

2. Trends and impacts of FDI in Indonesia

This chapter examines the evolution of foreign direct investment (FDI) in Indonesia over the past two decades, its sectoral composition and origin. It also investigates how FDI contributes to key sustainable development priorities, namely global value chain integration, productivity, wages, skills, gender equality and the greening of the economy. The performance of Indonesia is assessed against a group of comparator countries.

Summary and policy directions

The first *OECD Investment Policy Review* of Indonesia conducted in 2010 showed that, in the years preceding the global financial crisis, FDI played a major role in raising employment and productivity and in generating exports in Indonesia. This suggests that FDI, in addition to domestic investment, could make an important contribution to a sustainable and inclusive recovery of Indonesia in the aftermath of the COVID-19 pandemic and resulting social and economic crisis. Besides providing a source for financing, FDI may bring significant advantages to the host country. It can raise productivity; support global value chain (GVC) integration; create more decent jobs; contribute to the development of human capital and the diffusion of cleaner technologies; and bring more gender-inclusive work practices. Indonesia has increasingly incorporated sustainable development targets in national and subnational development planning. Long term development priorities to build a more resilient and sustainable economy include boosting productivity and innovation; strengthening skills; creating more and better jobs; enhancing gender parity; and transitioning to a low-carbon and energy efficient economy.

Foreign direct investment (FDI) as a share of gross domestic product (GDP) in Indonesia has fluctuated over time, reflecting changes in domestic policy conditions. Since 2004, FDI as a share of GDP has grown significantly but has declined recently. Indonesia was historically a key FDI destination in ASEAN, but its share in the region's FDI inflows has fallen in the past few years. Rising global uncertainties have contributed to lower FDI inflows, which are expected to decline further due to the COVID-19 pandemic and ensuing global economic crisis. Cross-border equity flows in Indonesia have already dropped significantly during 2020 relative to 2019, as companies have put some mergers and acquisitions (M&A) deals and greenfield projects on hold due to rising uncertainty.

The largest share of FDI during 2010-19 went to manufacturing, although the share is declining as services have received increasing flows. The primary sector also attracts a large share of FDI due to the country's rich endowment of natural resources. Greenfield FDI projects are prevalent in manufacturing, while M&A deals are mainly concluded in the primary and services sectors. The bulk of FDI to Indonesia originates in Singapore and Japan. Investment from Singapore is, however, likely to be inflated due to the tendency of some foreign multinationals to invest through their Singapore affiliates.

Foreign firms directly contribute to several sustainable development objectives of Indonesia. They are more productive, have higher employment ratios and pay higher wages than Indonesian firms. Additionally, they export a higher share of their production. Foreign firms also generate important multiplier effects on the domestic economy. For instance, an increase of 1% in foreign sales is found to increase the total expenses for wages and salaries by 0.4% through the creation of new jobs. This additional labour income, in turn, is expected to generate a positive multiplier effect on the domestic economy through its impact on domestic consumption.

Foreign firms favour participation in GVCs, but Indonesia appears to be less integrated in GVCs than other countries in the region. It has a lower export orientation and a lower share of foreign value added in gross exports, and foreign firms contribute less to domestic value added relative to their peers in other countries. Its level of GVC participation is nevertheless similar to that other economies with large domestic markets, namely India, China and the United States, or rich in natural resources like Australia. Foreign firms in Indonesia also contribute less to gross exports and imports in comparison with other countries in the region since Indonesia attracts a large share resource-oriented and market-seeking, as opposed to export-oriented, FDI.

FDI supports productivity gains within the economy, as it is concentrated in sectors that are relatively more productive, namely mining, energy, transport services and chemicals. Across most sectors, foreign firms are more productive and are more likely to invest in research and development (R&D) and innovate. While this foreign performance premium confirms the importance of the direct contribution of FDI to sustainable development, it also points to gaps in domestic capabilities, which reduce the chances for technology

transfer from foreign to domestic firms and positive productivity spillovers. Business linkages between foreign and domestic firms are significant, suggesting that the potential for productivity spillovers is high. In 2016, intermediate goods sourced domestically by foreign firms accounted for 36% of their output. The large extent of domestic linkages observed in Indonesia is also partly explained by local content requirements in a variety of sectors, including mining, transport equipment and electronics. FDI influences different labour market outcomes in opposite ways. It is concentrated in sectors with relatively higher wages (mining, energy, transport services), but with lower levels of female participation. In most sectors, foreign firms pay higher salaries and are more gender-inclusive than domestic firms: they employ a larger share of female workers and are more likely to be run or owned by women. Foreign and domestic firms employ comparable levels of skilled labour and report similar difficulties in hiring qualified labour, particularly in relation to IT, foreign language proficiency and technical skills.

Lastly, FDI contributes to Indonesia's environmental targets in contrasting ways. Foreign investors tend to locate in sectors that are more polluting in terms of CO₂ emissions, but they are more energy-efficient than domestic firms. While the share of FDI in renewable energy is still comparatively low, inflows in clean energy infrastructure are increasing rapidly.

Main policy directions

Some policy directions are formulated based on the results presented in this chapter. They will be further discussed in other chapters of this review.

- Due to the COVID-19 pandemic and resulting economic turmoil, FDI flows are expected to decline further in 2020. Policies to retain investment will play a key role in the recovery phase to minimise economic and social costs such as loss of jobs and tax revenue (Chapters 6 and 7). Additionally, removing remaining FDI restrictions and creating a level playground for both domestic and foreign companies (Chapter 3) will be key to attract investors and enhance positive FDI spillovers.
- The share of FDI in manufacturing has declined in the past few years. Among other constraints, foreign manufacturing firms report difficulties in finding workers with the required skills. Enhancing the attractiveness of Indonesia as a manufacturing location for foreign investors requires actions in multiple areas, including addressing inefficiencies and rigidities in the labour market, improving the quality of the education system, and liberalising services FDI (Chapter 3).
- FDI is highly concentrated in terms of origin: the bulk of FDI in Indonesia originates in Asia, of which more than two-third comes from Singapore and Japan. While there is evidence that some OECD and EU multinationals invest in Indonesia through their operations in Singapore, reliance on FDI from a small group of investors increases Indonesia's exposure to changes in macroeconomic conditions in those countries. Targeting FDI from other countries, especially from other regions, is therefore crucial to reduce the country's vulnerability to external shocks (Chapter 6).
- Affiliates of foreign firms established in Indonesia tend to outperform domestic firms: they are more productive, spend more on R&D, and innovate more. While a foreign performance premium is observed in many countries, it is especially large in Indonesia, particularly in some sectors (e.g. non-metallic minerals, food, chemicals). The observed gaps between domestic and foreign firms may indicate a lack of domestic capabilities. Consequently, domestic firms may not have the capacity to benefit from the presence of foreign firms, such as through the adoption of foreign technology. Strengthening domestic firms' capabilities requires policy efforts in different areas, including improving human capital development, boosting research and innovation, and engaging in responsible business conduct (Chapter 5).
- Foreign firms in Indonesia are prevalent in male-dominated sectors but are more gender-inclusive than domestic firms. Specifically, they employ higher shares of women, and they are more likely to be run or owned by women. Closing the gender gap could bring about significant benefits for

Indonesia, and the results suggest that the country could leverage FDI to promote more gender-inclusive outcomes in the labour market. Chapter 5 touches upon responsible business conduct practices in relation to gender equality in Indonesia.

- FDI is prevalent in sectors that emit more CO₂, but foreign firms are more energy-efficient than domestic firms. Furthermore, Indonesia's share of FDI in renewables is growing fast. The results show that there is the potential to enhance the environmental performance of Indonesian firms, for instance by encouraging the diffusion and adoption of cleaner technologies brought by foreign firms. Responsible business practices of foreign multinational companies in Indonesia in relation to the environment are discussed in Chapter 5. The findings also suggest that Indonesia could benefit in terms of a reduced environmental impact by attracting FDI in a wider variety sectors by lifting FDI restrictions (Chapter 3).

FDI can support Indonesia's sustainable development agenda

The first OECD *Investment Policy Review of Indonesia* released in 2010 shows that FDI has historically contributed little to gross fixed capital formation and that investment, both domestic and foreign, has been inadequate to meet the development needs of the country. At the same time, the review highlights that FDI in Indonesia has played a major role in raising employment and productivity and in generating exports, especially in the years preceding the global financial crisis of 2008 (OECD, 2010).

The COVID-19 pandemic is likely to have long lasting and disruptive economic and social consequences in many countries, including Indonesia. In light of the rapid deterioration of the economic and social situation, the Indonesian government is expected to further strengthen efforts to support a sustainable and inclusive economic recovery from the pandemic and resulting economic crisis. Indonesia's experience in the years preceding the global financial crisis suggests that FDI could make an important contribution in the aftermath of the COVID-19 pandemic.

Besides providing a source for financing, FDI may bring significant advantages to the host country. It can raise productivity, ultimately leading to an improvement in standards of living; support GVC integration; create jobs; contribute to the development of human capital and to the diffusion of new technologies. FDI can also support social and environmental goals, for instance by bringing more gender-inclusive work practices in the host country and by increasing energy efficiency through the diffusion of cleaner technology.

The impact of FDI can be both direct and indirect. Direct impacts stem from foreign firms' operations abroad, whereas indirect impacts (or spillovers) arise from foreign firms' interactions with domestic firms.¹ The effects of FDI in promoting sustainable and inclusive growth are however not automatically positive. FDI affects different segments of the population and regions unevenly and, thus, may exacerbate existing income and territorial disparities.² Domestic policies and institutions are crucial for enabling FDI benefits while curbing potential adverse impacts.

Indonesia has been one of the first Asian countries to incorporate sustainable development targets, or the Sustainable Development Goals (SDGs) in national and subnational development planning (Republic of Indonesia, 2019a). While in the short run, the government may reorient its policy priorities in response to the COVID-19 crisis, key objectives reflected in current strategic development planning will remain important to build a more resilient and sustainable economy. These priorities include boosting productivity and innovation; strengthening skills; creating more and better jobs; enhancing gender parity; and the transition to a low-carbon and energy efficient economy.

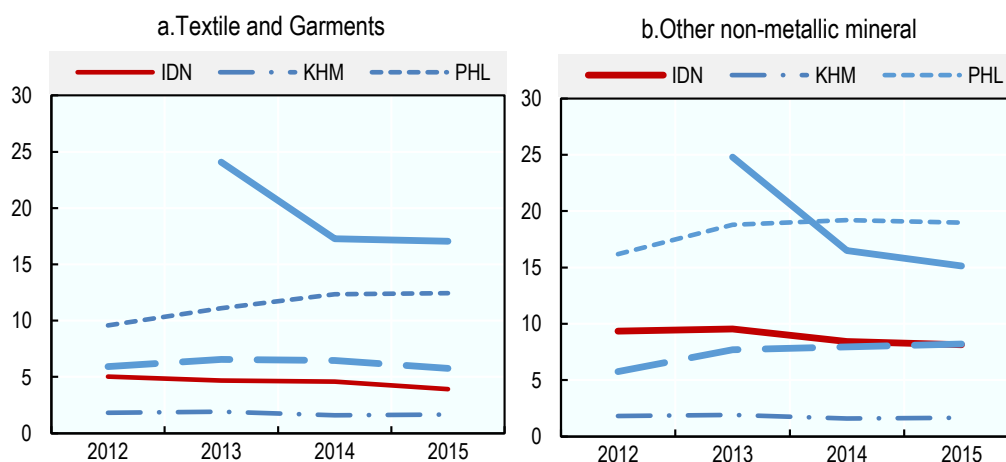
Boosting productivity

Recent trends in labour productivity show that Indonesia lags behind most countries in the region. OECD estimates show that, even in diverse industries, such as labour-intensive textile and garments and capital-intensive non-metallic minerals, Indonesia's labour productivity is below the regional average (Figure 2.1). Poor productivity performance of Indonesian firms is one of the reasons behind the country's loss of competitiveness in global markets (ADB, 2019a, 2019b; World Bank, 2018).

Boosting productivity and competitiveness in global markets is high on Indonesia's sustainable development agenda. The 2015-2019 National Medium-Term Development Plan (Republic of Indonesia, 2019a) sets nine guiding principles for government action to support the country's sustainable development agenda. Improving productivity and competitiveness in the international market is one of those guiding principles. 'Making Indonesia 4.0' initiative (Republic of Indonesia, 2019b), designed to revitalise the manufacturing sector through the diffusion of 4th generation technologies (artificial intelligence, machine learning, robotics, and so on), includes explicit targets on export, productivity and innovation. The strategy aims at returning the industry net export rate to 10%; doubling the labour productivity rate over labour costs; and allocating 2% of GDP to R&D and technology innovation fields. To reach these ambitious targets, the government has formulated ten national priority strategies. One of the strategies focuses on attracting FDI to close the technology gap and encourage technology transfer to local companies.³

Figure 2.1. Indonesia is less competitive than some regional peers in various sectors

Labour productivity (in bln USD)



Note: Labour productivity: value added per employee
Source: OECD elaboration based on OECD Input-Output Tables and ILO.

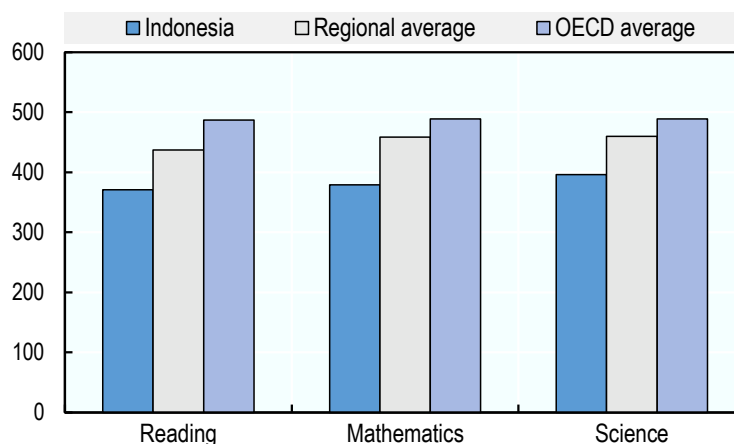
Existing evidence suggests that FDI, in addition to domestic investment, can support Indonesia in achieving its productivity targets. Foreign firms generate value added and jobs, and therefore directly contribute to aggregate domestic productivity. They may also affect productivity via spillovers on domestic firms. Business linkages with foreign firms are a key channel of FDI spillovers, as they facilitate the transfer of technology and skills and help domestic business tap into global value chains. Positive FDI spillovers are more likely to occur when domestic firm capabilities are closer to the foreign firm frontier. At the same time, FDI may have a negative impact on domestic productivity. FDI can crowd out local enterprises, for instance by increasing competition for inputs or local skills. Accordingly, FDI spillovers can be uneven across domestic firms, and potentially have a negative impact on domestic productivity.

Creating more decent jobs, improving skills and enhancing gender equality

Indonesia faces several labour market challenges, including limited decent employment opportunities, poor quality of the labour force, and labour market segmentation. Recent estimates by the OECD show that around half of all dependent employees and 70% of all workers in Indonesia are in informal jobs (OECD, 2018). These jobs tend to be associated with low wages and poor working conditions. Scarcity of skills, particularly of high-skilled professionals and managers, is a key concern for businesses (ADB, 2016). The lack of adequate skills in the labour market is consistent with the need to improve the quality of the domestic education system. According to the OECD Program for International Student Assessment (PISA), Indonesian students score lower than the OECD average and many other countries in the region in reading, mathematics and science (Figure 2.2). In addition, Indonesian women still do not participate equally in the labour market. Women tend to be concentrated in the informal economy, are paid less and face worse working conditions (ILO, 2020).

Figure 2.2. Indonesian students underperform their regional and OECD peers in all PISA assessment areas

Students' average scores in reading, mathematics and science



Note: The regional average is based on China, Singapore, Malaysia, Thailand, Indonesia and the Philippines.

Source: OECD, PISA 2018 Database

The 2015-19 Medium Term Development Plan integrates objectives and policies to expand decent employment opportunities and social protection for workers in vulnerable categories, such as informal workers, those with disabilities and elderly people. The plan also includes a number of measures to improve the quality of human resources through improving access to, and quality of, higher education and vocational training. It also contains objectives to enhance the role and representation of women in political and economic life. Enhancing the quality of human resources is one of the ten priorities identified in 'Making Indonesia 4.0' to accelerate the development of the manufacturing sector. The strategy states that Indonesia will work with industry players and foreign governments to improve the quality of training centres and develop skills that meet the needs of businesses.

