



Leveraging Foreign Direct Investment in Indonesia: Assessing Foreign Investor's Use of Domestic Suppliers

Tristan Reed, Mochamad Pasha, Alvaro Gonzalez

After Indonesia liberalized investment rules, foreign direct investment (FDI) increased. The government promoted linkages between foreign investors and local firms, but the impact on employment and productivity remains to be determined. Manufacturing survey data indicate a modest role for local suppliers, with three-fourths of jobs from FDI created directly within foreign firms, and only one-fourth upstream. Evidence suggests success in policies encouraging the local transformation of imported inputs: foreign firms source 83 percent of inputs locally, compared to 71 percent for domestic firms. Job creation, labor productivity, and wages at foreign firms declined, likely due to the increased use of unskilled labor, while in upstream local firms, productivity and profitability grew, but wages remained stagnant. Overall, FDI is mainly "domestic market-seeking" rather than "export-oriented" or "efficiency-seeking," intended mainly to serve a large and competitive local market. Investment in research and development (R&D) is low. Indonesia may be missing key opportunities for more profound economic transformation and poverty alleviation by not engaging more with international markets and innovation. There are emerging opportunities to attract "efficiency-seeking" FDI to boost exports and enhance upstream linkages.

Introduction

Foreign direct investment (FDI) has expanded rapidly in Indonesia, but it still needs to catch up to other large emerging markets as a share of GDP. Indonesia has inward FDI worth 22 percent of GDP, while the Arab Republic of Egypt has 34 percent, and Vietnam has 55 percent, the most recent data (UNCTADstat, WDI) show. In 2017, the Philippines, an island state with a lower GDP per capita than Indonesia, overtook Indonesia by this measure to have inward FDI worth 29 percent of GDP (UNCTADstat, WDI).

The Indonesian government has implemented significant reforms to attract FDI, most notably by passing Law No. 25/2007, which unified the framework for all investment activities and replaced outdated regulations. Initially met with mixed reactions, the law has been revised multiple times, with recent updates in 2021. Subsequent liberalization increases FDI flows to liberalized sectors, Montfaucon, Senelwa, and Doarest (2023) show. Attracting foreign investment depends on a robust policy framework and efficient business practices. While Indonesia has made progress, legal and regulatory reforms are ongoing to fully leverage FDI's potential for job creation, innovation, and economic growth.

The government has also focused on enhancing FDI's impact on development by promoting upstream linkages between foreign-owned and domestically owned firms. Such linkages are crucial for knowledge diffusion and economic growth. This Policy Brief quantifies the magnitude and effects of FDI and business linkages in Indonesia, analyzing how changes in FDI affect outcomes within and for downstream industries. The analysis uses data from the Indonesia Investment Coordinating Board and the annual Manufacturing Industry Statistics, categorized by foreign and domestic ownership at the 2-digit ISIC Rev 4 level. Further details on the approach are provided in the Technical Appendix.

What is FDI used for at foreign firms?

Many of the jobs created through FDI by foreign-owned firms in Indonesia do not raise wages; thus they do not raise living standards.. The impact of FDI on an industry takes time to emerge. Five years after a 1 percent increase in FDI in Indonesia, production employment, which refers to jobs directly involved in manufacturing of goods or services in an industry increases by 0.15 percent (figure 1, panel a). This suggests that FDI is associated with job creation. Troublingly, however, this increase in employment coincides with a decline in the real wage rate of about 0.1 percent over five years (relative to other industries not receiving FDI) (figure 1, panel b). An explanation for the wage decline is falling labor productivity. Over this five-year period, labor productivity also fell by 0.1 percent (figure 1, panel c). The wage decrease cannot be explained by labor market power because profit margins dropped by 1 percentage point (although not statistically significant) (figure 1, panel d). If employers had strong labor market power, they could suppress wages to boost profit margin, but in this case, profit margins also decline. While FDI appears to create employment in foreign firms, it does not drive productivity and wage growth that could raise living standards. At the same time, it generates less significant profit margins; lower margins, in turn, make additional foreign investment less attractive.

