



► Foreign direct investment, global value chains and labour markets

Authors / Christoph Ernst, Gabriel Michelena, Pablo Bertin





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Abstract

Foreign direct investment and the activities of multinational enterprises play an essential role in shaping employment outcomes, particularly in developing and emerging economies. With globalization and the expansion of global value chains, understanding how FDI influences labour markets has become increasingly relevant. This paper quantifies the global employment supported by foreign affiliates, examining both direct and indirect effects across regions and sectors. Our estimates suggest that foreign MNEs supported around 125 million jobs worldwide by 2021, a significant increase from earlier baselines. Employment is geographically concentrated in the European Union, China, North America, and East Asia, with services accounting for over 40 per cent of total MNE-supported jobs, though manufacturing remains key in China. Poorer countries are further marginalized.

The contribution of this paper lies in two main areas. First, it provides a consistent global estimate of employment associated with MNEs by combining firm-level datasets with ILO labour statistics. Second, it provides evidence about the heterogeneity of employment effects across regions and sectors: while the European Union, China, North America, and East Asia account for the largest employment shares, a shift towards services in productive activities and employment has been observed, but manufacturing still remains central in countries such as China.

About the authors

Gabriel Nicholas Michelena holds a Ph.D from the University of Buenos Aires and works and currently at MESI-IIEP, Universidad de Buenos Aires

Pablo Bertin MESI-IIEP, Universidad de Buenos Aires

Christoph Ernst holds a Ph.D. from the University of Paris 1 and is Lead of the Investment, Sectoral Strategies and Transitions Team of the EMPINVEST Branch, ILO.

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Foreword

This paper revisits the ILO's long-standing commitment to understanding the importance of foreign direct investment (FDI) in creating more and better jobs, particularly in developing countries. FDI and the activities of multinational enterprises play a vital role in determining employment outcomes, developing skills and capabilities, and thus facilitating structural transformation. In an era of globalization and expanding global value chains, it is crucial to understand how FDI influences national labour markets. This paper attempts to quantify the number of jobs created by and through multinational enterprises (MNEs), examining the direct and indirect effects on employment across regions and sectors. The paper found that MNEs had generated approximately 125 million jobs worldwide by 2021, representing a substantial increase from previous baselines. Employment is concentrated geographically in the European Union, China, North America, and East Asia. Services now account for over 40 per cent of total MNE-supported jobs, playing a prominent new role. In China, however, manufacturing remains the dominant sector. Additionally, poorer countries are further marginalized.

The major contribution of this paper is twofold: First, it provides a consistent global estimate of employment associated with MNEs by combining firm-level datasets with ILO labour statistics. Second, it provides evidence about the heterogeneity of employment effects across regions and sectors: while the European Union, China, North America, and East Asia account for the largest employment shares, a shift towards services in productive activities and employment has been observed, but manufacturing dominates in some countries like China.

This paper supports and is very much in line with the mandate of ILO's Employment and Investment Branch which looks into ways to stimulate the creation of more and better jobs through investment, from the private to the public sector, from international to national to local sources, and a combination of them.

Mito Tsukamoto

Chief

Employment and Investment Branch ILO

▶ 1 Introduction

Foreign direct investment (FDI) and the activities of multinational enterprises (MNEs) play significant roles in shaping economic and employment dynamics in host countries, particularly within developing and emerging markets. The globalization of production networks and increased participation in global value chains (GVCs) have further emphasized the relevance of understanding these impacts (Hummels et al. 2001). Recent studies suggest complex relationships between FDI inflows, employment creation, productivity spillovers, and environmental implications, warranting deeper analysis for effective policymaking (Saurav et al. 2020).

Given these diverse dimensions, this paper aims to critically analyse how FDI and MNE activities influence employment outcomes in developed and developing economies. Our paper contributes to the literature by quantifying the global employment supported by foreign affiliate (FAs) firms. To address the gap, the paper integrates data on FAs production with the employment-generation statistics, estimating both direct affiliate employment and the employment activated along supply chains. In a nutshell, our approach aims to reconcile output and employment data from domestic firms and FAs to ensure consistency with labour statistics recorded by ILOSTAT.

Key findings show that FAs play a significant role in job creation globally, supporting around 125 million jobs by 2021, representing an increase of 12 per cent compared with the 2012 level. This employment is geographically concentrated in the same areas with the higher FAs activities, with the European Union, China, North America and East Asia accounting for the largest shares. At sectoral level, over 40 per cent of FA-supported jobs are in services, though manufacturing, particularly machinery, equipment, and vehicles, remains key in countries like China. Importantly, more than half of these jobs are indirect, generated through domestic supply chains and multiplier effects.

This paper is closely related to a recent and growing literature that tries to link GVC, employment, and MNE (Ramondo and Rodríguez-Clare, 2013). FDI can stimulate demand for locally produced intermediate inputs. When multinational enterprises expand their operations, domestic suppliers may increase output and employment to meet this rising demand (Javorcik 2004). Mercer-Blackman et al. (2021) indicate that FDI significantly enhances labour productivity, particularly in sectors integrated within GVCs. Nevertheless, it is important to consider Blomström and Kokko's (1998) assessment, in which they conclude that the evidence on spillover effects is mixed and sector- and country-specific. Saurav et al. (2020) find that while FDI typically results in job creation within foreign-owned firms, the impact varies substantially by investment type and sector characteristics.

Notably, greenfield investments often stimulate new job creation and wage improvements. Greenfield FDI projects in 2018 created an estimated 2.3 million new jobs worldwide (Saurav et al. 2020). Nonetheless, brownfield investments, such as mergers and acquisitions, may lead to job displacement. These findings echo earlier findings by Ernst (2005), who noted limited employment gains from FDI in Latin American economies due to privatization-driven investments and labour shedding from industrial restructuring. A recent OECD contribution¹ offers evidence on these issues, presenting a dashboard of indicators to assess FDI's impact on various economic variables.

¹ For more details: <https://www.oecd.org/en/data/dashboards/fdi-qualities-indicators-visualisation-platform.html>

Our estimates are higher compared with previous estimates found in the literature. UNCTAD (2020) estimated globally that foreign affiliates directly employ about 82 million workers as of 2019, up 3 per cent from the previous year. Using the recently published MREID dataset (Ahmad et al. 2025), our own estimations suggest that around 35 million jobs are commanded by FAs worldwide, based on this data. Considering certain countries, there are significant differences between national statistical reports and the MREID database. For example, in the case of the United States, according to the Bureau of Economic Analysis (BEA), the number of jobs related to FAs was 7.9 million² in 2019, while the number of jobs estimated by MREID is approximately 0.67 million, while this paper's estimates are approximately 7.7 million. According to EUROSTAT, FA employment was 22.7 million in 2021³, while MREID recorded 15.7 million and we estimated around 23.7 million jobs.

The remainder of the paper is organized as follows: Section 2 describes the data sources used in our analysis, which include employment statistics, bilateral MNE flows, and the Multi-Regional Input-Output (MRIO) matrix. Section 3 provides an overview of global trends in FDI trade and output commanded by FAs. Section 4 estimates the employment generated by FAs. The last section concludes by summarizing key insights and suggesting ideas for future research.

² For more details: <https://www.bea.gov/sites/default/files/2021-08/imne0821.pdf>

³ https://ec.europa.eu/eurostat/databrowser/view/fats_activ/default/table?lang=en

▶ 2 Data

The following section describes the data used to assess the employment impact of FDI and MNE production, which includes an MRIO data matrix, FDI flows, and employment data. Each of the sources is described in more detail below. Prior to proceeding, it is imperative to clarify the terminology that will be employed throughout this document. Foreign direct investment refers to the financial relationship created when an investor acquires at least 10 per cent of the voting power in a foreign firm, establishing a lasting interest across borders. Once this link exists, the firms involved form a multinational enterprise, which is a corporate group operating in more than one country. Within this group, the parent company is the home-country firm that holds the controlling ownership stake and makes the strategic decisions, while the foreign affiliates are the host-country enterprises that the parent owns or influences through this investment. In essence, FDI can be defined as the capital link itself. The parent company and its affiliates form the organizational structure, while the MNE represents the entire cross-border firm network created by that link.

2.1 Employment

The ILO collects underlying household survey datasets compiled by national statistical offices in 161 countries. The raw data is then systematically processed to produce harmonized indicators based on international statistical standards. The ILOSTAT database compiles a wide range of detailed and internationally comparable labour statistics, which form the basis of published reports. For this analysis, all employment-related parameters were sourced from a satellite account containing employment data from ILOSTAT. The parameters used include the working-age population actively employed, defined as individuals engaged in any activity for at least one hour to produce goods or services in exchange for pay or profit, even if they are temporarily absent from work (ILO 2013).

Nonetheless, ILO labour statistics do not distinguish between employment commanded by domestic and foreign firms. Currently, ILO is working with national governments to fill this gap. The recent MNE Declaration states that: "Governments should carefully study the impact of multinational enterprises on employment in different industrial sectors. Governments, as well as multinational enterprises themselves, in all countries should take suitable measures to deal with the employment and labour market impacts of the operations of multinational enterprises."⁴

2.2 FDI and MNE flows

Two sources of information were utilized to delineate the flows of multinational enterprises and foreign direct investment patterns at the country and productive sectoral levels. On the one hand, the Activity of Multinational Enterprises (AMNE) database compiles detailed information about foreign affiliates in the home countries at sectoral level from 2000 to 2020 for 77 countries. The flows incorporate the country of origin as inward investments and the location of this flow as outward investments. The AMNE database incorporates information reported by the OECD and EUROSTAT through annual surveys on the activities of multinational enterprises with affiliates

⁴ For more information: <https://www.ilo.org/resource/other/what-ilo-mne-declaration>

abroad⁵. The databases contain information about gross value added, gross output, exports and import values at sectoral level. It also provides data for employment but only for OECD countries. In contrast, foreign direct investment flows and stocks by country are obtained from the United Nations Conference on Trade and Development (UNCTAD). These databases cover the period between 1990 and 2023 and express the variables in dollars at current prices for more than 200 countries⁶.