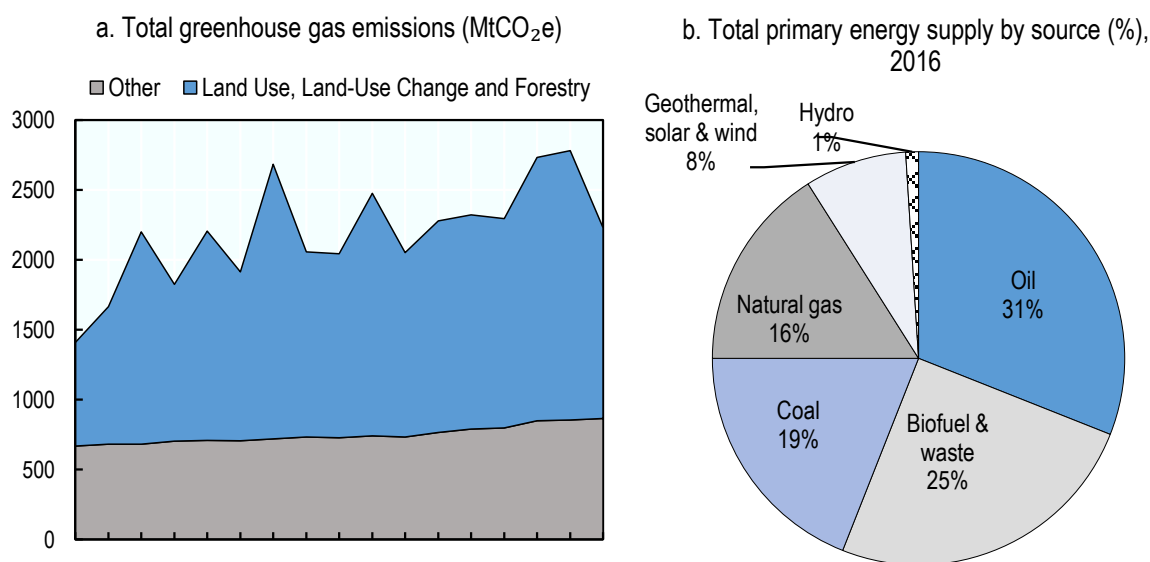
Several studies suggest that Indonesia could leverage FDI to address crucial labour market challenges. The establishment of a foreign investment or the takeover of a domestic firm by a foreign investor causes changes in the local demand for labour, thereby affecting domestic employment, wages and the labour force composition (e.g. the gender balance or skill intensity). Foreign firms may affect labour market outcomes directly, for instance by paying salaries to local employees, or indirectly through spillovers on

domestic firms. For example, foreign firms may compete for labour with domestic firms in the local labour market, which in turn may result in higher wages.

Transition to a low-carbon and energy efficient economy

Indonesia faces increasing environmental challenges associated with rapid urbanisation and economic growth. In the future, the country is expected to be increasingly affected by climate change with significant implications for the safety and prosperity of its communities. Indonesia is one of the main global emitters of greenhouse gasses. Up to 60% of its total emissions, which have grown over time, are caused by deforestation, forest degradation and peatland conversion (panel a, Figure 2.3). Energy demand has also accelerated, underpinned by strong demand for transport services and rising domestic incomes. Growing demand for energy poses additional challenges to climate change mitigation. Energy transition from fossil fuels to renewables has therefore become critical to curb emissions. Recent estimates by the International Energy Agency (IEA) show that Indonesia's share of renewable energy sources such as hydro, geothermal, solar, and wind (excluded biofuel and waste) in total primary energy supply remains modest (panel b).

Figure 2.3. Greenhouse gas emissions are increasing, while the share of renewables remains modest



Note: Total greenhouse gas emissions including land use, land-use change and forestry; panel b: Primary energy supply is defined as energy production plus energy imports, minus energy exports, minus international bunkers, then plus or minus stock changes.

Source: OECD elaboration based on Climate Watch (panel a) and IEA World Energy Statistics and Balances: Extended world energy balances (panel b)

Indonesia's climate pledge ("nationally determined contribution", or NDC) targets a 29-41% reduction in emissions by 2030, compared to "business as usual".⁴ The high end of this range, conditional on support from international cooperation, would require emissions in 2030 to remain at or below current levels. Benefits in terms of additional GDP growth are estimated to be substantial under both scenarios (Indonesian Ministry of Development Planning, 2019). Energy transition from fossil fuels to renewables is also a key pillar of Indonesia's plan to decarbonise its economy. The National Energy Policy (Kebijakan Energi Nasional, KEN) launched by the government in 2014 (Government Regulation No. 79/2014) sets a renewable energy target of 23% by 2025.⁵

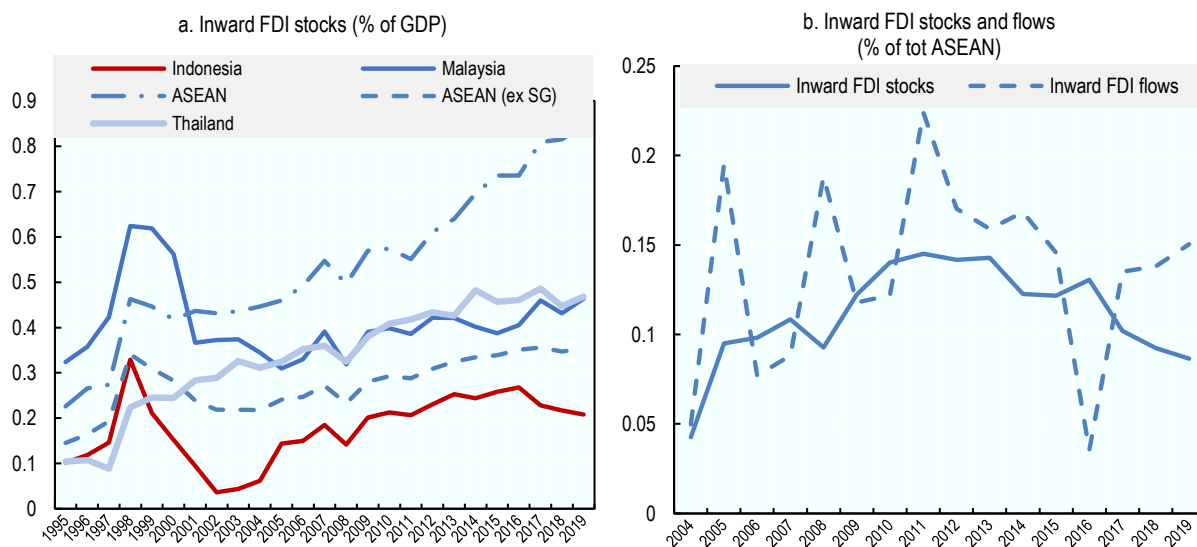
Growing evidence shows that FDI may have sizeable environmental impacts in host countries. It can affect a country's footprint through different channels: by expanding the *scale* of economic activity, by changing the *structural composition* of economic activity and by bringing *new techniques* of production.⁶ The scale effect is expected to increase CO₂ emissions, since an increase in the size of an economy implies more production and, in turn, more emissions. Conversely, the 'new techniques' effect often results in a reduction of emissions by helping diffuse cleaner or energy-saving technologies. The composition effect refers to changes in the industrial structure driven by FDI and its impact on emissions varies based on the type and level of specialisation of a country. The net impact of FDI on CO₂ emissions depends on several factors, including the stage of development and the policy context. Under the right market conditions, FDI may also contribute to reducing emissions by financing renewable infrastructure. Foreign firms play an important role in the diffusion of renewable energy technology across borders. Investment in renewable energy is critical in the context of mitigating CO₂ emissions, especially in emerging countries where the demand for energy is growing rapidly.

FDI trends

Recently FDI as a share of GDP has fallen

Over the past two decades, FDI as a share of GDP in Indonesia has fluctuated, reflecting changes in domestic policy conditions (panel a, Figure 2.4). Major policy reforms brought a surge in FDI in the mid-1990s. During this period, a large amount of export-oriented FDI flowed into labour-intensive manufacturing sectors, making Indonesia one of the main FDI destinations in the region. In 1995, FDI corresponded to 10% of GDP. By 1998, FDI as a share of GDP had reached 33%, its historically highest point. In 1999, FDI as a share of GDP fell to 4%, its lowest point. FDI as a share of GDP started to pick up only after 2004, boosted by several

Figure 2.4. FDI as a share of GDP and in total ASEAN is declining



Source: OECD elaboration based on UNCTAD and the World Bank.

Indonesia was hit hard by the Asian financial crisis of 1997-98, which caused massive outflows of FDI from the country. FDI as a share of GDP fell dramatically during this period, going down to 4% in 2003. Indonesia's economic recovery was slower than other countries in the region, also due to a period of political instability. FDI as a share of GDP started to pick up only after 2004, boosted by several

liberalisation reforms put in place by the government to meet the conditionality attached to IMF loans and facilitate restructuring of the corporate sector. Consequently, foreign ownership shares increased in many domestic companies who suffered from financial difficulties in the aftermath of the crisis (OECD, 2010). Between 2004 and 2007, FDI as a share of GDP tripled, passing from 6% to 18%.

During the global financial crisis of 2008-09, inflows remained generally robust by historical standards and in comparison with the fall in FDI in OECD countries (OECD, 2010). FDI as a share of GDP fell in 2008, but recovered sharply in 2009. Since 2016, FDI as a share of GDP has declined, partly owing to sluggish cross-border M&A sales and significant divestments by foreign multinational companies (UNCTAD, 2017). Mounting global uncertainties such as rising trade tensions and protectionism, China's economic slowdown, and tightening US monetary policy (and the resulting shifts of capital from low interest rate to the high interest rate countries) have contributed to lower FDI inflows. At the same time, there is some evidence that Indonesia may have benefitted from the US–China trade tensions. Recent analysis shows that the US–China trade war is likely to have contributed to trade and FDI diversion effects, where companies operating in China relocated operations away from China, especially to neighbouring countries in Southeast Asia, including in Indonesia (World Bank, 2020). Due to the COVID-19 pandemic and resulting global economic crisis, FDI flows are expected to decline further in the course of 2020. The latest data show a significant drop in equity flows in Indonesia, as well as in ASEAN, already in the first quarter of 2020 relative to the first quarter of 2019 (Box 2.1). This is because companies have put some M&A deals and greenfield projects on hold in response to mounting economic uncertainty (OECD, 2020).

Being by far the region's largest economy, Indonesia was historically a key FDI destination in the region. In the past few years, however, Indonesia's share in FDI flows to ASEAN has fallen (panel b, Figure 2.4). This is partly explained by the increasing importance of less developed ASEAN countries, namely Cambodia, Lao PDR, Myanmar and Viet Nam (CLMV), as FDI locations in the region. Foreign companies are investing more and more in CLMV, attracted by the competitive labour costs and increasingly open investment and trade regimes of those countries.

Box 2.1. The impact of the COVID-19 pandemic on FDI in Indonesia

Globally, FDI flows are expected to plummet due to the COVID-19 pandemic and the consequent economic turmoil. OECD projections indicate that even under the most optimistic scenario, global FDI flows will likely drop by at least 30 percent in 2020 compared to 2019 before going back to pre-crisis levels by the end of 2021 (OECD, 2020). The fall in FDI is predicted to be sharper in developing and emerging countries because sectors that have been severely impacted by the pandemic account for a larger share of their FDI. While the immediate effect on FDI will stem from a reduction in reinvested earnings, equity capital flows will also be affected as companies will put some M&A deals and greenfield projects on hold (OECD, 2020).

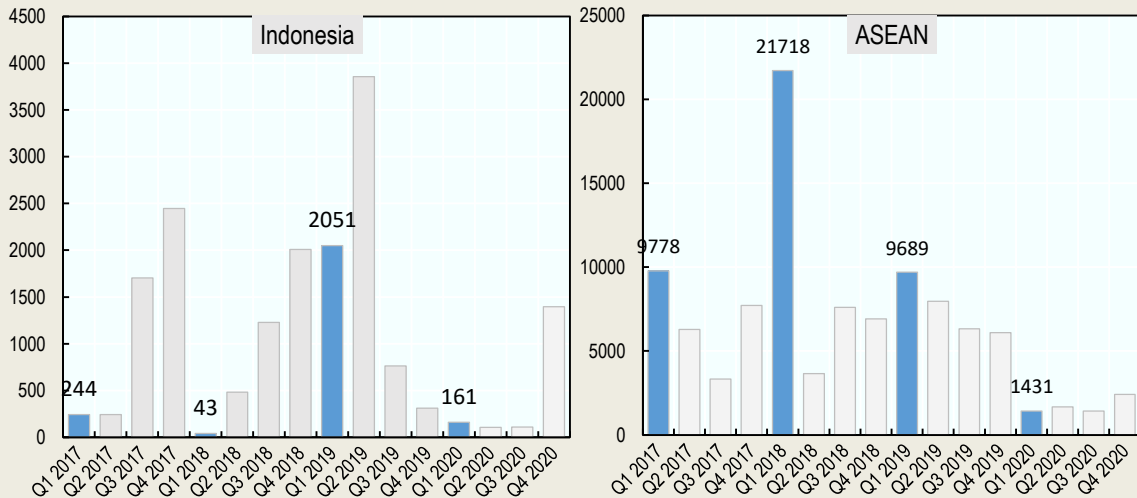
Data on cross-border M&As from the Refinitiv database show a significant decline in completed deals in the first quarter of 2020 in both Indonesia and ASEAN as a whole (Figure 2.5). In Indonesia, the value of cross-border M&As fell by 92% relative to the first quarter of 2019. A sharp decline is observed also in ASEAN, where the value of cross-border M&A deals dropped by 85% compared to the first quarter of 2019. In Indonesia, a significant drop can be observed also in the second and third quarter of 2020, while completed M&A deals in the fourth quarter are higher.

The latest data on greenfield FDI from the Financial Times' fDi Markets database provide further evidence that investors are more reluctant to explore new investment opportunities due to the pandemic. In Indonesia, the value of greenfield FDI pledges in the first quarter of 2020 dropped by 28% relative to 2019 and by 41% relative to 2018 (Figure 2.6). A sharp decline is observed also in the third quarter of 2020 relative to 2019.⁷ Similarly, in ASEAN FDI pledges in the first quarter of 2020 decreased

by 31% compared to 2019 and 47% compared to 2018. A sectoral breakdown of greenfield investments shows that in Indonesia infrastructure (construction, energy and ICT infrastructure) and services suffered the largest decline. Conversely, announced projects in manufacturing significantly increased relative to 2019. A similar trend is observed in ASEAN as a whole.

Figure 2.5. Value of completed M&A deals, 2017-2020

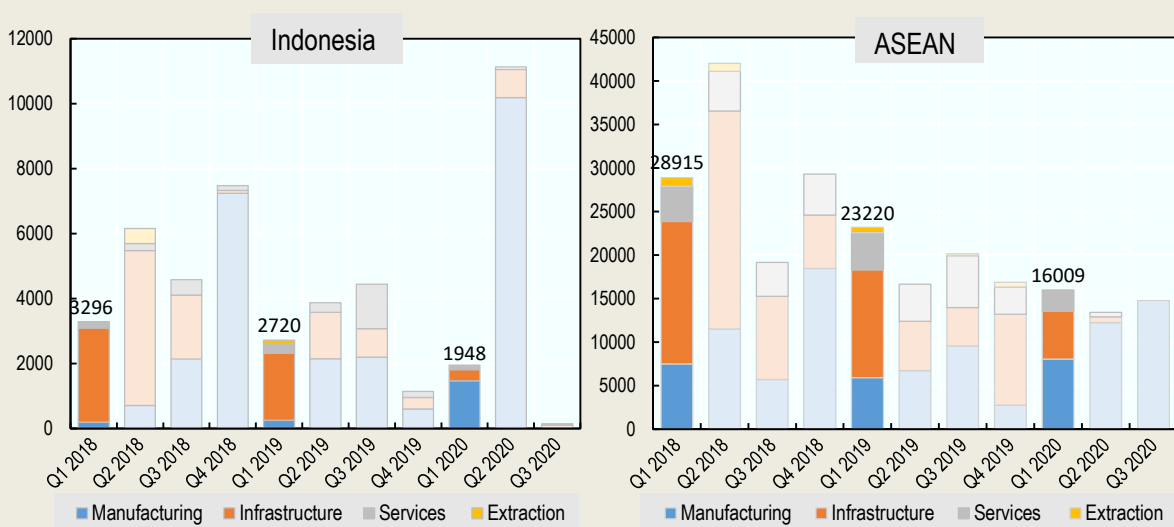
USD millions



Source: OECD based on Refinitiv M&A database

Figure 2.6. Value of announced greenfield investments by sector, 2018-2020

Announced capital expenditure, USD millions



Note: Infrastructure includes construction, energy and ICT infrastructure.

