RIETI Discussion Paper Series 22-E-010

Indonesia and Vietnam in Global Supply Chains and the Age of COVID: A Tale of Two Countries

THORBECKE, Willem
RIETI

KATO, Atsuyuki
RIETI

RIETI
Research Institute of Economy, Trade & Industry, IAA

The Research Institute of Economy, Trade and Industry
https://www.rieti.go.jp/en/

RIETI Discussion Paper Series 22-E-010

February 2022

Indonesia and Vietnam in Global Supply Chains and the Age of COVID: A Tale of Two Countries*

Willem Thorbecke[1]
Research Institute of Economy, Trade and Industry

Atsuyuki Kato[2]
Kanazawa University/ Research Institute of Economy, Trade and Industry

Abstract

Indonesia's economic performance since 2000 has been respectable. It has not succeeded, however, at joining global value chains (GVC). Vietnam on the other hand is a key link in GVCs for electronics, textiles, and other sectors. This paper recounts the experiences of Indonesia and Vietnam at attracting foreign direct invest, exporting, and coping with the COVID-19 pandemic. It considers why Indonesia has been less successful than Vietnam at joining GVCs. It then concludes with several recommendations for how Indonesia could attract FDI and avoid scarring from the pandemic.

Keywords: Indonesia, Vietnam, Global value chains, Foreign direct investment

JEL classification: F10, F14

* This study is conducted as a part of the research at the Research Institute of Economy, Trade and Industry (RIETI).
[1] 1-3-1 Kasumigaseki, Chiyoda-ku Tokyo, 100-8901 Japan Tel.: + 81-3-3501-0230;
E-mail: willem-thorbecke@rieti.go.jp
[2] Kakuma-machi, Kanazawa, Ishikawa, 920-1192 Japan Tel.; +81-76-264-5534;
E-mail: akatoecoon@staff.kanazawa-u.ac.jp

1. Introduction

Indonesia is politically stable. Its economy has also progressed over the last two decades. Its headcount poverty ratio fell from 19.1% of the population in 2000 to 9.4% in 2019.[1] GDP per capita grew on average by almost 4% per year between 2000 and 2019 and GDP by more than 5% per year. During the pandemic, GDP fell by only 2% in 2020 and grew by 3.7% in 2021. The World Bank (2021) forecasts growth of 5.2% in 2022.

One area where Indonesia could improve is in attracting foreign direct investment (FDI). Unlike its Association of Southeast Asian Nations (ASEAN) neighbors, it has never joined the value chain for electronics and other machinery industries and its participation in labor-intensive sectors such as textiles remains tenuous. Attracting FDI and joining regional value chains could benefit Indonesia. As Ando and Hayakawa (2021) reported, East Asian production networks remained resilient to shocks including the 1997 Asian Financial Crisis (AFC), the 2008-2009 Global Financial Crisis, the 2011 Great East Japan Earthquake, the 2011 Thai floods, and the COVID-19 pandemic. Including more manufactured goods in its export basket could also reduce its exposure to negative commodity price shocks. In addition, attracting FDI offers the opportunity to assimilate foreign technologies (see Yoshitomi, 2003).

While Indonesia has struggled in attracting FDI to produce manufacturing goods, Vietnam has succeeded. Vietnam's textile and apparel exports now exceed those from Indonesia, Malaysia, the Philippines, Singapore and Thailand combined. Vietnam is also the second leading importer of electronic parts and components and exporter of electronics goods in ASEAN behind Malaysia.

[1] The data cited in this paragraph come from https://data.worldbank.org/indicator/SI.POV.NAHC?locations=ID , https://hbs.unctad.org/ , and World Bank (2021).

How can we understand how countries such as Indonesia and Vietnam attract FDI?[2] Mundell (1957) considered capital flows from a capital-abundant country to a capital-scarce country. He demonstrated that, when the capital-scarce country hinders trade in goods, the capital-abundant country will channel capital to the capital-scarce country in search of higher returns. This inflow shifts production in the host country away from the less capital-intensive industry towards the more capital-intensive industry. The comparatively disadvantaged industry in the capital-scarce country thus expands relative to the comparatively advantaged industries. FDI in Mundell's model thus substitutes for trade. This model indicates that, as the Rybczynski theorem indicates, capital inflows cause the capital-intensive industry to expand and the labor-intensive industry to contract.

Kojima (1973) presented a model that differed from Mundell's because trade and FDI are complements. In his framework FDI flows from the capital-abundant country's disadvantaged industry into the capital-scarce country's advantaged industry. Kojima considered investment flows that raised production in industries where the host country is advantaged relative to the home country. As the home country faces rising wages and shifts to capital-and knowledge-intensive activities, its firms relocate labor-intensive factories to lower wage countries. Firms in the home country then export parts and components and capital goods to the host country, implying that there is a complementary relationship between FDI and imports. In this model, contrary to the predictions of the Rybczynski theorem, capital inflows increase output in the labor-intensive industry and decrease output in the capital-intensive industry.

Kojima (1973) viewed FDI as a means of transferring production techniques to developing countries through training managers and workers. He modeled FDI as a vehicle for transmitting

[2] The next three paragraphs draw on Ozawa (2007) and Thorbecke and Salike (2014).

capital, managerial skill, and technical knowledge to the host economy. He noted that it can transfer experience and know-how about production techniques, machine operation and maintenance, and material selection and treatment. Benefits include the provision of blueprints, the training of operators and engineers, and information on quality and cost control, inventory management, factory lay-out, and machinery and equipment selection. As discussed below, FDI into Indonesia sometimes functioned as the Rybczynski theorem predicted and at other times as Kojima modeled.

Kojima's (1973) model is related to global value chains. Multinational corporations (MNCs) have sliced production into fragmented blocks. These production blocks are allocated across countries and regions based on factor endowments, technology absorption capacity, wage levels, infrastructure, human capital, market-friendly institutions and political systems.

Jones and Kierzkowski (1990) modeled the slicing up of the value chain. They showed that firms opt to fragment production when the service cost of linking geographically separated blocks is less than the cost saving arising from production sharing. In their framework lowering the service link cost thus increases fragmentation.

Kimura and Ando (2005) showed that the service link cost (SLC) varies across two dimensions, managerial controllability and geographical distance. On the controllability dimension, the SLC depends on the costs of imperfect information, unstable contracts, and unreliable partners. Protecting property rights, enforcing private contracts, improving the ease of doing business, eliminating red tape, maintaining free trade, and consistently enforcing laws and regulations can reduce the service link cost. On the distance dimension, the SLC depends on costs associated with transportation, telecommunications, and intra-firm coordination. Ensuring a stable supply of electricity, improving highways, ports, and airports, and improving the information and communication technology infrastructure can reduce the service link cost. Production cost

savings arise when the cost of capital, labor, land, and other factors in the host country are lower than in the home country.

This framework implies that countries with corruption and cronyism will face difficulties attracting foreign direct investment (FDI). On the other hand, regions with high quality highways, ports, airports, and infrastructure should attract more FDI. As many firms locate in one area, service link costs will fall because it becomes easier to obtain parts and components and to handle changes in customer demand when many potential partners are nearby. As the quality of human capital increases, workers will be more productive and production costs will fall.

This paper compares the performances of Indonesia and Vietnam at exporting, attracting FDI, and coping during the pandemic. It then considers how Indonesia could attract FDI, diversify its export basket, and weather the pandemic.

