALB	1988-2018	7	11	1985-2018	1	11
Algeria	DZA	1967-2017	12	12	1967-1996	7	12
Angola	AGO	1970-2018	11	12	No Data	No Data	No Data
Argentina	ARG	1963-2002	12	12	1984-2002	12	12
Armenia	ARM	1998-2018	10	11	2004-2018	11	11
Australia	AUS	1963-2018	12	12	1963-2018	12	12
Austria	AUT	1963-2018	12	12	1963-2018	11	12
Azerbaijan	AZE	1990-2018	12	12	2001-2018	12	12
Bahrain	BHR	1992-2018	7	7	2001-2018	8	11
Bangladesh	BGD	1967-2018	12	12	2012-2018	12	12
Barbados	BRB	1970-1997	9	10	1970-1997	9	10
Belarus	BLR	2005-2018	10	12	2005-2018	12	12
Belgium	BEL	1963-2018	12	12	1963-2018	12	12
Benin	BEN	1975-1981	8	12	1974-1981	8	12
Bolivia (Plurinational State of)	BOL	1970-2018	12	12	1970-2018	11	12
Bosnia and Herzegovina	BIH	1994-2018	10	12	2010-2018	12	12

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Country	ISO	Employment			Value-Added		
		Time Span	Min	Max	Time Span	Min	Max
Botswana	BWA	1981-2018	6	11	1992-2018	2	9
Brazil	BRA	1963-2018	10	12	1990-2018	10	12
Bulgaria	BGR	1970-2018	12	12	1991-2018	6	12
Burundi	BDI	1980-2015	7	7	2007-2015	7	7
Cabo Verde	CPV	2012-2018	10	11	2016-2018	8	11
Cambodia	KHM	1985-2000	11	11	1993-2000	9	11
Cameroon	CMR	1970-2008	11	12	1970-2008	9	12
Canada	CAN	1963-2018	12	12	1963-2018	12	12
Central African Republic	CAF	1973-1993	5	12	1973-1993	4	12
Chile	CHL	1963-2018	12	12	1963-2018	10	12
China	CHN	1977-2018	12	12	1980-2018	12	12
China, Hong Kong SAR	HKG	1973-2018	8	12	1973-2018	8	12
China, Taiwan Province	TWN	1973-2018	12	12	1973-2018	12	12
Colombia	COL	1963-2018	12	12	1963-2018	12	12
Congo	COG	1968-1988	8	10	1968-1988	8	10
Costa Rica	CRI	1963-2018	11	12	1963-2018	11	11
Croatia	HRV	1990-2018	12	12	1997-2018	9	12
Cuba	CUB	1976-1989	9	9	1976-1989	9	9
Cyprus	CYP	1963-2018	11	12	1963-2018	11	12
Czechia	CZE	1990-2018	11	12	1995-2018	11	12
Denmark	DNK	1963-2018	11	12	1963-2018	11	12

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Country	ISO	Employment			Value-Added		
		Time Span	Min	Max	Time Span	Min	Max
Dominican Republic	DOM	1963-1997	10	12	1963-1984	10	12
Ecuador	ECU	1963-2018	11	12	1963-2018	11	12
Egypt	EGY	1964-2018	12	12	1964-2018	12	12
El Salvador	SLV	1965-1998	11	12	1965-1998	11	12
Estonia	EST	1993-2018	12	12	1993-2018	12	12
Eswatini	SWZ	1980-2015	9	12	2011-2011	10	10
Ethiopia	ETH	1990-2015	11	12	1990-2015	11	12
Finland	FIN	1963-2018	11	12	1963-2018	11	12
Former Sudan	SDN	1972-2007	12	12	2001-2001	12	12
France	FRA	1963-2018	10	12	1963-2018	10	12
Gabon	GAB	1980-1995	10	12	1966-1995	9	12
Gambia	GMB	1975-2004	7	12	1975-1995	5	12
Georgia	GEO	1998-2018	12	12	2000-2018	12	12
Germany	DEU	1998-2018	12	12	1998-2018	12	12
Ghana	GHA	1963-2015	9	12	1963-2015	9	12
Greece	GRC	1963-2018	12	12	1963-2018	12	12
Guatemala	GTM	1968-2006	7	12	1968-1988	12	12
Haiti	HTI	1969-1997	9	10	No Data	No Data	No Data
Honduras	HND	1963-1995	10	12	1963-1996	10	12
Hungary	HUN	1968-2018	12	12	1981-2018	12	12
Iceland	ISL	1967-2018	11	12	1968-2018	11	11

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Country	ISO	Employment			Value-Added		
		Time Span	Min	Max	Time Span	Min	Max
India	IND	1963-2018	12	12	1963-2018	12	12
Indonesia	IDN	1970-2018	11	12	1970-2018	11	12
Iran (Islamic Republic of)	IRN	1963-2018	12	12	1963-2018	12	12
Ireland	IRL	1963-2017	9	12	1963-2017	9	12
Israel	ISR	1963-2018	10	11	1963-2018	10	11
Italy	ITA	1967-2018	12	12	1967-2018	12	12
Ivory Coast	CIV	1966-1997	11	12	1965-1988	11	12
Jamaica	JAM	1963-2006	10	12	1963-1996	8	12
Japan	JPN	1963-2018	12	12	1963-2018	12	12
Jordan	JOR	1963-2018	11	12	1963-2018	11	12
Kazakhstan	KAZ	1998-2018	12	12	2009-2018	12	12
Kenya	KEN	1963-2018	12	12	1963-2018	11	12
Kuwait	KWT	1967-2018	11	12	1967-2018	11	12
Kyrgyzstan	KGZ	1992-2018	11	12	1997-2018	12	12
Lao People's Dem Rep	LAO	1999-2017	12	12	1999-2017	12	12
Latvia	LVA	1990-2018	12	12	1993-2018	12	12
Lebanon	LBN	1998-2007	12	12	2007-2007	12	12
Lesotho	LSO	1982-2009	6	7	1980-1985	7	7
Liberia	LBR	1980-1986	6	12	No Data	No Data	No Data
Libya	LBY	1964-1980	7	11	1964-1980	7	11
Lithuania	LTU	1992-2018	11	12	2000-2018	11	12

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Country	ISO	Employment			Value-Added		
		Time Span	Min	Max	Time Span	Min	Max
Luxembourg	LUX	1985-2018	8	12	1985-2018	8	12
Madagascar	MDG	1967-2006	11	12	1967-2018	6	12
Malawi	MWI	1964-2018	6	12	1964-2018	6	12
Malaysia	MYS	1968-2018	12	12	1968-2018	12	12
Malta	MLT	1963-2018	11	11	1963-2018	11	11
Mauritius	MUS	1968-2018	10	11	1968-2018	9	11
Mexico	MEX	1984-2018	12	12	1984-2018	12	12
Mongolia	MNG	2003-2018	11	12	2003-2018	10	12
Montenegro	MNE	2010-2018	11	11	2010-2018	11	11
Morocco	MAR	1976-2018	12	12	1976-2017	6	12
Mozambique	MOZ	1967-2000	11	12	1967-1973	12	12
Myanmar	MMR	1989-2018	7	11	2014-2018	7	10
Namibia	NAM	1994-2018	9	9	2007-2018	8	9
Nepal	NPL	1986-2011	10	12	1986-2018	10	12
Netherlands	NLD	1963-2018	12	12	1963-2018	12	12
New Zealand	NZL	1963-2018	12	12	1963-2018	12	12
Nicaragua	NIC	1980-1985	12	12	1980-1985	12	12
Niger	NER	1999-2018	6	6	1990-2018	2	7
Nigeria	NGA	1963-1996	11	12	1963-1996	11	12
North Macedonia	MKD	1990-2018	12	12	1995-2018	12	12
Norway	NOR	1963-2018	11	12	1963-2018	11	12

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Country	ISO	Employment			Value-Added		
		Time Span	Min	Max	Time Span	Min	Max
Oman	OMN	1993-2018	12	12	1993-2018	12	12
Pakistan	PAK	1963-2018	12	12	1963-2018	12	12
Panama	PAN	1963-2018	10	12	1963-2001	11	12
Paraguay	PRY	1965-2014	11	12	1963-2014	11	12
Peru	PER	1979-2018	12	12	1979-2018	12	12
Philippines	PHL	1963-2018	12	12	1963-2018	12	12
Poland	POL	1970-2018	12	12	1970-2018	12	12
Portugal	PRT	1963-2018	12	12	1963-2018	12	12
Puerto Rico	PRI	2016-2018	9	11	2016-2018	9	11
Qatar	QAT	1986-2018	10	12	1986-2018	10	12
Republic of Korea	KOR	1963-2018	12	12	1963-2018	12	12
Republic of Moldova	MDA	1990-2018	11	12	1993-2018	11	12
Romania	ROU	1963-2018	11	12	1988-2018	11	12
Russian Federation	RUS	1993-2018	12	12	1993-2018	12	12
Rwanda	RWA	1999-2017	9	12	2014-2018	7	7
Saint Lucia	LCA	No Data	No Data	No Data	1991-1997	9	12
Saudi Arabia	SAU	1976-2018	12	12	1989-2018	12	12
Senegal	SEN	1974-2018	11	12	1974-2018	9	12
Serbia	SRB	2013-2018	12	12	2002-2018	12	12
Singapore	SGP	1963-2018	12	12	1963-2018	12	12
Slovakia	SVK	1991-2018	11	12	1993-2018	11	12

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Country	ISO	Employment			Value-Added		
		Time Span	Min	Max	Time Span	Min	Max
Slovenia	SVN	1990-2018	12	12	1990-2018	11	12
South Africa	ZAF	1963-2018	12	12	1963-2018	12	12
Spain	ESP	1963-2018	11	12	1963-2018	11	12
Sri Lanka	LKA	1966-2018	12	12	1979-2018	11	12
State of Palestine	PSE	1994-2018	11	11	1994-2018	11	12
Sweden	SWE	1963-2018	11	12	1963-2018	11	12
Switzerland	CHE	1986-2018	8	9	1986-2018	8	9
Syrian Arab Republic	SYR	1963-2018	7	9	1963-1995	8	9
Tajikistan	TJK	1990-2018	12	12	No Data	No Data	No Data
Tunisia	TUN	1963-2018	12	12	1963-2018	5	7
Turkey	TUR	1963-2018	12	12	1963-2018	12	12
Uganda	UGA	1984-2000	8	12	1963-1989	11	12
Ukraine	UKR	1992-2018	12	12	2012-2018	12	12
United Arab Emirates	ARE	1970-2018	10	11	1977-2018	12	12
United Kingdom	GBR	1963-2007	12	12	1963-2007	12	12
United Republic of Tanzania	TZA	1965-2018	11	12	1965-2018	11	12
United States of America	USA	1963-2018	12	12	1963-2018	12	12
Uruguay	URY	1968-2018	12	12	1968-2018	12	12
Uzbekistan	UZB	2012-2018	12	12	2013-2018	12	12
Venezuela (Bolivarian Republic of)	VEN	1963-1998	8	12	1963-1998	8	12
Viet Nam	VNM	1998-2018	12	12	1998-2018	12	12