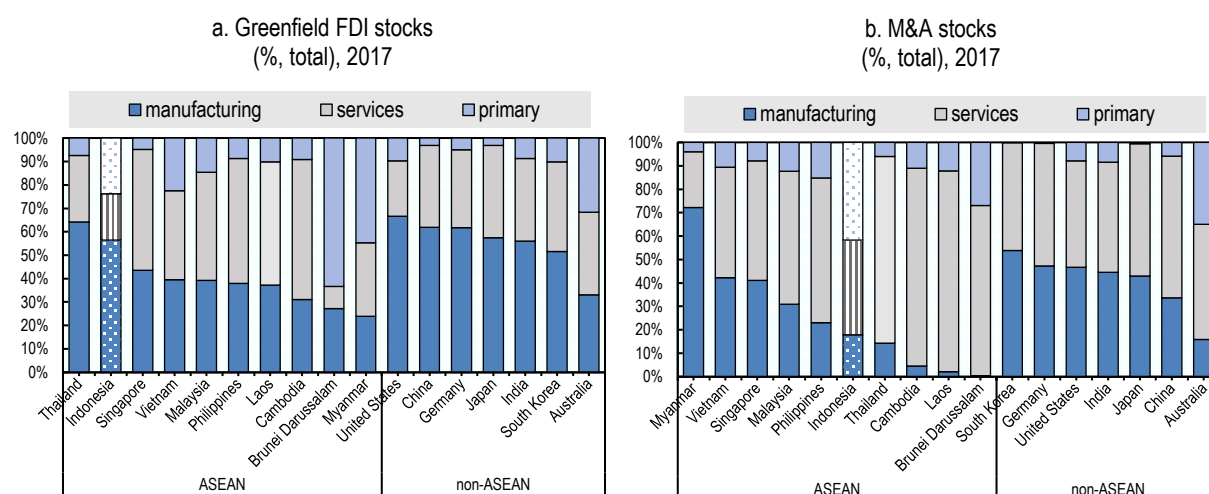
Source: OECD based on Financial Times fDi Markets (2020).

Greenfield investment dominates manufacturing, while M&A deals prevail in the primary and services sectors

Greenfield investment and cross-border M&As are two important entry modes for foreign investors.⁸ The *Financial Times* fDi markets database provides cross-border greenfield projects, while Dealogic collects data on cross-border M&A deals. Greenfield FDI data do not cover agriculture; hence, the share of greenfield projects in the primary sector only includes investment in mining. Greenfield FDI data also exclude energy and construction, therefore these two sectors are excluded from the analysis.

The bulk of greenfield investment in Indonesia is destined to manufacturing (panel a, Figure 2.7). Indonesia's share of manufacturing in total greenfield FDI is the second highest in the region (56%) after that of Thailand (64%), and similar to that of other economies including the United States (67%), China (62%) and Germany (62%). Its greenfield FDI share in the primary sector is also significant (24%). Indonesia's share is the third largest in the region, given the country's abundance of natural resources, after that of Brunei Darussalam (63%) and Myanmar (45%). Since Indonesia attracts a large number of foreign multinationals in agriculture, particularly in food crops and plantations, the share of greenfield investment in the primary sector is likely to be underestimated.

Figure 2.7. Greenfield FDI is concentrated in manufacturing, while M&A deals are prevalent in the primary and services sectors



Note: Energy and construction are not covered by greenfield FDI data, hence these two sectors are not shown. Moreover, greenfield FDI data do not cover agriculture; thus, the share of greenfield FDI in the primary sector might be underestimated.

Source: OECD based on Financial Times's fDi markets and Dealogic.

Foreign M&A deals are mainly concentrated in the primary and services sectors. Indonesia's share of M&A contracts in the primary sector is the highest in the region (42%) and similar to that of other resource-rich countries like Australia (35%). Within the primary sector, the majority of M&A deals were concluded in mining (60%), although M&A contracts in agriculture account for a significant share (40%). A large number of M&A deals are also reported in services (40%), but the share is one of the lowest in the region. Finally, Indonesia's share of M&A deals in manufacturing is modest (18%). While the share of M&A deals in manufacturing is low in most ASEAN countries, Indonesia's share is below the regional average.

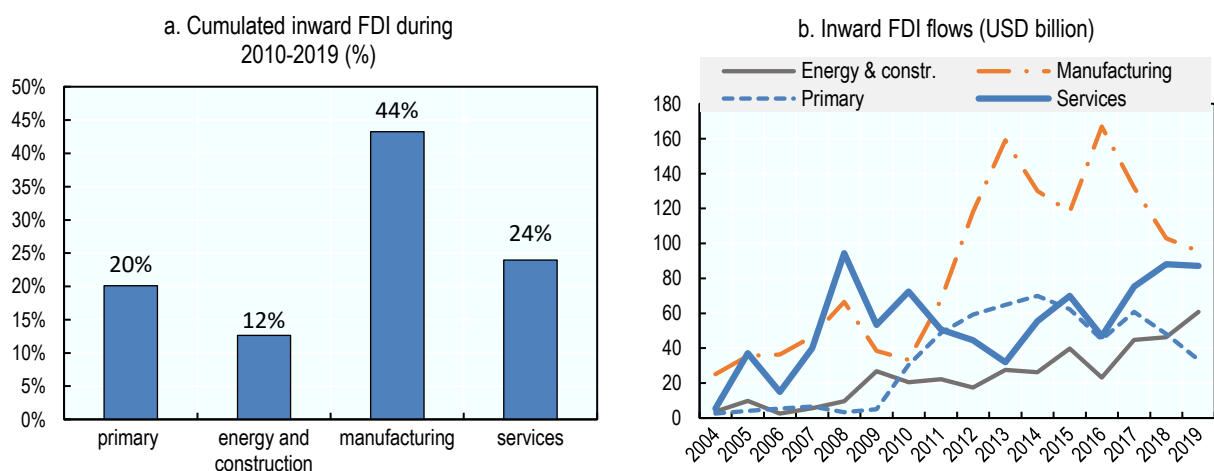
Manufacturing FDI accounts for the largest share but is declining

FDI data from the Indonesian Investment Coordinating Board (BKPM) are used to examine changes in structural distribution of FDI over time.⁹ BKPM's FDI statistics differ from those of other domestic sources, such as Bank of Indonesia, by excluding oil and gas and financial services, by deviating from the standard FDI definition and by the possible inclusion of some domestic equity contributions (Box 2.2).

According to the BKPM's FDI data, the sectoral distribution of FDI in Indonesia is dominated by manufacturing (panel a, Figure 2.8). About 44% of all foreign investments recorded by BKPM over 2009-18 were in manufacturing, 24% in services, 20% in the primary sector, and 12% in energy and construction. As investments in oil and gas and finance are not recorded by BKPM, the shares of primary and services sectors are likely to be underestimated.

The structural distribution of FDI in Indonesia has changed considerably over time. Until the 1980s, FDI was prevalent in extractive and energy activities. Since the early 2000s, FDI flows in the manufacturing sector increased significantly as a result of large greenfield investments in metals, chemicals, motor vehicles and the food industry (panel b, Figure 2.8). Recently, however, FDI flows in manufacturing have fallen, reflecting a loss of competitiveness of the Indonesia's manufacturing sector relative to other countries in the region (ADB, 2019a and 2019b; World Bank, 2018). FDI flows in the primary sector have also grown considerably since 2009. Besides extractive activities, an increasing amount of FDI went to agriculture, especially food crops and plantations. Within the plantation subsector, palm oil is the most important industry for FDI, driven by growing world demand for crude palm oil. Since 2014, however, FDI flows in the primary sector have declined. This drop was driven mainly by the mining sector, where investments have decreased owing to the ban on iron ore exports imposed in 2014. The energy sector has also attracted a growing share of FDI, whereas construction has remained a relatively restricted sector to foreign investors. Finally, FDI in services has been comparatively under-represented in Indonesia, although the country has attracted increasingly higher shares. Transport, storage and communications were responsible for most of the growth in services FDI over the past decade. Recently, hospitality and real estate have also played an important role.

Figure 2.8. Manufacturing accounts for 44% of FDI, but the share is declining



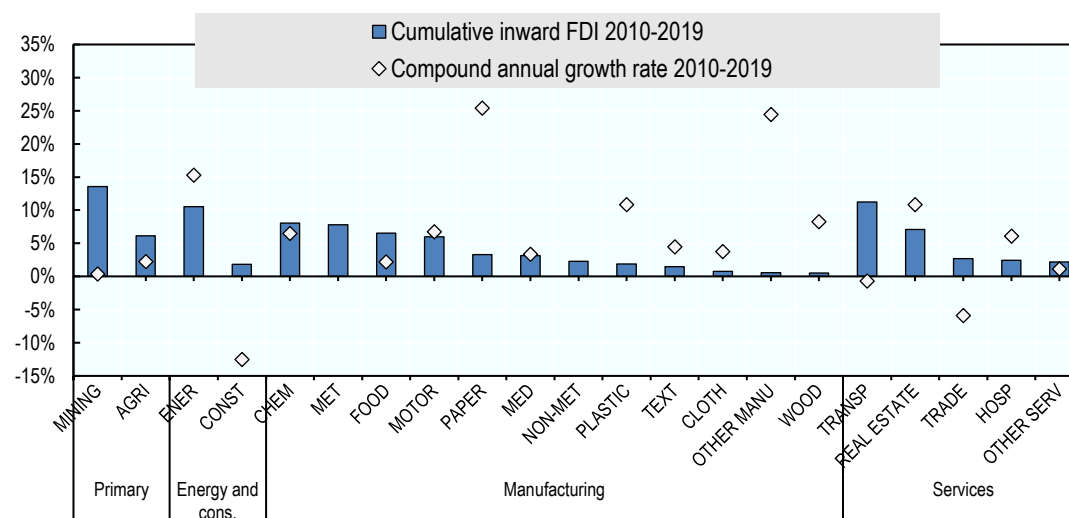
Note: Oil and gas, banking and non-bank financial services are excluded.

Source: OECD elaboration based on Indonesia Investment Coordinating Board (BKPM)

A closer look at the sectoral distribution of FDI during 2010-19 shows that, within manufacturing, the top four host industries are chemicals (8%), metals (8%), food (7%) and motor vehicles (6%). The data shows

that FDI flows increased in all manufacturing sectors. Within the services sector, transport, storage and communications (11%) and real estate (7%) are key targets. FDI flows in the transport sector, which increased rapidly during the wave of privatisations that took place after the Asian crisis, declined. Conversely, the importance of sectors such as real estate and hospitality rose. Mining (14%) receives the bulk of FDI in the primary sector. FDI flows to agriculture account for a smaller share (6%), but have increased over the past decade.

Figure 2.9. Mining, transport, energy and chemicals are key targets of FDI



Note: Oil and gas, banking and non-bank financial services are excluded.

Source: OECD elaboration based on Indonesia Investment Coordinating Board (BKPM)

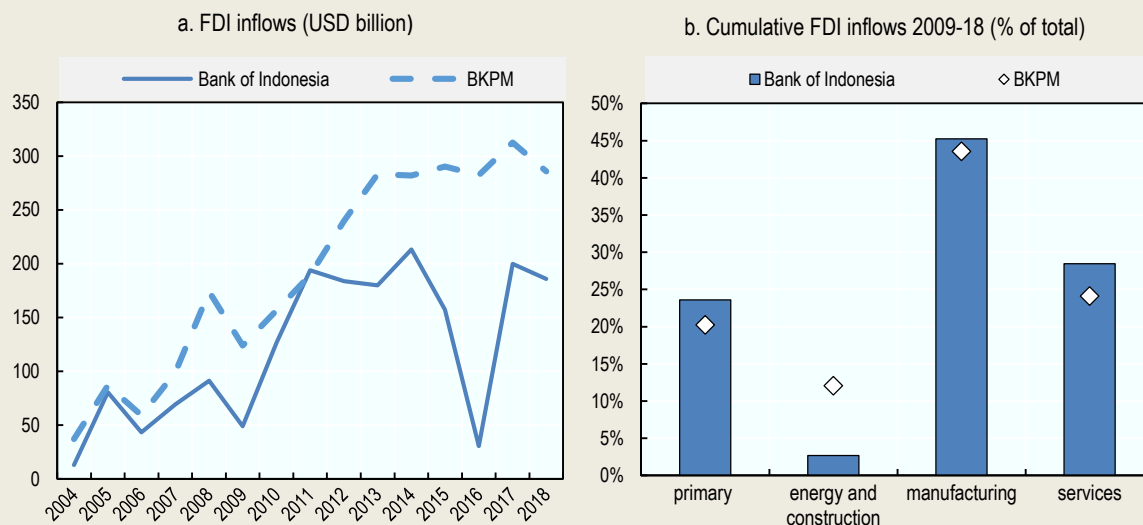
Box 2.2. FDI statistics: BKPM versus Bank of Indonesia

The Indonesian Investment Co-ordinating Board (BKPM) and the Bank of Indonesia are the two main sources of FDI data for Indonesia. (Figure 2.10). BKPM records FDI figures based on issued business licences, while Bank of Indonesia records international capital flows as part of balance of payments statistics. FDI statistics from these two sources, however, differ significantly (panel a of Figure 2.10). Several reasons explain such discrepancy:

- Definition of FDI:** BKPM classifies all investment realisations made into a PMA company (foreign capital investment company) as FDI, including those below 10% and joint venture with a local partner.¹⁰ Consequently, BKPM's FDI figures may include some equity contributions from domestic partners and investments financed from domestic sources. This practice tends to inflate BKPM's FDI figures. Bank of Indonesia's FDI instead follows the standard FDI categorisation of equity investment, retained earnings and other capital flows.
- Sectoral coverage:** BKPM records FDI projects based on issued business licenses. Since licences for companies in oil and gas and financial services are issued by other government bodies, these sectors are not covered by BPKM statistics. Conversely, FDI data from Bank of Indonesia cover all sectors of the economy, although they are less granular. Differences in sectoral coverage explain why the share of FDI in the primary and services sectors are underestimated by the BKPM data (panel b, Figure 2.10).

- **Divestment of foreign equity:** Modifications of foreign share ownership of a PMA company are not recorded by BKPM's FDI statistics. This explains why BKPM data do not show the sharp decline in 2016 unlike Bank of Indonesia's FDI data, which record the large divestment by foreign investors (panel a).

Figure 2.10. FDI statistics from BKPM differ significantly from those of Bank of Indonesia



Source: OECD elaboration based on BKPM and Bank of Indonesia

The bulk of FDI to Indonesia originates in Singapore and Japan

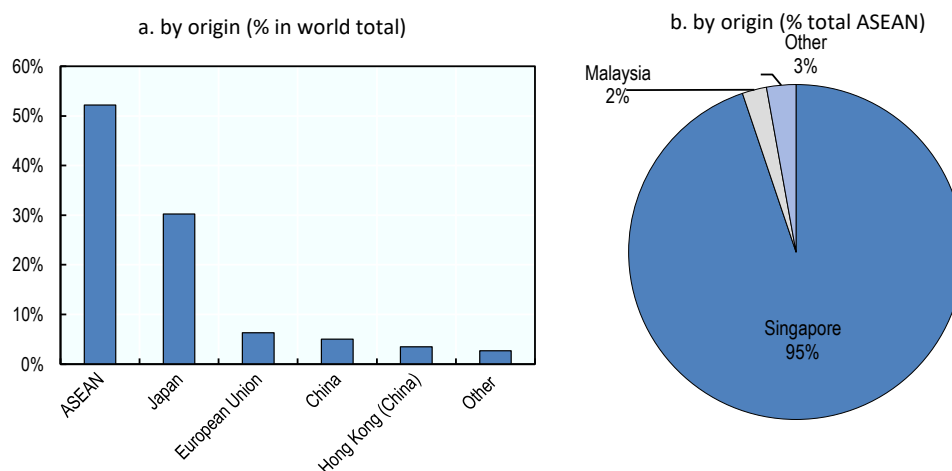
According to the Bank of Indonesia's FDI statistics, FDI flows to Indonesia originate mainly from Asia (panel a, Figure 2.11). 52% of total FDI flows received from 2010 to 2019 came from other ASEAN countries. From the rest of Asia, Japan is the largest investor (30%). Significant shares of FDI came also from the European Union (6%), particularly from the United Kingdom and Luxembourg, China (5%), and Hong Kong (China) (3.5%).

The data also show a considerable amount of divestment, corresponding to 6% of total FDI inflows during this period. Divestments were reported by foreign multinationals from the United States, Germany, Italy and Sweden. About 95% of ASEAN investment to Indonesia comes from Singapore (panel b). Malaysia provides approximately 2%, while other ASEAN countries contribute to the remaining 3%. FDI from Singapore, however, is likely to be overstated, as foreign multinationals, including from non-ASEAN countries, may choose to invest through their affiliates in Singapore (OECD, 2010).