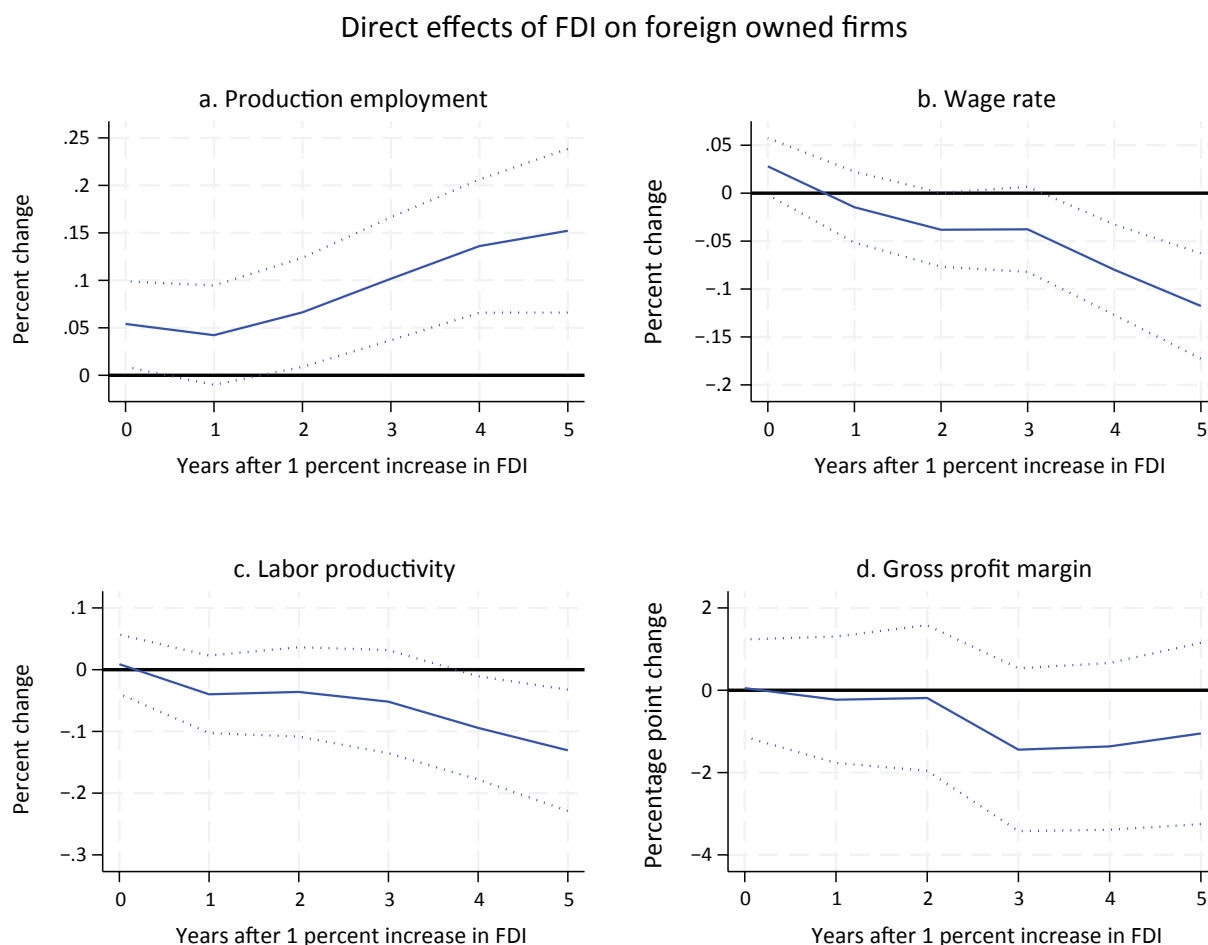
One explanation for declining wages after FDI is that foreign direct investment projects are more intensive in unskilled labor. The Indonesia Labor Force Survey classifies workers as unskilled if they have not yet completed secondary school. Though the share of skilled workers has increased over time in most industries, consistent with investment in human capital across the country, the share of skilled workers has grown more slowly in sectors where FDI has grown faster. In some industries with significant FDI growth (namely, Machinery, ISIC 28 and Machinery repair, ISIC 33), the share of skilled workers has fallen.