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Country	**ISO**	**Employment**			**Value-Added**		
		Time Span	Min	Max	Time Span	Min	Max
Yemen	YEM	1989-2014	7	12	1998-2014	12	12
Zambia	ZMB	1963-2017	11	12	1963-2017	3	12
Zimbabwe	ZWE	1963-2018	11	12	2009-2018	11	11

Table A2: Summary of Regions with Country Names and ISO Codes

Regions	**Country names**	**Country codes (ISO)**	**Total**
Advanced Asia and Oceania	Australia, China - Hong Kong SAR, China - Taiwan Province, Japan, New Zealand, Republic of Korea	AUS, HKG, JPN, KOR, NZL, TWN	6
Central America	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama	CRI, GTM, HND, NIC, PAN, SLV	6
Emerging Asia and Oceania	Bangladesh, Cambodia, China, Cyprus, India, Indonesia, Lao People's Dem Rep, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Viet Nam	BGD, CHN, CYP, IDN, IND, KHM, LAO, LKA, MMR, MNG, MYS, NPL, PAK, PHL, SGP, VNM	16
Europe	Albania, Austria, Belgium, Bulgaria, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, North Macedonia, Norway, Poland, Portugal, Republic of Moldova, Romania, Spain, Sweden, Switzerland, United Kingdom	ALB, AUT, BEL, BGR, CHE, DEU, DNK, ESP, FIN, FRA, GBR, GRC, HUN, IRL, ISL, ITA, LUX, MDA, MKD, MLT, NLD, NOR, POL, PRT, ROU, SWE	26

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Regions	Country names	Country codes (ISO)	Total
Middle-East and North-Africa (MENA)	Algeria, Bahrain, Egypt, Iran (Islamic Republic of), Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, State of Palestine, Syrian Arab Republic, Tunisia, Turkey, United Arab Emirates, Yemen	ARE, BHR, DZA, EGY, IRN, ISR, JOR, KWT, LBN, LBY, MAR, OMN, PSE, QAT, SAU, SYR, TUN, TUR, YEM	19
North America	Canada, Mexico, United States of America	CAN, MEX, USA	3
Post-Soviet States	Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Croatia, Czechia, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Montenegro, Russian Federation, Serbia, Slovakia, Slovenia, Tajikistan, Ukraine, Uzbekistan	ARM, AZE, BIH, BLR, CZE, EST, GEO, HRV, KAZ, KGZ, LTU, LVA, MNE, RUS, SRB, SVK, SVN, TJK, UKR, UZB	20
South America	Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela (Bolivarian Republic of)	ARG, BOL, BRA, CHL, COL, ECU, PER, PRY, URY, VEN	10

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Regions	Country names	Country codes (ISO)	Total
Sub-Saharan Africa (SSA)	Angola, Benin, Botswana, Burundi, Cameroon, Central African Republic, Congo, Eswatini, Ethiopia, Former Sudan, Gabon, Gambia, Ghana, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Uganda, United Republic of Tanzania, Zambia, Zimbabwe	AGO, BDI, BEN, BWA, CAF, CIV, CMR, COG, ETH, GAB, GHA, GMB, KEN, LBR, LSO, MDG, MOZ, MWI, NAM, NER, NGA, RWA, SDN, SEN, SWZ, TZA, UGA, ZAF, ZMB, ZWE	30
West Indies and Other Islands	Barbados, Cabo Verde, Cuba, Dominican Republic, Haiti, Jamaica, Mauritius, Puerto Rico, Saint Lucia	BRB, CPV, CUB, DOM, HTI, JAM, LCA, MUS, PRI	9

Note: To classify countries into broader areas, we adjust the traditional MARC classification system. First, Asia is split into *Advanced Asia and Oceania* and *Emerging Asia and Oceania* following the CEPII's classification. Second, we do the same for Africa by grouping 19 economies to retrieve the *Middle-East and North-Africa* region following the last UNICEF report. The remaining African countries are classified into the *Sub-Saharan Africa* group. Third, we decide to create a proper area for *Post-Soviet States* encompassing both former European and Central Asian's communist states. Fourth, we have opted to group all islands located in the Caribbean, the Atlantic Ocean, and the Indian Ocean into a single region termed *West Indies and Other Islands*. Finally, we keep the *North America*, *South America*, and *Europe* regions as they are.

Table A3: Number of countries with available data by region in the 1960s.

Regions	Total	Country codes (ISO)	Employment	Value-Added
Advanced Asia and Oceania	6	AUS, HGK, JPN, KOR, NZL, TWN.	4	4
Central America	6	CRI, GTM, HND, NIC, PAN, SLV.	3	5
Emerging Asia and Oceania	16	BGD, CHN, CYP, IDN, IND, KHM, LAO, LKA, MMR, MNG, MYS, NPL, PAK, PHL, SGP, VNM.	8	5
Europe	26	ALB, AUT, BEL, BGR, CHE, DEU, DNK, ESP, FIN, FRA, GBR, GRC, HUN, IRL, ISL, ITA, LUX, MDA, MKD, MLT, NLD, NOR, POL, PRT, ROU, SWE.	17	16
Middle-East and North-Africa	19	ARE, BHR, DZA, EGY, IRN, ISR, JOR, KWT, LBN, LBY, MAR, OMN, PSE, QAT, SAU, SYR, TUN, TUR, YEM.	8	10
North America	3	CAN, MEX, USA.	2	2
Post-Soviet States	20	ARM, AZE, BIH, BLR, CZE, EST, GEO, HRV, KAZ, KGZ, LTU, LVA, MNE, RUS, SRB, SVK, SVN, TJK, UKR, UZB.	0	0
South America	10	ARG, BOL, BRA, CHL, COL, ECU, PER, PRY, URY, VEN.	8	6
Sub-Saharan Africa	30	AGO, BDI, BEN, BWA, CAF, CIV, CMR, COG, ETH, GAB, GHA, GMB, KEN, LBR, LSO, MDG, MOZ, MWI, NAM, NER, NGA, RWA, SDN, SEN, SWZ, TZA, UGA, ZAF, ZMB, ZWE.	12	11
West Indies and Other Islands	9	BRB, CPV, CUB, DOM, HTI, JAM, LCA, MUS, PRI.	4	3

Note: Out of the 6 countries included in the Advanced and Oceania region across the whole period, 4 have employment and value-added data available in the 1960s. These countries will act as the baseline for the region when investigating deindustrialisation over time (i.e., Equation 1). The same logic applies to the other regions.

Table A4: Manufacturing trends in employment shares through decades, by regions

	(1) North Am.	(2) Cent. Am.	(3) South Am.	(4) Europe	(5) MENA	(6) SSA	(7) Adv. Asia	(8) Em. Asia	(9) WIOI	(10) Post-Sov
1970s	-0.022***	0.009	-0.016***	0.005	0.006	0.006**	0.026**	0.026***	-0.027***	
	(0.004)	(0.006)	(0.004)	(0.005)	(0.005)	(0.002)	(0.011)	(0.006)	(0.008)	
1980s	-0.041***	0.006	-0.060***	-0.018***	0.007	0.002	0.043***	0.032***	-0.034***	
	(0.006)	(0.007)	(0.007)	(0.005)	(0.006)	(0.004)	(0.014)	(0.007)	(0.011)	
1990s	-0.053***	-0.001	-0.093***	-0.045***	0.005	0.001	0.026	0.039***	-0.034**	0.000
	(0.011)	(0.009)	(0.010)	(0.006)	(0.007)	(0.005)	(0.016)	(0.008)	(0.014)	(.)
2000s	-0.055***	-0.021**	-0.110***	-0.072***	0.009	0.002	0.040*	0.027**	-0.105***	-0.029***
	(0.015)	(0.011)	(0.012)	(0.007)	(0.008)	(0.006)	(0.020)	(0.011)	(0.016)	(0.005)
2010s	-0.053***	-0.031**	-0.122***	-0.095***	0.004	-0.006	0.062**	0.020	-0.207***	-0.044***
	(0.018)	(0.013)	(0.014)	(0.007)	(0.010)	(0.008)	(0.025)	(0.013)	(0.025)	(0.007)
GDPpc	1.901***	0.451***	0.191***	0.372***	0.075***	0.074***	1.012***	0.296***	0.077	0.349***
	(0.197)	(0.099)	(0.053)	(0.037)	(0.019)	(0.025)	(0.102)	(0.034)	(0.115)	(0.068)
GDPpc sq.	-0.094***	-0.025***	-0.010***	-0.019***	-0.004***	-0.004***	-0.055***	-0.014***	0.002	-0.019***
	(0.009)	(0.006)	(0.003)	(0.002)	(0.001)	(0.002)	(0.006)	(0.002)	(0.006)	(0.004)
Pop	-0.086	0.218***	-0.011	-0.226***	0.019	0.097***	-1.230***	-0.085**	0.341	-0.187
	(0.068)	(0.066)	(0.021)	(0.041)	(0.014)	(0.019)	(0.228)	(0.041)	(0.209)	(0.315)
Pop sq.	-0.000	-0.011***	0.006***	0.015***	-0.001	-0.005***	0.055***	0.000	-0.019	0.010
	(0.002)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.012)	(0.002)	(0.012)	(0.017)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse
P-value	0.000***	0.000***	0.016**	0.000***	0.000***	0.006***	0.000***	0.003***	.	0.000***
Turn. point	10.134	8.902	9.914	9.878	9.699	8.442	9.181	10.610	-15.553	9.296
Slope min	0.710	0.129	0.069	0.133	0.026	0.018	0.312	0.119	0.109	0.111
Slope max	-0.342	-0.155	-0.039	-0.078	-0.017	-0.031	-0.306	-0.038	0.137	-0.100
Obs.	147	201	490	1256	820	1024	316	706	235	459
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.971	0.895	0.834	0.773	0.635	0.831	0.775	0.860	0.859	0.914

Notes: Regressions are run separately for each region. WIOI and Post-Sov stand for the West Indies and Other Islands and Post-Soviet states. For ease of interpretation, we exclude them from the graphical representation displayed in the core of the text. Note that for post-Soviet states, the excluded decade is the 1990s, as shares could not be computed before because of the lack of information. To test the non-linearity of manufacturing shares on income, we follow the U-testprocedure by Lind and Melhun (2010). Standard errors are in parenthesis. *p<0.1, **p<0.05, ***p<0.01.