The next section documents Indonesia and Vietnam's evolving export structures. Section 3 seeks to explain these countries export and FDI experiences. Section 4 considers how they have fared during the COVID-19 pandemic. Section 5 concludes.

2. Indonesia and Vietnam's Evolving Export Structures

Figure 1 shows Indonesia's exports disaggregated by sector before the 1997 AFC. The figure shows the dominant role that energy (largely oil) played in Indonesia's exports between 1974 and 1986. The spot price of West Texas intermediate crude oil increased almost nine times between December 1973 and January 1981. The value of Indonesia's energy exports increased more than 14 times between 1973 and 1981 and became the dominant export category for Indonesia. It then fell 60% between 1981 and 1986.

As the value of oil exports fell, the value of other exports rose. Textile exports amounted to USD 540 million in 1985. They rose to $9.3 billion in 1996. Food and agriculture exports (e.g., palm oil and coffee) rose from $2.7 billion to $8.1 billion over this period and wood exports rose from $520 million to $6.6 billion.

While Indonesia's textile, agricultural, and wood exports increased, Indonesia never succeeded in joining the electronics value chain in Asia. This is clear in Figures 2 and 3. Figure 2 shows that electronic parts and components (EPC) imports into Malaysia, the Philippines, and Thailand soared in the 1980s and 1990s and remained high. The figure also shows that EPC imports into these ASEAN countries dwarfed those into Indonesia. Figure 3 shows that electronic exports from the other ASEAN countries also soared in the 1980s and 1990s while Indonesia's exports barely increased. In 2018, the value of the Philippines electronics exports was more than five time greater than Indonesia's, the value of Thailand's exports was more than eight times greater, and the value of Malaysia's exports more than 16 times greater.

Table 1 shows the components of Indonesia's export basket in 2019. Column 3 shows that agriculture comprised 23% of its exports, minerals 18.7%, services 15.8%, textiles 9.6%, and chemicals 8.3%. The leading category for agriculture was palm oil, for minerals coal, for services travel and tourism, for textiles footwear, and for chemicals rubber. The product complexity index (PCI) is also calculated for each sector (i.e., agriculture, chemicals, electronics, machinery, metals, minerals, motor vehicles, and textiles) by obtaining PCI values for the ten leading export categories at the 4-digit Harmonized System level within the sector. The PCI for the sector is then measured as a weighted average of the PCI values for the ten categories, with the weights determined by the share of exports in each of the ten categories. The PCI values at the HS 4-digit level are calculated using the method of Hidalgo and Hausmann (2009) and

obtained from the Atlas of Economic Complexity website.[3] The PCI values in column (4) indicate that agriculture exports are on average at the 11th complexity percentile, mineral exports at the 6th percentile, textile exports at the 22nd percentile, and chemical exports at the 18th percentile. Indonesia's export basket in 2019 remains unsophisticated.

Figure 4 shows the value of Vietnam's textile exports. Before 1990 Vietnam exported almost no textile products. By 2018, the value of its textile exports was 50% more than textile exports from Indonesia, Malaysia, the Philippines, Singapore, and Thailand combined. Figure 5 shows the value of Vietnam's electronic exports. In 1999 Vietnam's electronics exports equaled USD 600 million. By 2018 they amounted to $116 billion. Vietnam was thus the second leading electronics exporter in ASEAN, behind electronics exports of $129 billion by Malaysia. Although not shown in Figure 5, Vietnam in 2018 was also the second leading importer of EPC in ASEAN behind Malaysia.

Table 1 shows the components of Vietnam's export basket in 2019. Column 6 shows that electronics comprised 38.3% of its exports, textiles 22.4%, agriculture 10.2%, machinery 7.9%, and services 5.4%. The leading category for electronics was TV, digital, and video cameras, for textile footwear, for agriculture trunks, and for machinery parts for office equipment. The PCI values in column (7) indicate that electronic exports are on average at the 74th complexity percentile, textile exports at the 18th percentile, agricultural exports at the 10th percentile, and machinery exports at the 90th percentile. Vietnam's export basket in 2019 thus contained many sophisticated products.

Figure 6 shows the country complexity rankings calculated using the method of Hidalgo and Hausmann (2009). Vietnam has steadily climbed the rankings, going from 107th out of 133

[3] The URL for the Atlas website is: https://atlas.cid.harvard.edu .

countries in 1995 to 52nd in 2019. Indonesia, by contrast, saw its ranking fall from 55th in 2002 to 61st in 2019. Vietnam has thus steadily adopted more sophisticated production techniques while Indonesia has not.

Figure 7 traces the evolution of the stock of FDI in Indonesia and Vietnam. It shows that FDI has steadily increased into Vietnam and by 2020 reached 66% of GDP. In contrast, Indonesia's GDP in 2020 was only 23% of GDP. In addition, Ginting (2019) reported that more than half of the FDI coming into Indonesia has not flowed to the manufacturing sector. He noted that the top nine sectors receiving FDI in Indonesia are renewable energy, mining, chemicals, real estate, metals, hotels, information technology, and finance. Only the 10th leading recipient of FDI, automobiles, is a manufacturing industry. He also observed that investors in manufacturing do not do this in order to export but to produce for the domestic market. By contrast, the lion's share of FDI flowing into Vietnam is for manufacturing and much of this is aimed at producing goods for export.

3. Understanding Indonesia and Vietnam's Evolving Export and FDI Patterns

Azis (2022) noted that reforms to Indonesia's FDI laws in 1967 attracted FDI into oil and other sectors. Between 1974 and 1985, 74% of Indonesia's exports was in the energy sector. Basri and Hill (2002) observed that the sharp drop in oil prices in 1985 and 1986 caused Suharto to assign policymaking influence to the technocrats. Under their influence Indonesia removed nontariff barriers and other impediments to trade. Azis reported that the goal of these policies was to stimulate labor-intensive exports and revitalize the private sector.

The technocrats' strategy was to attract FDI in order to succeed at exporting. To do this, the government exempted firms exporting more than 85% of their goods from import tariffs and

licensing restrictions (Azis, 2022). It also allowed up to 95% foreign ownership in exporting firms and issued FDI permits for 30 years Much of the FDI that Indonesia attracted at this time was from Japan. The appreciation of the Japanese yen from 242 yen per dollar in 1985 to 153 in 1986 reduced the yen cost of investing in Indonesia. In addition, to maintain price competitiveness in the face of the appreciating yen, Japanese firms transferred factories to Indonesia. This type of FDI corresponds to the type that Kojima (1973) modeled.

Yoshitomi (2003) discussed how the combination of attracting FDI and exporting in Indonesia led to learning and technological assimilation. Japanese firms diffused codified technical information. They also ensured that the transferred technology worked. Azis (2022) noted that many well run firms in Indonesia succeeded at exporting labor-intensive goods in the late 1980s and early 1990s.

The advent of the AFC in 1997 and 1998 with the accompanying riots and instability caused new FDI inflows from Japan to dry up. The foreign investment already there remained but new investments slowed to a trickle. The spike in FDI relative to GDP in 1998 and 1999 in Figure 7 reflects not an increase in FDI but a fall in GDP.