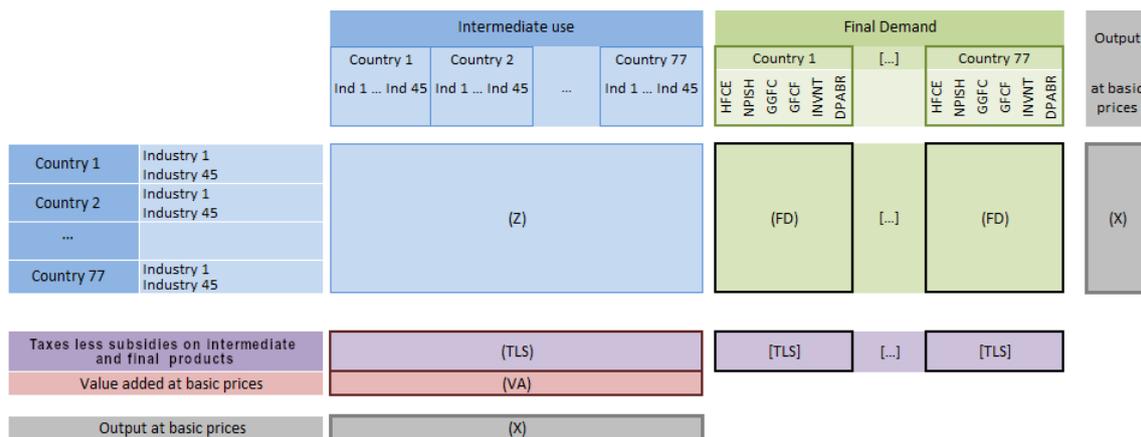
2.3. Multi Regional Input Output Matrix

For the calculation of employment related to MNE, this document uses the AMNE- ICIO⁷ (Inter-Country Input-Output) matrix of the OECD with base year 2019, which synthesizes information on 41 economic activities for 76 countries, and an additional region representing the rest of the world (RoW).

The input-output table is a representation of the economy’s monetary transactions between productive and institutional sectors. It captures the sectoral composition of the GDP components, such as household consumption, government expenditure, investment, exports and imports, as well as the sectoral composition of taxes and value-added components such as wages and profits.

In the MRIO version, the intermediate transactions matrix Z, contains the purchases and sales of inputs between sectors within the same country, but also includes external sales and purchases to and from third destinations. Final demand, on the other hand, is a matrix whose rows contain the final purchases made by countries at the sectoral level and which includes imports from other destinations. In turn, this matrix includes columns detailing the components of domestic demand: private consumption, public consumption, and investment. Finally, since a country’s imports are the exports of other countries, external sales at the sectoral level, and by component, are represented in the final demand matrix, in the columns outside the main diagonal.

► Figure 1: Structure of the multi-regional input-output matrix OECD



Source: OECD

⁵ For more information: <https://www.oecd.org/en/data/datasets/activity-of-multinational-enterprises.html>

⁶ For more information: <https://unctadstat.unctad.org/datacentre/reportInfo/US.FdiFlowsStock>

⁷ <https://www.oecd.org/en/data/datasets/multinational-enterprises-and-global-value-chains.html>

Throughout the document, the macro data available in the ICIO was expanded to include other relevant variables, such as GDP and population, which were taken from the latest version of the Penn World Table (Feenstra et al. 2015), released in 2023. Penn World Table is a database with information on relative levels of income, output, input and productivity, covering 183 countries, including all 76 countries in the OECD MRIO, between 1950 and 2021.

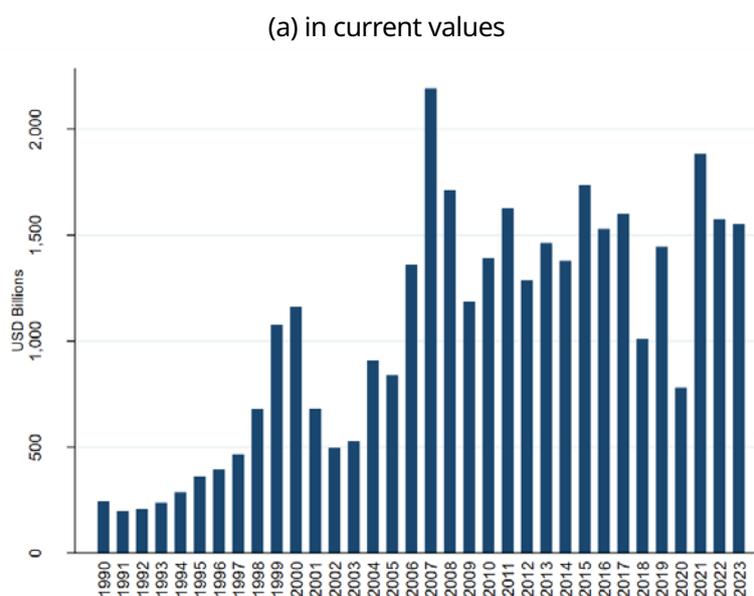
► 3 The international flows of FDI and MNE

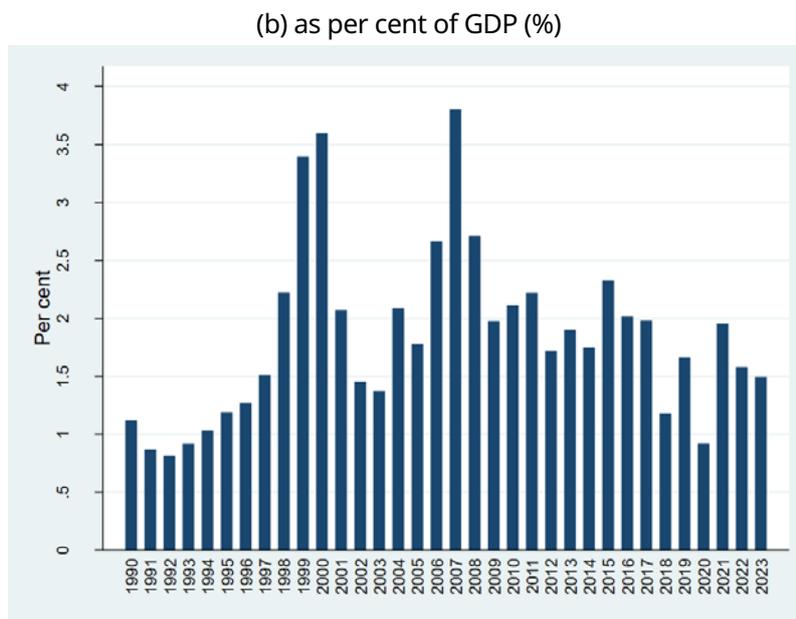
This section presents the results of the analysis of international FDI and FAs dynamics. In the case of MNE operations, the research covers the years between 2000 and 2020, with recent years missing due to data limitations. It also examines the fundamental characteristics of FAs activities, considering both its regional and sectoral composition. The results show that high-income countries export capital and produce intensively in China and other upper-middle-income countries. At the same time, these regions export to high-income countries. In terms of foreign trade, FAs exhibit a higher level of trade intensity than the global average, reflecting their deeper integration within global value chains.

As shown in figure 2, there has been a significant increase in foreign direct investment flows since the early 2000s. Comparing the averages of FDI flows between 1990–99 and 2009–19, the second period shows an increase of 71 per cent. The peak of flows was in 2007, while the lowest levels in the first decade of the 2000s occurred in 2001–2002, coinciding with the dotcom bust and the subsequent global economic slowdown. In addition to the dotcom bust, the early-2000s decline in FDI flows reflects the collapse of cross-border merger and acquisition activity, heightened global uncertainty, and corporate balance-sheet adjustment following the late-1990s investment boom.

Following the global financial crisis, FDI flows declined sharply in 2009, although not to the levels observed in the early 2000s. In the subsequent decade, the sharpest declines occurred in 2018 and 2020 due to the pandemic caused by the SARS-CoV-2 virus. In terms of GDP, the series peaked in the early 2000s. After the dotcom crisis it recovered and then fell again with the financial crisis in 2008–09. After that episode, it started a long-term downward trend, with notable decline observed after 2010. Currently, the flows as a percentage of GDP are at the same levels as in the late 1990s.

► **Figure 2: FDI flows in US\$ billions and as per cent of GDP (%) 1990–2023**

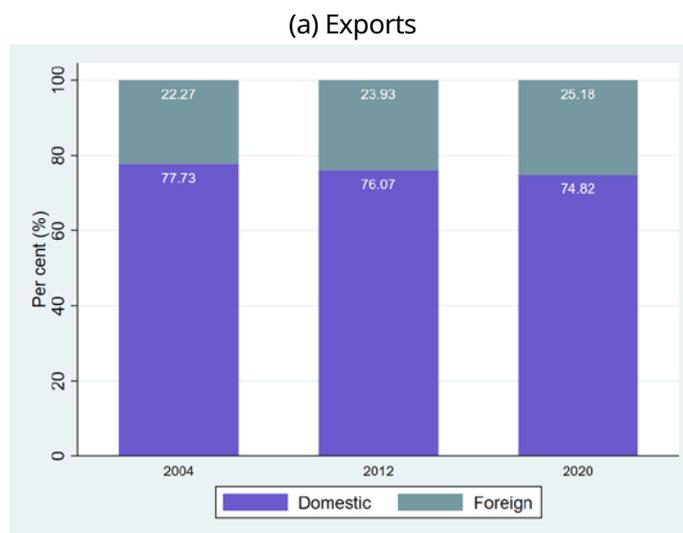


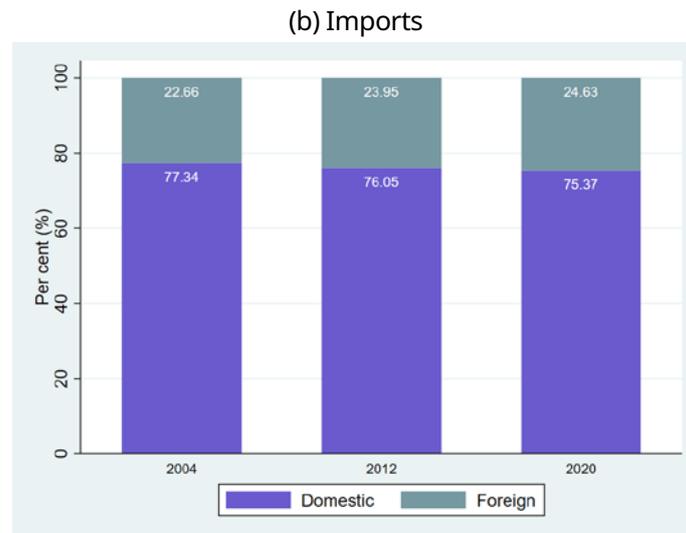


Source: Author's estimate, based on UNCTAD FDI database.