Table A5: Manufacturing trends in value-added shares through decades, by regions.

	(1) North Am.	(2) Cent. Am.	(3) South Am.	(4) Europe	(5) MENA	(6) SSA	(7) Adv. Asia	(8) Em. Asia	(9) WIOI	(10) Post-Sov
1970s	-0.032***	0.008	-0.013	0.007	-0.012*	0.031***	0.010	0.015	-0.005	
	(0.006)	(0.006)	(0.008)	(0.005)	(0.006)	(0.007)	(0.009)	(0.009)	(0.006)	
1980s	-0.043***	-0.011	-0.049***	-0.008	-0.016*	0.029***	0.001	0.011	-0.029***	
	(0.010)	(0.013)	(0.014)	(0.006)	(0.009)	(0.010)	(0.012)	(0.017)	(0.010)	
1990s	-0.055***	-0.023	-0.118***	-0.034***	-0.016	-0.006	-0.009	0.003	-0.026*	0.000
	(0.016)	(0.017)	(0.020)	(0.008)	(0.011)	(0.014)	(0.013)	(0.021)	(0.015)	(.)
2000s	-0.071***	-0.082***	-0.153***	-0.058***	-0.037**	-0.010	-0.013	-0.010	-0.057***	-0.011
	(0.023)	(0.030)	(0.024)	(0.010)	(0.015)	(0.018)	(0.017)	(0.029)	(0.020)	(0.008)
2010s	-0.075***	-0.093***	-0.165***	-0.079***	-0.062***	0.002	0.006	-0.048	-0.119***	-0.007
	(0.026)	(0.032)	(0.030)	(0.011)	(0.016)	(0.022)	(0.021)	(0.032)	(0.023)	(0.009)
GDPpc	2.221***	1.371***	0.894***	0.302***	0.249***	0.333***	1.510***	0.381***	0.163	0.476**
	(0.207)	(0.342)	(0.188)	(0.053)	(0.055)	(0.087)	(0.092)	(0.080)	(0.309)	(0.187)
GDPpc sq.	-0.109***	-0.083***	-0.057***	-0.016***	-0.013***	-0.023***	-0.080***	-0.017***	-0.010	-0.026***
	(0.009)	(0.020)	(0.010)	(0.003)	(0.003)	(0.005)	(0.005)	(0.004)	(0.018)	(0.010)
Pop	-0.051	0.334*	0.194	-0.080	0.128***	0.060	-0.051	-0.094	1.873***	-0.215
	(0.086)	(0.187)	(0.118)	(0.056)	(0.036)	(0.045)	(0.176)	(0.071)	(0.367)	(0.463)
Pop sq.	-0.002	-0.017	0.003	0.007*	-0.004*	-0.003	0.002	0.002	-0.111***	0.018
	(0.004)	(0.012)	(0.006)	(0.003)	(0.002)	(0.002)	(0.010)	(0.003)	(0.022)	(0.027)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse
P-value	0.000***	0.001***	0.001***	0.000***	0.000***	0.013**	0.000***	0.093*	0.336	0.008***
Turn. point	10.167	8.217	7.906	9.307	9.389	7.343	9.405	10.968	8.183	9.147
Slope min	0.834	0.312	0.176	0.096	0.081	0.045	0.490	0.160	0.037	0.146
Slope max	-0.392	-0.624	-0.459	-0.086	-0.068	-0.209	-0.410	-0.034	-0.075	-0.146
Obs.	147	184	439	1166	722	761	270	556	159	342
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.948	0.911	0.716	0.744	0.453	0.660	0.886	0.639	0.849	0.778

Notes: Regressions are run separately for each region. WIOI and Post-Sov stand for the West Indies and Other Islands and Post-Soviet states. For ease of interpretation, we exclude them from the graphical representation displayed in the core of the text. Note that for post-Soviet states, the excluded decade is the 1990s, as shares could not be computed before because of the lack of information. To test the non-linearity of manufacturing shares on income, we follow the U-testprocedure by Lind and Melhun (2010). Standard errors are in parenthesis. *p<0.1, **p<0.05, ***p<0.01.

Table A6: Manufacturing trends through decades (covering the full sample), by technological intensity.

	Employment			Nominal Value Added		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT
1970s	-0.001	-0.000	0.000	-0.002*	0.003***	-0.003**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
1980s	-0.009***	-0.004***	-0.006***	-0.015***	0.002	-0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1990s	-0.015***	-0.009***	-0.013***	-0.028***	-0.005***	-0.017***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
2000s	-0.023***	-0.013***	-0.022***	-0.044***	-0.008***	-0.031***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
2010s	-0.031***	-0.017***	-0.029***	-0.056***	-0.012***	-0.039***
	(0.002)	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)
GDPpc	0.170***	0.045***	0.066***	0.086***	0.127***	0.125***
	(0.008)	(0.003)	(0.005)	(0.013)	(0.007)	(0.011)
GDPpc sq.	-0.009***	-0.002***	-0.003***	-0.005***	-0.007***	-0.005***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)
Pop	0.024***	0.011***	0.018***	0.014	0.039***	0.044***
	(0.006)	(0.002)	(0.004)	(0.009)	(0.006)	(0.007)
Pop sq.	-0.000	0.000	0.000	0.001*	-0.002***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse
P-value	0.000***	0.000***	0.000***	0.000***	0.000***	0.067*
Turn. point	9.026	9.807	10.758	8.657	9.209	11.497
Slope min	0.050	0.016	0.027	0.023	0.039	0.056
Slope max	-0.055	-0.010	-0.007	-0.033	-0.038	-0.005
Obs.	5654	5654	5654	4731	4719	4710
FE	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.791	0.842	0.885	0.711	0.647	0.801

Notes: Regressions are run separately for each group. All the controls are in logarithm. To test the non-linearity of manufacturing shares on income, we follow the U-test procedure by Lind and Melhun (2010). We retrieve the main results of the test such as the turning point in log. Standard errors are in parenthesis. *p<0.1, **p<0.05, ***p<0.01.

Table A7: Manufacturing trends in employment shares through decades, by regions and technological-intensity.

	North Am.			Cent. Am.			South Am.		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	-0.009***	-0.004***	-0.009***	0.005	0.003**	0.001	-0.010***	-0.002**	-0.004***
	(0.001)	(0.001)	(0.002)	(0.004)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
1980s	-0.016***	-0.011***	-0.014***	0.004	0.002	-0.001	-0.035***	-0.010***	-0.015***
	(0.002)	(0.002)	(0.003)	(0.005)	(0.001)	(0.001)	(0.004)	(0.001)	(0.002)
1990s	-0.021***	-0.013***	-0.019***	0.001	0.000	-0.002	-0.052***	-0.017***	-0.023***
	(0.005)	(0.002)	(0.005)	(0.006)	(0.002)	(0.001)	(0.006)	(0.002)	(0.003)
2000s	-0.020***	-0.013***	-0.022***	-0.016**	-0.002	-0.004**	-0.061***	-0.021***	-0.028***
	(0.006)	(0.003)	(0.007)	(0.008)	(0.002)	(0.002)	(0.007)	(0.002)	(0.003)
2010s	-0.020**	-0.012***	-0.021***	-0.029***	-0.002	-0.000	-0.069***	-0.022***	-0.031***
	(0.008)	(0.004)	(0.008)	(0.010)	(0.003)	(0.002)	(0.009)	(0.002)	(0.004)
GDPpc	0.777***	0.280***	0.843***	0.260***	0.084***	0.108***	0.114***	0.039***	0.038*
	(0.094)	(0.033)	(0.076)	(0.080)	(0.017)	(0.012)	(0.030)	(0.013)	(0.019)
GDPpc sq.	-0.039***	-0.013***	-0.041***	-0.014***	-0.005***	-0.006***	-0.006***	-0.002***	-0.002
	(0.004)	(0.001)	(0.003)	(0.004)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Pop	-0.234***	-0.013	0.162***	0.053	0.054***	0.111***	-0.022*	0.003	0.007
	(0.032)	(0.013)	(0.029)	(0.051)	(0.012)	(0.007)	(0.012)	(0.005)	(0.007)
Pop sq.	0.009***	-0.001	-0.009***	-0.002	-0.003***	-0.006***	0.004***	0.001***	0.001*
	(0.001)	(0.000)	(0.001)	(0.003)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse
P-value	0.000***	0.000***	0.000***	0.003***	0.000***	0.000***	0.004***	0.008***	0.473
Turn. point	9.904	10.423	10.259	9.177	8.629	8.496	9.610	9.325	11.826
Slope min	0.279	0.110	0.321	0.080	0.022	0.027	0.039	0.012	0.017
Slope max	-0.161	-0.041	-0.140	-0.079	-0.032	-0.044	-0.028	-0.011	-0.000
Obs.	147	147	147	201	201	201	490	490	490
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.974	0.972	0.962	0.842	0.871	0.963	0.835	0.825	0.817

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining regions.

Table A8: Manufacturing trends in employment shares through decades, by regions and technological-intensity.