Comparing FDI flows to Indonesia from OECD countries provided by the Bank of Indonesia with those reported by OECD countries shows significant differences between the two series (panel a, Figure 2.12). FDI reported by OECD countries tend to be higher, which is consistent with some OECD multinationals investing in Indonesia through Singapore (OECD, 2010). Over the period 2009-18, FDI reported by OECD countries exceeds that from Bank of Indonesia by 8% (panel b). A much higher discrepancy rate of 50% is observed between FDI reported by EU countries and those recorded by the Bank of Indonesia.

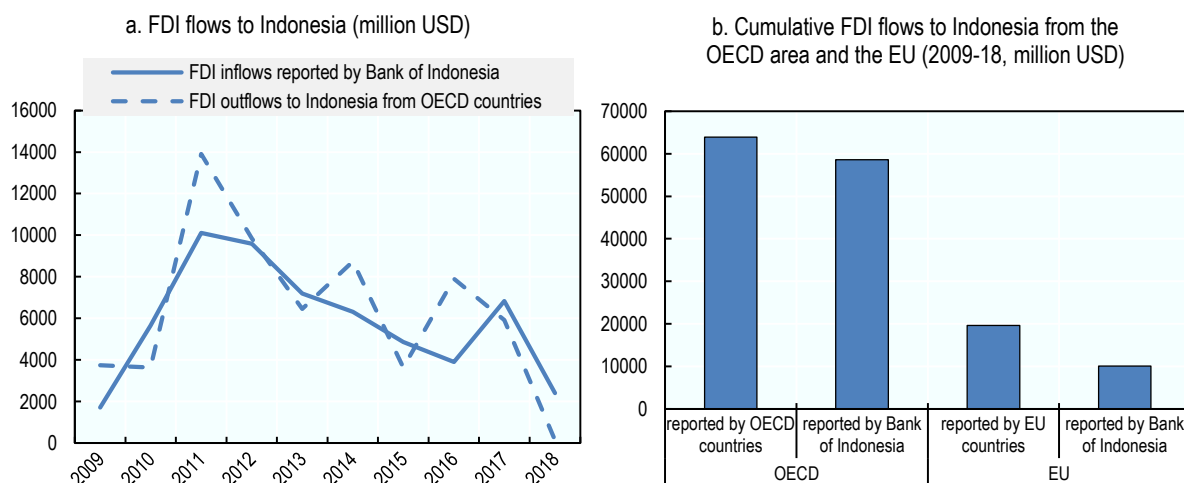
Figure 2.11. The bulk of FDI to Indonesia originates in Singapore and Japan

Cumulative inward FDI flows (2010-2019)



Source: OECD elaboration based on Bank of Indonesia.

Figure 2.12. FDI from OECD and EU countries is underestimated



Note: Aggregates for the EU reported by both EU countries and BI are based on 13 EU member states, namely Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Sweden and the United Kingdom.

Source: OECD elaboration based on OECD FDI statistics and Bank of Indonesia

FDI qualities

Using a variety of data sources, including the new OECD FDI qualities indicators (Box 2.3), this section examines how FDI contributes to several aspects of sustainable development in Indonesia. It first provides some insights on the direct contribution of foreign firms to sustainable development outcomes (e.g. productivity, wages) in Indonesia and then highlights the contribution of foreign firms to GVC integration. The third section focuses on the relationship between FDI and productivity and investigates the potential for productivity spillovers through business linkages and the capabilities gaps between domestic and foreign firms. The fourth section examines the link between FDI and selected labour market outcomes, namely wages, skills and gender equality. The last section looks at the contribution of FDI to the greening of the economy.

Box 2.3. The OECD FDI qualities indicators

The OECD FDI Qualities Indicators describe how FDI relates to specific aspects of sustainable development in host countries. An in-depth assessment of all 17 SDGs, and their corresponding targets, was undertaken to identify the full spectrum of FDI Qualities – that is, areas where FDI may contribute to achieving the SDGs. This assessment further considers the extent to which FDI's potential for advancing the SDGs is reflected in the OECD *Policy Framework of Investment (PFI)*, including related frameworks and guidelines, such as the OECD *Guidelines on Multinational Enterprises* and the OECD *Policy Guidance for Investment in Clean Energy Infrastructure*.

The FDI Qualities Indicators currently focus on five clusters; namely, productivity and innovation, employment and job quality, skills, gender equality, and carbon footprint. These clusters have been selected in consultation with various stakeholders of the FDI Qualities Policy Network, which includes policymakers, the private sector, the civil society, international organisations and the academia. For each of the five clusters, a number of different outcomes are identified and used to produce indicators that relate them to FDI or activity of foreign multinationals, allowing for comparisons both within and across clusters so as to identify potential sustainability trade-offs.

Taking into account the country-specific context, policymakers can use the FDI Qualities Indicators to assess how FDI supports national policy objectives, where challenges lie, and in what areas policy action is needed. Indicators also allow cross-country comparisons and benchmarking against regional peers or income groups, which, taking into account the country context, can help to identify good practices and make evidence-based policy decisions.

Source: OECD (2019), FDI Qualities Indicators: Measuring the sustainable development impacts of investment, OECD Publishing, Paris, <http://www.oecd.org/investment/fdi-qualities-indicators.htm>.

Foreign firms generate significant direct economic effects

Foreign firms contribute directly to several sustainable development outcomes in host countries. They generate output and jobs, pay salaries and add to gross exports and imports. Descriptive statistics based on the World Bank Enterprise Survey of Indonesia provide some first insights on the direct contribution of affiliates of foreign firms established in Indonesia. The data based on a sample of 761 domestic and 96 foreign firms show that foreign firms established in Indonesia outperform domestic firms (Table 2.1). Foreign affiliates are on average larger: they report 15 times higher sales and employ almost 4 times more workers. They also pay higher wages, as suggested by their higher (annual) labour cost. However, they employ lower shares of skilled labour: on average, 78% of their workers are skilled, whereas for domestic firms this share is 84%. Finally, foreign firms are 7 times as productive and are more export-oriented than domestic firms, as shown by their higher export intensity.

This foreign premium holds even when comparing firms of the same size and in the same sector. Additional empirical analysis performed on the same sample of domestic and foreign firms shows that foreign ownership is significantly and positively related to labour productivity, export intensity and energy efficiency independent of firm size and sector of activity (Panel a, Figure 2.13). Specifically, foreign ownership is associated with higher productivity (foreign firms are almost 6 times as productive as domestic firms) and higher export intensity (foreign firms' export intensity is almost 5 times as high as that of domestic firms). Nevertheless, foreign ownership has no significant effect on the share of skilled workers, potentially suggesting that firm size and sector-specific factors are more relevant to explain differences in skill intensity between domestic and foreign firms. These findings are in line with the predictions of the theoretical literature: due to sunk cost of investing abroad, foreign firms are more productive and larger than purely

domestic companies (Melitz, 2003; Helpman et al. 2004). Evidence of a foreign performance premium has also been found by numerous empirical studies, including for Indonesia (Box 2.4).

Table 2.1. Foreign affiliates outperform Indonesian firms

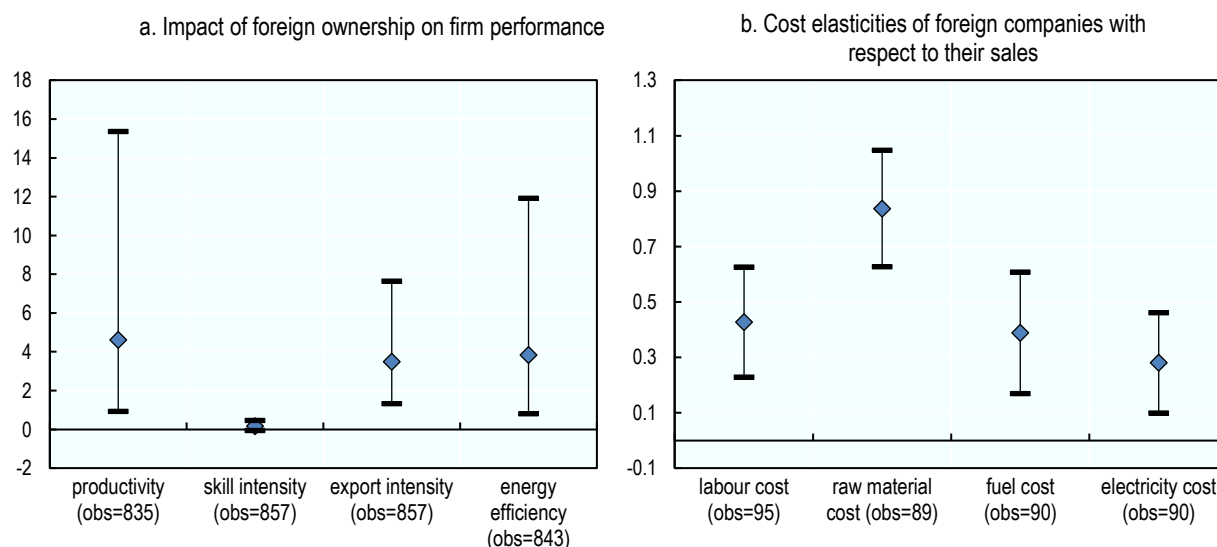
Differences between foreign and domestic manufactures in Indonesia, comparative statistics

	Manufacturing (2015)	
	Domestic	Foreign
Sales (in mln USD)	338	5 260
Number of workers	134	494
Average annual cost of labor (in mln USD)	22.1	41.4
Skilled workers (% of total number of workers)	84%	78%
Labour productivity (in mln USD)	808	5710
Export intensity (%)	6%	25%

Note: Labour productivity: value added per employee; Export intensity: share of production that is exported; Annual labour cost: wages, salaries, bonuses, and social security payments. The sample includes 761 domestic companies and 96 foreign companies.

Source: OECD elaboration based on World Bank Enterprise Survey.

Figure 2.13. Foreign firms have a positive impact on firm performance and generate a multiplier impact on the economy



Note: The figures show percentage impacts estimated from regression models and their respective 95% confidence interval. The model in panel a assesses the impact of foreign ownership on firm performance, whereas the model in panel b quantifies cost elasticities of foreign firms with respect to their sales. Dependent variables (e.g. productivity) and foreign sales are in logarithms. Foreign ownership is a dummy variable that takes value 1 if the investor owns directly 10% or more of the ordinary shares or voting power and 0 otherwise. All regressions control for firm size and sector fixed effects.

Source: OECD elaboration based on World Bank Enterprise Survey.

Analysis based on the same sample of domestic and foreign companies shows that in Indonesia the multiplier effects of foreign affiliates on the domestic economy are significant. The results indicate that a 1% increase in foreign sales leads to an increase of 0.4% in wages and salaries (labour cost) (Panel b, Figure 2.13). This means that if foreign sales increase by USD 100 000, everything else been equal, the total cost for wages and salaries increase by USD 40 000. In other words, an expansion in the foreign

business activity (captured by an increase in foreign sales) would require the use of additional labour input, thereby leading to an increase in the total wages and salaries paid by the company. This additional labour income could then translate into higher aggregate consumption, generating a multiplier effect on the domestic economy. The results also show a similar effect on other elements of the supply chain. For instance, a 1% increase in foreign sales leads to an increase of 0.8% in expenditure for raw materials, 0.4% in expenditure for fuel and of 0.3% of expenditure on electricity. Comparable results are found by a study on the impact of FDI originating from the United States on the Indonesian economy (Ernst & Young, 2013).

Box 2.4. Studies comparing the performance of foreign and domestic firms in Indonesia

Several studies compare the performance of foreign and domestic plants in Indonesia. They differ in terms of performance variable examined (e.g. productivity, wages), time coverage and methodology. All studies conclude that foreign firms have a performance premium relative to domestic firms, regardless of the performance variable under study. A summary of those studies, based on Lipsey and Sjöholm (2010), is shown below.

Table 2.2. Summary of studies comparing the performance of foreign and domestic firms in Indonesia

Study	Year	Performance variable	Results
Arnold and Javorcik (2005)	1983-1996	Total Factor Productivity (TFP)	Foreign ownership leads to significant productivity improvements in the acquired plants. The improvements become visible in the acquisition year and continue in the subsequent periods.
Okamoto and Sjöholm (2005)	1990-95	TFP	TFP growth is higher in foreign firms than in domestic firms.
Takii and Ramstetter (2005)	1975-2001	Labour productivity	Foreign affiliates are more productive than local firms, even after controlling for plant-specific factors.
Takii (2004)	1995	Labour productivity TFP	Foreign plants have high productivity. Wholly foreign-owned plants tend to have higher productivity, while new foreign-owned plants tend to have relatively low productivity levels.
Sjöholm and Takii (2008)	1990-2000	Export	Foreign plants are substantially more likely to start exporting than wholly domestically owned plants.
Sjöholm (2003)	1996	Export	Foreign firms are more likely to export than domestic firms.
Ramstetter (1999)	1990; 1992; 1994	Export intensities	Foreign firms have high export intensities.
Lipsey, Sjöholm, and Sun (2010)	1975-2005	Growth in employment	Foreign firms have high growth in employment.
Lipsey and Sjöholm (2006)	1975-1999	Wages	Foreign firms pay high wages.
Lipsey and Sjöholm (2004)	1996	Wages	Foreign firms pay high wages.

Source: Lipsey and Sjöholm (2010).

Foreign firms favour GVC integration of Indonesia

A greater presence of foreign firms in an economy tends to be associated with higher export orientation and greater integration in GVCs. Participation in GVCs may bring several advantages, such as technology transfer, skills upgrading, and innovation, which in turn may increase efficiency and competitiveness of domestic firms. Data from the OECD TiVA and analytical AMNE database allow to examine the contribution of foreign firms to exports and GVC participation in Indonesia and other comparator countries (see Box 2.5).

Box 2.5. Data and definitions

This section relies on three indicators to study the contribution of foreign affiliates to GVC integration in Indonesia and other comparator countries. Indicators (1) and (2) come from the OECD Trade in Value Added (TiVA) database, while indicator (3) is from the Analytical Activities of Multinational Enterprises (AMNE) database.

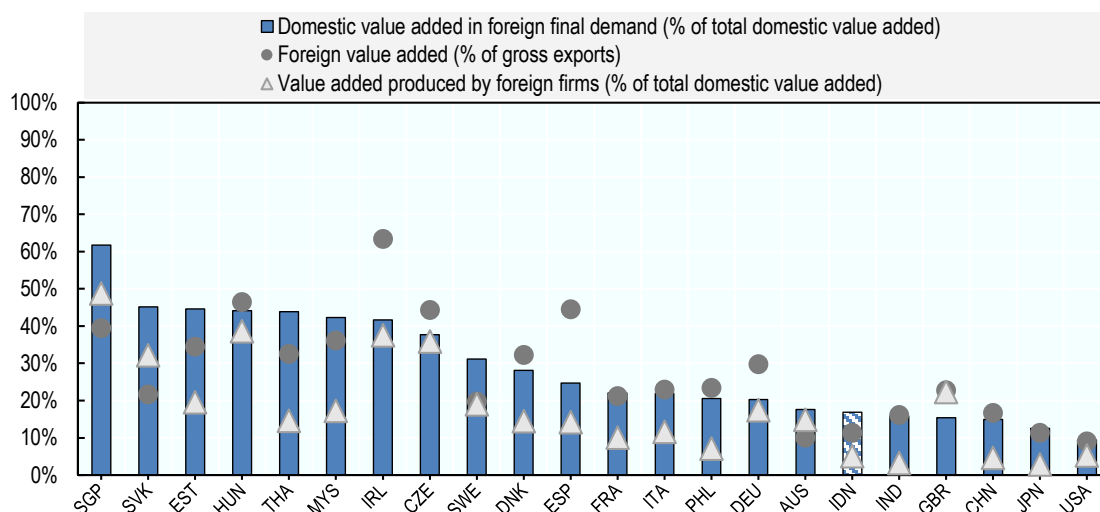
1. **Domestic value added in foreign final demand (% of total domestic value added).** The indicator shows how much domestic value added is included, via direct final exports and via indirect exports of intermediates through other countries, in the demand of foreign final consumers. The indicator measures the export orientation of a country. Higher values are associated with higher export orientation.
2. **Foreign value added (% of gross exports).** The indicator captures the value of imported intermediate goods and services that are embodied in the domestic country's export. It assesses the extent to which a country relies on imports for its exports or, in other words, its backward GVC participation. The higher the share of value added embodied in exports, the more integrated a country is in GVCs.
3. **Value added produced by foreign firms (% of total domestic value added):** The indicator measures the contribution of foreign firms to total value added produced in the domestic country.

These three series tend to move in the same direction, as shown in Figure 2.14, meaning that a greater presence of foreign firms in the economy is associated with higher export orientation and greater integration in GVCs. This shows that foreign firms can facilitate a country's integration into GVCs.