Affiliations: Tristan Reed is an economist with the Development Research Group (DECMG), World Bank. Mochamad Pasha is an economist in the World Bank East Asia and Pacific. Alvaro Gonzalez is lead economist in the World Bank East Asia and Pacific.

Acknowledgements: The authors would like to thank Alexandre Hugo Laure, Auja Doarest, Agnesia Adhissa Hasmand, Gonzalo J. Varela, Ivan Anton Nimac, Priyanka Kher, and Habib Rab, as well as the participants of the Prosperity Practice Group Knowledge Exchange Indonesia, for their valuable comments and suggestions. Nancy Morrison provided editorial assistance.

Objective and disclaimer: Research & Policy Briefs synthesize existing research and data to shed light on a useful and interesting question for policy debate. Research & Policy Briefs carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions are entirely those of the authors. They do not necessarily represent the views of the World Bank Group, its Executive Directors, or the governments they represent.

Figure 1. Foreign direct investment in Indonesia from foreign-owned firms creates jobs but does not increase wages, productivity, or profit margins



Source: Statistik Industri; Indonesia Investment Coordinating Board.

Note: The analysis covers 2008-2018. The line shows the cumulative impact over five years following a 1 percent increase in FDI compared to industries that did not receive FDI. The dotted line indicates a 90 percent confidence interval. FDI = foreign direct investment. Production employment refers to jobs directly involved in manufacturing of goods or services.

Most FDI can be classified as “domestic market-seeking” or “efficiency-seeking,” with efficiency-seeking investments having more significant potential for scale and development impact. FDI is “efficiency-seeking” when multinational firms choose to locate in a country because it is highly productive, allowing them to export at internationally competitive prices and potentially undertake research and development. In contrast, in “domestic market-seeking” investment, foreign-owned firms invest in meeting domestic demand they cannot meet by importing into that country: for instance, because of tariff or nontariff measures or simply because of low value per weight of their goods, as in the case of beverages and certain food products. Because domestic market-seeking investments target only the domestic market, their potential employment growth is limited by the size of the domestic economy.¹ In contrast, the potential employment growth from efficiency-seeking investments is more significant and is limited only by the size of the global export market. Efficiency-seeking investments also have greater potential to raise wages because of their emphasis on productivity and innovation, which can translate into higher wages for skilled workers.

FDI in Indonesia appears to be primarily domestic market-seeking rather than efficiency seeking. Declining labor productivity in foreign firms after FDI (figure 1, panel c) suggests that foreign direct investment does not seek to increase productive efficiency. Consistently, exports do not grow significantly after foreign direct investment. Indonesia’s participation in global value chains is low and, in some cases, declining, as documented by the International Finance Corporation (IFC) Country Private Sector Diagnostic (IFC 2019). At the same time, given that foreign firms’ profit margins do not rise after FDI, foreign investment does not appear to be “rent-seeking.” It is primarily invested to capture excess profits in the local market. Together, these results suggest that FDI projects in Indonesia are intended mainly to serve a large and competitive local market. Though FDI may not achieve productivity gains, one benefit of FDI in Indonesia appears to be increased demand for domestically produced inputs. Five years after a 1 percent increase in FDI, domestic input purchases rose by 0.18 percent, and imported input purchases changed little. The productivity benefits of FDI may potentially lie upstream.