While Indonesia attracted FDI in labor-intensive sectors, Kimura (2005) discussed why Indonesia before the AFC never succeeded at joining global value chains for advanced products such as electronics. The Indonesian government harbored suspicions of foreign investors because of Indonesia's experiences with foreign investors in the mining and oil sectors. Investment in the mining and oil sector, as the Rybczynski theorem predicts, caused the capital-intensive sector in Indonesia to expand. On the other hand, as Thorbecke and Salike (2014) documented, investment in the Asian electronics industry followed the pattern outlined by Kojima (1973). It thus offered the possibility for Indonesian firms to obtain capital, managerial

skill, and technical knowledge. Another factor mentioned by Kimura to explain the dearth of electronics investment is that the universe of small and medium sized enterprises (SMEs) in Indonesia that could support multinational enterprises (MNEs) was shallow. The government also tended to favor cottage firms run by indigenous Indonesians (p*ribumis*) over SMEs run by ethnic Chinese in Indonesia. In countries such as Malaysia, it was often the firms run by ethnic Chinese that succeeded in joining the electronics value chain (Rasiah, 2017). A final factor mentioned by Kimura is insufficient human capital.

How has Indonesia performed after the AFC in the factors highlighted in Section 1 that promote the slicing up of the value chain? The 1997-98 crisis left many Indonesians distrustful of globalization and the recommendations of the International Monetary Fund and other international financial institutions about matters such as trade liberalization. Many were already suspicious because of foreign exploitation during Indonesia's colonial past (Bland, 2020). After President Suharto resigned, Indonesia developed a nascent democracy with active interest groups. Rent seeking by interest groups led to nontariff barriers and other protectionist policies. The Global Trade Alert reported that Indonesia had 532 protectionist trade interventions between 2009 and January 2022, compared with 255 for Malaysia and 131 for Thailand.

Indonesia has several nontariff measures (NTMs) that do not address externalities but instead appear protectionist (Cali and Montfaucon, 2021). These include pre-shipment inspections (PSI), restrictions on port of entry for imports (POE), mandatory certification with the Indonesian national standard (SNI), and import approvals (IA). The World Bank (2021) reported that PSI and IA affect almost two-thirds of firms and POE and SNI impact one-third of firms. Since Indonesian exporters depend on imports of capital goods and parts and components, restrictions on importing can also reduce exports Cali and Montfaucon, using monthly data on

the universe of Indonesian exporting firms over the 2014-2018 period, found that a 1% increase in SNI and POE restrictions reduces export quantities and values by 0.8-0.9%. They also reported that increased exposure to NTMs reduces the extensive margin of exports, the number of export destinations, and the probability of firm survival. Protectionism not only harms exporters but it also promotes cronyism and reduces Indonesia's attractiveness to foreign investors.

Human capital formation is failing. Indonesia passed a constitutional amendment in 2002 mandating that governments spend at least 20% of their budgets on education. Unfortunately this spending has not produced quality results. In the 2018 Programme for International Assessment (PISA) tests measuring the educational attainment of 15 year olds, Indonesia ranked 71st out of 78 countries. Its ranking was 71st in math, 70th in science, and 72nd in reading. These outcomes were worse than the 2015 PISA tests, when Indonesia's overall ranking was 62nd out of 72 countries.

Logistics in Indonesia, while improving, rank below other Asian neighbors. Table 2 shows that, according to the World Bank's World Logistics Index, Indonesia ranked 75th in 2010. This was far below Asian peers. For instance, Vietnam ranked 53rd , the Philippines ranked 44th , Thailand ranked 35th , Malaysia ranked 29th, China ranked 27th , and Singapore ranked 2nd . In 2010 Indonesia ranked 80th in both tracking and tracing and in international shipments and 92nd in logistics quality and competence. These weaknesses reduced the locational attractiveness of Indonesia to foreign investors relative to its neighbors. By 2018 Indonesia's overall logistics ranking had improved to 46th . This was still below several peers. Malaysia ranked 41st, Vietnam ranked 39th, Thailand ranked 32nd , China ranked 26th , and Singapore ranked 7th .

Concerning the service link cost, the World Economic Forum (2019) noted redundancy costs in the labor market. In 2019, Indonesia ranked 136th out of 141 countries in redundancy costs in the labor market. On average employers need to pay 58 weeks of salary when dismissing workers. Minimum wage laws also increase labor costs. The Indonesian government has addressed these issues with the 2020 Omnibus Law on Job Creation. The law was declared unconstitutional by the Constitutional Court in 2021, and the government is working on remedying the law to pass constitutional muster. Indonesia also depends on imported capital goods, and protectionism has increased their costs and thus the service link cost of relocating production to Indonesia.

Plummer (1995) recounted the early reform process in Vietnam. Before the *doi moi* reforms in 1986, the Vietnamese economy lurched from crisis to crisis. Triple digit inflation, inefficiencies associated with a command economy, and decreasing aid from the Soviet Union contributed to grinding poverty. Meanwhile Vietnam's neighbors liberalized trade and attracted FDI, contributing to miraculous growth rates. The *doi moi* reforms included policies to liberalize trade and attract foreign investment. Vietnam also eliminated its two-tiered exchange rate system and kept the exchange rate competitively valued. In 1995 it joined ASEAN. Plummer notes that these reforms contributed to economic growth rates in Vietnam before the AFC that were similar to those of its ASEAN neighbors.

Vietnam promulgated the Law on Foreign Investment in 1987 and updated it four time up until 2000.[4] The law and the updates were intended to bestow more rights to foreign investors, to improve the investment environment, and to reduce the gap between the treatment of foreign and domestic investors (Anh, Hong, Thang, and Hai, 2006). Vietnam's exports increased 13 fold

[4] This paragraph draws on Anh, Hong, Thang, and Hai (2006).

between 1991 to 2004, and the share of exports from FDI firms increased from 4% to 55%. By 2004 78% of registered FDI projects was in the industrial sector.

As Nguyen (2022) noted, Vietnam since 1986 has used free trade agreements (FTAs) to stimulate reforms by harnessing external pressure to challenge domestic interests. As a member of ASEAN, Vietnam took part in the many ASEAN FTAs. It also joined the World Trade Organization in 2007 and negotiated membership in the Trans-Pacific Partnership (later renamed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership in 2015. It has thus followed an aggressive liberalization path.

Vietnam has also performed well in education. For instance, in the 2015 Programme for International Assessment (PISA) tests, Vietnam scored 8th out of 72 countries.

Logistics in Vietnam are also good for a country at its stage of development. Table 2 indicates that, in almost every category and in almost every year from 2010 to 2018 it ranks higher than Indonesia. One weakness is infrastructure. However, Vietnam has many industrial zones where the infrastructure can be tailored to the needs of foreign companies (Vo and Nguyen, 2013).

The Japanese Bank for International Cooperation surveyed 530 companies in late 2020.[5] They ranked Vietnam third as an investment location. The top three reasons mentions were: the future growth potential of the local market, inexpensive local labor, and qualified human resources. The top three issues raised were: unclear execution of the legal system, intense competition with other companies, and rising labor costs. Thus productive and inexpensive workers increase the production cost savings of relocating to Vietnam, although the costs of labor are increasing. Inconsistent enforcement of the laws raises the service link cost of

[5] The results are available at: https://www.jbic.go.jp/en/information/press/press-2020/pdf/0115-014188_4.pdf .

transferring factories to Vietnam.