The data show that Indonesia has a lower export orientation than regional peers (Figure 2.14). The share of domestic value added in foreign final demand (blue bar) is smaller in Indonesia than, for instance, in Singapore, Thailand, Malaysia and the Philippines. They also indicate that Indonesia is less integrated in GVCs, as shown by its share of foreign value added in gross exports (grey circle), than other countries in the region. Foreign firms' contribution to value added (white triangle) is also lower than in other countries from the region, notably Singapore, Thailand, Malaysia and the Philippines.

Overall, Indonesia appears to be less integrated in GVCs than other countries in the region, although its level of GVC participation is similar to that of other large economies, such as India, China and the United States. Countries with large domestic markets tend to import less as they can rely on a wider array of domestic intermediates. Indonesia's low level of participation in GVCs also reflects the composition of its export basket. Due to its abundant natural resources (e.g. coal, copper, oil), Indonesia's international trade activities tend to be based more on upstream components within value chains.

Figure 2.14. Indonesia is less integrated in GVCs than its regional peers

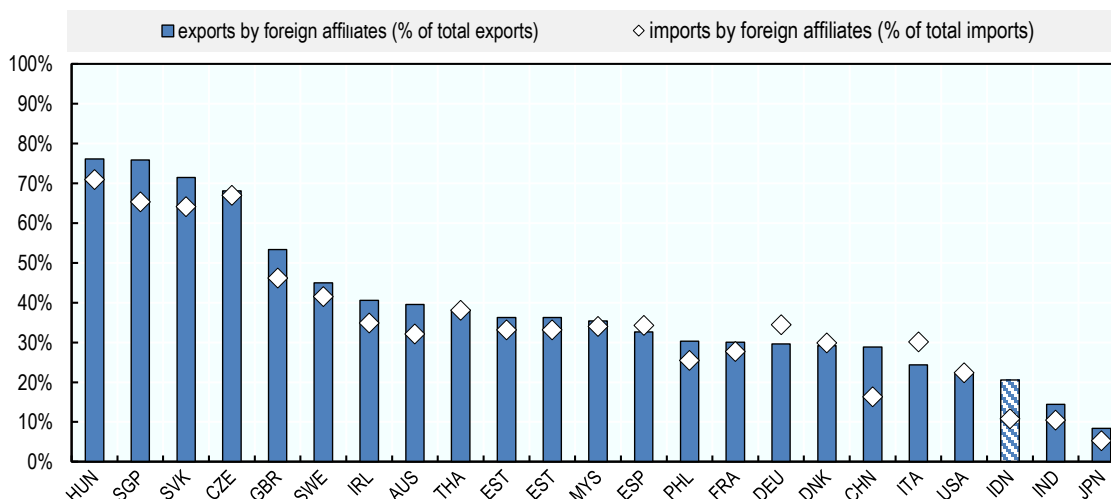


Source: OECD Trade in Value Added (TiVA) and OECD AMNE database, data for 2016.

The contribution of foreign firms to gross exports and imports provides another measure of the role played by FDI in a country's GVCs integration (Figure 2.15). In Indonesia, exports by foreign firms account for 20% of total exports. Imports by foreign firms represent 10% of total imports. These shares are lower than in regional peers such as Singapore, Thailand, Malaysia and the Philippines, but similar to those of other large economies including India and China. This is because Indonesia attracts a large share of resource-seeking and market-seeking, as opposed to export-oriented, FDI. In fact, multinational enterprises (MNEs) often choose to invest in Indonesia to extract natural resources or to serve the large domestic market. Even manufacturing FDI is mainly oriented to serve the domestic rather than the global market, as shown by a recent study by the World Bank (2018).

Figure 2.15. Foreign firms in Indonesia contribute less to international trade

Exports and imports of foreign affiliates (% of total), 2016



Source: OECD AMNE database

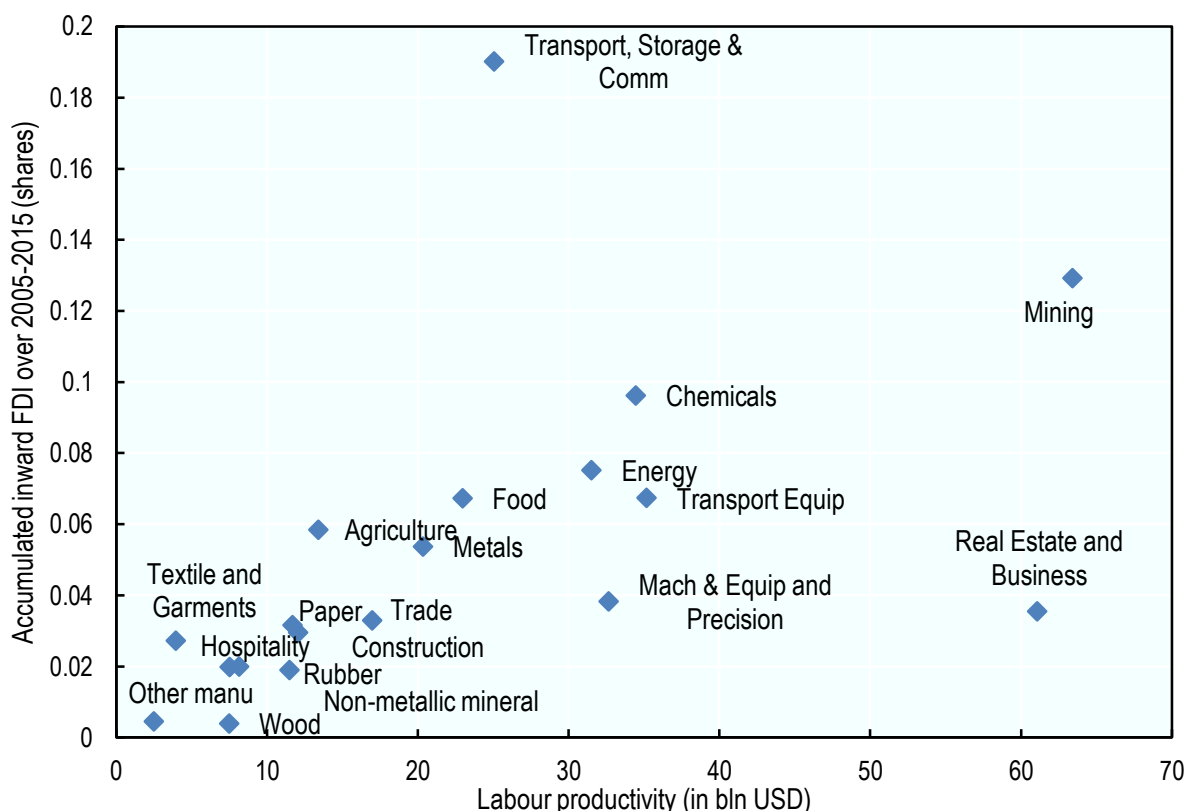
FDI supports productivity gains within the economy

This section examines whether FDI supports shifts of the economy towards more (or less) productive sectors. While available data do not allow to disentangle between FDI direct impacts and spillovers on domestic firm productivity, some indicators shed light on the correlation between FDI and productivity at the sectoral level and on the evolution of the FDI-productivity relationship over time.¹¹ The section also investigates the potential for productivity spillovers. Research has shown that the extent of spillovers is affected by several factors, including: the ‘proximity’ to foreign firms, such as through business linkages and the capabilities gap between domestic and foreign firms. This section studies the extent of linkages between foreign and domestic firms and the capacity gaps (measured by the relative productivity and innovation gap) between foreign and domestic firms.

FDI is prevalent in sectors that are more productive

Plotting FDI from BKPM against estimates of productivity based on the OECD input-output tables shows a positive correlation: FDI is concentrated in sectors where workers are, on average, more productive (Figure 2.16). FDI-intensive sectors with relatively higher productivity include many capital-intensive sectors, namely mining, energy, transport services and chemicals, but also in some relatively more productive labour-intensive sectors such as food.

Figure 2.16. FDI is prevalent in sectors that are more productive



Note: Oil and gas, banking and non-bank financial services are excluded. Labour productivity: value added per employee.

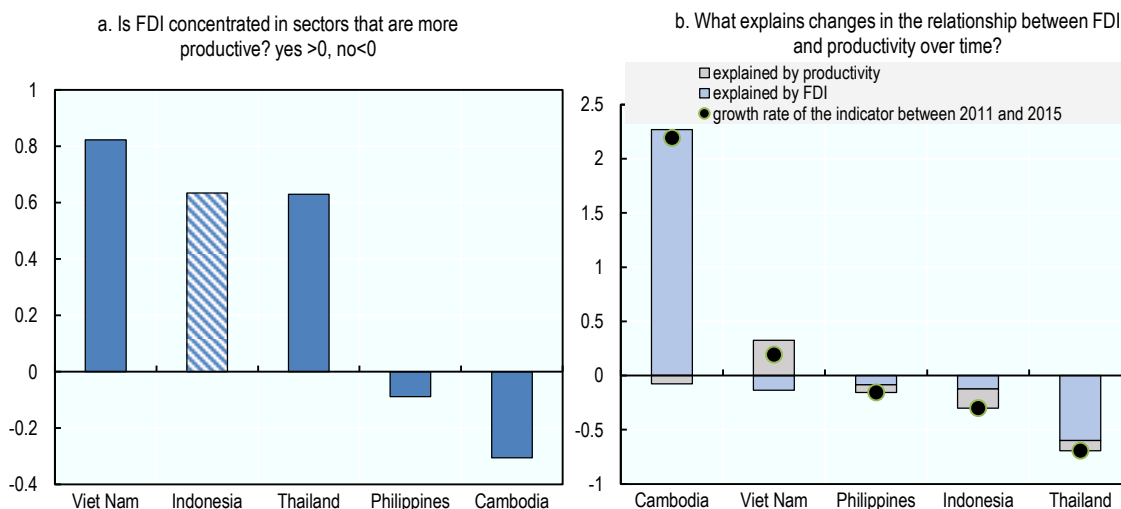
Source: OECD elaboration based on Indonesia Investment Coordinating Board (BKPM) and OECD Input-Output tables.

Another indicator based on greenfield FDI data from fDi Markets compares Indonesia to other regional peers. The results confirm the positive association between FDI and productivity for Indonesia (panel a, Figure 2.17). The positive relation is explained by a higher concentration of greenfield FDI in relatively more productive sectors, namely mining, metals, chemicals, transport equipment and food. A positive correlation between greenfield FDI and productivity is also observed in other regional peers such as Viet Nam and Thailand. In Viet Nam a large share of greenfield FDI is found in mining, real estate and business activities, which are relatively more productive than sectors with less greenfield projects. Similarly, in Thailand FDI-intensive sectors have higher productive levels. These sectors are machinery and equipment, transport and finance. Conversely, FDI is channelled to less productive sectors in the Philippines (food) and Cambodia (textile and garments, and hospitality).

Looking at the evolution of the above indicator over time shows that several Asian countries, including Indonesia, saw a decline in the FDI-productivity relationship during 2011-15, as the value of the indicator decreased during this period (panel b, Figure 2.17). In order to shed light on the drivers of this decline, the analysis further breaks down the growth rate of the indicator into two components. Specifically, changes in the indicator could be driven by (i) variations in FDI shares in more productive sectors; or (ii) changes in the productivity of sectors that have received the bulk of FDI.

The decomposition of the growth rate of the indicator shows that, in Indonesia, about 58% of the decline was explained by changes in labour productivity in FDI-intensive sectors. Specifically, productivity decreased in sectors that receive large amounts of FDI. These sectors are mining, metals, real estate and business activities, where productivity considerably declined over 2011-15. Shifts in FDI composition from more productive (mining, machinery & equipment, paper) to less productive sectors (non-mineral metal products, rubber) account for the remaining 42% of the change in the growth rate. This means that, during 2011-15, FDI went increasingly to less productive sectors.

Figure 2.17. In Indonesia the positive relationship between FDI and productivity has declined between 2011 and 2015



Note: The chart shows a Type 2 FDI qualities indicator and its decomposition over time. See Annex A for a description of the methodology. Greenfield FDI data do not cover agriculture, energy, construction, and trade.

Source: OECD elaboration based on Financial Times' fDi Markets

Indonesian firms may lack capacity to benefit from FDI positive spillovers

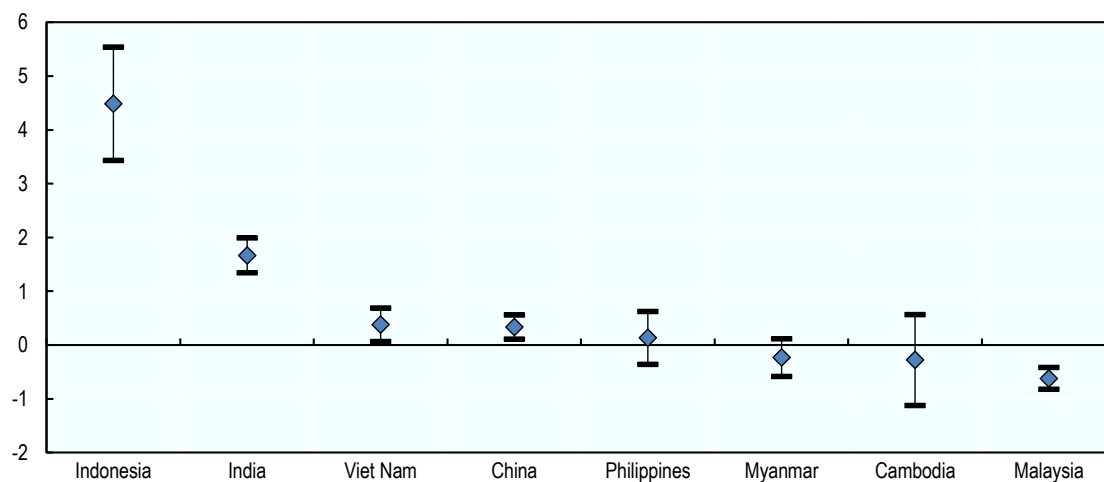
Positive productivity spillovers from FDI to domestic firms are not automatic and might not materialise at all (Smeets, 2008). A key factor enabling FDI spillovers is the capability of domestic firms to absorb and use knowledge from foreign firms. Absorptive capacities are often measured in terms of performance gaps between foreign and domestic firms, including with respect to differences in labour productivity and innovation activities.

An indicator compares labour productivity of foreign firms with that of domestic firms in manufacturing. The indicator shows the extent to which foreign firms have a productivity premium or gap relative to domestic firms, and whether these differences are statistically significant. The results show that in Indonesia foreign manufacturers are, on average, more productive than domestic firms (Figure 2.18). Foreign firms have a statistically significant labour productivity premium over domestic firms also in several regional peers including India, China, and Viet Nam. Results are not statistically significant in the Philippines, Viet Nam and Cambodia, whereas a reverse premium in favour of domestic firms is observed in Malaysia.

A closer look at the data for Indonesia shows that a foreign productivity premium exists in all sectors with the exception of wood (Figure 2.19). The magnitude of the foreign premium varies widely across sectors: in non-metallic minerals, foreign firms are almost 15 times as productive as domestic firms, while in leather they are almost three times as productive.

Figure 2.18. In Indonesia, foreign firms enjoy a significant productivity premium

Are foreign manufacturers more productive than their domestic peers? yes > 0; no < 0

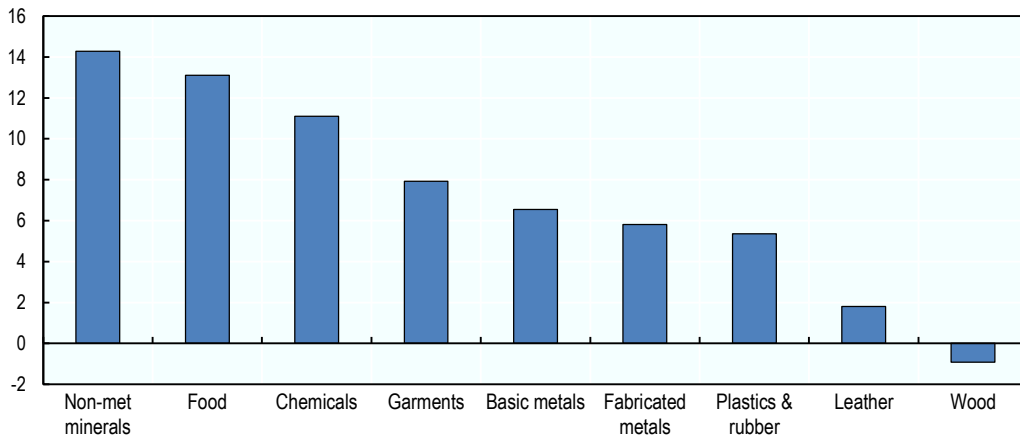


Note: The chart shows a Type 1 FDI qualities indicator. See Annex A for a description of the methodology. Labour productivity: value added per employee. Data for Indonesia refers to 2015.