Only in two industries is FDI significantly associated with wage growth and employment growth, a pattern called the creation of “good jobs.” These industries are Textiles (ISIC 13) and Electrical Equipment (ISIC 27). Though these industries may serve only the domestic market, wage growth suggests productivity growth that could be used to gain a competitive advantage in international markets. Only in two sectors is FDI significantly associated with increases in exports. These industries are Other Manufacturing (ISIC 32) and Metal Goods, Not Machinery and Equipment (ISIC 25). This pattern suggests that Indonesia may have a strong comparative advantage in

these industries and that further “efficiency-seeking” investment could be attracted.

How prevalent are business linkages between foreign and domestic firms, and what are their effects?

The Indonesian automotive industry offers compelling evidence for learning spillovers triggered by foreign investment. For instance, Japanese automakers appear to generate vertical and backward spillovers (Takii and Narjoko, 2012). Vertical spillovers directly benefit local metal component producers supplying

Table 1. Most inputs purchased by foreign-owned firms in Indonesia are produced domestically

Percent of input value produced domestically

RIPIN Priority Sector	ISIC Code	Industry	Foreign firms			Domestic firms		
			1999	2009	2019	1999	2009	2019
		All Industries	75	78	83	47	51	71
YES	16	Wood	97	95	96	95	87	95
YES	31	Furniture	94	84	93	84	61	84
YES	10	Food	90	86	93	81	79	89
YES	23	Nonmetal Minerals	62	82	90	41	26	82
YES	17	Paper	62	75	87	48	82	96
YES	28	Machinery	81	64	86	45	34	85
YES	29	Vehicles	32	62	81	9	62	63
YES	22	Rubber/Plastic	84	92	80	66	77	81
YES	20	Chemicals	58	82	80	48	61	70
YES	13	Textile	72	62	78	48	53	74
YES	33	Machinery Repair	100	100	77	23	12	89
YES	24	Base Metal	37	62	71	35	31	66
YES	15	Leather/Footwear	36	53	61	46	44	54
YES	14	Apparel	52	54	58	45	41	55
YES	21	Pharma	59	31	55	25	5	48
YES	27	Electrical Equipment	58	54	52	28	68	65
YES	30	Other Transport	62	37	36	13	71	43
YES	26	Computers	12	84	27	31	57	35
NO	11	Beverage	94	84	94	87	66	96
NO	18	Printing/Media	93	95	92	97	100	86
NO	12	Tobacco	94	87	80	72	68	67
NO	19	Coal/Petroleum	75	78	78	21	76	78
NO	25	Metal Goods	59	57	64	33	51	61
NO	32	Other Processing	59	63	58	36	36	43

Source: Statistik Industri

Note: Sectors with over 70 percent domestic input usage are shaded blue, with darker shades indicating higher usage. Red shading denotes sectors using less than 55 percent domestic inputs, with darker shades indicating even lower usage. . . ISIC = International Standard Industrial Classification; RIPIN = Rencana Induk Pembangunan Industri Nasional (National Industrial Development Master Plan) 2015–2035.

to these companies. Through collaboration and technical input from the Japanese firms, these suppliers experience product design and quality enhancements. This improvement then ripples outward through backward spillovers, benefiting other clients (local and foreign) of the now-improved local suppliers, which consequently gain the capacity to produce better-quality products.