To contextualize changes in firm ownership structure within international trade, figure 3 shows a rise in foreign firms' participation in exports and imports over time. While domestic firms continue to dominate trade, their relative share has experienced a marginal decline, with foreign enterprises gaining a slightly higher proportion. By 2020, the foreign share in exports had surpassed 25 per cent, while for imports it reached 24.6 per cent, thereby signifying a growing role of foreign-owned firms in international trade.

► Figure 3: Exports and Imports by Firm Origin, 2004–20 (per cent)

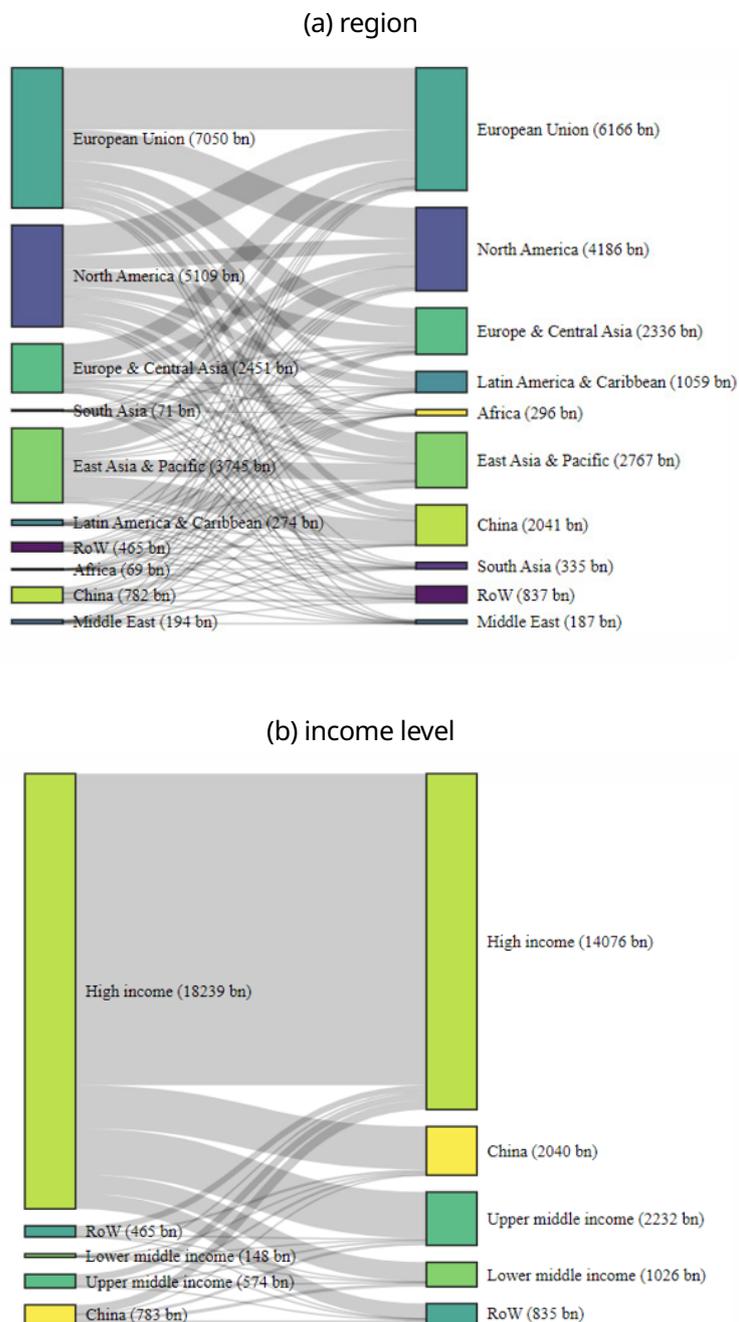




Source: Author's estimate, based on AMNE – OECD database.

Figure 4 summarises the patterns of origin and localization of foreign affiliates' production activities. On the one hand, the European Union is the region with the highest outflows and inflows of production linked to foreign affiliates, with a significant presence of North American and European and Central Asian (ECA) enterprises. It is followed by North America, both as a source and a destination of this production. On the other hand, foreign enterprises have a strong presence in China, while Chinese enterprises still do not play a major role in the rest of the world's production. In the case of East Asia and the Pacific (EAP), its enterprises produce mainly in North America and China, while receiving investment from Europe and North America. On the other hand, the discrepancy between the origin and production of these enterprises is significantly related to the income level of the different countries. High-income countries are the most important in terms of both origin and production, accounting for 90.3 per cent and 69.7 per cent of the total respectively. Upper-middle-income countries and China are important as destinations to produce foreign affiliates. Lower-middle-income countries and the rest of the world, on the other hand, have a comparatively negligible share.

► Figure 4: Output of Foreign Affiliates, 2019 (US\$ billions)

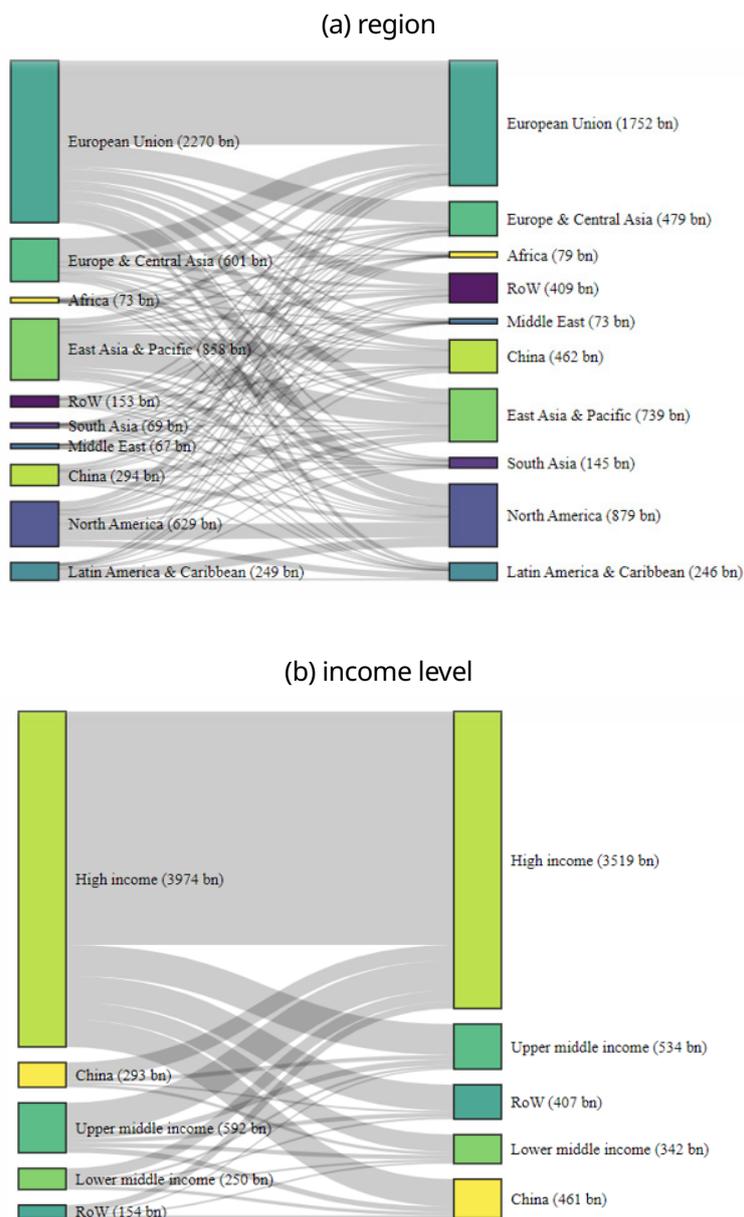


Source: Author's estimate, based on AMNE – OECD database.

Figure 5 provides valuable information to understanding how multinational enterprises shape the structure and concentration of global trade through their foreign affiliates. The European Union is the region that shows both exports and imports of foreign MNEs. The European Union's exports amounted to around US\$2,270 billion, followed by the East Asia-Pacific and North America regions, which accounted for US\$601 billion and US\$ 629 billion respectively. China's imports from FAs accounted for about US\$462 billion. In terms of income groups, exports from high-income countries accounted for more than 78 per cent of the total (US\$3,974 billion), with these countries receiving 66.9 per cent of the value of FAs' exports (US\$3,519 billion). Upper-middle-income

countries are also important players, accounting for 7.7 per cent of exports (US\$592 billion), although China's trade balance is much more robust, receiving more than it exports, mainly from high-income countries. This also shows a further marginalisation of poorer countries in FDI flows, with negative impacts of their insertion into global value chains, limiting also positive technology and employment effects.