Source: OECD elaboration based on World Bank Enterprise Survey

Figure 2.19. The foreign premium varies greatly across sectors

Are foreign manufacturers more productive than their domestic peers? yes > 0; no < 0



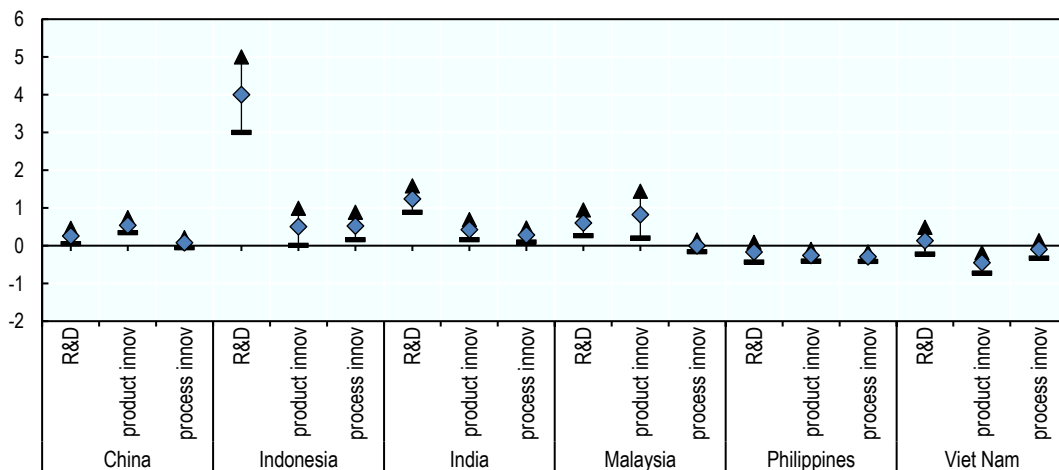
Note: The chart shows a Type 1 FDI qualities indicator. See Annex A for a description of the methodology. Labour productivity: value added per employee. Data for Indonesia refers to 2015.

Source: OECD elaboration based on World Bank Enterprise Survey

The data also show that in Indonesia foreign manufacturers are more likely to engage in R&D or to introduce a new product or process innovation relative to their domestic peers (Figure 2.20). Foreign firms also engage more in R&D and innovate more in regional peers such as China, India and Malaysia. As for productivity, a foreign premium is observed in most manufacturing sectors, although with varying intensity (Figure 2.21). For instance, in non-metallic minerals foreign firms are 25 times more likely to invest in R&D than their domestic peers, whereas in fabricated metals the probability that foreign firms invest in R&D is only one time higher.

Figure 2.20. Foreign manufactures are more innovative across most sectors in Indonesia

Are foreign manufacturers more likely to invest in R&D or to introduce a product/process innovation than their domestic peers? yes > 0; no < 0

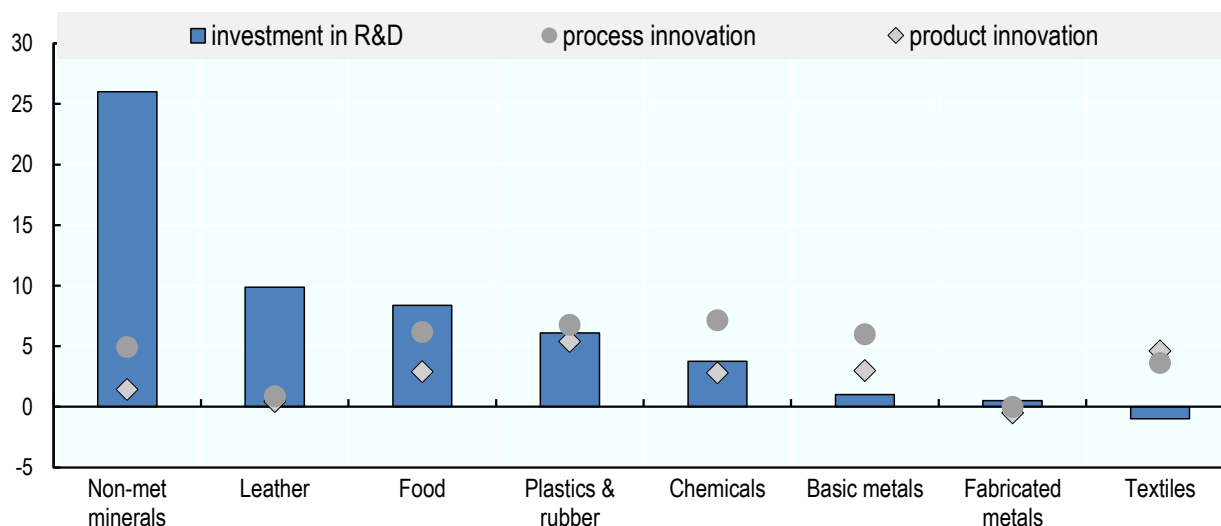


Note: The chart shows a Type 1 FDI qualities indicator. See Annex A for a description of the methodology. Data for Indonesia refers to 2015.

Source: OECD elaboration based on World Bank Enterprise Survey

Figure 2.21. The foreign innovation premium differs largely across sectors

Are foreign manufacturers more likely to invest in R&D or to introduce a product/process innovation than their domestic peers? yes > 0; no < 0



Note: The chart shows a Type 1 FDI qualities indicator. See Annex A for a description of the methodology. Data for Indonesia refers to 2015.
Source: OECD elaboration based on World Bank Enterprise Survey

Overall, the results suggest that Indonesian firms may lack the ability to benefit from the presence of foreign firms. While foreign firms tend to be more productive and innovative than domestic firms in many countries¹², the foreign premium appears to be particularly large in Indonesia. Additionally, some sectors (e.g. non-metallic minerals) could be affected more than others by the lack of domestic absorptive capacity.

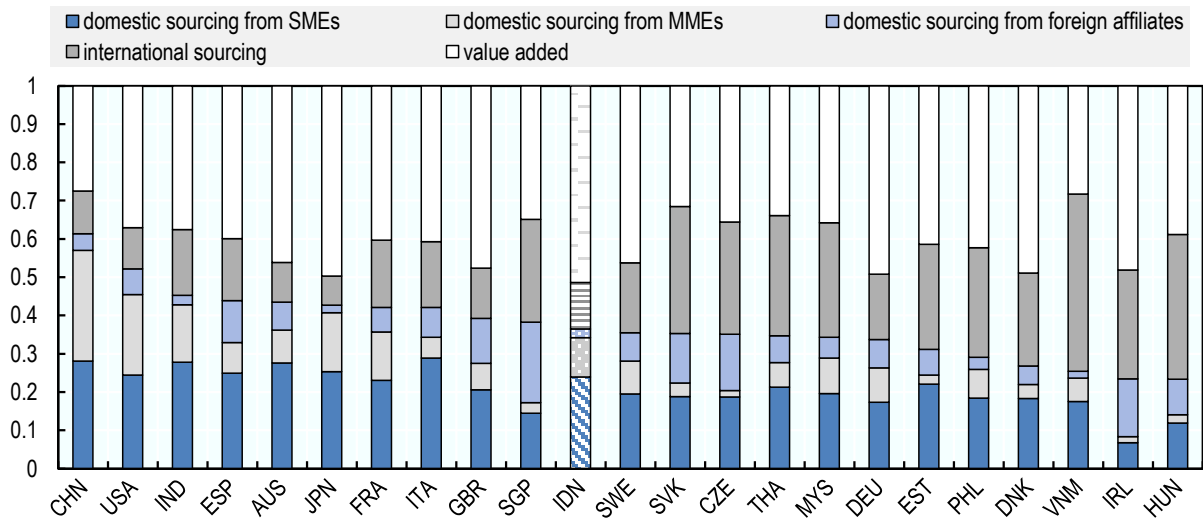
Business linkages with foreign firms are significant

Business linkages between foreign and domestic firms are an important channel of productivity spillovers. Linkages with foreign firms may help domestic firms acquire new technologies, knowledge and skills; improve management practices; expand their market for selling and for inputs; and tap into GVCs. New indicators based on the OECD Analytical AMNE database reveal the extent of linkages with foreign firms in Indonesia and other comparator countries. Domestic buy (or backward) linkages are formed when affiliates of foreign firms purchase intermediate inputs from local companies, i.e. domestic MNEs, domestic SMEs and other foreign affiliates established locally. Conversely, sell (or forward) linkages are forged when foreign affiliates sell intermediate goods to local companies. Both buy and sell linkages encourage the inclusion of domestic firms in the foreign firm's supply chains and their direct and indirect involvement in export activities.

The data show that in Indonesia domestic backward linkages with foreign firms are significant (Figure 2.22). In 2016, intermediate inputs sourced domestically by foreign affiliates accounted for 36% of their output. Furthermore, domestic sourcing of foreign affiliates benefits more Indonesian firms: 34% of domestically sourced inputs were bought from domestic companies, of which 24% from domestic SMEs, 10% from domestic MNEs, and 2% from other foreign affiliates established locally.

Figure 2.22. Foreign affiliates established locally source mainly from Indonesian companies

The sourcing structure of foreign affiliates (% total output), 2016



Note: SMEs: small and medium enterprises; SMEs are companies with less than 200 employees. MNEs: multinational enterprises.
Source: OECD Analytical AMNE database

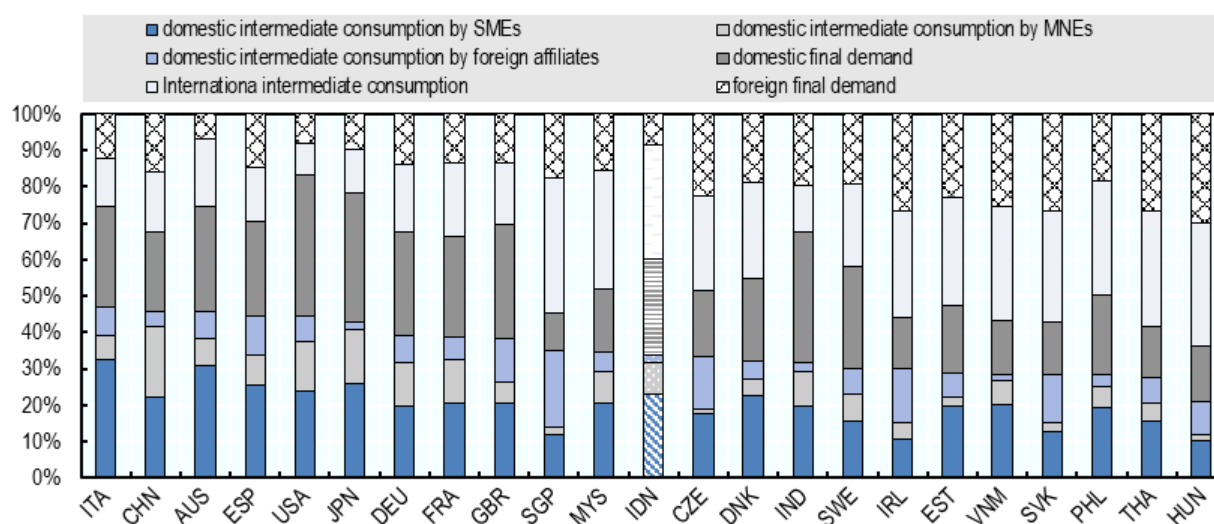
The share of domestically purchased inputs is higher in Indonesia than in other regional peers, namely Thailand, Malaysia, the Philippines, and Vietnam, but similar to that of other countries with large domestic markets for intermediate goods such as China, the United States, Japan and India. Beside a large domestic market for inputs, local content requirements in a variety of sectors with an important presence of foreign MNEs, such as mining, energy, transport equipment, electronics and so on, also explain the significant share of backward linkages observed in Indonesia.¹³

Business linkages developed in the context of local content requirement policies may nevertheless be detrimental for the competitiveness of domestic industries. Local content requirements may increase production costs for foreign investors (OECD, 2017). Especially in industries that do not have a domestic supply side capable of meeting the production needs of foreign companies, these policies may increase prices and thus reduce the competitiveness of the targeted industries, generating negative spillovers to the rest of the economy (Stone et al., 2015).

The data also reveal that domestic forward linkages with foreign affiliates are considerable (Figure 2.23). In 2016, the share of intermediates in total output sold by foreign affiliates in the Indonesian market was close to 34%. Similar shares were sold by foreign affiliates in Singapore and Malaysia, while the extent of forward linkages was lower in other regional peers such as India, Viet Nam, the Philippines and Thailand. As was the case for backward linkages, the size of the economy seems to matter also for forward linkages: countries with larger domestic markets like Japan, Italy and the United States are characterised by more important domestic forward linkages with foreign affiliates (Figure 1.23). Moreover, 32% of intermediates were bought by Indonesian companies (23% by Indonesian SMEs and 9% by Indonesian MNEs), while the remaining 2% was purchased by other affiliates of foreign firms located in the country.

Figure 2.23. The intermediate output of foreign affiliates sold domestically was bought mainly by Indonesian companies

Output use of foreign affiliates, 2016



Note: SMEs: small and medium enterprises; SMEs are companies with less than 200 employees. MNEs: multinational enterprises.
Source: OECD Analytical AMNE database

FDI has mixed effects on labour market outcomes

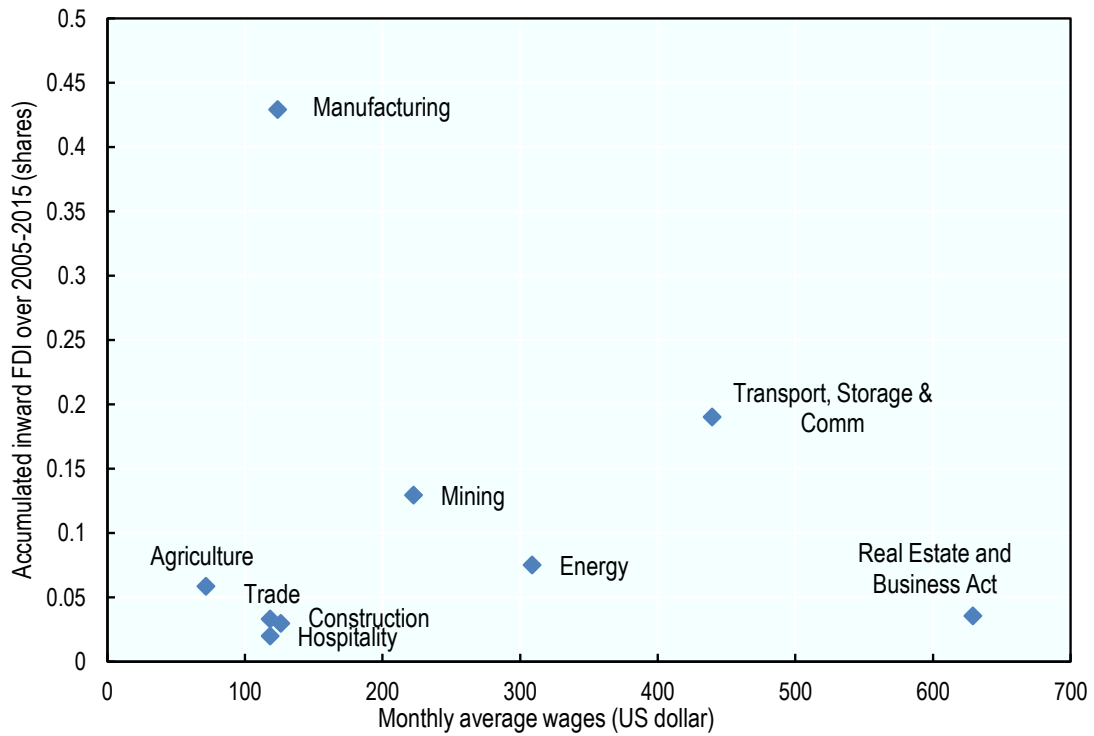
This section examines the relationship between FDI and three labour market outcomes in Indonesia and other comparator countries, namely wages, skills and selected aspects of gender equality. Due to data limitations, the analysis cannot disentangle direct and spillover effects of FDI, but rather provides an indication of how FDI correlates with the above outcomes. Specifically, it shows whether FDI supports the expansion of sectors with higher (or lower) wages. It also examines differences between foreign and domestic firms in relation to wages and skills. Finally, it investigates whether FDI is found more in sectors with higher (or lower) female employment and looks for systematic differences in gender equality practices between foreign and domestic firms.