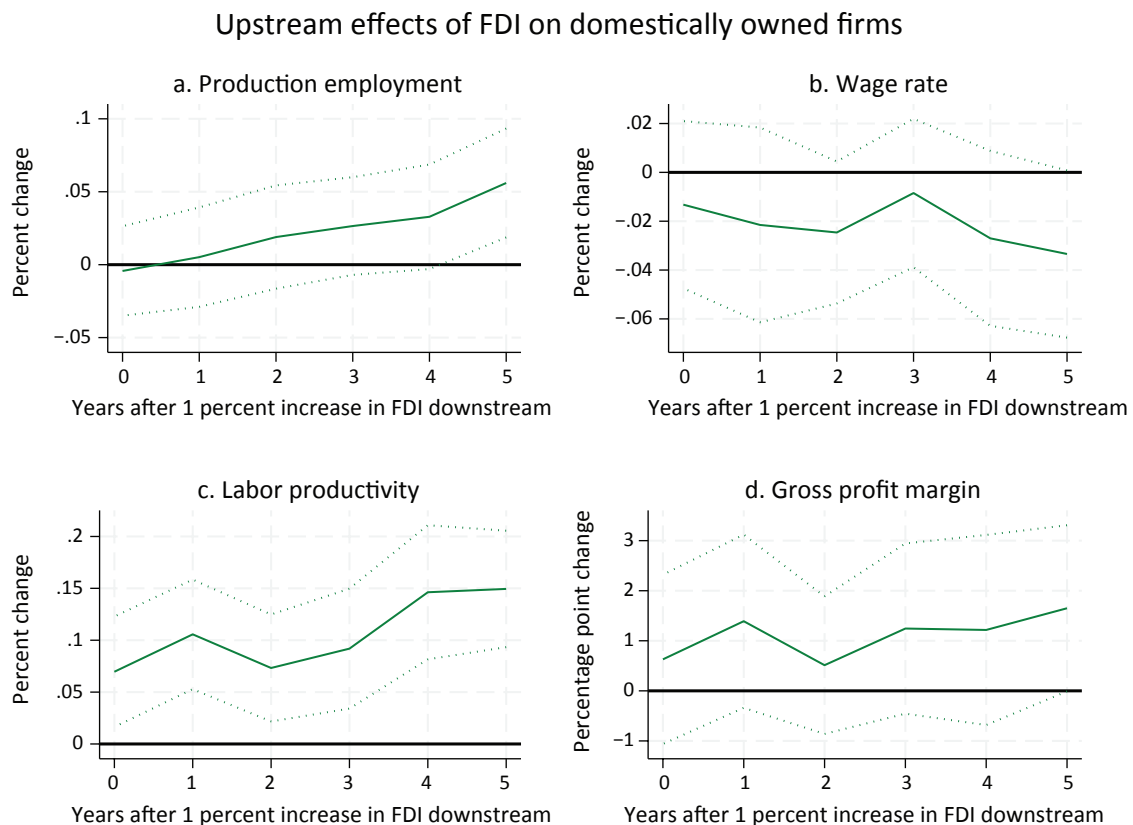
Overall, linkages between FDI projects and domestic firms are widespread. Foreign firms purchased about 83 percent of the value of inputs from domestic producers in 2019, more than in the past and typically more than domestic firms in the same industry (table 1). In most sectors prioritized by the National Industrial Development Master Plan 2015–2035 (RIPIN), more than 75 percent of inputs purchased by foreign firms were domestically produced. In only two industries did foreign firms purchase less than 50 percent of inputs from domestic producers—Other Transport Equipment Industries (ISIC 30) and Manufacture Computers, Electronics, and Optical Goods (ISIC 26). Overall, local businesses appear tightly integrated with foreign-owned firms through input supply relationships.

FDI increases upstream employment, productivity, and profits through business linkages. When FDI occurs downstream

from a firm in the supply chain, jobs are created upstream. Recall that a 1 percent increase in FDI in Indonesia raised employment by only 0.15 percent after 5 years among foreign firms in the same industry (figure 1, panel a). After a 1 percent increase in FDI in downstream industries, employment in the upstream sector increases by only 0.05 percent after 5 years (figure 2, panel a). Combining these estimates, about three-fourths of jobs created by FDI are in foreign firms, and one-fourth of jobs created by FDI are through upstream linkages.² In contrast to the direct effects of FDI on foreign firms, upstream effects of FDI increase labor productivity, which grows by about 0.15 percent 5 years after a 1 percent increase in FDI downstream (figure 2, panel c). They also increase the profit margin, which increases by 1.75 percentage points (figure 2, panel d). Increases in the profit margin upstream may account for the fact that the wage rate upstream does not rise after FDI despite increases in employment (figure 2, panel b).