► Figure 5: Trade flows of Foreign Affiliates, 2019 (US\$ billions)



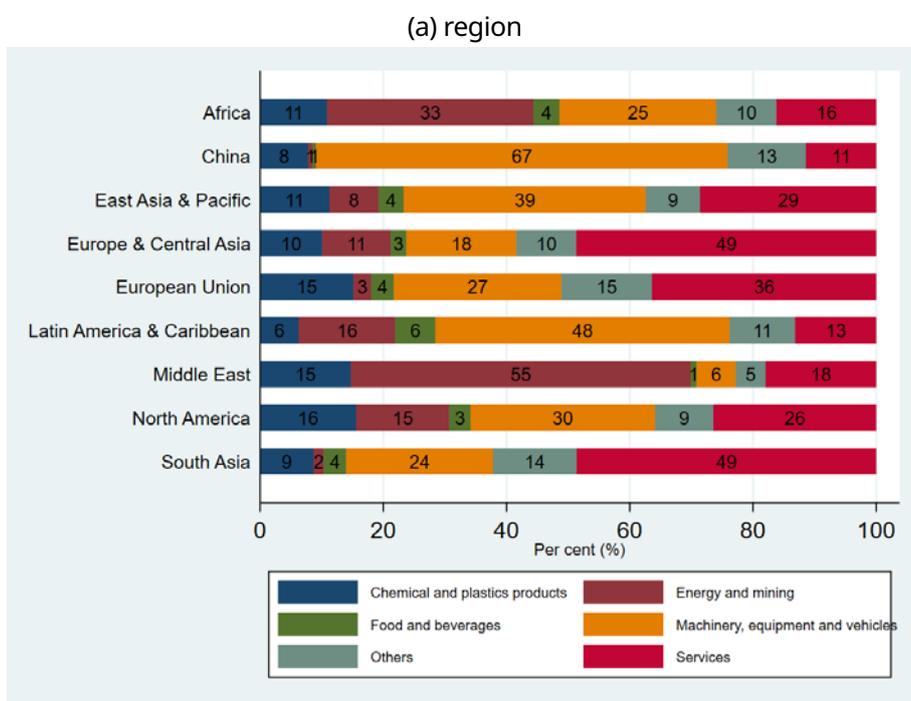
Source: Author's estimate, based on AMNE – OECD database.

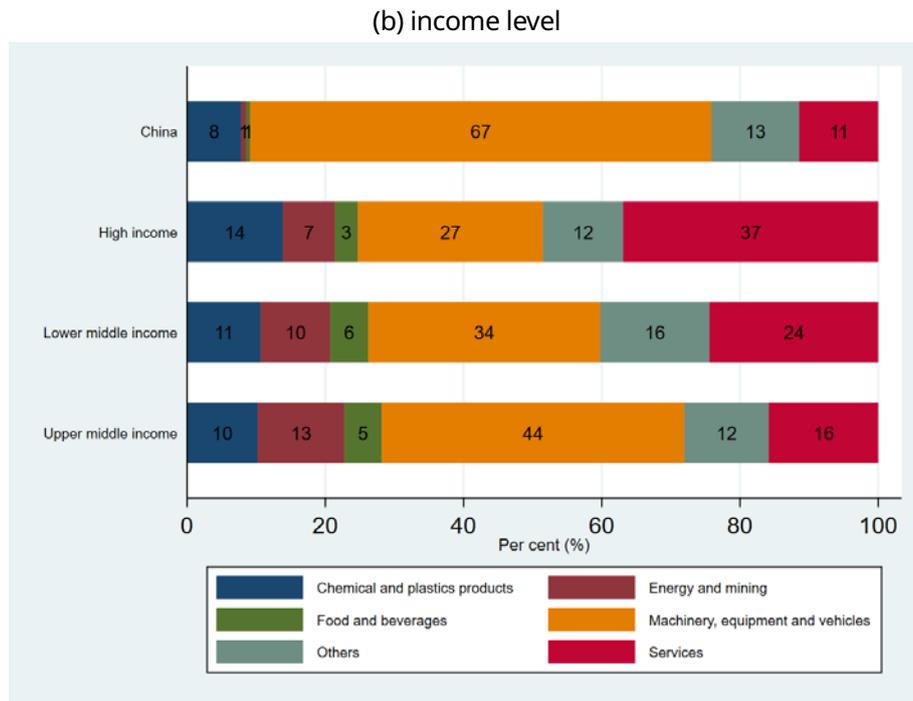
Figure 6 presents the patterns of industrial specialisation associated with multinational activity across regions and income groups. While services, machinery, transport equipment, energy and mining are the most significant activities in terms of FAs' exports, the relative importance of these sectors varies according to the region and income group analysed. Services are a very

relevant exporting activity for South Asia, Europe and Central Asia, the European Union, and East Asia and the Pacific. In contrast, the Middle East and Africa are characterised by a strong presence of MNEs in the energy and mining sectors. In the case of China and Latin America and the Caribbean, machinery, equipment and vehicles from East Asia and the Pacific are relevant in explaining regional exports. Chemicals and plastic products are a key export for the European Union, North America and the Middle East.

When considering income groups, services emerge as the most significant sector for high-income countries, while machinery, equipment and vehicles take the lead in lower-middle and upper-middle income countries. This sector is of particular importance for China, where it accounts for 66.8 per cent of MNEs' exports.

► Figure 6: Exports of foreign MNE, sectoral distribution, 2019 (per cent)

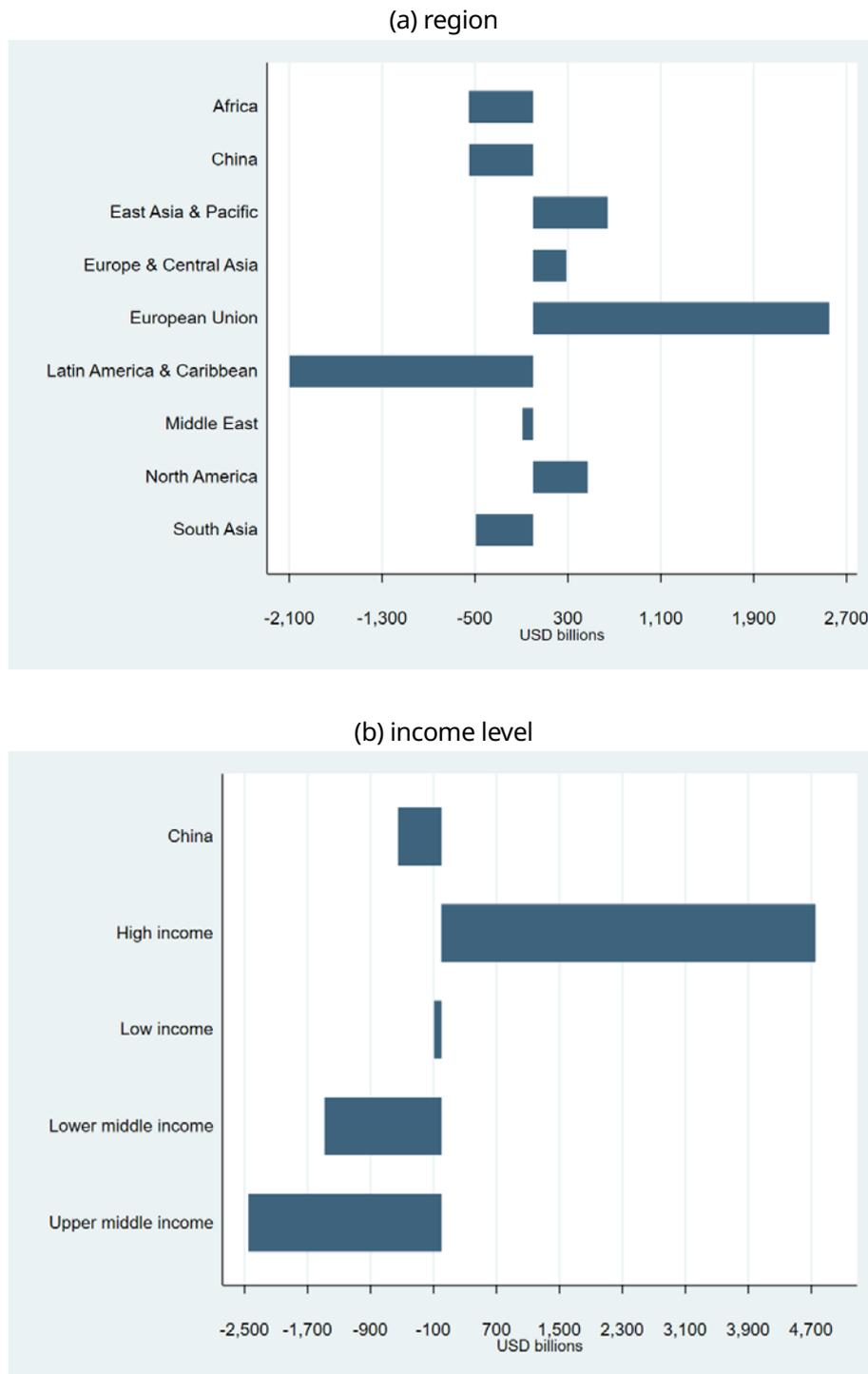




Source: Author's estimate, based on AMNE – OECD database.

Figure 7 illustrates the trade balance of FAs operating in each region. This is essential for understanding the asymmetries in multinational trade, as well as the uneven distribution of gains across regions and income groups. The European Union has the largest trade surplus over the period 2000–20, followed by East Asia and the Pacific and North America. The European Union's surplus is four times higher than that of East Asia and the Pacific reaching US\$2,550 billion. Latin America and the Caribbean recorded the largest deficit with US\$2,096 billion, more than Africa (US\$552 billion), South Asia (US\$491 billion) and China (US\$549 billion). The significant trade surplus of the European Union and North America is reflected in the highest trade surplus of high-income countries in figure 9. In contrast, upper-middle-income countries had a substantial trade deficit, reflecting the inflows they received and their limited capacity to generate outflows. China had a minor deficit in the 1990s and 2020s. In summary, the persistent trade surpluses of foreign affiliates in high-income regions contrast sharply with the deficits observed elsewhere, emphasizing the asymmetric distribution of value capture within multinational-led trade.