Foreign firms operate in sectors with higher wages and pay their employees more

The data show that FDI is concentrated in sectors with relatively higher wages, with the notable exceptions of manufacturing and real estate and business activities (Figure 2.24). Manufacturing attracts a significant share of FDI but has on average lower wages than other sectors. Conversely, real estate and business activities receive less FDI but have relatively higher wages. Generally, the findings are in line with those for productivity; sectors that receive more FDI tend to be more productive and pay higher wages (Figure 2.16). This is not surprising given that productivity and wages tend to evolve together.

The results also show that in Indonesia foreign companies pay, on average, higher wages than domestic firms (Figure 2.25). The indicator is positive (and statistically significant) also for India, China and Myanmar. Wage differences between the two groups of firms mirror the productivity premia observed in those countries (Figure 2.18). A similar indicator is produced at the sectoral level for Indonesia. Other than plastics & rubber, foreign firms pay better wages than indigenous firms in all sectors (Figure 2.26).¹⁴ Not surprisingly, sectors with a relatively higher foreign productivity premium, namely non-metallic minerals, food and chemicals, are also those with a higher foreign wage premium (Figure 2.19). This further supports the evidence of strong link between productivity and wages.

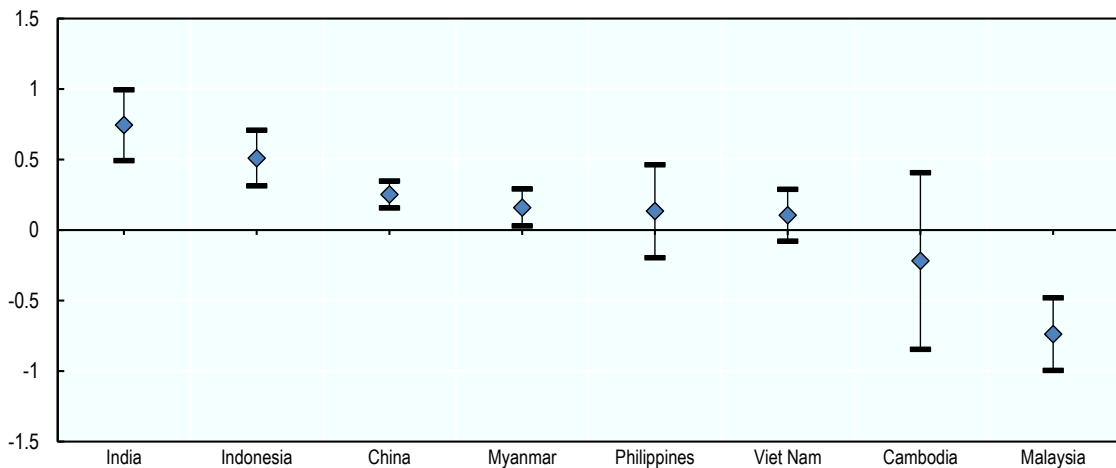
Figure 2.24. FDI goes to sectors with relatively higher wages



Note: Oil and gas, banking and non-bank financial services are excluded.
 Source: OECD elaboration based on Indonesia Investment Coordinating Board (BKPM) and ILO

Figure 2.25. In Indonesia, foreign firms pay higher wages than domestic firms

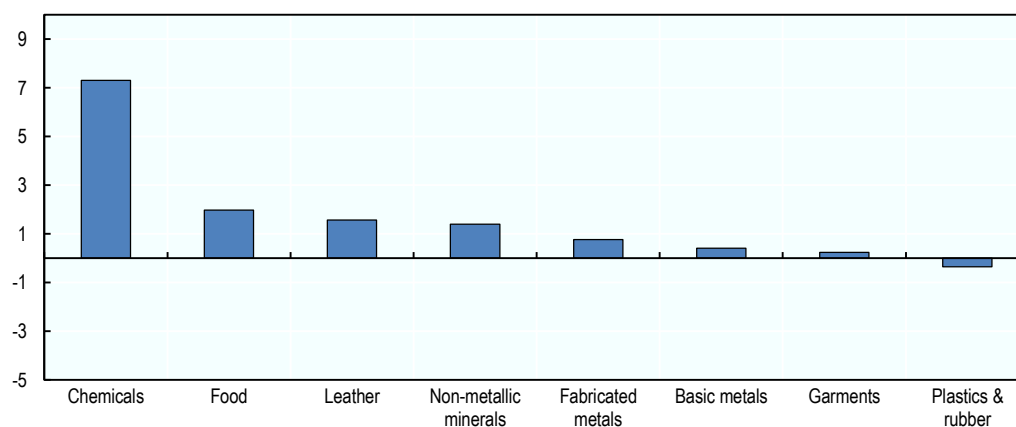
Do foreign firms pay higher wages than domestic firms? Yes>0, no<0



Note: The chart shows a Type 1 FDI Qualities indicator. See Annex A for a description of the methodology. Data for Indonesia refers to 2015 and covers the manufacturing sector.
 Source: OECD elaboration based on the World Bank Enterprise Survey

Figure 2.26. The foreign wage premium is higher in chemicals, food, leather and non-metallic minerals

Do foreign firms pay higher wages than domestic firms? Yes>0, no<0



Note: The chart shows a Type 1 FDI Qualities indicator. See Annex A for a description of the methodology. Data for Indonesia refers to 2015 and covers the manufacturing sector.

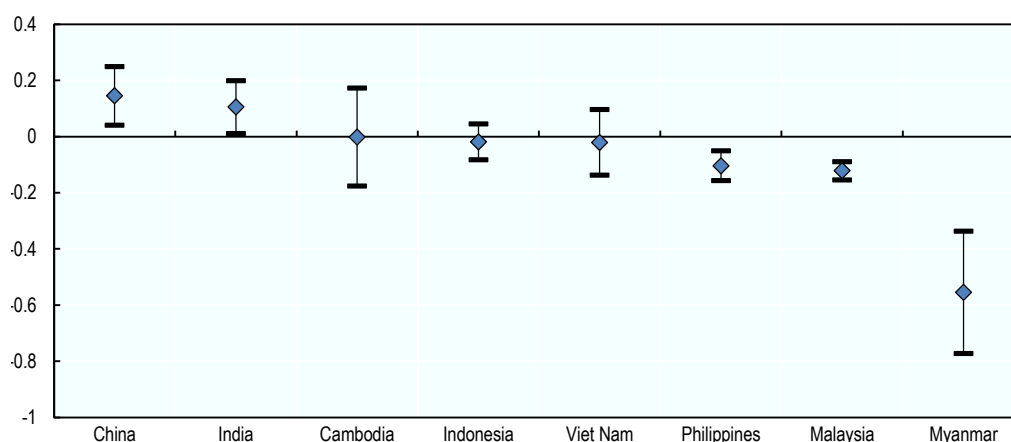
Source: OECD elaboration based on the World Bank Enterprise Survey

Foreign and domestic firms do not differ systematically in their skill intensity

The analysis presented above shows that, on average, foreign firms tend to be more productive and pay higher wages. In the economic literature, this productivity-wage premium is explained by the fact that foreign firms tend to have access to better technologies, inputs and human capital (OECD, 2019). For the same reasons, foreign firms are also expected to employ larger shares of skilled workers relative to domestic firms.

Figure 2.27. In Indonesia, variations in skill intensity between foreign and domestic firms are not systematic

Do foreign firms employ higher shares of skilled workers? yes>0, no<0



Note: The chart shows a Type 1 FDI qualities indicator. See Annex A for a description of the methodology. Data for Indonesia refers to 2015 and covers the manufacturing sector.

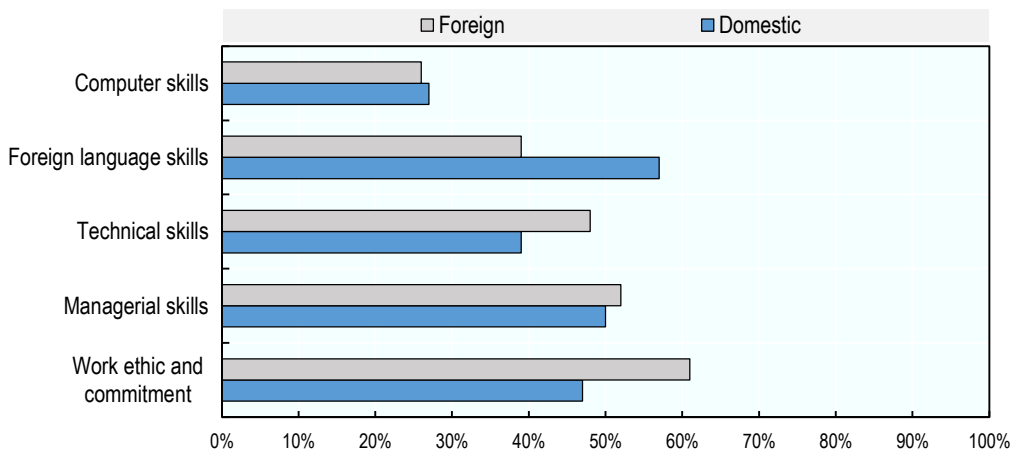
Source: OECD elaboration based on the World Bank Enterprise Survey

In Indonesia foreign firms have, on average, lower shares of skilled workers than domestic firms although the indicator is not statistically significant, meaning that variations in skill intensity between these two groups of firms are not systematic (Figure 2.27). These results confirm the empirical findings presented above: foreign and domestic firms of comparable size and in the same sector of activity tend to hire similar shares of skill workers (panel a, Figure 2.13).

Furthermore, domestic and foreign firms in Indonesia report similar difficulties in finding workers with the required skills. According to the answers provided by 120 domestic firms and 23 foreign firms in the World Bank Enterprise Survey of Indonesia (2015), the three most difficult-to-find skills in the local labour market are i) managerial skills, ii) foreign language skills, and iii) technical skills (Figure 2.28). While available data do not allow to examine how firms respond to hiring difficulties (e.g. by increasing pay) and how this can affect their performance, skill shortages are likely to raise costs and lower productivity, at least in the short run. Workforce skills gaps in core disciplines (e.g. engineering) and lack of workforce readiness are highlighted as key concerns in the latest Investor Perceptions Study for Indonesia (Arise Plus-Indonesia, 2020), which analyses the answers provided by 84 international corporate executives with a documented experience or interest in Indonesia. Based on the study, this skill deficit affects many sectors, from infrastructure and transport, to chemicals and energy, to tourism and agribusiness. These issues are even more challenging for investors operating in more remote parts of the country.

Figure 2.28. Foreign and domestic firms face similar difficulties in hiring skills

Percentage of firms with difficulty in finding employees with skills, by ownership and skill type



Note: Percentages are calculated using the total numbers of foreign and domestic firms. The sample includes 120 domestic firms and 23 foreign firms.

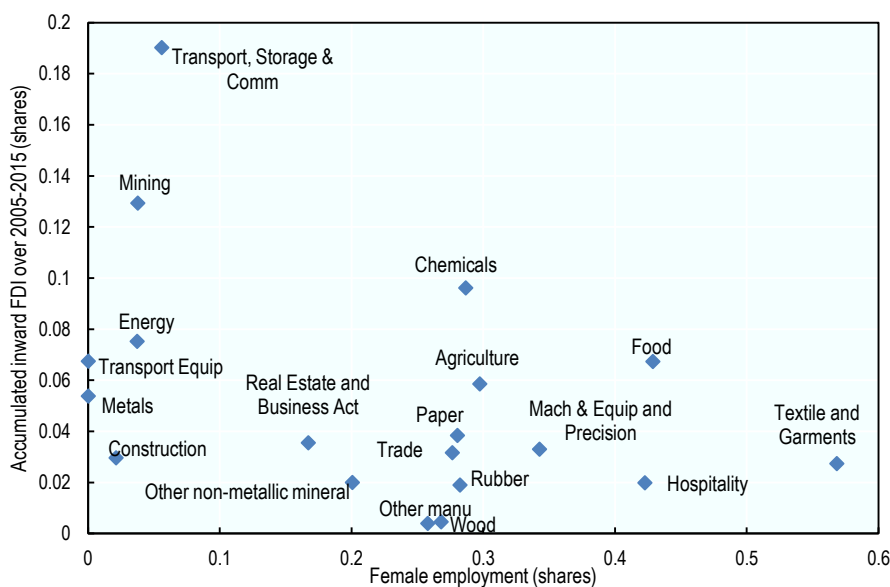
Source: OECD elaboration based on the World Bank Enterprise Survey

Foreign firms operate in male-dominated sectors but are more gender-inclusive

A key indicator of gender inequality in the labour market is the share of female (dependent) employment. Plotting this measure against FDI at the sectoral level shows a negative relationship for Indonesia (Figure 2.29).

This negative association is explained by the higher concentration of FDI in typically male-dominated sectors, notably transport, storage and communication, and energy. As expected, mining also plays a prominent role, as a sector with considerable foreign investment and fewer jobs for women. Conversely, sectors with a large presence of women, such as textiles and food, receive relatively less FDI. The results are in line with existing evidence: a negative relationship between FDI and the share of female employment is often observed, especially in countries at advanced stages of industrialisation (OECD, 2019).

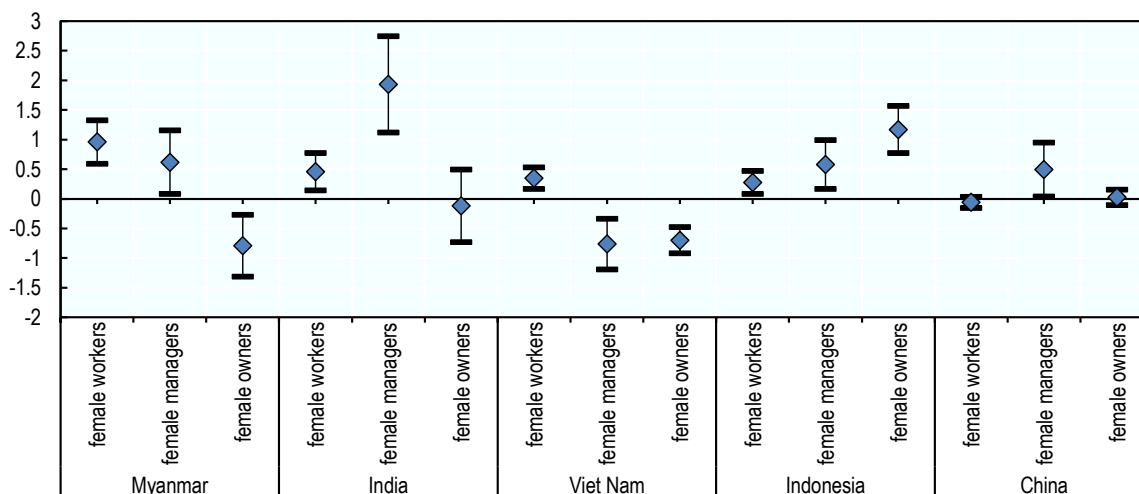
Figure 2.29. Foreign investors are concentrated in male-dominated sectors



Note: Oil and gas, banking and non-bank financial services are excluded.
 Source: OECD elaboration based on Indonesia Investment Coordinating Board (BKPM) and ILO.

Figure 2.30. In Indonesia, foreign firms are more gender-inclusive than domestic firms

Are foreign firms more gender-inclusive than domestic firms? yes>0, no<0



Note: The chart shows a Type 1 FDI qualities indicator and the respective 95% confidence interval. See Annex A for a description of the methodology. Data for Indonesia refers to 2015. Female workers: share of female workers in total production workers; female managers: share of firms with female managers; female owners: share of firms with female owners.
 Source: OECD elaboration based on the World Bank Enterprise Survey

To compare gender outcomes of foreign and domestic manufacturers in Indonesia and regional peers, three indicators are presented: the share of female workers; the share of firms with female top-managers; and the share of firms with a female owner (Figure 2.30). The results for Indonesia indicate that foreign firms are more gender inclusive than domestic firms: they employ larger shares of female workers and are more likely to be run and owned by women. The findings are more mixed for other comparator countries.

In particular, foreign firms are more likely to have female top-managers everywhere, but the results vary considerably across countries in relation to other gender outcomes.