	Europe			MENA			SSA		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	0.001	0.002	0.003	0.001	0.002**	0.003***	0.004**	0.000	0.001***
	(0.002)	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.002)	(0.000)	(0.000)
1980s	-0.008***	-0.003	-0.007***	-0.000	0.003**	0.004***	0.002	-0.001	0.001*
	(0.002)	(0.002)	(0.003)	(0.003)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
1990s	-0.015***	-0.008***	-0.022***	0.001	-0.002	0.006***	0.004	-0.003***	-0.001
	(0.003)	(0.002)	(0.003)	(0.004)	(0.002)	(0.002)	(0.004)	(0.001)	(0.001)
2000s	-0.023***	-0.014***	-0.035***	0.003	-0.003	0.008***	0.008	-0.004***	-0.001*
	(0.003)	(0.002)	(0.004)	(0.005)	(0.002)	(0.002)	(0.005)	(0.001)	(0.001)
2010s	-0.031***	-0.019***	-0.045***	0.001	-0.007***	0.010***	0.003	-0.006***	-0.003***
	(0.003)	(0.002)	(0.004)	(0.006)	(0.003)	(0.003)	(0.007)	(0.001)	(0.001)
GDPpc	0.189***	0.058***	0.124***	0.058***	-0.002	0.019***	0.066***	0.017***	-0.010
	(0.020)	(0.011)	(0.016)	(0.011)	(0.006)	(0.005)	(0.016)	(0.007)	(0.006)
GDPpc sq.	-0.010***	-0.003***	-0.006***	-0.003***	0.000	-0.001***	-0.004***	-0.001**	0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Pop	-0.200***	-0.096***	0.070***	0.014*	0.001	0.004	0.058***	0.025***	0.014***
	(0.025)	(0.030)	(0.017)	(0.008)	(0.004)	(0.004)	(0.013)	(0.004)	(0.004)
Pop sq.	0.011***	0.005***	-0.000	-0.001	0.001**	-0.000	-0.003***	-0.001***	-0.001***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Shape	Inverse	Inverse	Inverse	Inverse	U	Inverse	Inverse	Inverse	U
P-value	0.000***	0.042**	0.001***	0.000***	0.405	0.006***	0.000***	0.010***	0.361
Turn. point	9.234	10.798	10.576	9.473	8.155	10.238	8.182	8.210	6.641
Slope min	0.059	0.024	0.050	0.019	-0.000	0.007	0.015	0.004	-0.000
Slope max	-0.056	-0.006	-0.016	-0.015	0.001	-0.003	-0.031	-0.008	0.008
Obs.	1256	1256	1256	820	820	820	1024	1024	1024
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.795	0.659	0.784	0.561	0.671	0.818	0.804	0.852	0.920

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining regions.

Table A9: Manufacturing trends in employment shares through decades, by regions and technological-intensity.

	Adv. Asia			Em. Asia			WIOI		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	0.017***	0.006**	0.003	0.013***	0.002*	0.012***	-0.028***	0.000	0.001
	(0.005)	(0.003)	(0.004)	(0.003)	(0.001)	(0.004)	(0.007)	(0.002)	(0.001)
1980s	0.025***	0.010***	0.008*	0.020***	0.002*	0.010**	-0.027***	-0.002	-0.004***
	(0.006)	(0.003)	(0.005)	(0.004)	(0.001)	(0.004)	(0.010)	(0.002)	(0.002)
1990s	0.022***	0.005	-0.001	0.027***	0.004**	0.008	-0.020	-0.005*	-0.009***
	(0.007)	(0.004)	(0.006)	(0.005)	(0.002)	(0.005)	(0.013)	(0.003)	(0.002)
2000s	0.033***	0.009*	-0.001	0.025***	0.003	-0.001	-0.081***	-0.008**	-0.017***
	(0.009)	(0.005)	(0.007)	(0.006)	(0.002)	(0.006)	(0.014)	(0.003)	(0.002)
2010s	0.046***	0.014**	0.002	0.029***	0.002	-0.012	-0.175***	-0.010**	-0.023***
	(0.011)	(0.006)	(0.008)	(0.008)	(0.002)	(0.008)	(0.023)	(0.005)	(0.003)
GDPpc	0.524***	0.213***	0.275***	0.206***	0.034***	0.056***	0.106	-0.004	-0.025
	(0.046)	(0.026)	(0.033)	(0.018)	(0.006)	(0.021)	(0.087)	(0.030)	(0.018)
GDPpc sq.	-0.031***	-0.011***	-0.013***	-0.011***	-0.001***	-0.002	-0.000	0.001	0.002*
	(0.003)	(0.001)	(0.002)	(0.001)	(0.000)	(0.001)	(0.005)	(0.002)	(0.001)
Pop	-0.942***	-0.161***	-0.128*	-0.053**	-0.020***	-0.012	0.362**	-0.034	0.012
	(0.102)	(0.057)	(0.074)	(0.026)	(0.006)	(0.016)	(0.182)	(0.049)	(0.032)
Pop sq.	0.049***	0.006*	0.000	0.000	0.000*	-0.000	-0.021**	0.002	0.000
	(0.006)	(0.003)	(0.004)	(0.001)	(0.000)	(0.001)	(0.010)	(0.003)	(0.002)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	U	U
P-value	0.000***	0.000***	0.016**	0.000***	0.256	.	.	.	0.419
Turn. point	8.419	9.482	10.768	9.426	11.413	18.191	182.192	2.097	6.614
Slope min	0.129	0.071	0.113	0.067	0.015	0.037	0.102	0.008	-0.001
Slope max	-0.220	-0.056	-0.030	-0.055	-0.002	0.019	0.099	0.018	0.020
Obs.	316	316	316	706	706	706	235	235	235
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.824	0.760	0.856	0.775	0.875	0.869	0.860	0.823	0.809

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining region.

Table A10: Manufacturing trends in employment shares through decades, by regions and technological-intensity.

	Post-sovietic states		
	(1) LT	(2) MT	(3) HT
1990s	0.000	0.000	0.000
	(.)	(.)	(.)
2000s	-0.013***	-0.003***	-0.012***
	(0.002)	(0.001)	(0.003)
2010s	-0.022***	-0.006***	-0.017***
	(0.003)	(0.002)	(0.004)
GDPpc	0.268***	0.064***	0.017
	(0.029)	(0.022)	(0.037)
GDPpc sq.	-0.015***	-0.003***	-0.001
	(0.002)	(0.001)	(0.002)
Pop	0.032	-0.231***	0.013
	(0.085)	(0.080)	(0.210)
Pop sq.	-0.004	0.012***	0.001
	(0.005)	(0.005)	(0.011)
Shape	Inverse	Inverse	Inverse
P-value	0.000***	0.012**	0.416
Turn. point	9.166	9.664	10.094
Slope min	0.082	0.022	0.006
Slope max	-0.082	-0.015	-0.003
Obs.	459	459	459
FE	Yes	Yes	Yes
R2	0.880	0.899	0.917

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A11: Manufacturing trends in value-added shares through decades, by regions and technological-intensity.

	North Am.			Cent. Am.			South Am.		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	-0.009***	-0.008***	-0.015***	-0.001	0.002*	0.007***	-0.018***	0.012**	-0.007***
	(0.002)	(0.002)	(0.003)	(0.005)	(0.001)	(0.002)	(0.006)	(0.005)	(0.002)
1980s	-0.011***	-0.018***	-0.015**	-0.021**	-0.002	0.012***	-0.045***	0.014**	-0.017***
	(0.003)	(0.003)	(0.006)	(0.010)	(0.001)	(0.004)	(0.009)	(0.006)	(0.004)
1990s	-0.014***	-0.024***	-0.016*	-0.026**	-0.005**	0.009	-0.090***	-0.000	-0.028***
	(0.005)	(0.004)	(0.009)	(0.013)	(0.002)	(0.006)	(0.013)	(0.008)	(0.006)
2000s	-0.019***	-0.024***	-0.028**	-0.062***	-0.003	-0.017	-0.110***	-0.004	-0.040***
	(0.007)	(0.006)	(0.013)	(0.021)	(0.003)	(0.011)	(0.016)	(0.009)	(0.006)
2010s	-0.022***	-0.022***	-0.031**	-0.065***	-0.004	-0.024**	-0.126***	0.007	-0.046***
	(0.008)	(0.007)	(0.014)	(0.022)	(0.003)	(0.012)	(0.019)	(0.012)	(0.008)
GDPpc	0.771***	0.391***	1.058***	0.998***	0.174***	0.199**	0.441***	0.227**	0.227***
	(0.070)	(0.050)	(0.105)	(0.255)	(0.046)	(0.099)	(0.119)	(0.099)	(0.051)
GDPpc sq.	-0.039***	-0.019***	-0.051***	-0.061***	-0.011***	-0.012**	-0.027***	-0.016***	-0.013***
	(0.003)	(0.002)	(0.005)	(0.015)	(0.003)	(0.006)	(0.007)	(0.006)	(0.003)
Pop	-0.298***	0.030	0.217***	0.286**	-0.009	0.056	-0.045	0.010	0.228***
	(0.032)	(0.023)	(0.045)	(0.136)	(0.035)	(0.058)	(0.068)	(0.038)	(0.045)
Pop sq.	0.012***	-0.003***	-0.012***	-0.015*	0.002	-0.004	0.010***	0.003	-0.009***
	(0.001)	(0.001)	(0.002)	(0.009)	(0.002)	(0.004)	(0.004)	(0.002)	(0.002)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse
P-value	0.000***	0.000***	0.000***	0.001***	0.003***	0.033**	0.004***	0.239	0.000***
Turn. point	9.874	10.468	10.279	8.201	7.994	8.512	8.188	6.980	8.466
Slope min	0.275	0.154	0.405	0.225	0.036	0.051	0.099	0.021	0.057
Slope max	-0.163	-0.056	-0.173	-0.457	-0.086	-0.081	-0.203	-0.162	-0.094
Obs.	147	147	147	184	184	184	439	439	439
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.966	0.915	0.935	0.837	0.607	0.959	0.755	0.632	0.702

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining regions.

Table A12: Manufacturing trends in value-added shares through decades, by regions and technological-intensity.

