



CREATING MARKETS IN INDONESIA

UNLOCKING THE DYNAMISM OF THE INDONESIAN PRIVATE SECTOR

Country Private Sector Diagnostic

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Unlocking the Dynamism of the Indonesian Private Sector: A Country Private Sector Diagnostic

A Joint Study by the World Bank and the International Finance Corporation

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Abbreviations and Acronyms

APINDO	The Indonesian Employers Association
ASEAN	Association of Southeast Asian Nations
BIT	Bilateral Investment Treaty
BPS	Indonesian Central Bureau of Statistics
CPSD	Country Private Sector Diagnostic
DNI	Negative Investment List
EAP	East Asia and Pacific Region
ECED	Early Childhood Education and Development
EU	European Union
FDI	Foreign Direct Investment
FTA	Free Trade Agreements
GDP	Gross Domestic Product
IFC	International Finance Corporation
KADIN	The Indonesian Chamber of Commerce and Industry
KBLI	Indonesia Standard Industrial Classification
KPPU	Business Competition Commission
MSME	Micro, Small, and Medium Enterprise
NCD	Noncommunicable Diseases
NRP	Nominal Rate of Protection
NTM	Nontariff Measure
OECD	Organisation for Economic Co-operation and Development
PLN	Indonesian State Electricity Company
SOE	State-Owned Enterprise
STRI	Services Trade Restrictiveness Index
UNIDO	United Nations Industrial Development Organization

Note: All dollar amounts are U.S. dollars unless otherwise indicated

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Executive Summary



Three decades of robust economic growth have substantially reduced poverty in Indonesia, yet the vast majority of Indonesians still lack the economic security that marks a sustainable transition into the middle class. Real GDP growth has averaged 5 percent per year since 1990, supported by high commodity prices, favorable demographic trends, and a sound macroeconomic policy framework. As a result, GDP per capita increased six-fold between 1990 and 2018, while extreme poverty fell from 57 percent to just below 6 percent. Nevertheless, about 30 percent of Indonesians could be pushed back into poverty by a relatively modest financial or nonfinancial shock, and less than one-quarter of Indonesians enjoy the relative security from monetary poverty associated with middle- or upper-class status.

Enabling more Indonesians to join the middle class remains challenging due to the economy's reliance on the commodity sector and its limited participation in global markets. Investment and growth in the past decade have been closely linked to commodity prices, and the Indonesian economy's moderate exposure to

international trade and weak integration into global value chains have slowed the growth of the non-commodity tradable sectors. Consequently, most new jobs are in agriculture and low-value-added, low-wage services. However, the country's nascent digital sector is generating a small but rising share of employment and income, and this trend could spark the development of a wider range of high-value services if sectoral growth patterns remain on their current trajectory.

The Indonesian economy's reliance on commodity production has also exposed it to balance-of-payments risks and environmental vulnerabilities. The weakening of commodity prices since 2011 has slowed export growth, and declining manufacturing competitiveness and accelerating import growth have compounded its impact on the balance of payments. The resulting current-account deficit has increasingly been financed by volatile short-term capital flows, creating external vulnerabilities that have intensified since 2018. Meanwhile, the country's commodity-based economic model, dominated by plantation agriculture and extractive industries, has contributed to high levels of deforestation, forest degradation, and air pollution. The resulting environmental and health costs underscore the urgent need to develop more sustainable production methods and shift toward less resource-intensive sectors.

Low levels of human capital limit Indonesia's ability to move into higher-value-added activities, boost productivity, and improve household welfare. According to the World Bank's human capital index (HCI), Indonesia's health and education outcomes compare poorly to those of countries at similar income levels. Moreover, the country's commodity-based economic model exacerbates health risks and environmental challenges, which further undermine the wellbeing and economic prospects of Indonesian households.

While the government has implemented important measures in recent years, deeper reforms will be necessary to accelerate growth, ensure environmental sustainability, and create high-quality jobs. The government has developed a credible record for sound macroeconomic management while steadily refocusing public expenditures from inefficient energy subsidies toward productive investments in infrastructure. However, a more comprehensive approach will be necessary to enable the Indonesian economy to embrace a more outward-looking, less commodity-dependent, and increasingly human-capital-based growth pattern. A forthcoming World Bank modelling exercise suggests that this transformation could spur the annual economic growth rate to about 6 percent over the next decade, a full 2 percentage points above the baseline scenario.

A dynamic private sector will be essential to transform the Indonesian economy. The private sector is responsible for over 90 percent of all jobs in Indonesia. Alleviating constraints on private-sector activity will be vital to drive productivity improvements, accelerate growth, ensure economic and environmental sustainability, and create high-quality jobs. A more dynamic private sector could also help improve health and learning outcomes of Indonesians, with positive implications for productivity, wages, and quality of life.

Indonesia's economy is marked by a combination of micro, small, and medium enterprises (MSMEs) and large state-owned enterprises (SOEs). MSMEs and SOEs both suffer from low productivity and exhibit limited integration into regional and global value chains. The SOE sector plays a major role in the economy, and the interests of SOEs greatly influence economic policy. SOEs receive public subsidies and operate as monopolists or dominant players in key sectors. Indonesian firms typically export relatively unsophisticated products, and this pattern has changed little over the past several decades. The private sector's limited integration into global value chains

inhibits technology transfer and slows productivity growth.