4. How the COVID-19 Crisis Has Impacted Indonesia and Vietnam[6]

Figure 8 shows that Indonesia initially suffered more COVID-19 cases than Vietnam. The first case was reported on 2 March 2020. The numbers steadily increased to reach 7,000 per million in June 2021. Then, as the Delta variant arrived, the numbers more than doubled to plateau at over 15,000 per million.

The Indonesian government took several steps to fight the pandemic and stimulate the economy. It initiated a vaccination campaign in January 2021 and by February 2022 49% of the population were fully vaccinated. The government imposed temporary bans on public gatherings, closed some schools, and restricted travel. It also shutdown Java, Bali, and other locations as the Delta variant struck in July 2021.

The government implemented a national recovery program of 3.8% of GDP in 2020. The program focused on helping the healthcare sector test and treat COVID-19, providing benefits for food and electricity bills to poorer individuals, increasing unemployment insurance, and reducing taxes. The government also sought to stimulate loans by placing funds in commercial banks. BI also purchased government bonds to help finance pandemic spending.

The Indonesian economy has performed relatively well during the pandemic. GDP growth equaled -2% in 2020, 3.7% in 2021, and is forecasted to equal 5.2% in 2022.[7] To shed light on sectoral performance we present in Table 3 the change in stock returns since 18 February 2020, the day before stocks around the world started falling due to COVID-19, until 12 February

[6] Parts of the section draw on the IMF summary of policy responses to COVID that is available here: https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19 .
[7] These data come from World Bank (2021).

2022. In theory stock prices equal the expected present value of future cash flows, and change across sectors shed light on how different sectors have been impacted.

Interestingly, the aggregate Indonesian stock market had the same value on 11 February 2022 as it had on 18 February 2020 just before COVID-19 news roiled the market. Table 3 indicates that electricity stocks and telecommunications equipment stocks have both increased logarithmically by more than 100 percent. Electricity stocks were below their pre-crisis value until September 2021. They have benefited from the recovery that took hold near the end of 2021. Telecommunications equipment stocks have gained been increasing since July 2020. They benefited from the need for better ICT equipment during the pandemic. Commodity stocks such as industrial metals & mines, coal, and precious metals & mines gained between 44% and 78% during the crisis. They have benefited from the strong demand for commodities in China and the rest of the world. Banks have gained 12%. They returned to their pre-crisis value in October 2021 and posted gains since then.

Examining sectors that lost, gas distribution stocks lost 9% and automobiles & auto parts lost 12%. The consumer sector has done especially badly. Consumer discretionary stocks lost 13%, food products lost 18%, consumer digital services lost 40%, consumer staples lost 41%, and drug & grocery stores lost 47%. The World Bank (2021) reported that consumption remained subdued because of depressed consumer sentiment. The worst performing sector was tobacco, that lost 67%. Concerns about the link between severe COVID cases and smoking have harmed this industry.

The World Bank (2021) discussed the danger of scarring from the crisis on the Indonesian economy. It found that school closures up until June 2021 cost students between 0.9 and 1.2 learning adjusted years of schooling. It also reported that the share of 15-24 year olds

who were neither working nor in education or training almost doubled in 2020/2021 to reach 16.4%. As young people are detached from schooling and the labor force, they not only fail to learn skills but can also lose work discipline. This in turn can generate hysteresis effects that reduce potential output.

Figure 8 shows that initially Vietnam succeeded in controlling COVID. The first case was reported in Vietnam on 23 January 2020. The number of cases remained below 100 per million until June 2021. Then, as the Delta variant arrived, the number of cases per million multiplied and became higher than those recorded for Indonesia.

The Vietnamese government at first pursued a "no COVID-19" policy. It focused on preventing, detecting, tracing, and isolating cases. It closed its borders to foreign tourists on 22 March 2020 and kept them closed throughout 2020 and 2021. It extended the school vacations in 2020. It also mandated lockdowns. The strategy imposed an economic cost, with economic growth falling from 7.0% in 2019 to 2.9% in 2021.

The government's pandemic strategy was successful until the Delta variant arrived in the summer of 2021. As Figure 8 shows, cases surged at this point. The government then changed from a "No COVID-19" policy to a "Living with COVID-19" policy. The percent fully vaccinated rose from close to zero in May 2021 to almost 80% by February 2021. The government also imposed lockdowns in Ho Chi Minh City, Hanoi, and other places. The COVID cases and the government responses reduced economic growth in the third quarter of 2021. Economic growth was 4.7% in 2021Q1, 6.7% in 2021Q2, -6.0% in 2021Q3, and 5.2% in 2021Q4.[8]

[8] These data come from https://www.jetro.go.jp/biznews/2022/01/e7948ff8b1eb79ba.html .

Fiscal policy involved tax deferrals and reductions in fees. The government also established a fund soliciting voluntary contributions to purchase and research vaccinations. The Vietnamese central bank also encouraged commercial banks to reduce or eliminate interest charges, to provide loan forbearance, and to provide loans for legitimate needs. The World Bank (2022) projects that the Vietnamese economy will grow by 5.5% in 2022

The aggregate Vietnamese stock market increased logarithmically by 47% between 18 February 2020 and 11 February 2022. Table 4 indicates that, as in Indonesia, commodity stocks performed well. Iron & steel, industrial metals & mines, fertilizers, and chemicals all increased logarithmically by more than 100%. Precious metals & mines gained 55%. Clothing and telecommunication equipment, two strong exporting sectors in Vietnam, increased by 139% and 62% respectively. Travel & leisure, although a laggard relative to other Vietnamese stocks, still gained 11%. The second and third worst performers were health care and pharmaceuticals. One reason for their relatively weaker performance is that they relied partly on charitable contributions during the pandemic. The worst performing sector was brewers. As the pandemic reduced people going out to bars and restaurants, it also reduced spending on beer.

5. Conclusion

Indonesia has some weaknesses that deter its ability to attract FDI. These include logistics problems, high redundancy labor costs, protectionism, and weaknesses in education. Vietnam has been able to attract FDI partly because it has improved logistics, pursued free trade, and succeeded in training students. The Indonesian government should continue focusing on these areas. For instance, Indonesia could imitate Vietnam by joining more FTAs and using the foreign pressure to resist cronyism and domestic protectionist pressures.

Poor educational outcomes are problematic not only because they reduce productivity and FDI but also because they detract from the quality of citizens' lives. Investing in children in the womb and during the first few years can improve their ability to learn later. One measure of young children's health is stunting. The World Bank's Human Capital Project defines the stunting rate as the percentage of children under 5 whose height is more than two standard deviations below the median for their age.[9] The percentage of children in Indonesia who are not stunted improved from 57.6% in 2000 to 72.3% in 2019. While this is encouraging, the Human Capital Project still finds that stunting in Indonesia is much more prevalent that for other countries at comparable income levels.

Since the educational system is not working it makes sense to try other approaches to learning. Einstein said that modern education can suppress curiosity and thinking. He also said that education is often like taking a whip and forcing a lion to eat. Rather than responding to failures in student performance by becoming stricter, it might be helpful to start by nurturing a hunger for learning in students and by demonstrating to students that learning and creativity can be enjoyable.