	Europe			MENA			SSA		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	0.000	0.006***	0.002	-0.007**	-0.005**	0.000	0.016***	0.011***	0.007***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)
1980s	-0.005*	0.004**	-0.004	-0.011***	-0.003	-0.001	0.011**	0.013***	0.009***
	(0.003)	(0.002)	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)	(0.003)	(0.003)
1990s	-0.013***	-0.000	-0.019***	-0.007	-0.008*	-0.001	-0.007	0.009**	-0.003
	(0.003)	(0.002)	(0.005)	(0.005)	(0.005)	(0.004)	(0.008)	(0.004)	(0.004)
2000s	-0.026***	-0.002	-0.031***	-0.014**	-0.020***	-0.004	-0.015	0.016***	-0.006
	(0.004)	(0.003)	(0.007)	(0.006)	(0.006)	(0.006)	(0.010)	(0.006)	(0.006)
2010s	-0.036***	-0.007**	-0.037***	-0.020***	-0.032***	-0.010*	-0.008	0.018***	-0.001
	(0.005)	(0.003)	(0.007)	(0.007)	(0.007)	(0.006)	(0.011)	(0.007)	(0.007)
GDPpc	0.006	0.089***	0.086***	0.113***	0.111***	0.024	0.112**	0.184***	0.169***
	(0.037)	(0.015)	(0.031)	(0.023)	(0.023)	(0.019)	(0.045)	(0.022)	(0.023)
GDPpc sq.	-0.001	-0.005***	-0.004**	-0.006***	-0.006***	-0.001	-0.008***	-0.012***	-0.011***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Pop	-0.133***	-0.001	0.066***	0.105***	0.021	0.002	-0.071**	0.058***	0.062***
	(0.026)	(0.037)	(0.021)	(0.014)	(0.016)	(0.013)	(0.028)	(0.010)	(0.013)
Pop sq.	0.009***	-0.001	-0.002	-0.006***	0.000	0.001	0.004***	-0.004***	-0.003***
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse
P-value	.	0.000***	0.429	0.000***	0.000***	0.166	0.149	0.000***	0.000***
Turn. point	2.159	9.021	11.708	9.437	9.419	9.040	7.112	7.540	7.485
Slope min	-0.013	0.026	0.040	0.037	0.036	0.007	0.012	0.029	0.026
Slope max	-0.029	-0.029	-0.002	-0.030	-0.030	-0.008	-0.076	-0.108	-0.101
Obs.	1151	1166	1153	722	722	722	761	734	738
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.811	0.624	0.724	0.648	0.428	0.609	0.551	0.761	0.758

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining regions.

Table A13: Manufacturing trends in value-added shares through decades, by regions and technological-intensity.

	Adv. Asia			Em. Asia			WIOI		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	0.018***	0.005**	-0.012**	-0.002	0.001	0.016***	-0.012**	0.002	0.005*
	(0.003)	(0.002)	(0.005)	(0.004)	(0.003)	(0.005)	(0.005)	(0.002)	(0.003)
1980s	0.019***	0.001	-0.018***	-0.011	-0.001	0.023***	-0.029***	0.000	-0.000
	(0.004)	(0.003)	(0.007)	(0.008)	(0.004)	(0.008)	(0.007)	(0.003)	(0.004)
1990s	0.019***	0.002	-0.029***	-0.015	-0.005	0.022**	-0.029***	0.001	0.002
	(0.005)	(0.005)	(0.008)	(0.010)	(0.005)	(0.010)	(0.010)	(0.003)	(0.006)
2000s	0.018***	0.004	-0.036***	-0.020	-0.005	0.015	-0.058***	0.005	-0.004
	(0.006)	(0.006)	(0.009)	(0.015)	(0.007)	(0.012)	(0.015)	(0.005)	(0.006)
2010s	0.021***	0.013*	-0.029**	-0.037**	-0.008	-0.002	-0.110***	-0.005	-0.004
	(0.007)	(0.008)	(0.011)	(0.016)	(0.008)	(0.013)	(0.017)	(0.006)	(0.007)
GDPpc	0.476***	0.450***	0.584***	0.079*	0.181***	0.121***	-0.066	0.040	0.189**
	(0.026)	(0.034)	(0.056)	(0.044)	(0.023)	(0.040)	(0.236)	(0.057)	(0.089)
GDPpc sq.	-0.029***	-0.024***	-0.027***	-0.004	-0.009***	-0.004**	0.005	-0.002	-0.013**
	(0.002)	(0.002)	(0.003)	(0.002)	(0.001)	(0.002)	(0.013)	(0.003)	(0.005)
Pop	-0.459***	0.361***	0.047	-0.124***	-0.019	0.049*	0.951***	0.182***	0.740***
	(0.059)	(0.067)	(0.083)	(0.040)	(0.018)	(0.028)	(0.257)	(0.057)	(0.115)
Pop sq.	0.028***	-0.018***	-0.008*	0.005***	0.000	-0.003**	-0.058***	-0.010***	-0.043***
	(0.003)	(0.004)	(0.005)	(0.002)	(0.001)	(0.001)	(0.016)	(0.004)	(0.007)
Shape	Inverse	Inverse	Inverse	Inverse	Inverse	Inverse	U	Inverse	Inverse
P-value	0.000***	0.000***	0.003***	0.311	0.000***	.	.	0.247	0.161
Turn. point	8.121	9.392	10.811	10.928	9.550	14.157	6.193	8.729	7.275
Slope min	0.104	0.146	0.241	0.033	0.061	0.067	0.002	0.011	0.024
Slope max	-0.225	-0.123	-0.062	-0.007	-0.046	0.019	0.061	-0.015	-0.122
Obs.	270	270	270	556	556	556	159	159	159
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.904	0.775	0.924	0.544	0.696	0.847	0.873	0.862	0.827

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining region.

Table A14: Manufacturing trends in value-added shares through decades, by regions and technological-intensity.

	Post-sovietic states		
	(1) LT	(2) MT	(3) HT
1990s	0.000	0.000	0.000
	(.)	(.)	(.)
2000s	-0.014***	0.007**	-0.003
	(0.004)	(0.003)	(0.002)
2010s	-0.018***	0.010**	0.000
	(0.005)	(0.004)	(0.003)
GDPpc	0.278***	0.401***	-0.204***
	(0.082)	(0.078)	(0.073)
GDPpc sq.	-0.015***	-0.021***	0.011***
	(0.004)	(0.004)	(0.004)
Pop	0.206	-0.038	-0.383**
	(0.271)	(0.163)	(0.151)
Pop sq.	-0.011	0.004	0.025***
	(0.016)	(0.010)	(0.009)
Shape	Inverse	Inverse	U
P-value	0.001***	0.000***	0.008***
Turn. point	9.005	9.449	9.541
Slope min	0.082	0.132	-0.068
Slope max	-0.091	-0.107	0.052
Obs.	342	342	342
FE	Yes	Yes	Yes
R2	0.719	0.803	0.890

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A15: Internal recomposition trends through decades (covering the full sample), by technological intensity.

	Employment			Nominal Value Added		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT
1970s	-0.009**	0.002	0.007**	-0.022***	0.020***	0.002
	(0.004)	(0.002)	(0.003)	(0.005)	(0.005)	(0.004)
1980s	-0.014***	0.007**	0.008**	-0.052***	0.042***	0.010**
	(0.004)	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)
1990s	0.008*	-0.009***	0.001	-0.047***	0.045***	0.003
	(0.005)	(0.003)	(0.004)	(0.006)	(0.007)	(0.006)
2000s	0.017***	-0.004	-0.013**	-0.067***	0.065***	-0.013*
	(0.006)	(0.004)	(0.006)	(0.007)	(0.008)	(0.008)
2010s	0.011	0.002	-0.013*	-0.077***	0.074***	-0.011
	(0.007)	(0.005)	(0.007)	(0.008)	(0.010)	(0.009)
GDPpc	0.244***	-0.037*	-0.206***	-0.209***	0.336***	-0.239***
	(0.027)	(0.022)	(0.024)	(0.044)	(0.053)	(0.038)
GDPpc sq.	-0.016***	0.002**	0.014***	0.007***	-0.019***	0.017***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.002)
Pop	0.044*	-0.009	-0.036*	-0.010	-0.026	-0.023
	(0.023)	(0.016)	(0.019)	(0.030)	(0.037)	(0.028)
Pop sq.	-0.006***	0.002**	0.004***	0.001	0.000	0.004**
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Obs.	5735	5735	5735	4855	4843	4834
FE	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.894	0.826	0.874	0.865	0.718	0.853

Notes: Regressions are run separately for each technological group. Note that the dependant variable denotes internal shares within manufacturing. Standard errors are in parenthesis. *p<0.1, **p<0.05, ***p<0.01.

Table A16: Internal recomposition trends in employment shares through decades, by regions and technological-intensity.

	North Am.			Cent. Am.			South Am.		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	0.007	0.006**	-0.013**	-0.002	0.013**	-0.011	-0.010	0.007*	0.003
	(0.005)	(0.003)	(0.005)	(0.011)	(0.006)	(0.008)	(0.009)	(0.004)	(0.007)
1980s	0.012	-0.011**	-0.001	0.001	0.010	-0.011	-0.008	0.018***	-0.009
	(0.011)	(0.005)	(0.010)	(0.017)	(0.009)	(0.013)	(0.012)	(0.005)	(0.009)
1990s	0.010	-0.009	-0.000	0.021	-0.007	-0.014	0.027*	-0.001	-0.026**
	(0.019)	(0.010)	(0.014)	(0.024)	(0.013)	(0.017)	(0.014)	(0.007)	(0.011)
2000s	0.018	-0.001	-0.017	0.003	0.003	-0.006	0.076***	-0.024***	-0.052***
	(0.024)	(0.012)	(0.020)	(0.032)	(0.016)	(0.023)	(0.018)	(0.008)	(0.014)
2010s	-0.014	0.010	0.004	-0.133***	0.038**	0.094***	0.048**	0.003	-0.051***
	(0.029)	(0.016)	(0.022)	(0.044)	(0.019)	(0.036)	(0.023)	(0.011)	(0.017)
GDPpc	0.913***	-1.681***	0.767***	-0.762**	0.512***	0.251	0.129	0.155	-0.284*
	(0.293)	(0.177)	(0.180)	(0.338)	(0.168)	(0.290)	(0.210)	(0.105)	(0.159)
GDPpc sq.	-0.054***	0.087***	-0.033***	0.053***	-0.032***	-0.021	-0.006	-0.011*	0.017**
	(0.013)	(0.008)	(0.009)	(0.019)	(0.009)	(0.017)	(0.011)	(0.006)	(0.009)
Pop	-0.676***	0.085	0.592***	-1.882***	0.441***	1.441***	-0.225***	0.134***	0.091*
	(0.105)	(0.062)	(0.080)	(0.218)	(0.085)	(0.191)	(0.064)	(0.034)	(0.052)
Pop sq.	0.036***	-0.010***	-0.026***	0.108***	-0.025***	-0.084***	0.006**	-0.004**	-0.003
	(0.004)	(0.002)	(0.003)	(0.013)	(0.005)	(0.012)	(0.003)	(0.001)	(0.003)
Obs.	147	147	147	224	224	224	490	490	490
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.910	0.868	0.909	0.637	0.579	0.701	0.766	0.633	0.816

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining regions.