FDI affects environmental targets in contrasting ways

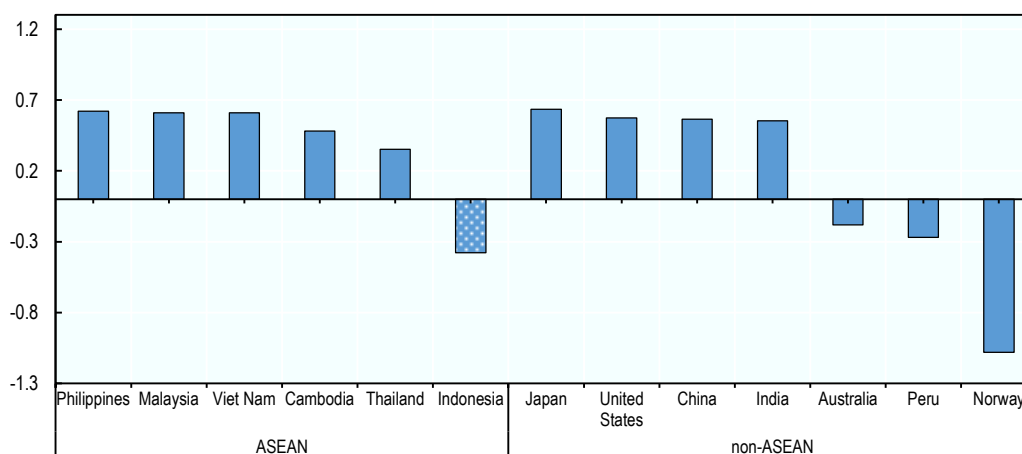
This section analyses the contribution of FDI to the greening of the economy in Indonesia and in comparator countries. It examines whether FDI is channelled to sectors that generate more (or less) CO₂ emissions. The section also shows whether foreign firms use more energy-saving technologies and are, therefore, more energy efficient than domestic firms. Finally, the section analyses the extent and evolution of FDI in renewables in Indonesia and other regional peers.

FDI goes to more polluting sectors, but foreign firms are more energy-efficient

An indicator examines whether greenfield FDI projects are prevalent in sectors that produce higher (or lower) CO₂ emissions per unit of output, relative to the overall economy (Figure 2.31).¹⁵ It shows that in Indonesia FDI is concentrated in relatively more polluting sectors in terms of CO₂ emissions. Conversely, FDI is observed in cleaner sectors in regional peers. The results are not surprising as Indonesia is a resource-rich country and attracts a significant amount of FDI in extraction and energy transformation (e.g. coal, oil, natural gas), both highly polluting activities. In fact, similar results are found for other resource-rich countries like Norway, Peru and Australia.

Figure 2.31. In Indonesia, FDI is prevalent in sectors that are more polluting

Is greenfield FDI concentrated in cleaner activities? (yes if value > 0; no if value < 0)



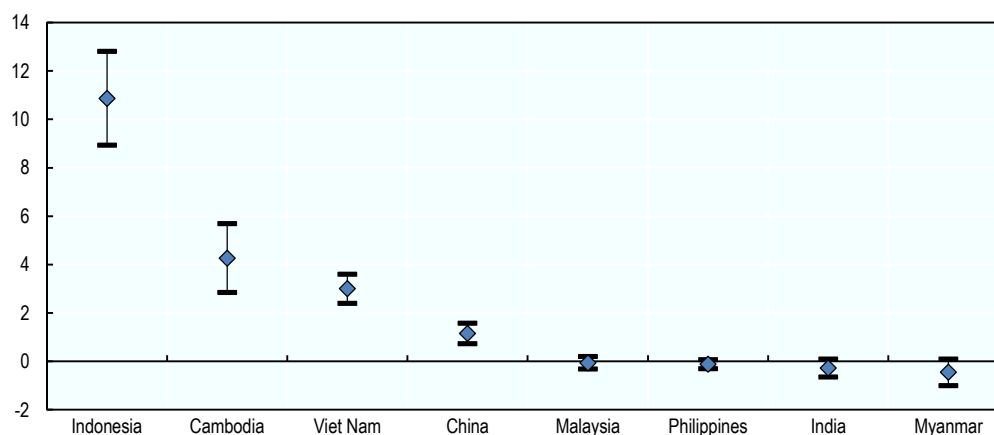
Note: The chart shows a Type 2 FDI qualities indicator. See Annex A for a description of the methodology.

Source: OECD based on Financial Times' fDi Markets database; OECD Input-Output Tables; International Energy Agency's World Energy Statistics; International Energy Agency's CO₂ Emissions database

While the indicator above captures both the scale and the composition effects of FDI on the economy, another indicator shows whether foreign investors improve energy efficiency in the host country by bringing cleaner technologies (Figure 2.32). The following indicator compares sales over electricity and fuel costs across foreign and domestic firms in manufacturing. Since foreign and domestic firms face the same electricity and fuel prices, the indicator captures the quantity of output sold per unit of electricity and fuel consumed, which serves as a proxy for energy efficiency. For Indonesia, as well as for Cambodia, Viet Nam and China, the indicator is positive and statistically significant. This means that on average foreign firms are more energy-efficient than domestic firms.

Figure 2.32. In Indonesia, foreign firms are more energy efficient than domestic firms

Are foreign firms more energy efficient than their domestic peers? (yes if value > 0; no if value < 0)



Note: The Figure shows a Type 1 FDI Quality indicator and corresponding 95% confidence interval. See Annex A for a description of the methodology and data. Energy efficiency: sales over electricity and fuel cost.

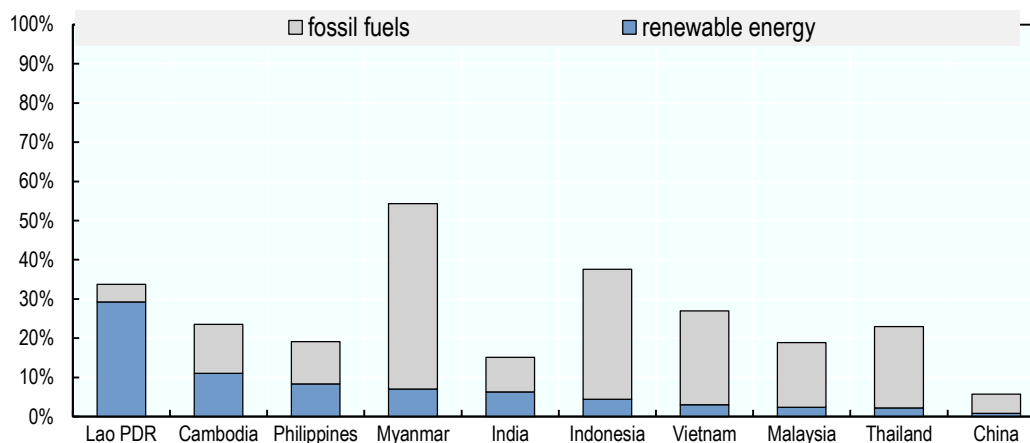
Source: OECD based on World Bank Enterprise Surveys

FDI in renewables is low but growing

While energy efficiency is critical in mitigating climate change in the long run, the use of renewable energy is key for meeting growing energy demand and curbing emissions in the short term (OECD, 2019). Based on greenfield FDI statistics, in Indonesia as well as in most regional peers, investment in fossil fuels far exceeds investment in renewable energy (Figure 2.33). With few noticeable exceptions, in most countries FDI in renewable energy is still dwarfed by investment in fossil fuels by a factor of six or above.

Figure 2.33. Investment in fossil fuels dominates investment in renewables

Greenfield FDI in the energy sector by type (share of total Greenfield FDI)



Note: Renewables include wind, solar, geothermal, tide/wave/ocean, small hydroelectric, and biomass; fossil fuels comprise coal, oil and natural gas and related extraction activities.

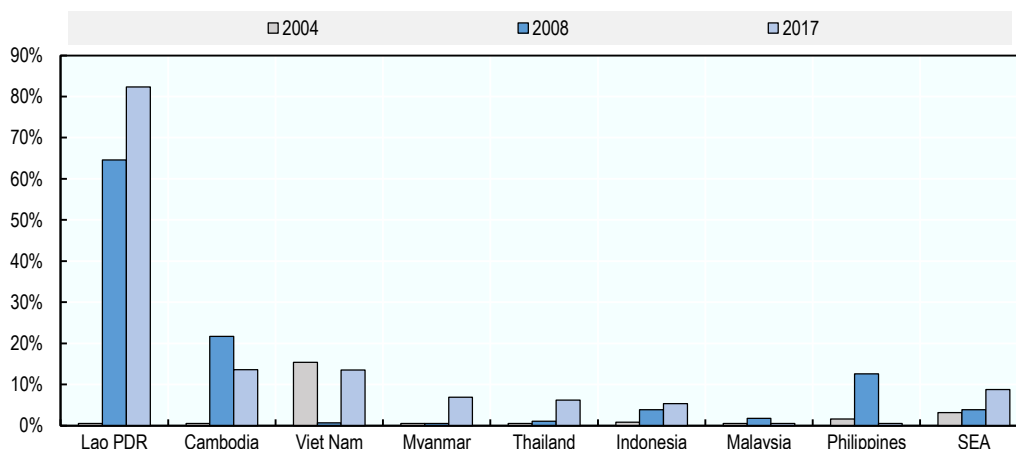
Source: OECD based on Financial Times' fDi Markets database

The results are in line with a recent OECD study (2019), which shows that the stocks of FDI in renewables tend to exceed FDI in fossil fuels in most OECD and many emerging countries, while the opposite is generally observed in less developed countries. According to the study, this is due to more advanced technological requirements associated with renewable energy and the lack of domestic capabilities for investing in renewable energy technology. Other factors may also play a role like the structure and degree of liberalisation of the energy market, the natural resource endowment and geographical position of a country, as well as other economic and political factors. The results for Indonesia for instance, are likely to be driven also by the fact that the country is rich in fossil fuels, and therefore attracts considerable investments in those sectors.

Examining FDI flows shows that this trend is changing rapidly in the region. In 2004, FDI flows in renewables going into the region (excluding China and India) were less than 3% of total FDI flows (Figure 2.34). By 2017, the share of FDI in renewables was close to 10%. At the national level, countries performed differently. In Indonesia FDI flows in renewables tripled, going from less than 1% in 2004 to 5% in 2017. A similar trend is observed also in Lao PDR, Cambodia, Myanmar, and Thailand. Box 2.6 provides a description of the OECD Clean Energy Finance and Investment Mobilisation Programme in Indonesia, which aims to help the government attract investments in renewables and energy efficiency.

Figure 2.34. The share of FDI flows in renewables is increasing rapidly

Greenfield FDI flows in renewables: 2004, 2008 and 2017 (share of total greenfield FDI flows)



Note: Renewables include wind, solar, geothermal, tide/wave/ocean, small hydroelectric, and biomass.

Source: OECD based on Financial Times' fDi Markets database

Box 2.6. OECD Clean Energy Finance and Investment Mobilisation Programme in Indonesia

Realising Indonesia's clean energy potential will require an unprecedented scale up in the level of investment for energy efficiency and renewable energy projects. Despite substantial potential across all end use sectors, energy efficiency in Indonesia remains largely untapped. At the same time, renewable electricity development remains at a very early stage of deployment as numerous barriers – including grid access, unattractive tariff structure in certain areas, risk of curtailment, lack of capacity among smaller project developers to prepare bankable feasibility studies, and access to land – have resulted in a relative scarcity of investment-ready projects.

In 2019, the OECD launched a multi-year engagement with the Government of Indonesia to help support the country's efforts to accelerate the development and scale up of investments in clean energy. The OECD [Clean Energy Finance and Investment Mobilisation \(CEFIM\) Programme](#) supports Indonesia and other emerging economies in strengthening clean energy policy frameworks to unlock finance and investments in renewables and energy efficiency.

The Programme builds off wide-ranging OECD experience in helping countries strengthen and align policy frameworks; build robust pipelines of bankable projects; and mobilise institutional investors for clean energy and sustainable infrastructure investments. To achieve its objectives, the CEFIM Programme intends to create an impactful collaboration across relevant domestic and international stakeholders with a view to collectively identifying and operationalising key policy solutions for accelerating clean energy investment in Indonesia.

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Annex 2.A. Methodology of calculation of indicators Type 1 and 2

This chapter uses two types of FDI Qualities indicators (see Box 2.3). Their methodology of construction is presented below.

Indicator Type 1

Type 1 indicator measures how foreign firms perform relative to domestic firms for a given outcome (e.g. productivity). It takes positive values if foreign firms have higher outcomes than domestic firms, on average, and vice versa. The indicator is constructed as the proportional difference between average outcomes of foreign firms and average outcome of domestic firms:

$$\text{Type 1} = (\bar{Y}_F - \bar{Y}_D) / \bar{Y}_D$$

where \bar{Y}_F is the average outcome of foreign firms and \bar{Y}_D is the average outcome of domestic firms, and population averages are calculated using survey weights.

Indicator Type 2

Type 2 indicator shows whether FDI is concentrated in sectors with higher or lower sustainable development outcomes, while controlling for the economic size of each sector. This indicator type compares two sector-weighted averages. The first weighted average (the “FDI-weighted” outcome) is a function of sector-level GDP and FDI. The second weighted average (the “baseline” outcome) only uses sector-level GDP shares as weights. The indicator is constructed as the proportional difference between the FDI-weighted and baseline outcomes:

$$\text{Type 2} = \frac{\sum_s \omega_s Y_s - \sum_s \delta_s Y_s}{\sum_s \delta_s Y_s},$$

$$\omega_s = \frac{1}{\sum_s \frac{FDI_s}{FDI_{TOT}} \frac{GDP_s}{GDP_{TOT}}} \left(\frac{FDI_s}{FDI_{TOT}} \frac{GDP_s}{GDP_{TOT}} \right),$$

$$\delta_s = \left(\frac{GDP_s}{GDP_{TOT}} \right)$$

where Y_s is the average outcome of sector s ; ω_s is the weight corresponding to sector s constructed using the product of the GDP share and the FDI share of sector s ; δ_s is the GDP share of sector s . The indicator takes positive values if the FDI-weighted outcome is higher than the baseline; and vice versa. The growth rate of Type 2 indicator can be further decomposed into two factors to assess how the relationship between FDI and a given outcome has changed over time. This decomposition disentangles the extent to which the indicator changes (1) as a result of changes in outcomes (e.g. labour productivity) in sectors that have received the bulk of FDI, or (2) as a result of shifts in FDI to sectors with different outcomes.

Mathematically, this implies totally differentiating Type 2 indicator (Y) with respect to FDI (FDI) and the outcome under analysis (OUT).

$$Y = F(FDI, OUT)$$

$$dY = F_{FDI} dFDI + F_{OUT} dOUT$$

where F_i corresponds to the partial derivative of Y with respect to variable $i = \{FDI, OUT\}$. The equation is then divided by Y and each change is converted into a growth rate:

$$\frac{dY}{Y} = \left(\frac{F_{FDI} FDI}{Y} \right) \frac{dFDI}{FDI} + \left(\frac{F_{OUT} OUT}{Y} \right) \frac{dOUT}{OUT} = \beta \frac{dFDI}{FDI} + \gamma \frac{dOUT}{OUT}$$

where β measures the change in the Type 2 indicator explained by FDI, and γ denotes the variation in the Type 2 indicator explained by the outcome variable.

Notes

¹ The terms ‘affiliates of foreign firms’, ‘foreign affiliates’ and ‘foreign firms’ are used interchangeably in this chapter.

² Chapter 7 examines FDI across regions and focuses on the sub-national dimension of investment policy in Indonesia.

³ The strategy focuses on five pioneer manufacturing sectors, namely food and beverages, textile and apparel, automotive, electronics, and chemicals.

⁴ The [Paris Agreement](#) requires each party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve.

⁵ Biomass is excluded from the renewable energy target of 23%.

⁶ The terms scale, composition and technique effects were first used by Grossman and Krueger (1991) in their investigation on the environmental impact of trade liberalisation within the context of NAFTA, and later applied to FDI (Gill, 2018; Paziienza, 2015; He, 2008, 2006).

⁷ The high value observed in Q2 2020 is explained by one single announced FDI project in the chemical sector by a Chinese company.

⁸ Greenfield investment involves the creation of a new asset under the control of the foreign firm, while M&A deals consist of a transfer of existing assets from local companies.

⁹ The distribution of FDI across regions is analysed in Chapter 7, which focuses on investment policy in the context of regional development.

¹⁰ Based on BKPM classification, a joint venture between two companies from different countries is considered as coming from the company, and therefore from the country, with the highest share.

¹¹ The identification of FDI direct effects and spillovers on domestic productivity requires large firm-level datasets, both of foreign and domestic firms, which have not been available for the purpose of this study.

¹² See for example, Arnold and Javorcik (2009), Guadalupe et al. (2012), Criscuolo and Martin (2009) and Bandick et al. (2014).

¹³ Local content requirements are quantitative targets for local sourcing or procurement procedures that give preference to domestic suppliers in a given industry.

¹⁴ The indicator does not disentangle the different drivers of the wage premium. As the indicator compares *average* wages, and not *individual* workers’ wages, it is likely that most of the premium reflects foreign firms’ intrinsic features, i.e. that they are larger, more productive and have higher technology intensity.

¹⁵ The indicator only captures direct CO₂ emissions, while it does not capture emissions associated to electricity and heat use.



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