► **Figure 7: Accumulated trade balance 2000–20, US\$ billions**



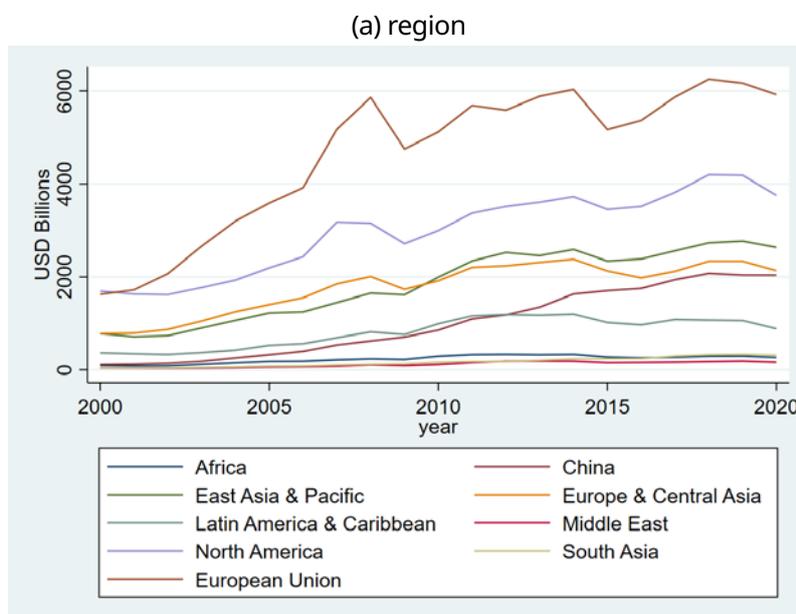
Source: Author's estimate, based on AMNE – OECD database.

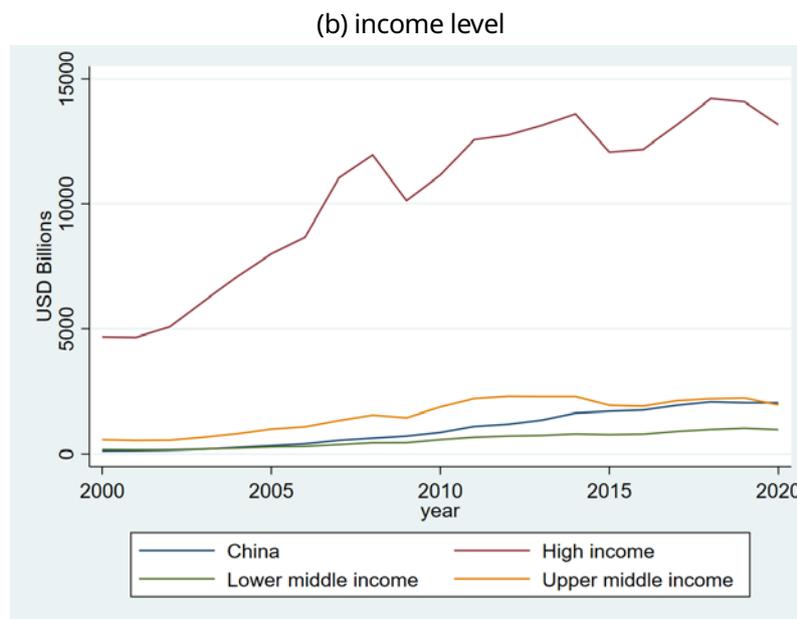
Regarding the evolution of gross production related to foreign affiliates, figure 8 shows that China was the major growing country in the period 2000–20. On one hand, the regions with the highest gross production value associated with FAs are the European Union, North America, and East Asia with US\$5,921 billion, US\$3,756 billion and US\$2,636 billion respectively by 2020. On the other hand, South Asia, Africa and the Middle East are the worst-performing regions in

terms of FAs with less than US\$320, billion. Latin America and the Caribbean meanwhile maintained a growth path until the early 2010s, after which production stagnated and started to decline, reaching US\$885 billion in 2020.

Figure 8 also shows a growing divergence in foreign affiliate-related production across regions and income groups over time. High-income economies, particularly the European Union and North America, not only concentrate the largest shares of gross production but also reinforce their dominance throughout the period, as reflected in the widening gap observed in the income-level panel. China exhibits the most rapid expansion during the 2000s, especially prior to the mid-2010s, after which growth moderates, suggesting a transition from rapid accumulation to a more mature production structure. In contrast, several developing regions, most notably Latin America and the Caribbean, Africa, South Asia, and the Middle East, display flat or declining trajectories in the latter part of the period, pointing to a more fragile and uneven integration into multinational production networks.

► Figure 8: Gross output Foreign Affiliates, US\$ billions 2000–20





Source: Author's estimate, based on AMNE – OECD database.

Figure 9 depicts the sectoral composition of gross output generated by foreign affiliates and provides key insights on multinational production patterns across regions and income groups. The production of services has a significant presence in Europe and Central Asia, the European Union, and East Asia and the Pacific, accounting for more than 40 per cent of the gross production in these regions. In the case of China and South Asia, the primary sectors are dominated by the production of machinery, equipment and vehicles, accounting for 49.3 per cent and 35 per cent, respectively. In contrast, the energy and mining sector has a comparatively higher share in the Middle East and Africa, at 27.3 per cent and 17.4 per cent respectively. The analysis by income group suggests that the significance of services production in low-middle-income countries exceeds that of upper-middle-income countries. In upper middle-income countries, the production of services (29.6 per cent) holds similar relevance to the machinery, equipment and vehicles sector (26.8 per cent). In high-income countries, MNEs are focused on services.

The sectoral composition of foreign affiliates' gross output reveals clear and persistent differences across regions and income groups. High-income economies are characterised by a strong concentration of multinational activity in services, reflecting their advanced productive structures and positioning in higher value-added segments. In contrast, middle-income regions, particularly China and South Asia, remain more specialised in manufacturing activities such as machinery, equipment, and vehicles, while energy and mining play a larger role in the Middle East and Africa. These patterns suggest that foreign affiliate production continues to mirror existing structural characteristics of host economies, reinforcing differentiated development paths and highlighting the limits of convergence in multinational-led production structures.

► Figure 9: Output of Foreign Affiliates, sectoral distribution, 2019 (per cent)

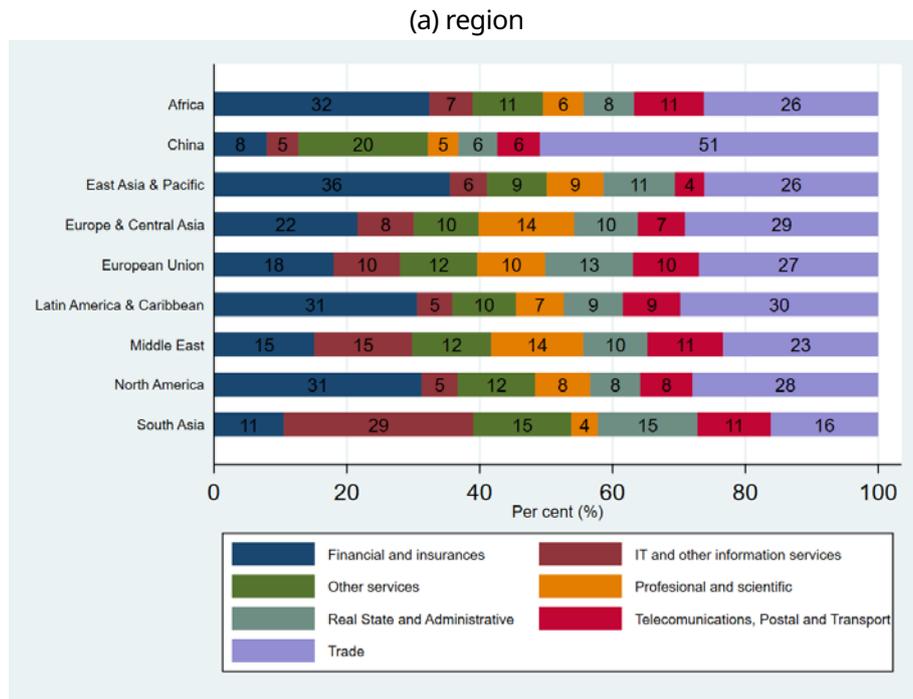


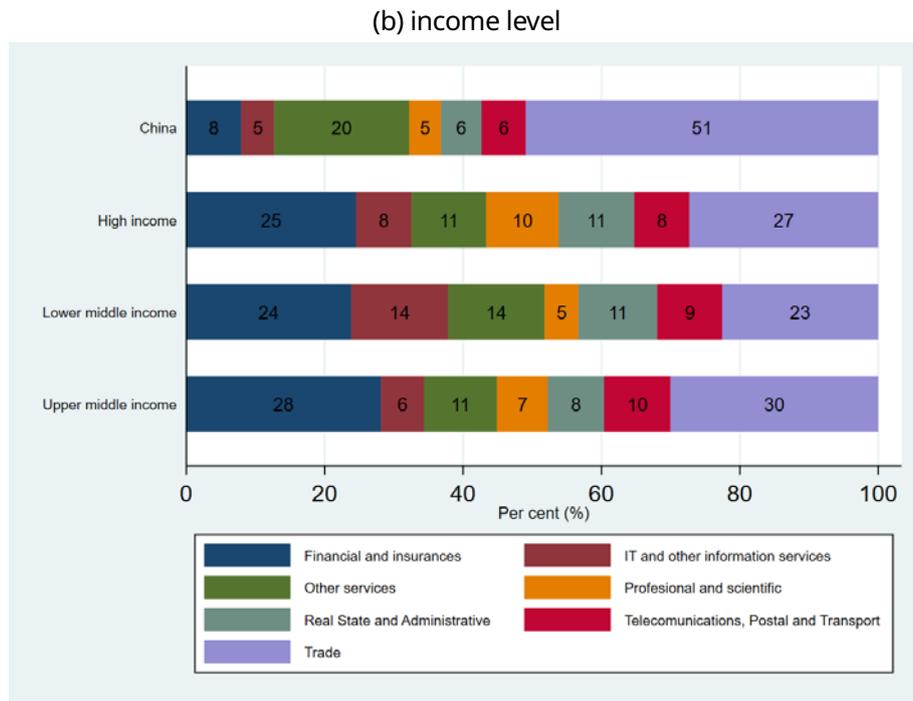
Source: Author's estimate, based on AMNE – OECD database.