One explanation for the association of linkages to FDI projects and productivity is that domestically owned firms primarily transform imported inputs before supplying them to foreign-owned firms. A 1 percent increase in FDI upstream is associated with an immediate 0.1 percent increase in imported input purchases by domestic firms; this percentage grows

Figure 2. After FDI downstream, domestic firms create jobs and increase labor productivity, though wages are stagnant as profit margins rise



Source: Statistik Industri; Indonesia Investment Coordinating Board.

Note: The analysis covers 2008–2018. The line shows the cumulative impact over five years following a 1 percent increase in FDI compared to industries that did not receive FDI. The dotted line indicates a 90 percent confidence interval. FDI = foreign direct investment. Production employment refers to jobs directly involved in manufacturing of goods or services.

slightly over time. Previous research has found that users of imported inputs in Indonesia grow faster in terms of value added and employment and have improved and diversified product quality in the market (Rahardja and Varela 2014).

Similarly to the direct effects of FDI on foreign firms, upstream FDI does not increase the export or intangible asset investment of domestic firms, suggesting limited development impact from business linkages to FDI projects. While upstream FDI leads to some increases in labor productivity, it does not raise productivity to the point where domestic firms become competitive enough to export and does not increase their investment in innovative activities, including research and development (R&D). In Indonesia's economy, large firms hold significant economic power and market influence, which may limit competition and innovation in the manufacturing sector (World Bank, 2024). Despite regulatory reforms, persistent issues such as regulatory overlap, low-quality regulations, and poor coordination create uncertainty (World Bank, 2022). This ambiguity not only hampers firms' investment and innovation but also deters new FDI, reducing competitive pressure and further weakening incentives for innovation (Hallward-Diemeier and Pritchett, 2015).

Policy implications

FDI in Indonesia has been a significant factor in job creation, particularly for the lower-skilled workforce. However, the impact of FDI on productivity could be greater and more precise. While it does provide jobs, there is little evidence to suggest that it substantially boosts productivity levels within the local economy. Moreover, these investments are predominantly oriented toward serving the domestic market. This inward focus means that the projects are less concerned with exports or driving innovation. This raises questions about the alignment of Indonesia's FDI with the broader evidence that suggests exports are a crucial pathway to achieving long-term poverty reduction (Goldberg and Reed 2023). Indonesia may miss key opportunities for more profound economic transformation and poverty alleviation by not engaging more with international markets and innovation.

Foreign firms in Indonesia predominantly source their inputs from domestic companies. This dependence on local inputs could indicate Indonesia's distinctive natural resources or the impact of its local content regulations. These domestic firms typically transform imported inputs into finished goods, which adds value and enhances the domestic supply chain.

However, the imposition of tariffs and nontariff measures poses a potential threat to the efficacy of local content regulations. These trade barriers could complicate the importation of necessary inputs, thereby limiting the overall productivity and competitive advantage of domestic suppliers.

Indonesia needs to shift its investment promotion strategy to capitalize on the growing export opportunities to the United States and Europe. It should target investment promotion toward efficiency-seeking and domestic market-seeking projects. Indonesia has a significant opportunity to grow exports to the United States and Europe as they seek to diversify its supply chains away from Chinese exports (World Bank 2018, 2020). Yet, capturing this export opportunity will require foreign investment to contribute technology, know-how, and trading relationships. Despite significant liberalization, export-oriented firms have yet to be attracted. Efforts to attract them include the following.