The World Bank (2018) noted that jobs involving routine and codifiable tasks are at risk in the digital economy. It thus highlighted that schools should emphasize cognitive skills (e.g., complex problem-solving), social skills (e.g., teamwork) and adaptive skills (e.g., reasoning and self-efficacy). Rosser (2018) discussed several obstacles to improving education in these and other ways in Indonesia. These include inadequately trained teachers, an incentive structure that does not reward good teaching, and excessive government control. The World Bank (2021) highlighted the need to improve access to the internet for students and others by enhancing

[9] This definition and the data in this paragraph are obtained from https://www.worldbank.org/en/publication/human-capital.

regulation and competition in the digital infrastructure sector. Indonesia should address these issues and be patient, as investments in education can take 15 years or longer to bear fruit (World Bank, 2018).

To promote learning Indonesia should also seek to attract the type of FDI modeled by Kojima (1973). Traditionally this type of FDI has been associated with Japanese MNCs. The IMF (2012) reported that Japanese FDI has benefited Asian countries. They found that a 10% increase in Japanese FDI to an emerging Asian economy over the 1985-2011 period raised growth in that country by between 6% and 7%. The IMF reported that this is much more than the increase in growth generated by FDI from other countries. Whether from Japan or from other countries, Indonesia should focus on attracting the type of FDI that produces learning and technology transfer.

It should also try to prevent scarring from the COVID-19 pandemic. Afkar and Yarrow (2021) and World Bank (2021) have proposed steps to counter learning losses during the pandemic. Teachers should pinpoint learning shortfalls across individual students and develop personalized approaches for them to catch up. Teachers also need tools and support to succeed at distance learning. Parents should ensure that students are learning at home. As students return to school, water, hygiene, and sanitary facilities need to be improved. Also, booster vaccines should be promoted to help keep the economy open so that 15-24 year olds who are not in education or training will have opportunities to reengage.

Finally, Indonesia should catalyze entrepreneurship. Yoshitomi (2003) noted that entrepreneurs in Asia provide jobs by taking risks and transforming ideas into marketable goods. The government should improve the business climate and remove red tape to encourage entrepreneurship. It should also survey start-up firms and entrepreneurs to understand the

obstacles they face and the support they need. In its zeal to raise tax revenues, it should avoid "hunting in the zoo" by excessively targeting established entrepreneurs. It should also improve bank risk management practices, deepen capital markets, and seek to channel saving not just to financial assets but towards entrepreneurs and exporting firms.

Table 1. The Value and Complexity of Indonesia and Vietnam's Exports in 2019.

	Indonesia			Vietnam		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Export Sector	Value of Exports (billions of USD)	Percent of Total Exports	Product Complexity Index	Value of Exports (billions of USD)	Percent of Total Exports	Product Complexity Index
Total	200	100	NA	305	100	NA
Agriculture	45.9	23.0	-1.34	31	10.2	-1.39
Chemicals	16.5	8.3	-0.98	13	4.3	-0.01
Electronics	9.54	4.8	0.39	117	38.3	0.71
Machinery	8.24	4.1	0.95	24.2	7.9	1.21
Metals	13.3	6.7	-0.19	10.4	3.4	0.25
Minerals	37.3	18.7	-1.62	5.8	1.9	-1.69
Motor Vehicles	9.8	4.9	0.73	4.0	1.3	0.63
Textiles	19.2	9.6	-0.85	68.2	22.4	-0.97
Services	31.6	15.8	NA	16.6	5.4	NA

Source: https://atlas.cid.harvard.edu/and calculations by the author.
Note: The product complexity index (PCI) in columns (4) and (7) is calculated using data from https://atlas.cid.harvard.edu . For each sector in column (1), the PCIs for the ten leading export categories at the Harmonized System (HS) 4-digit level are observed. A weighted average of these PCIs is then calculated using the share of exports in each of the ten 4-digit HS categories as weights. PCIs are calculated using the method of Hidalgo and Hausmann (2009).

Table 2. Logistics Rankings for Indonesia and Vietnam.

	Indonesia						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	Overall	Customs	Infra-structure	Inter-national shipments	Logistics quality and comp-etence	Tracking and tracing	Timeliness
2010	75	72	69	80	92	80	69
2012	59	75	85	57	62	52	42
2014	53	55	56	74	41	58	50
2016	63	69	73	71	55	51	62
2018	46	62	54	42	44	39	41

	Vietnam						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	Overall	Customs	Infra-structure	Inter-national shipments	Logistics quality and competence	Tracking and tracing	Timeliness
2010	53	53	66	58	51	55	76
2012	53	63	72	39	82	47	38
2014	48	61	44	42	49	48	56
2016	64	64	70	50	62	75	56
2018	39	41	47	49	33	34	40

Source: The World Bank, The Logistic Performance Index (available at: https://lpi.worldbank.org/).

Table 3. Change in Indonesian Sectoral Stock Prices between 18 February 2020 and 11 February 2022.

Sector	Change in the Log of Prices between 18 February 2020 and 11 February 2022
Electricity	1.09
Telecommunication Equipment	1.08
Industrial Metals & Mines	0.78
Coal	0.64
Precious Metals & Mines	0.44
Chemicals	0.21
Industrial Transport	0.17
Pharmaceuticals	0.16
Banks	0.12
Telecommunication Services	0.11
Health Care	0.06
Paper	0.03
Gas Distribution	-0.09
Automobiles & Parts	-0.12
Consumer Discretionary	-0.13
Food Products	-0.18
Investment Banks & Brokers	-0.2
Cement	-0.33
Consumer Digital Services	-0.4
Consumer Staples	-0.41
Drug & Grocery Stores	-0.47
Tobacco	-0.67

Source: Datastream database and calculations by the authors.

Table 4. Change in Vietnamese Sectoral Stock Prices between 18 February 2020 and 11 February 2022.

Sector	Change in the Log of Prices between 18 February 2020 and 11 February 2022
Iron & Steel	1.67
Industrial Metals & Mines	1.43
Investment Banks & Brokers	1.40
Clothing & Accessories	1.39
Fertilizers	1.38
Household Furnishing	1.27
Chemicals	1.23
Electronic Equipment: Gauges	1.03
International Oil & Gas	0.97
Construction	0.93
Electricity	0.83
Industrial Support Services	0.68
Industrials	0.66
Oil Equipment & Services	0.64
Telecommunication Equipment	0.62
Building Materials	0.62
Banks	0.60
Cement	0.59
Precious Metals & Mines	0.55
Food Producers	0.48
Telecommunications Services Providers	0.47
Transport Services	0.46
Household Appliances	0.39
Consumer Staples	0.37
Consumer Discretionary	0.32
Real Estate	0.31
Gas Distribution	0.26
Retailers	0.12
Travel & Leisure	0.11
Insurance	0.06
Pharmaceuticals	0.05
Health Care	0.05
Brewers	-0.10

Source: Datastream database and calculations by the authors.