In consideration of the essential role services play in the global economic landscape, particularly regarding production and export dynamics, the sector has been disaggregated to facilitate a comprehensive analysis of its composition, as illustrated in figure 10. Within most of the regions, services related to trade, insurance and the financial sector predominate, followed by real estate and professional services. In the case of China, trade-related services are the most significant,

while for North America, Europe and Central Asia (ECA) and the European Union, trade-related services together with the financial and insurance sector account for a significant share in the composition of services. In the case of South Asia, services related to information technology emerge as the most salient. On the other hand, the insurance and financial services sector accounts for approximately 25 per cent of the total service share in high-income and lower-middle-income countries. In contrast, the share of professional and scientific services is comparatively lower, and these services are more significant in high-income and upper-middle-income countries, with shares of 10.5 per cent and 6.9 per cent, respectively.

► **Figure 10: Output of Foreign Affiliates in the service sector, sectoral distribution, 2019 (per cent)**





Source: Author's estimate, based on AMNE – OECD database.

In summary, section 3 highlights how foreign direct investment and multinational enterprise activity are becoming more unevenly distributed and increasingly concentrated worldwide. FDI flows have expanded markedly since the early 2000s, albeit with pronounced cyclical volatility associated with major global shocks, while foreign affiliates have steadily increased their participation in international trade and production. The analysis highlights strong asymmetries across regions and income groups: high-income economies remain the primary sources and beneficiaries of multinational production and trade surpluses, whereas upper- and lower-middle-income countries, despite hosting significant production, tend to exhibit weaker outward integration and persistent trade deficits. Sectoral patterns further indicate that multinational activity largely mirrors and reinforces existing structural specializations, with services dominating in advanced economies and manufacturing, energy, and extractive activities playing a larger role elsewhere. These structural patterns in investment, trade, and production set the stage for understanding how multinational enterprises translate economic activity into labour outcomes, a question taken up in section 4 through a detailed analysis of the direct and indirect employment effects of foreign affiliates.

► 4 MNE and Employment

This section analyses the labour dimension of MNEs and focuses on the quantity and quality of jobs that are directly and indirectly created through the production of foreign firms operating in each region. The selected technique for estimating the impact of MNE production on employment is the input-output model. Multisectoral models have a long tradition, originating with the seminal work of Leontief (1951). However, those models present a simplified framework of the circular flow in a manner analogous to *Tableau Économique* (Quesnay, 1759). Within that framework, firms require labour, intermediate inputs and capital to produce goods and services. The outputs are subsequently sold to households, other firms, governments or on the global market. Households, in turn, use their incomes to purchase goods and services and to pay taxes (T), while saving the remainder (S). The government collects revenue through taxation, requests and pays for goods and services (G), and influences changes in investment and savings.

This paper employs a single-region input-output approach (Leontief, 1951), albeit making use of all the information provided by the MRIO dataset. To facilitate meaningful cross-country comparisons of employment, it is essential to consider the relationship between final demand and the structure of the economy. This section provides an overview of the methodology used to estimate this employment-trade link and is followed by the main findings.

4.1 Methodology

The single country input-output model can be shown using the following subset of matrices and vectors, starting from the expenditure side:

1.

$$x = Ze + F$$

Where x is the vector of gross output values, Z is the matrix of intermediate uses, e is a row vector of ones and F is the matrix of final demand.

After the algebraic steps of dividing and multiplying the elements of the matrix Z by the gross output, it is possible to reformulate the equation (1), such that:

2.

$$x = Ax + F$$

Where A is the input-output coefficient matrix describing the units of intermediate inputs needed to produce one unit of gross output.

Finally, by passing elements from one side of the equation to the other, the following expression is derived:

3.

$$x = (1 - A)^{-1}F$$

The matrix $B = (1 - A)^{-1}$ is the so-called Leontief matrix, or total requirements matrix. Each element of B represents the direct and indirect requirements of input i by activity k , in country n from partner m .

To calculate how much employment is generated directly and indirectly by foreign firms, it is necessary to recover the diagonal matrix θ , whose elements contain the labour to output coefficients.

Finally, multiplying the matrix θ by B and the final demand matrix, F , yields the matrix L . The subscript n refers to the country, while k indicates the activity. The matrix L provides all of the necessary information for estimating employment linked to MNE gross output. The diagonal elements of the L matrix represent the domestic labour content embedded in the final demand of MNE foreign and domestic firms.

4.

$$\begin{pmatrix} L_1 \\ \vdots \\ L_n \end{pmatrix} = \begin{pmatrix} \theta_1 & \dots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \dots & \theta_n \end{pmatrix} \begin{pmatrix} 1 - \alpha_{11} & \dots & -\alpha_{1n} \\ \vdots & \ddots & \vdots \\ -\alpha_{n1} & \dots & 1 - \alpha_{nn} \end{pmatrix} \begin{pmatrix} F_1 \\ \vdots \\ F_n \end{pmatrix}$$

The main difference with the usual input-output matrix is that the vector F and the matrix B , as well as L and θ , are partitioned, with some transactions corresponding to expenditure directed at domestic firms (D) and some directed at foreign firms (R).

5.

$$F = \begin{pmatrix} D \\ R \end{pmatrix}$$

and

6.

$$B = \begin{pmatrix} DD & DR \\ RD & RR \end{pmatrix}$$

The ILOSTAT series provides a comprehensive set of internationally comparable labour statistics. However, it should be noted that it does not differentiate between foreign and domestic ownership. In this paper, we use OECD/AMNE data on the employment and output of foreign affiliates and compare their labour-to-output ratio with the overall average, which does not distinguish by firm ownership. Our empirical strategy proceeds in five steps.

1. Benchmarking labour-output ratios.

We begin by comparing the labour intensity of FAs with that of the overall economy. Sector-specific labour/output ratios for FAs are taken from the OECD AMNE database, while total-economy ratios are obtained from ILOSTAT. This comparison establishes the extent to which MNEs differ from the average firm in terms of labour use per unit of output.

2. Estimation of sector-level labour-intensity gaps.

For each sector s , we compute a labour-intensity gap defined as the difference between the MNE labour/output ratio and the corresponding total-economy ratio:

$$\text{Gaps}_s = \left(\frac{L}{O} \right)_{\text{AMNE},s} - \left(\frac{L}{O} \right)_{\text{ILO},s}$$

This measure captures the sector-specific deviation of MNE labour intensity relative to the economy-wide benchmark.

3. Sectoral coverage.

We successfully estimate gap values for 29 out of the 41 sectors for which comparable information is available. Sectors lacking consistent cross-database mappings or complete observations are completed taking aggregate sectoral averages.

4. Application of estimated gaps across countries.

The estimated sector-level gaps are then applied uniformly to all countries in the sample. This step assumes that sectoral differences between FAs and the total economy, rather than country-specific features, drive systematic deviations in labour intensity.

5. Construction of a harmonised dataset.

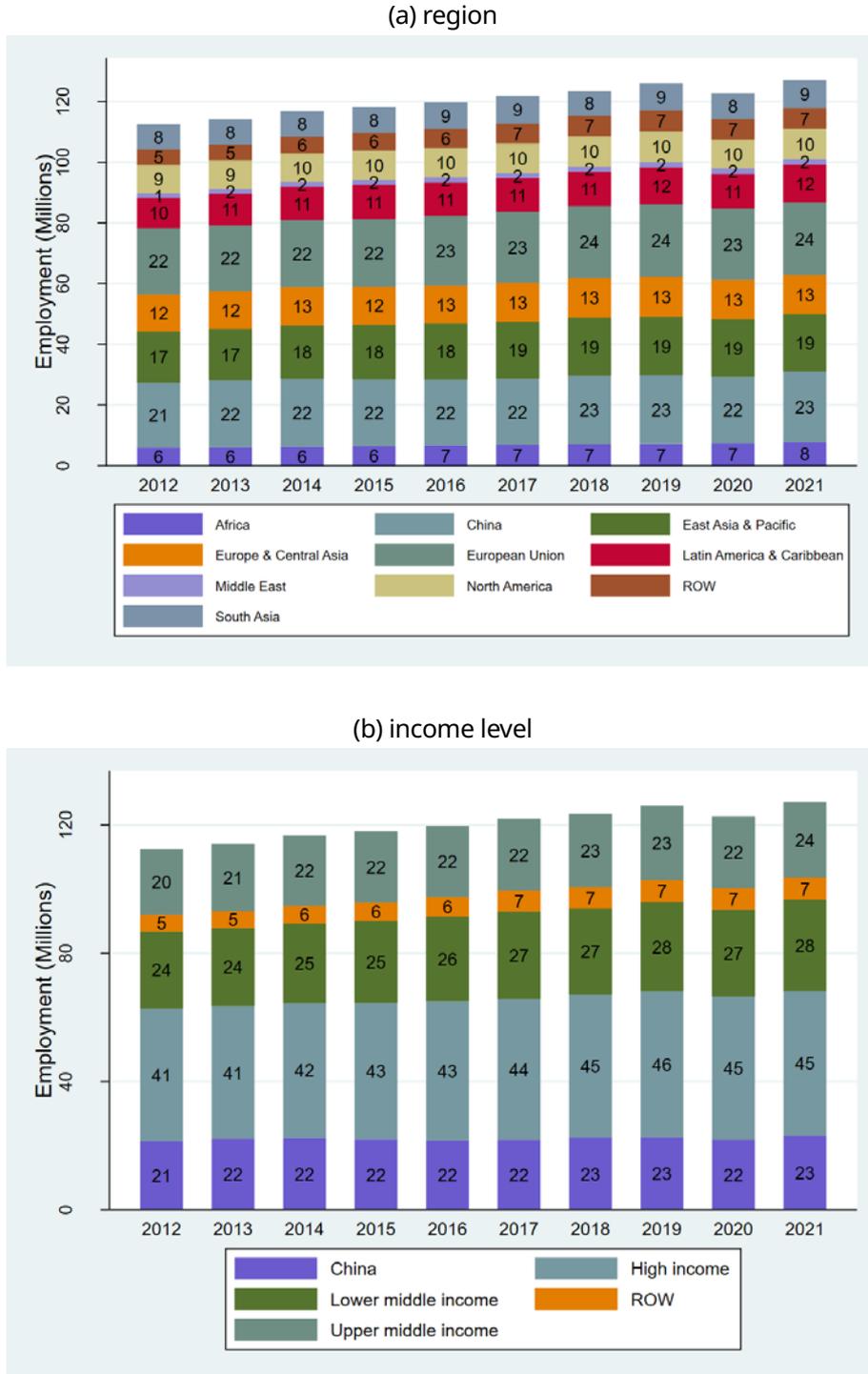
Finally, we adjust FAs employment estimates to ensure full consistency with ILOSTAT totals. This produces a harmonised, globally comparable dataset where sector-level MNE employment aligns with observed labour/output relationships and aggregate labour statistics.