Identify the most productive local suppliers for FDI projects and assess whether they have the capacity or willingness to expand exports. This evaluation can involve conducting supplier surveys and visiting the facilities of shortlisted candidates. Following the initial identification, these suppliers' willingness and capacity to expand their production capabilities to meet export demands can be assessed.

Ensure tariffs and nontariff measures do not bind domestic firms supplying foreign investment projects. Business linkages with foreign firms rely on domestic firms' ability to transform imported inputs. Trade barriers affecting these firms could hinder their ability to supply domestic firms. In addition, policymakers could consider implementing measures to enhance market competition and ensuring a more balanced regulatory environment that encourages innovation across firms.

Notes

- 1 Intel's decision in 1996 to invest in a semiconductor assembly and test (A&T) plant in Costa Rica is a leading example of "efficiency-seeking" investment that exploited local human capital and a duty-free investment zone to drive significant exports, additional FDI into the technology sector, and GDP growth (see World Bank Group/MIGA 2006). FDI in Viet Nam was a significant driver of export success and employment growth, even up to 16 years after the firms entered (McCaig, Pavcnik, and Wong 2023).
- 2 In domestically owned firms in the same industry as the industry receiving foreign investment, jobs creation is negligible, suggesting minimal "horizontal spillovers" from FDI, as also documented by Blalock and Gertler (2008). Upstream, the percentage increase in employment is similar for domestic and foreign firms.

References

- Blalock, Garrick, and Paul J. Gertler. 2008. "Welfare Gains from Foreign Direct Investment through Technology Transfer to Local Suppliers." *Journal of International Economics* 74 (2): 402–21.
- Goldberg, Pinelopi J. and Reed, Tristan. 2023. "Presidential Address: Demand-Side Constraints in Development: The Role of Market Size, Trade, and (In)Equality." *Econometrica* 91 (6): 1915–1950.
- Hallward-Diemeier, Mary and Pritchett, Lant. 2015. "How Business is Done in the Developing World: Deals versus Rules." *Journal of Economic Perspectives* 29 (3): 121–40.
- IFC (International Finance Corporation). 2019. "Creating Markets in Indonesia: Unlocking the Dynamism of the Indonesian Private Sector." Country Private Sector Diagnostic, October 2019. IFC.
- McCaig, Brian, Nina Pavcnik, and Woon Foong Wong. 2023. "Foreign and Domestic Firms: Long Run Employment Effects of Export Opportunities" Dartmouth University, unpublished.
- Montfaucon, Angella Faith, Victor Kidake Senelwa, and Aupa Doarest. 2023. "Early Impacts of Indonesia's Investment Reforms: A Preliminary Analysis." Policy Research Working Paper 10478, World Bank, Washington, DC.
- Rahardja, Samsu, and Gonzalo Varela. 2014. "Nothing to Fear but Fear Itself: Evidence on Import Intermediates in Indonesia." Economic Premise Number 138, World Bank.
- Takii, S. and D. A. Narjoko 2012. "FDI Forward Linkage Effect and Local Input Procurement: Evidence from Indonesian Manufacturing", in Hahn, C. H. And D. A. Narjoko (eds.), "Dynamics of Firm Selection Process in Globalized Economies." ERIA Research Project Report 2011 no.3, pp.111-146. Available at: http://www.eria.org/RPR_FY2011_No.3_Chapter_5.pdf
- World Bank. 2024. "Indonesia Economic Prospects, June 2024: Unleashing Indonesia's Business Potential." Washington, DC: World Bank.
- World Bank. 2022. "Regulatory Policy and Delivery Review of Indonesia." Washington, DC: World Bank.
- World Bank. 2018. "Indonesia Economic Quarterly," December 2018. World Bank.
- World Bank Group/MIGA (Multilateral Investment Guarantee Agency). 2006. The Impact of Intel in Costa Rica: Nine Years After the Decision to Invest. Investing in Development Series. Multilateral Investment Guarantee Agency. Washington, DC: World Bank Group/MIGA.