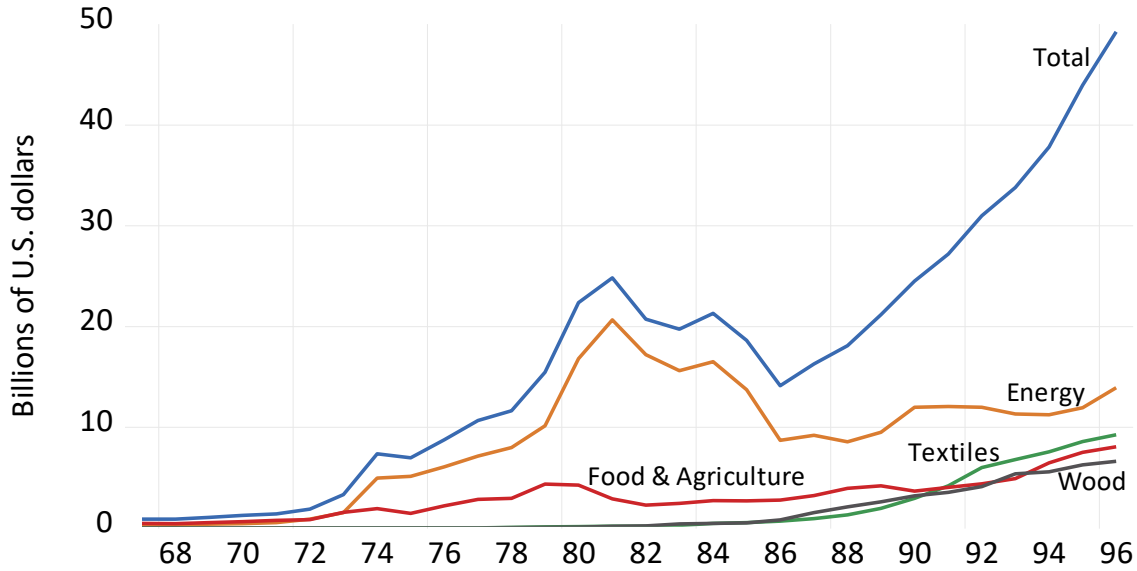

Figure 1. The Value of Indonesia's Exports before the Global Financial Crisis
Source: CEPII-CHELEM database.

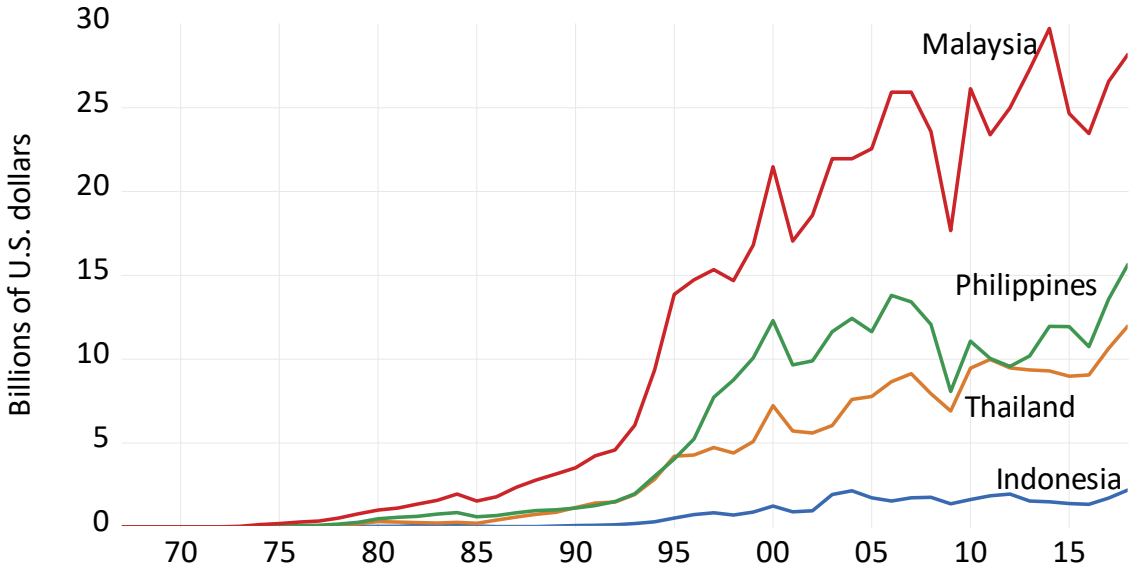

Figure 2. The Value of Electronic Parts and Components Imports into ASEAN Countries
Source: CEPII-CHELEM database.

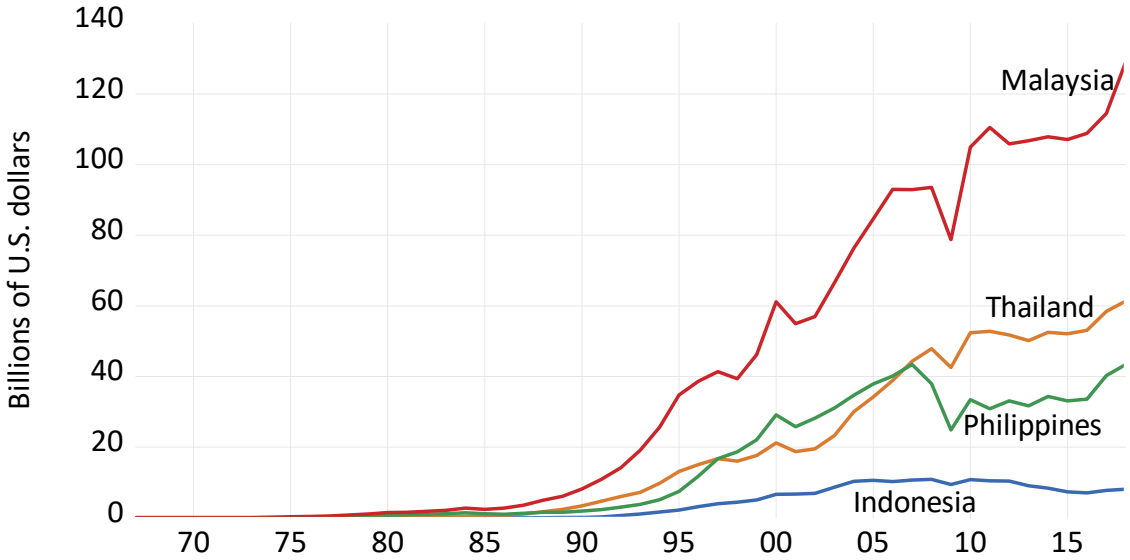

Figure 3. The Value of Electronic Good Exports from ASEAN Countries

Source: CEPII-CHELEM database.

Note: Electronic goods include electronic parts and components, telecommunications equipment, computer equipment, consumer electronics, precision instruments, clock making, and optics.