4.2 Results

In this section, aggregate figures on employment sustained by FAs are presented using the calculations described in the previous section. The aggregate results indicate that approximately 125 million jobs were directly sustained by multinationals globally in 2021, representing an increase of 12 per cent with respect to the 2012 level. In relative terms, these values represent a 4.1 per cent of total employment in 2021.

As shown in figure 11, based on regional dynamics, the European Union, China and East Asia and the Pacific have the highest magnitudes of direct employment created by FAs for the period 2012–21. For the period under review, the shares of each region in terms of direct employment remained relatively stable, showing a positive evolution in the amount of employment generated by these companies, except in 2020 due to the impact of the pandemic on the global economy (Bortz et al. 2021). In terms of income level, high-income countries account for 44.9 million of jobs, followed by lower-middle-income (24.2 million), upper middle-income (21 million) and China (22.6 million).

► Figure 11: Direct employment demanded by Foreign Affiliates, 2012-21 (millions)

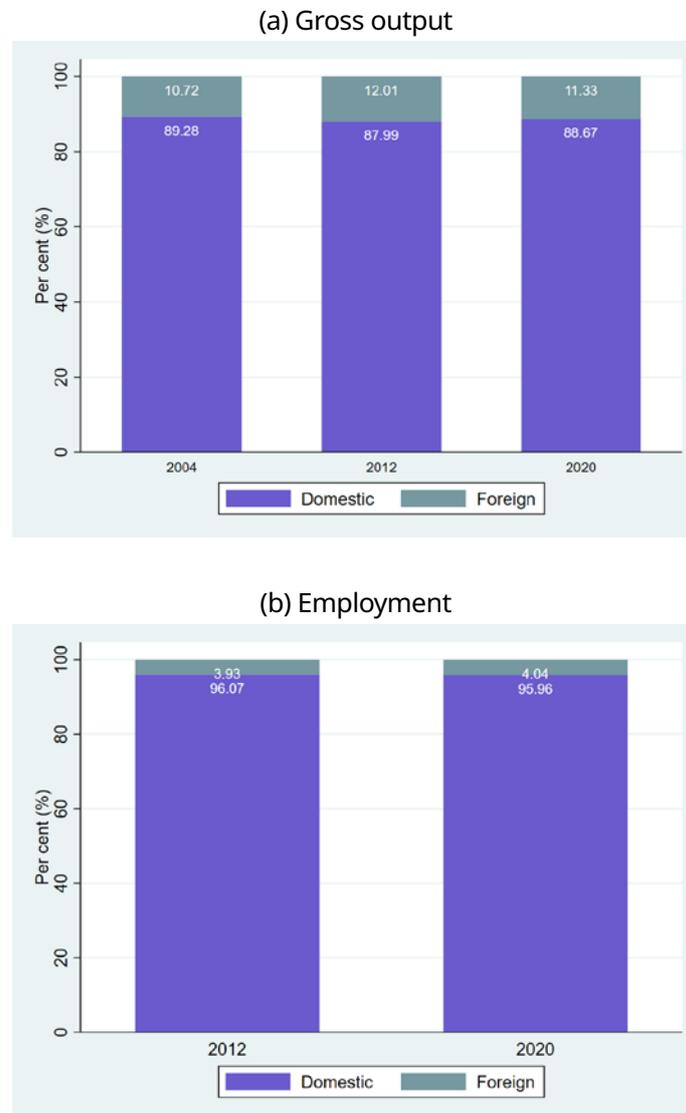


Source: Author's estimate.

The following chart combines the estimated employment data for FAs and the output data contained in the AMNE dataset and the MRIO matrix. As illustrated in figure 12, the share of foreign enterprises in gross output at the international level remained relatively stable. Between 2012 and 2020, this figure experienced a slight decline, dropping from 12.3 per cent to 11.3 per

cent. In terms of employment, the share of foreign enterprises remained at around 4 per cent, although it exhibits marked regional differences.

► **Figure 12: Gross output and employment, by firm's origin in per cent (2004–20)**



Source: Author's estimate, based on AMNE – OECD database.

In terms of sectoral composition, services account for more than 50 per cent of total employment, as illustrated in figure 13. In turn, taking the average across regions, machinery, equipment and vehicles represent 17.9 per cent followed by the 'Other' sector with 13.3 per cent. Chemicals and plastics, food and beverages, and energy and mining are the next sectors with 5.3 per cent, 4.5 per cent and 1.2 per cent, respectively.

Regarding China specifically, the machinery, equipment and vehicles sector is a relevant sector for direct employment, reaching 32.3 per cent by 2019, whilst the food and beverages sector is less relevant when compared to the rest of the regions. Conversely, in the context of Latin America and the Caribbean, East Asia and the Pacific, Africa and South Asia, the food and beverage sector exhibits a higher share than in other regions. In this regard, upper-middle-income

and lower-middle-income countries have the largest shares in this sector. In countries associated with high-income levels, however, the services sector has the highest share among all income categories.

► Figure 13: Direct Employment demanded by Foreign Affiliates, sectoral distribution, 2019 (per cent)



Source: Author's estimate.

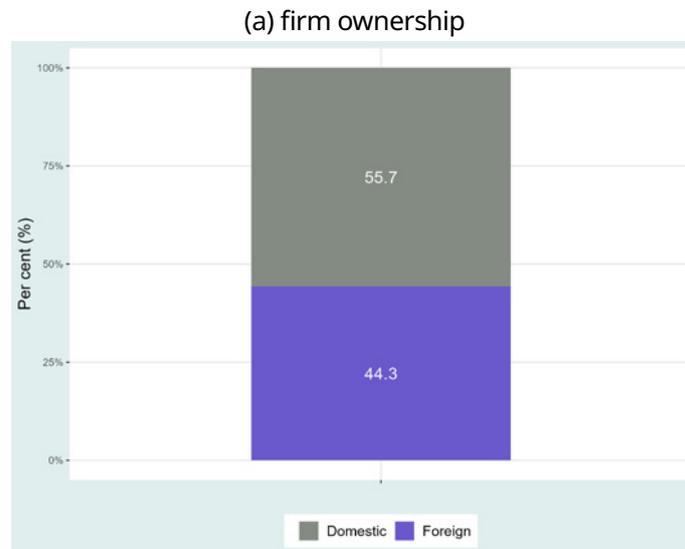
To isolate the employment multipliers associated exclusively with multinational enterprises, the analysis adopts a counterfactual approach in which the demand for domestic products is set to zero. Under this specification, the final demand vector includes only demand directed toward goods and services produced by multinational enterprises, thereby excluding employment effects that would arise indirectly from an initial shock to domestic demand. The resulting estimates thus capture the employment multipliers generated solely by foreign firms' production activities, providing a clearer assessment of their linkages with the rest of the economy.

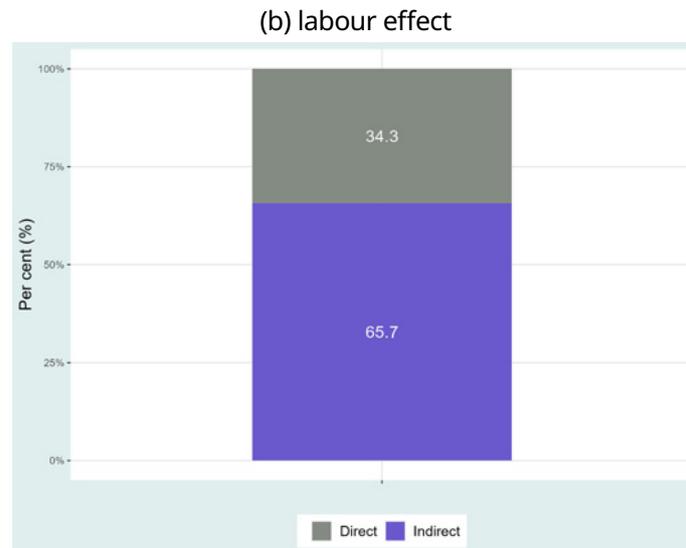
(7)

$$F = \left(\frac{D=0}{R} \right)$$

Figure 14 shows the composition of employment generated by final demand for goods and services produced by foreign enterprises. It is interesting to note that most of the jobs activated are indirect, i.e. they are created because of the n-round effects of output on input demand. Moreover, about 55.7 per cent of these jobs are demanded from domestic firms, showing that foreign firms have strong links with the rest of the economy and that their activity is not isolated in a reduced network of MNEs.