Table A17: Internal recomposition trends in employment shares through decades, by regions and technological-intensity.

	Europe			MENA			SSA		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	-0.016***	0.004	0.012*	-0.041***	0.019***	0.023***	0.017*	-0.018**	0.001
	(0.006)	(0.004)	(0.006)	(0.009)	(0.007)	(0.006)	(0.009)	(0.007)	(0.009)
1980s	-0.011	0.003	0.008	-0.075***	0.031***	0.045***	0.015	-0.024***	0.009
	(0.007)	(0.006)	(0.009)	(0.011)	(0.010)	(0.008)	(0.013)	(0.009)	(0.013)
1990s	0.007	0.006	-0.013	-0.042***	-0.028**	0.070***	0.035*	-0.040***	0.005
	(0.010)	(0.007)	(0.012)	(0.014)	(0.012)	(0.010)	(0.019)	(0.011)	(0.018)
2000s	0.031**	0.006	-0.037**	-0.050***	-0.043***	0.093***	0.034	-0.048***	0.014
	(0.012)	(0.009)	(0.016)	(0.017)	(0.014)	(0.011)	(0.023)	(0.013)	(0.022)
2010s	0.028**	0.008	-0.036**	-0.057***	-0.065***	0.122***	0.034	-0.061***	0.027
	(0.013)	(0.010)	(0.017)	(0.020)	(0.016)	(0.013)	(0.027)	(0.016)	(0.025)
GDPpc	0.267***	-0.124**	-0.143**	0.327***	-0.354***	0.027	0.624***	-0.025	-0.599***
	(0.066)	(0.057)	(0.060)	(0.055)	(0.052)	(0.031)	(0.125)	(0.080)	(0.090)
GDPpc sq.	-0.018***	0.007**	0.011***	-0.017***	0.019***	-0.002	-0.041***	0.003	0.038***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.008)	(0.005)	(0.006)
Pop	-0.163	-0.166	0.329***	0.188***	-0.234***	0.046*	-0.215**	0.142***	0.073
	(0.108)	(0.122)	(0.080)	(0.041)	(0.032)	(0.026)	(0.094)	(0.050)	(0.077)
Pop sq.	0.000	0.007	-0.007	-0.016***	0.019***	-0.003*	0.009*	-0.004	-0.005
	(0.006)	(0.006)	(0.005)	(0.003)	(0.002)	(0.002)	(0.005)	(0.003)	(0.004)
Obs.	1256	1256	1256	847	847	847	1041	1041	1041
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.856	0.699	0.848	0.828	0.848	0.800	0.798	0.757	0.693

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining regions.

Table A18: Internal recomposition trends in employment shares through decades, by regions and technological-intensity.

	Adv. Asia			Em. Asia			WIOI		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	-0.004	0.008	-0.004	0.023*	-0.028***	0.004	-0.031**	0.014	0.017
	(0.009)	(0.006)	(0.005)	(0.014)	(0.008)	(0.015)	(0.015)	(0.012)	(0.013)
1980s	-0.016	0.019***	-0.003	0.039**	-0.023**	-0.016	-0.012	0.019	-0.007
	(0.011)	(0.007)	(0.006)	(0.018)	(0.011)	(0.017)	(0.021)	(0.016)	(0.018)
1990s	-0.008	0.015	-0.007	0.076***	-0.036**	-0.040*	0.055**	0.005	-0.060***
	(0.014)	(0.009)	(0.008)	(0.024)	(0.016)	(0.022)	(0.027)	(0.019)	(0.022)
2000s	-0.019	0.022*	-0.004	0.082***	-0.024	-0.058**	0.035	0.037	-0.072***
	(0.015)	(0.012)	(0.008)	(0.030)	(0.020)	(0.027)	(0.031)	(0.022)	(0.026)
2010s	-0.032*	0.034**	-0.002	0.097**	-0.006	-0.091***	-0.013	0.068**	-0.055*
	(0.019)	(0.014)	(0.010)	(0.038)	(0.026)	(0.033)	(0.041)	(0.029)	(0.033)
GDPpc	-0.352***	0.137*	0.214***	0.579***	0.035	-0.614***	0.617**	-0.101	-0.516***
	(0.089)	(0.071)	(0.038)	(0.098)	(0.092)	(0.082)	(0.269)	(0.202)	(0.194)
GDPpc sq.	0.008	-0.008*	-0.000	-0.037***	-0.002	0.038***	-0.034**	0.007	0.027**
	(0.005)	(0.004)	(0.002)	(0.006)	(0.005)	(0.005)	(0.016)	(0.012)	(0.011)
Pop	0.135	-0.337**	0.202***	0.152	-0.103	-0.049	1.442***	-0.828**	-0.614**
	(0.168)	(0.138)	(0.070)	(0.094)	(0.083)	(0.076)	(0.421)	(0.342)	(0.265)
Pop sq.	0.013	0.018**	-0.032***	-0.015***	0.005	0.010***	-0.100***	0.050***	0.050***
	(0.009)	(0.007)	(0.004)	(0.004)	(0.004)	(0.003)	(0.023)	(0.019)	(0.015)
Obs.	316	316	316	706	706	706	249	249	249
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.953	0.758	0.974	0.869	0.711	0.886	0.909	0.891	0.821

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining region.

Table A19: Internal recomposition trends in employment shares through decades, by regions and technological-intensity.

	Post-sovietic states		
	(1) LT	(2) MT	(3) HT
1990s	0.000	0.000	0.000
	(.)	(.)	(.)
2000s	-0.006	0.029***	-0.023***
	(0.008)	(0.005)	(0.008)
2010s	-0.021*	0.040***	-0.019*
	(0.011)	(0.007)	(0.011)
GDPpc	0.654***	0.058	-0.713***
	(0.142)	(0.105)	(0.124)
GDPpc sq.	-0.037***	-0.002	0.039***
	(0.008)	(0.006)	(0.007)
Pop	-0.688	-0.343	1.031*
	(0.571)	(0.269)	(0.534)
Pop sq.	0.030	0.025	-0.055*
	(0.031)	(0.016)	(0.029)
Obs.	459	459	459
FE	Yes	Yes	Yes
R2	0.897	0.861	0.905

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A20: Internal recomposition trends in value-added shares through decades, by regions and technological-intensity.

	North Am.			Cent. Am.			South Am.		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	0.017**	-0.009	-0.007	-0.035***	0.011	0.024***	-0.000	0.035**	-0.035***
	(0.006)	(0.007)	(0.006)	(0.012)	(0.008)	(0.009)	(0.015)	(0.018)	(0.008)
1980s	0.025**	-0.042***	0.017	-0.082***	0.018	0.064***	-0.027	0.081***	-0.054***
	(0.012)	(0.013)	(0.011)	(0.020)	(0.013)	(0.015)	(0.019)	(0.022)	(0.011)
1990s	0.027	-0.065***	0.038**	-0.074**	0.010	0.065***	-0.025	0.074**	-0.048***
	(0.018)	(0.018)	(0.017)	(0.030)	(0.020)	(0.024)	(0.025)	(0.029)	(0.015)
2000s	0.022	-0.046*	0.023	-0.077**	0.060**	0.016	0.011	0.055	-0.066***
	(0.025)	(0.027)	(0.024)	(0.037)	(0.027)	(0.032)	(0.030)	(0.035)	(0.017)
2010s	-0.004	-0.016	0.020	-0.087**	0.075**	0.012	-0.010	0.104**	-0.094***
	(0.028)	(0.030)	(0.028)	(0.043)	(0.032)	(0.038)	(0.037)	(0.044)	(0.024)
GDPpc	0.310	-0.488***	0.179	0.150	0.844*	-0.994***	-0.015	-0.689	0.703***
	(0.253)	(0.169)	(0.207)	(0.502)	(0.456)	(0.351)	(0.388)	(0.437)	(0.247)
GDPpc sq.	-0.023*	0.031***	-0.008	-0.012	-0.049*	0.061***	0.006	0.028	-0.034**
	(0.012)	(0.008)	(0.010)	(0.029)	(0.027)	(0.020)	(0.022)	(0.024)	(0.014)
Pop	-0.879***	0.406***	0.473***	1.126***	-0.729***	-0.397	-0.773***	0.033	0.739***
	(0.105)	(0.087)	(0.090)	(0.345)	(0.280)	(0.243)	(0.133)	(0.165)	(0.110)
Pop sq.	0.045***	-0.026***	-0.019***	-0.069***	0.048***	0.021	0.029***	0.009	-0.038***
	(0.004)	(0.004)	(0.004)	(0.021)	(0.017)	(0.015)	(0.006)	(0.008)	(0.005)
Obs.	147	147	147	190	190	190	442	442	442
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.876	0.738	0.914	0.823	0.695	0.932	0.795	0.618	0.808

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining regions.

Table A21: Internal recomposition trends in value-added shares through decades, by regions and technological-intensity.