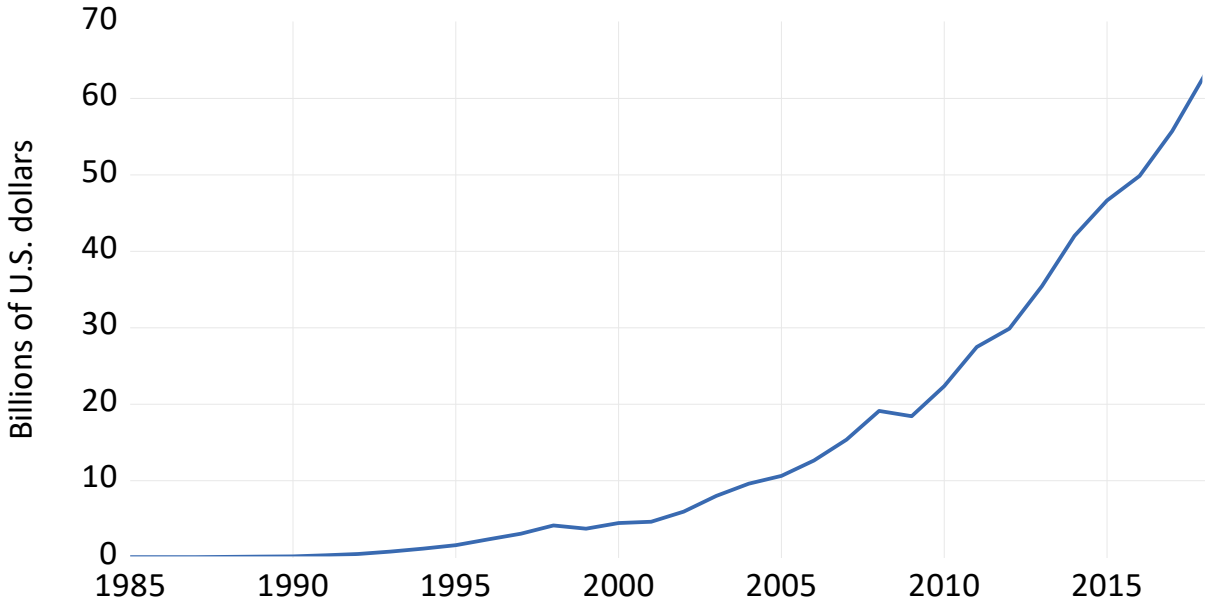

Figure 4. The Value of Vietnam's Textile Exports
Source: CEPII-CHELEM database.
Note: Textiles include yarns, fabrics, clothing, knitwear, carpets, and leather goods.

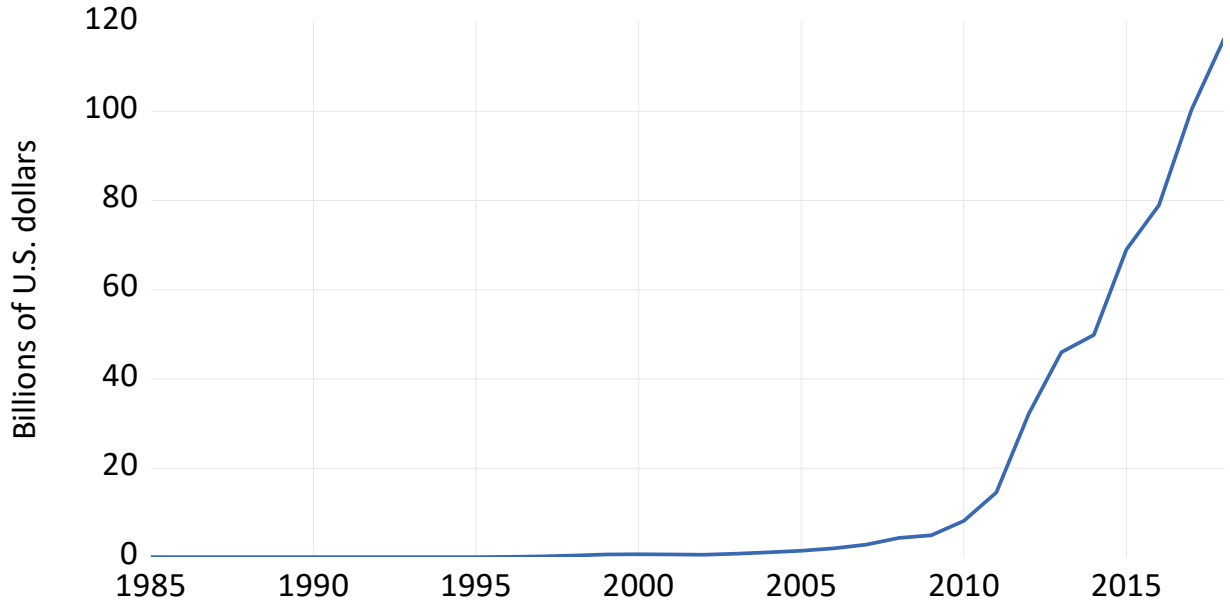

Figure 5. The Value of Vietnam's Electronic Good Exports
Source: CEPII-CHELEM database.
Note: Electronic goods include electronic parts and components, telecommunications equipment, computer equipment, consumer electronics, precision instruments, clock making, and optics.

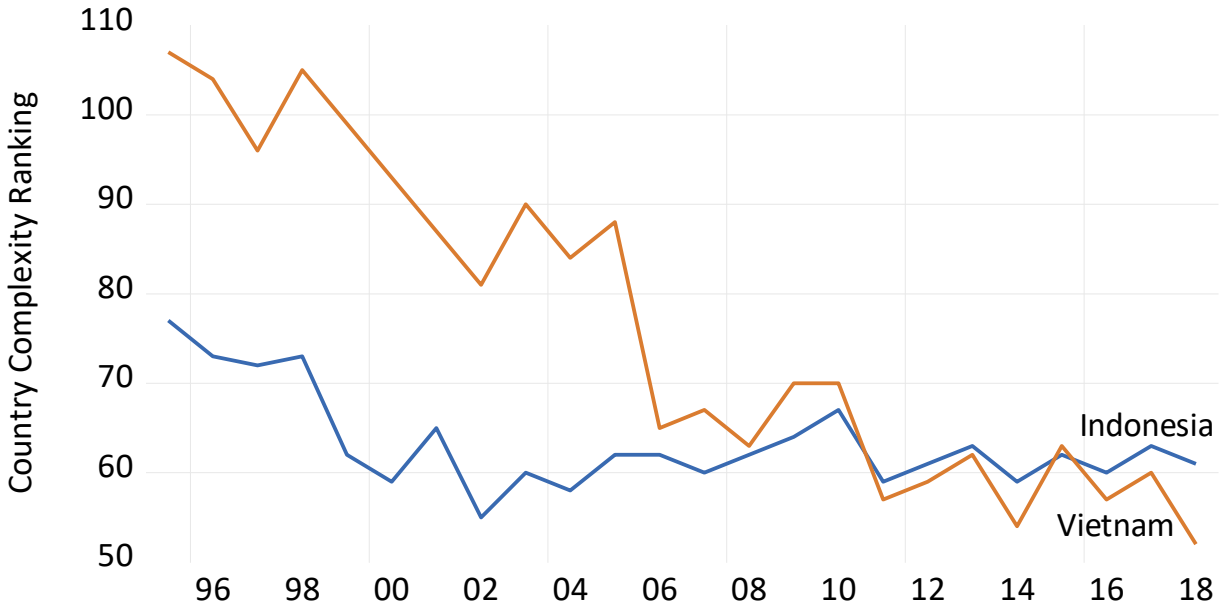

Figure 6. Country Complexity Rankings for Indonesia and Vietnam
Source: https://atlas.cid.harvard.edu/..
Note: The figure shows the counties' complexity rankings relative to 133 countries. Lower rankings indicate more complex economies. Complexity indices are calculated using the method of Hidalgo and Hausmann (2009).