► **Figure 14: Total Employment demanded by Foreign Affiliates, by firm ownership and labour effect, 2019 (per cent)**

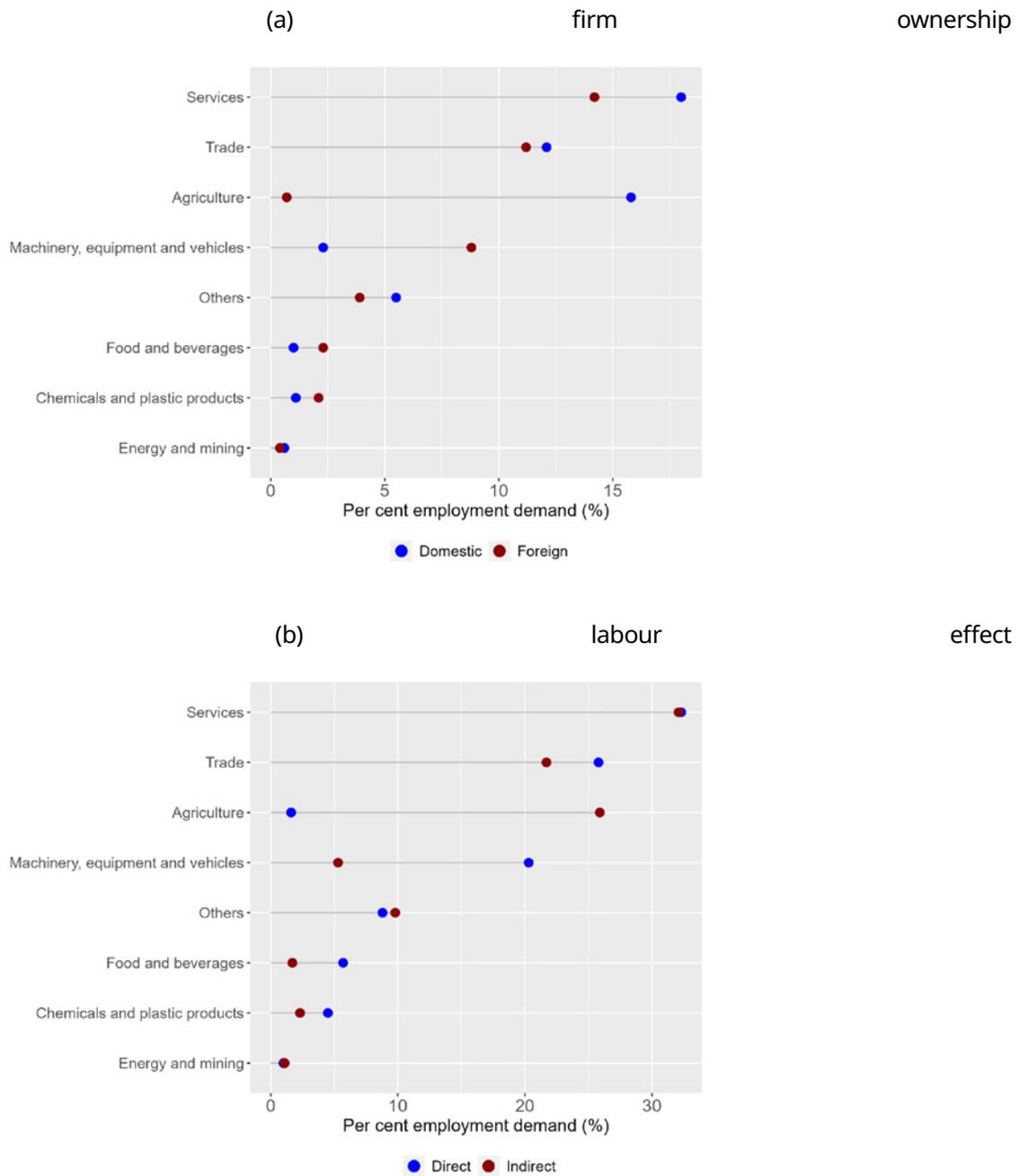




Source: Author's estimate.

To further unpack the mechanisms through which multinational enterprises generate employment, figure 15 examines the composition of labour demand across firm ownership and employment channels. Panel (a) shows the share of employment demanded by domestic and foreign firms as a result of existing final demand for goods and services produced by foreign MNEs. On average, demand originating from foreign firms activates a larger share of employment within foreign enterprises in sectors such as food, chemicals, and machinery, whereas it generates relatively more employment in domestic firms in agriculture, services, and trade. Panel (b) presents a complementary decomposition between direct and indirect employment effects. Indirect employment accounts for a substantial share in agriculture, trade, and services, while direct employment is more prominent in machinery and equipment, highlighting sector-specific differences in the channels through which multinational activity translates into labour demand.

► **Figure 15: Total Employment Demanded by Foreign Affiliates, Sectoral Distribution of Direct and Indirect Labour Demand, 2019 (per cent)**



Source: Author's estimate.

This section demonstrated how multinational companies generate employment opportunities, both directly and via their supply chains. By combining input-output techniques with harmonised employment data, the analysis elucidates the channels through which foreign affiliates interact with domestic economies. This approach reveals significant differences between sectors and firm ownership structures. Decomposing the employment effects highlights the importance of indirect and domestically generated labour demand, demonstrating that the employment footprint of multinational enterprises extends well beyond their own establishments.

▶ Concluding remarks

This paper examines the complex relationship between FDI, MNEs and employment dynamics worldwide, with a particular focus on sectoral, regional and indirect employment effects. Key findings show that MNEs play a significant role in job creation globally, supporting around 125 million direct jobs by 2021, a significant increase from the 2012 baseline. The distribution of these jobs is highly concentrated, with the European Union, China, North America and the East Asia and Pacific region accounting for the highest employment generated by MNEs, leaving poorer developing countries aside.

Examining different sectors, over 40 per cent of total employment created by FAs is found in services. However, in regions such as China, sectors related to machinery, equipment and vehicles are also important, highlighting the different sectoral contributions of MNEs depending on regional economic structures. The paper also highlights the importance of indirect employment effects. MNEs also employ around two indirect workers per direct job commanded, resulting from domestic supply chain linkages and multiplier effects, highlighting the integrated nature of MNEs' operations within local economies.

Looking ahead, several extensions could further strengthen the empirical foundations of our approach. First, future work could relax the assumption of uniform sector-level gaps across countries by incorporating country-specific characteristics, such as productivity levels, to better capture heterogeneity in MNE operations. Specifically, we could draw on the OECD FDIQ Indicators to estimate country-specific productivity or capital-intensity differentials between foreign and domestic firms, which would allow us to adjust the MNE labour-intensity gaps in a way that better reflects cross-country heterogeneity, particularly between OECD and emerging economies.

Future studies should longitudinally track employment trends associated with MNE activities to better understand the sustainability and long-term structural impacts of FDI. In this regard, it would be insightful to look into the importance of "green" or "digital" FDIs for a future, more sustainable development path. Investigations into the role of MNEs in promoting skills development and enhancing the capabilities of the workforce could provide important insights into the human capital effects of foreign investment. In addition, broader assessments of the environmental and social impacts of MNEs' activities are essential for a comprehensive understanding of their holistic effects, which in turn could guide sustainable investment policies. Finally, assessing the effectiveness of policy frameworks designed to harness the benefits of FDI while mitigating adverse effects is crucial; such analyses would inform targeted interventions aimed at optimising employment and economic outcomes. Taken together, these lines of research promise to enrich the understanding of how MNEs shape employment dynamics and sustainable economic development globally.

References

- Ahmad, S., J. Bergstrand, J. Paniagua, and H. Wickramarachi. 2025. "The Multinational Revenue, Employment, and Investment Database (MREID)." *Review of International Economics* 33, no. 4: 817–836. <https://doi.org/10.1111/roie.12808>
- Bénassy-Quéré, A.; Coupet, M. and Mayer, T. 2005. Institutional Determinants of Foreign Direct Investment. CEPII
- Blomström, M. and Kokko, A. 1998. Multinational Corporations and Spillovers. *Journal of Economic Surveys*, 12: 247-277. <https://doi.org/10.1111/1467-6419.00056>
- Borga, M.; Pegoue, A.; Legoff, Gregory M.; Sanchez R., Alberto; Entalsev, D. and Egesa, K. 2022. Measuring Carbon Emissions of Foreign Direct Investment in Host Economies. International Monetary Fund
- Bortz, P., Michelena, G. and Toledo F. 2020. "A Gathering of Storms: The Impact of COVID-19 Pandemic on the Balance of Payments of Emerging Markets and Developing Economies (EMDEs)," *International Journal of Political Economy*, Taylor & Francis Journals, vol. 49(4), pages 318-335, November.
- Charandabi, S. E., Ghashami, F., & Kamyar, K. 2021. US–China Tariff War: A Gravity Approach. *Business & Economic Research*, 11(3), 69–77. <https://doi.org/10.5296/ber.v11i3.18757>
- Ernst, Christoph. 2005. The FDI – employment link in a globalizing world: The case of Argentina, Brazil and Mexico. International Labor Organization
- Feenstra, Robert, Robert Inklaar and Marcel P. Timmer. 2015. "The Next Generation of the Penn World Table". *American Economic Review*, 105 (10): 3150–3182.
- ILO. 2013. Statistics of work, employment and labour underutilization: Report for discussion at the 19th International Conference of Labour Statisticians (Report II, ICLS/19/2013/2). International Labour Organization, Department of Statistics.
- Leontief, Wassily. 1951. *The Structure of American Economy, 1919-1939: An Empirical Application of Equilibrium Analysis*. New York: Oxford University Press.
- Mercer-Blackman, Valerie; Xiang, Wei and Khan, Fahad. 2021. Understanding FDI Spillovers in the Presence of GVCs. The World Bank.
- Ramondo, Natalia, and Andrés Rodríguez-Clare. 2013. "Trade, Multinational Production, and the Gains from Openness." *Journal of Political Economy* 121 (2): 273–322.
- Saurav, Abhishek; Liu, Yan and Sinha, Aarushi. 2020. A Literature Review of the Effects of FDI on Job Creation and Wages. The World Bank.
- UNCTAD. 2020. World Investment Report 2020: International production beyond the pandemic (Chapter I: Global investment trends and prospects). United Nations Conference on Trade and Development.

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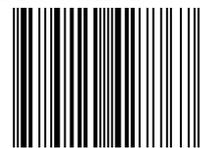
Contact details

**Employment Policy Department
(EMPLOYMENT)**
Development and Investment Branch
(DEVINVEST)

International Labour Organization
Route des Morillons 4
1211 Geneva 22
Switzerland
T +41 22 799 7307



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