	Europe			MENA			SSA		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	-0.025***	0.036***	0.006	-0.052***	0.028**	0.025***	-0.033*	0.007	0.034***
	(0.008)	(0.007)	(0.010)	(0.013)	(0.013)	(0.009)	(0.017)	(0.016)	(0.009)
1980s	-0.035***	0.057***	0.008	-0.073***	0.044***	0.029**	-0.074***	0.022	0.073***
	(0.012)	(0.010)	(0.015)	(0.017)	(0.017)	(0.014)	(0.028)	(0.023)	(0.018)
1990s	-0.041***	0.070***	-0.006	-0.032*	-0.004	0.036**	-0.066*	0.048	0.067***
	(0.016)	(0.014)	(0.020)	(0.020)	(0.021)	(0.018)	(0.038)	(0.032)	(0.024)
2000s	-0.066***	0.072***	-0.014	-0.012	-0.035	0.047**	-0.172***	0.128***	0.058*
	(0.021)	(0.017)	(0.027)	(0.024)	(0.026)	(0.022)	(0.052)	(0.043)	(0.032)
2010s	-0.089***	0.074***	0.006	0.019	-0.073**	0.054**	-0.159***	0.103**	0.099**
	(0.022)	(0.018)	(0.028)	(0.030)	(0.031)	(0.025)	(0.062)	(0.050)	(0.039)
GDPpc	-0.064	-0.604***	-0.317***	0.203**	0.117	-0.320***	0.284	0.175	0.279**
	(0.084)	(0.182)	(0.106)	(0.091)	(0.095)	(0.078)	(0.241)	(0.149)	(0.122)
GDPpc sq.	0.001	0.029***	0.020***	-0.013***	-0.004	0.017***	-0.025	-0.002	-0.021***
	(0.005)	(0.009)	(0.006)	(0.005)	(0.005)	(0.004)	(0.016)	(0.009)	(0.008)
Pop	-0.131	0.426**	-0.064	0.541***	-0.432***	-0.109**	-0.857***	0.935***	-0.216**
	(0.095)	(0.168)	(0.115)	(0.059)	(0.063)	(0.046)	(0.142)	(0.114)	(0.097)
Pop sq.	0.005	-0.028***	0.011	-0.037***	0.026***	0.012***	0.050***	-0.054***	0.009*
	(0.006)	(0.008)	(0.007)	(0.004)	(0.004)	(0.003)	(0.008)	(0.006)	(0.005)
Obs.	1178	1193	1180	727	727	727	784	757	761
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.839	0.640	0.781	0.843	0.751	0.787	0.683	0.650	0.755

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining regions.

Table A22: Internal recomposition trends in value-added shares through decades, by regions and technological-intensity.

	Adv. Asia			Em. Asia			WIOI		
	(1) LT	(2) MT	(3) HT	(4) LT	(5) MT	(6) HT	(7) LT	(8) MT	(9) HT
1970s	0.006	0.006	-0.012	0.016	-0.013	-0.003	-0.050**	0.017	0.033***
	(0.007)	(0.009)	(0.008)	(0.013)	(0.012)	(0.015)	(0.021)	(0.012)	(0.012)
1980s	0.001	0.013	-0.013	0.001	0.016	-0.017	-0.059**	0.029*	0.031
	(0.010)	(0.013)	(0.010)	(0.015)	(0.015)	(0.018)	(0.028)	(0.016)	(0.021)
1990s	-0.009	0.043**	-0.034**	0.023	0.011	-0.034	-0.066**	0.033*	0.033
	(0.014)	(0.019)	(0.013)	(0.019)	(0.019)	(0.023)	(0.032)	(0.019)	(0.027)
2000s	-0.040**	0.066***	-0.026*	0.018	0.045*	-0.063**	-0.097**	0.077***	0.020
	(0.018)	(0.023)	(0.016)	(0.024)	(0.025)	(0.029)	(0.040)	(0.027)	(0.030)
2010s	-0.093***	0.097***	-0.004	0.011	0.094***	-0.105***	-0.117**	0.061*	0.056
	(0.024)	(0.031)	(0.018)	(0.029)	(0.029)	(0.034)	(0.045)	(0.032)	(0.036)
GDPpc	-0.943***	0.854***	0.088	-0.660***	0.908***	-0.247**	-1.351***	0.228	1.123***
	(0.099)	(0.140)	(0.086)	(0.112)	(0.089)	(0.105)	(0.500)	(0.318)	(0.429)
GDPpc sq.	0.039***	-0.049***	0.010**	0.034***	-0.052***	0.018***	0.085***	-0.011	-0.074***
	(0.006)	(0.008)	(0.005)	(0.006)	(0.005)	(0.006)	(0.029)	(0.018)	(0.025)
Pop	-1.127***	1.144***	-0.017	-0.723***	0.190**	0.533***	-2.653***	0.017	2.636***
	(0.208)	(0.282)	(0.131)	(0.103)	(0.086)	(0.095)	(0.563)	(0.331)	(0.512)
Pop sq.	0.076***	-0.047***	-0.028***	0.027***	-0.012***	-0.014***	0.152***	0.002	-0.153***
	(0.011)	(0.015)	(0.007)	(0.005)	(0.004)	(0.004)	(0.034)	(0.020)	(0.031)
Obs.	316	316	316	568	568	568	159	159	159
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.936	0.686	0.952	0.908	0.552	0.904	0.891	0.793	0.870

Notes: Same remarks as in the previous table. The table continues on the next page with the remaining region.

Table A23: Internal recomposition trends in value-added shares through decades, by regions and technological-intensity.

	Post-sovietic states		
	(1) LT	(2) MT	(3) HT
1990s	0.000	0.000	0.000
	(.)	(.)	(.)
2000s	-0.047***	0.032***	0.015*
	(0.011)	(0.008)	(0.009)
2010s	-0.070***	0.023**	0.047***
	(0.014)	(0.011)	(0.011)
GDPpc	0.178	1.972***	-2.150***
	(0.299)	(0.268)	(0.216)
GDPpc sq.	-0.014	-0.099***	0.113***
	(0.016)	(0.014)	(0.012)
Pop	1.288	0.781	-2.068***
	(0.858)	(0.543)	(0.715)
Pop sq.	-0.083	-0.048	0.131***
	(0.053)	(0.034)	(0.043)
Obs.	344	344	344
FE	Yes	Yes	Yes
R2	0.903	0.919	0.919

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A24: Internal and External variations in manufacturing shares

			Employment		Value-Added	
Country	**Regions**	**Tech group**	**Ext**	**Int**	**Ext**	**Int**
AUS	Advanced Asia and Oceania	Low-tech	-0.040	0.124	-0.029	0.117
AUS	Advanced Asia and Oceania	Mid-tech	-0.030	0.010	-0.031	0.041
AUS	Advanced Asia and Oceania	High-tech	-0.062	-0.134	-0.057	-0.159
JPN	Advanced Asia and Oceania	Low-tech	-0.029	-0.042	-0.035	-0.022
JPN	Advanced Asia and Oceania	Mid-tech	-0.017	-0.018	-0.031	-0.065
JPN	Advanced Asia and Oceania	High-tech	-0.020	0.061	-0.034	0.086
KOR	Advanced Asia and Oceania	Low-tech	-0.017	-0.259	-0.004	-0.185
KOR	Advanced Asia and Oceania	Mid-tech	0.008	-0.012	0.047	-0.124
KOR	Advanced Asia and Oceania	High-tech	0.040	0.272	0.188	0.313
NZL	Advanced Asia and Oceania	Low-tech	-0.040	0.019	-0.030	-0.198
NZL	Advanced Asia and Oceania	Mid-tech	-0.007	0.026	0.055	0.338
NZL	Advanced Asia and Oceania	High-tech	-0.020	-0.045	-0.015	-0.134
CRI	Central America	Low-tech	0.000	-0.070	-0.101	0.047
CRI	Central America	Mid-tech	-0.001	-0.025	-0.014	0.033
CRI	Central America	High-tech	0.008	0.095	-0.063	-0.065
PAN	Central America	Low-tech	-0.006	0.170		
PAN	Central America	Mid-tech	-0.011	-0.114		
PAN	Central America	High-tech	-0.007	-0.056		
BGD	Emerging Asia and Oceania	Low-tech	0.040	0.065		
BGD	Emerging Asia and Oceania	Mid-tech	0.007	0.067		
BGD	Emerging Asia and Oceania	High-tech	-0.007	-0.132		
CYP	Emerging Asia and Oceania	Low-tech	-0.015	-0.005		-0.010
CYP	Emerging Asia and Oceania	Mid-tech	-0.004	0.004		0.009
CYP	Emerging Asia and Oceania	High-tech	-0.005	0.001		0.017
IND	Emerging Asia and Oceania	Low-tech	-0.012	-0.072	-0.004	-0.023
IND	Emerging Asia and Oceania	Mid-tech	0.004	0.059	0.021	0.024
IND	Emerging Asia and Oceania	High-tech	-0.004	0.013	0.007	-0.029
LKA	Emerging Asia and Oceania	Low-tech	0.077	0.363		
LKA	Emerging Asia and Oceania	Mid-tech	-0.001	-0.170		
LKA	Emerging Asia and Oceania	High-tech	-0.005	-0.193		
MYS	Emerging Asia and Oceania	Low-tech	0.024	-0.105	0.033	0.002
MYS	Emerging Asia and Oceania	Mid-tech	0.023	-0.099	0.033	-0.196
MYS	Emerging Asia and Oceania	High-tech	0.052	0.203	0.076	0.195
PAK	Emerging Asia and Oceania	Low-tech	-0.005	0.055	0.002	0.121
PAK	Emerging Asia and Oceania	Mid-tech	0.003	0.055	0.004	-0.055
PAK	Emerging Asia and Oceania	High-tech	-0.007	-0.110	-0.005	-0.086

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Country	Regions	Tech group	Employment		Value-Added	
			Ext	Int	Ext	Int
PHL	Emerging Asia and Oceania	Low-tech	-0.009	-0.172	-0.032	-0.075
PHL	Emerging Asia and Oceania	Mid-tech	0.000	-0.028	-0.007	-0.075
PHL	Emerging Asia and Oceania	High-tech	0.003	0.200	0.010	0.135
SGP	Emerging Asia and Oceania	Low-tech	-0.006	-0.162	0.019	-0.071
SGP	Emerging Asia and Oceania	Mid-tech	-0.014	-0.235	-0.033	-0.383
SGP	Emerging Asia and Oceania	High-tech	0.066	0.397	0.106	0.471
THA	Emerging Asia and Oceania	Low-tech	0.034	-0.074		
THA	Emerging Asia and Oceania	Mid-tech	0.018	-0.007		
THA	Emerging Asia and Oceania	High-tech	0.026	0.081		
AUT	Europe	Low-tech	-0.019	-0.064	-0.029	-0.130
AUT	Europe	Mid-tech	-0.013	-0.040	-0.010	-0.033
AUT	Europe	High-tech	0.007	0.104	0.023	0.167
BEL	Europe	Low-tech	-0.073	-0.034	-0.041	-0.074
BEL	Europe	Mid-tech	-0.050	-0.010	-0.023	-0.009
BEL	Europe	High-tech	-0.057	0.044	-0.025	0.087
DNK	Europe	Low-tech	-0.028	-0.113	-0.032	-0.156
DNK	Europe	Mid-tech	-0.005	0.011	-0.011	-0.044
DNK	Europe	High-tech	-0.005	0.102	0.004	0.204
ESP	Europe	Low-tech	-0.012	0.009	0.005	0.059
ESP	Europe	Mid-tech	-0.013	-0.040	-0.012	-0.076
ESP	Europe	High-tech	-0.006	0.031	-0.006	0.017
FIN	Europe	Low-tech	-0.046	-0.204	-0.051	-0.163
FIN	Europe	Mid-tech	0.004	0.060	-0.001	0.033
FIN	Europe	High-tech	0.010	0.144	0.001	0.135
FRA	Europe	Low-tech	-0.043	0.000	-0.047	-0.176
FRA	Europe	Mid-tech	-0.033	-0.032	-0.045	-0.030
FRA	Europe	High-tech	-0.045	0.032	-0.036	0.205
GRC	Europe	Low-tech	-0.002	-0.026	0.006	-0.002
GRC	Europe	Mid-tech	-0.001	0.004	0.005	0.066
GRC	Europe	High-tech	0.000	0.023	-0.006	-0.060
IRL	Europe	Low-tech	-0.053	-0.109	-0.039	-0.043
IRL	Europe	Mid-tech	-0.008	0.032	-0.012	-0.076
IRL	Europe	High-tech	-0.003	0.077	0.046	0.129
ISL	Europe	Low-tech	-0.064	-0.028	-0.036	-0.110
ISL	Europe	Mid-tech	-0.009	0.010	0.012	0.159
ISL	Europe	High-tech	-0.010	0.018	-0.010	-0.031
ITA	Europe	Low-tech	-0.007	-0.026	0.006	0.045
ITA	Europe	Mid-tech	-0.003	-0.001	-0.006	-0.019
ITA	Europe	High-tech	-0.001	0.026	-0.017	-0.025