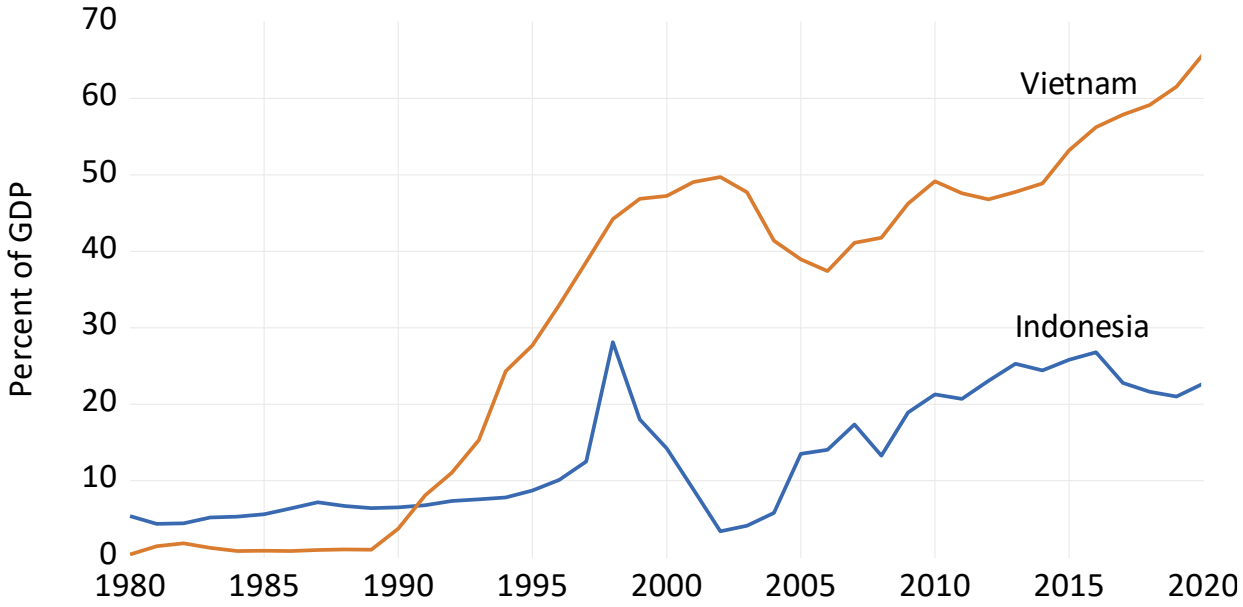

Figure 7. The Stock of FDI in Indonesia and Vietnam

Source: https://atlas.cid.harvard.edu/..

Note: The figure shows the countries' complexity rankings relative to 133 countries. Lower rankings indicate more complex economies. Complexity indices are calculated using the method of Hidalgo and Hausmann (2009).

References

Ando, M., and Hayakawa, K. 2021. Global Value Chains and COVID-19: An Update on Machinery Production Networks in East Asia. ERIA Policy Brief No. 2021-04. Jakarta: Economic Research Institute for ASEAN and East Asia.

Anh, N., Hong, V., Trang, T., and Hai, N., 2006. The Impacts of Foreign Direct Investment on the Economic Growth in Vietnam. Hanoi: Central Institute for Economic Management.

Afkar, R., and Yarrow, N. 2021. Rewrite the Future: How Indonesia's Education System Can Overcome the Losses from the COVID-19 Pandemic and Raise Learning Outcomes for All. Washington, DC: World Bank. Available at: https://openknowledge.worldbank.org/bitstream/handle/10986/36327/Rewrite-the-Future-How-Indonesias-Education-System-Can-Overcome-the-Losses-From-the-COVID-19-Pandemic-and-Raise-Learning-Outcomes-for-All.pdf?sequence=1

Azis, I. 2022. Indonesia: A Tale of Three Crises. In Hoe Khor, Diwa Guinigundo, and Masahiro Kawai, eds., *Trauma to Triumph: Rising from the Ashes of the Asian Financial Crisis*. Singapore: World Scientific.

Basri, M. and Hill, H. 2002. The Political Economy of Manufacturing Protection in Indonesia. In Mohamad Ikhsan, Chris Manning, and Hadi Soesastro, eds., *Ekonomi Indonesia di Era Politik Baru*. Jakarta: Kompas.

Bland, B. 2021. *Man of Contradictions: Joko Widodo and the Struggle to Remake Indonesia.*. London: Penguin Random House.

Cali, M., and Montfaucon, A. 2021. Non-Tariff Measures, Import Competition, and Exports. Policy Research Working Paper 9801. Washington DC: World Bank.

Ginting, E. 2019. Foreign Direct Investment is not Coming to Indonesia. Really? *Jakarta Post*, 18 September.

Hidalgo, C. A., & Hausmann, R. 2009. The Building Blocks of Economic Complexity. *Proceedings of the National Academy of Sciences*, 106, 10570–10575.

IMF. 2012. *2012 Spillover Report*. Washington DC: International Monetary Fund.

Jones, R. and Kierzkowski, H. (1990. The Role of Services in Production and International Trade: A Theoretical Framework. In R.W. Jones and A.D. Krueger, eds., *The Political Economy of International Trade.* Hoboken, NJ: Blackwell.

Kimura, F. 2005. International Production/Distribution Networks and Indonesia. *The Developing Economies* 43, 17-38.

Kimura, F., and Ando, M. 2005. Two-dimensional Fragmentation in East Asia: Conceptual Framework and Empirics. *International Review of Economics and*

Finance 14, 317–348.

Kojima, K. 1973. A Macroeconomic Approach to Foreign Direct Investment. *Hitotsubashi Journal of Economics* 14, 1–21.

Mundell, R. A. 1957. International Trade and Factor Mobility. *American Economic Review* 47, 321–335.

Nguyen, A. 2022. Time for Vietnam to Get Cracking on CPTPP Reforms. East Asia Forum Weblog, 13 January. Available at https://www.eastasiaforum.org/ .

Ozawa, T. 2007. Professor Kiyoshi Kojima's Contributions to FDI Theory: Trade, Structural Transformation, Growth, and Integration in East Asia. The International Economy 11, 17–33.

Plummer, M. 1995. An Analytical Survey of Vietnam's External Policy Challenges. *Journal of Asian Economics* 6, 327-49.

Rasiah, R. 2017. The Industrial Policy Experience of the Electronics Industry in Malaysia. In John Page and Finn Tarp, eds., *The Practice of Industrial Policy: Government—Business Coordination in Africa and East Asia*. Oxford: Oxford University Press.

Rosser, A.. 2018. *Beyond Access: Making Indonesia's Education System Work*. Sydney: Lowy Institute.

Thorbecke, W., and Salike, N. 2014. FDI in East Asia: The Role of Production Networks. In Sarah Tong, ed., *Trade, Investment, and Economic Integration*. Singapore: World Scientific Publishing.

Vo, T., and Nguyen, D. 2013. Experiences of Vietnam in FDI Promotion: Some Lessons for Myanmar. In Hank Lim and Yasuhiro Yamada, eds., *Economic Reforms in Myanmar: Pathways and Prospects.* Bangkok: Bangkok Research Center.

World Bank. 2022 Taking Stock: Vietnam Economic Growth Update, January. Washington DC: World Bank.

World Bank. 2021. Indonesia Economic Prospects, December. Washington DC: World Bank.

World Economic Forum. 2019. The Global Competitiveness Report 2019. Cologny/Geneva, Switzerland: World Economic Forum.

World Bank. 2018b. *World Development Report. The Changing Nature of Work*. Washington DC: World Bank.

Yoshitomi, M. 2003. *Post-Crisis Development Paradigms in Asia*. Tokyo: ADBI Publishing.