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Country	Regions	Tech group	Employment		Value-Added	
			Ext	Int	Ext	Int
MLT	Europe	Low-tech	-0.062	-0.202		-0.014
MLT	Europe	Mid-tech	-0.009	0.132		0.120
MLT	Europe	High-tech	-0.017	0.070		-0.088
NLD	Europe	Low-tech	-0.061	-0.059	-0.014	-0.019
NLD	Europe	Mid-tech	-0.027	0.025	-0.007	-0.000
NLD	Europe	High-tech	-0.055	0.034	-0.025	0.021
NOR	Europe	Low-tech	-0.040	-0.027	-0.017	0.020
NOR	Europe	Mid-tech	-0.024	-0.044	-0.032	-0.063
NOR	Europe	High-tech	-0.025	0.072	-0.035	0.050
PRT	Europe	Low-tech	0.001	-0.100	-0.010	-0.031
PRT	Europe	Mid-tech	0.010	0.030	0.008	0.060
PRT	Europe	High-tech	0.015	0.070	-0.006	-0.024
ROU	Europe	Low-tech	-0.020	0.051		
ROU	Europe	Mid-tech	-0.010	-0.028		
ROU	Europe	High-tech	-0.017	-0.024		
SWE	Europe	Low-tech	-0.045	-0.075	-0.037	-0.083
SWE	Europe	Mid-tech	-0.024	-0.002	-0.023	-0.026
SWE	Europe	High-tech	-0.031	0.077	-0.024	0.112
DZA	Middle-East and North-Africa	Low-tech	-0.024	0.052		
DZA	Middle-East and North-Africa	Mid-tech	-0.010	0.057		
DZA	Middle-East and North-Africa	High-tech	-0.014	-0.109		
EGY	Middle-East and North-Africa	Low-tech	-0.027	-0.040	-0.022	-0.131
EGY	Middle-East and North-Africa	Mid-tech	-0.002	0.049	0.018	0.147
EGY	Middle-East and North-Africa	High-tech	-0.009	-0.010	-0.002	-0.025
IRN	Middle-East and North-Africa	Low-tech	0.008	-0.305	-0.016	-0.260
IRN	Middle-East and North-Africa	Mid-tech	0.019	0.152	0.023	0.107
IRN	Middle-East and North-Africa	High-tech	0.017	0.153	0.028	0.142
IRQ	Middle-East and North-Africa	Low-tech		-0.059		
IRQ	Middle-East and North-Africa	Mid-tech		0.072		
IRQ	Middle-East and North-Africa	High-tech		-0.013		
ISR	Middle-East and North-Africa	Low-tech	-0.041	-0.065	-0.038	-0.084
ISR	Middle-East and North-Africa	Mid-tech	-0.017	-0.027	-0.027	-0.045
ISR	Middle-East and North-Africa	High-tech	-0.012	0.093	-0.013	0.137
JOR	Middle-East and North-Africa	Low-tech	0.012	0.122	0.051	0.138
JOR	Middle-East and North-Africa	Mid-tech	-0.001	-0.082	0.011	-0.109
JOR	Middle-East and North-Africa	High-tech	0.002	-0.040	0.021	-0.009
KWT	Middle-East and North-Africa	Low-tech		0.111	0.011	0.145
KWT	Middle-East and North-Africa	Mid-tech		-0.193	-0.043	-0.267
KWT	Middle-East and North-Africa	High-tech		0.082	0.003	0.149

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Country	Regions	Tech group	Employment		Value-Added	
			Ext	Int	Ext	Int
SYR	Middle-East and North-Africa	Low-tech	0.010	-0.110		
SYR	Middle-East and North-Africa	Mid-tech	0.008	0.059		
SYR	Middle-East and North-Africa	High-tech	0.008	0.051		
TUN	Middle-East and North-Africa	Low-tech	0.050	0.076	0.032	0.318
TUN	Middle-East and North-Africa	Mid-tech	0.006	-0.117	-0.021	-0.239
TUN	Middle-East and North-Africa	High-tech	0.026	0.041	-0.010	-0.072
TUR	Middle-East and North-Africa	Low-tech	0.044	-0.055	0.021	-0.005
TUR	Middle-East and North-Africa	Mid-tech	0.025	-0.001	0.019	-0.065
TUR	Middle-East and North-Africa	High-tech	0.027	0.055	0.029	0.062
CAN	North America	Low-tech	-0.052	-0.060	-0.052	-0.029
CAN	North America	Mid-tech	-0.021	0.012	-0.023	0.033
CAN	North America	High-tech	-0.030	0.047	-0.042	-0.007
USA	North America	Low-tech	-0.040	-0.025	-0.030	0.031
USA	North America	Mid-tech	-0.023	0.035	-0.025	-0.007
USA	North America	High-tech	-0.056	-0.010	-0.068	-0.036
BRA	South America	Low-tech	0.018	0.086		
BRA	South America	Mid-tech	0.006	-0.033		
BRA	South America	High-tech	0.007	-0.053		
CHL	South America	Low-tech	-0.012	0.138	-0.036	0.166
CHL	South America	Mid-tech	-0.012	-0.064	-0.040	-0.042
CHL	South America	High-tech	-0.013	-0.074	-0.034	-0.124
COL	South America	Low-tech	-0.013	0.023	-0.052	0.036
COL	South America	Mid-tech	-0.007	-0.028	-0.015	0.015
COL	South America	High-tech	-0.007	0.005	-0.022	-0.056
ECU	South America	Low-tech	0.002	0.029	0.016	-0.088
ECU	South America	Mid-tech	-0.002	-0.024	0.023	0.190
ECU	South America	High-tech	-0.003	-0.005	-0.006	-0.099
PRY	South America	Low-tech	-0.012	0.121	-0.072	-0.074
PRY	South America	Mid-tech	-0.009	-0.038	-0.017	-0.011
PRY	South America	High-tech	-0.012	-0.082	-0.008	0.096
URY	South America	Low-tech	-0.039	0.078	-0.151	0.081
URY	South America	Mid-tech	-0.017	-0.062	-0.043	-0.025
URY	South America	High-tech	-0.014	-0.016	-0.055	-0.051
GHA	Sub-Saharan Africa	Low-tech	0.009	0.089	0.051	-0.219
GHA	Sub-Saharan Africa	Mid-tech	0.001	0.024	0.052	0.140
GHA	Sub-Saharan Africa	High-tech	-0.002	-0.113	0.040	0.076
KEN	Sub-Saharan Africa	Low-tech	-0.002	0.261	0.019	0.512
KEN	Sub-Saharan Africa	Mid-tech	-0.002	0.018	-0.041	-0.304
KEN	Sub-Saharan Africa	High-tech	-0.009	-0.279	-0.030	-0.217

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Country	Regions	Tech group	Employment		Value-Added	
			Ext	Int	Ext	Int
MDG	Sub-Saharan Africa	Low-tech			-0.038	0.088
MDG	Sub-Saharan Africa	Mid-tech			-0.007	-0.051
MDG	Sub-Saharan Africa	High-tech			-0.007	-0.044
MWI	Sub-Saharan Africa	Low-tech	-0.003	0.101		0.187
MWI	Sub-Saharan Africa	Mid-tech	-0.005	-0.067		-0.066
MWI	Sub-Saharan Africa	High-tech	-0.006	-0.035		-0.119
TZA	Sub-Saharan Africa	Low-tech	-0.016	0.007	0.029	0.195
TZA	Sub-Saharan Africa	Mid-tech	-0.005	0.012	-0.005	-0.097
TZA	Sub-Saharan Africa	High-tech	-0.010	-0.019	-0.014	-0.105
ZAF	Sub-Saharan Africa	Low-tech	-0.012	0.008	-0.064	0.018
ZAF	Sub-Saharan Africa	Mid-tech	-0.010	-0.058	-0.034	0.044
ZAF	Sub-Saharan Africa	High-tech	-0.002	0.050	-0.052	-0.071
ZMB	Sub-Saharan Africa	Low-tech	-0.002	0.153	-0.037	-0.231
ZMB	Sub-Saharan Africa	Mid-tech	-0.006	-0.144	-0.015	0.461
ZMB	Sub-Saharan Africa	High-tech	-0.005	-0.009		
ZWE	Sub-Saharan Africa	Low-tech	-0.013	0.036		
ZWE	Sub-Saharan Africa	Mid-tech	-0.008	-0.061		
ZWE	Sub-Saharan Africa	High-tech	-0.005	0.025		
MUS	West Indies and Other Islands	Low-tech	0.052	0.089	0.025	0.043
MUS	West Indies and Other Islands	Mid-tech	0.003	-0.016	0.006	0.047
MUS	West Indies and Other Islands	High-tech	-0.003	-0.073	-0.009	-0.076