The manufacturing sector vividly illustrates the competitiveness problems faced by Indonesian firms. Except during the commodity-price boom period from 2007 to 2011, Indonesia's export performance has been worsening since 2000, especially in the manufacturing sector. This pattern contrasts with those of other regional economies, including Vietnam and Thailand, which have been increasing their share in global manufacturing exports. The deterioration of Indonesia's manufacturing competitiveness is also reflected in the decreasing share of manufacturing in GDP and in the country's diminished attractiveness as a destination for export-oriented foreign direct investment (FDI). The latter effect has especially serious long-term implications, as export-oriented FDI is typically associated with high rates of product and process innovation.

Unlocking the dynamism of Indonesia's private sector will require addressing four related gaps that inhibit productivity growth and weaken firm-level incentives to innovate. These gaps involve competition, infrastructure, human capital, and finance. They constrain access to factor and product markets, undermining the competitiveness of private firms.

The competition gap reflects trade and investment restrictions compounded by a weak competition framework and an unpredictable regulatory environment. Since 2000, the government's policy for promoting the development of the domestic private sector has focused on trade and investment protectionism. Indonesia has gradually increased both tariffs and non-tariff barriers, raising the cost and reducing the availability of imported inputs. Meanwhile, a host of other policy barriers, such as foreign-equity limits, sectoral reservations for MSMEs, domestic content requirements, and local government regulations have raised the cost of investing in Indonesia. These restrictions have significantly reduced both foreign and domestic investment, limited firm entry into

certain markets, inhibited private-sector performance, and distorted prices. A weak competition policy framework and an unpredictable regulatory process compound the adverse effect of these restrictions on the business environment.

The human capital gap further limits private-sector development by diminishing labor productivity and slowing economy-wide growth. Indonesia suffers from a large human-capital deficit. According to the World Bank's Human Capital Index, a child born in Indonesia today will be only 53 percent as productive as she could be if she had a complete education and high-quality healthcare and nutrition. Indonesia's education system is underfunded, with low-quality teaching and an outdated curriculum. Meanwhile, stunting rates remain high relative to Indonesia's GDP per capita. Combined with a high and rising incidence of noncommunicable diseases, these factors impose a significant drag on workers' health, quality of life, and productivity. The World Bank estimates that closing the human capital gap could boost Indonesia's GDP by 31 percent through increased labor productivity.

The infrastructure gap is the result of years of underinvestment, particularly in the energy and transportation sectors, which limits the supply of essential services to the private sector. The value of Indonesia's public capital stock per capita in 2015 was 2.5 times lower than the average for other emerging economies, indicating a US\$1.5 trillion infrastructure gap. The country's investment needs far exceed its fiscal resources, which highlights the importance of exploring options for private financing and public-private partnerships (PPPs). However, the dominant role of SOEs in many infrastructure sectors, regulatory barriers to competition, and non-cost-reflective tariffs deter private participation in infrastructure. In the energy sector, subsidized electricity prices have contributed to an inadequate supply by weakening investment incentives. Moreover, although power generation is open to private investment, distribution is still the sole

responsibility of the Indonesian State Electricity Company, and its weak operational performance discourages private investors. The transportation sector suffers from a similar combination of underinvestment and the dominance of inefficient SOEs, which has led to high transportation costs and insufficient infrastructure development. In the information technology sector, inadequate regulations to support the sharing of digital infrastructure (especially broadband) and promote private investment have contribute to a digital gap.

While public infrastructure investment has benefited from the reallocation of subsidies, the infrastructure gap will continue to widen under the business-as-usual scenario. Infrastructure funding remains a major challenge, as fiscal limits cap public investment in the sector. Meanwhile, the Ministry of State-Owned Enterprises has requested that SOEs raise funds through the financial markets, leading some SOEs to become highly leveraged and face significant financial stress. In addition, several SOEs are approaching the single-borrower limits imposed by local lenders and are operating with high debt-to-equity ratios.

The financial gap constrains access to credit for Indonesian firms, reducing their competitiveness and their ability to help close the other gaps identified above. Indonesia's small and inefficient financial sector, along with the high cost of borrowing, limits access to credit. The limited capital available in the domestic market constrains private investment in infrastructure and in key services such as health and education. Furthermore, domestic lending practices are not conducive to infrastructure financing, as most bank loans tend to be relatively short term and geared toward SOEs. Infrastructure financing is also limited by the small size and short-term horizon of domestic institutional investors.

The government will need to implement a series of policy reforms to close the competition gap. Key measures include: (i) reducing import barriers; (ii) relaxing investment restrictions,

starting with the negative investment list; (iii) revising the Competition Law to better identify and sanction anticompetitive behavior; (iv) finalizing the pending Free Trade Agreements (FTAs) with the European Union and regional partners and joining other major FTAs; and (v) mainstreaming competition considerations into policymaking and strengthening the technical capacity of the Business Competition Commission to enforce competition law and promote pro-competition reforms.

Closing the human capital and infrastructure gaps will require substantial public investment, increased expenditure efficiency, and greater involvement by the private sector. Enhancing fiscal revenue collection and improving the efficiency and effectiveness of public expenditures will be necessary to address deficiencies in the supply of public goods and services, but the private sector will also play a critical role in closing these gaps. To encourage private-sector engagement, the authorities will need to remove regulatory obstacles to private participation in the infrastructure, healthcare, education and financial sectors.

Closing the human capital gap will require policy reforms designed to enhance labor mobility and improve education and health outcomes. Easing regulatory restrictions on work permits could allow an influx of skilled professionals to meet the demand of Indonesian firms. Meanwhile, providing fiscal and non-fiscal incentives to firms to train their workforce could boost the domestic supply of skilled workers. Expanded private-sector participation in the health sector could enhance the quality of health services, while continued public support for the evaluation and eventual expansion of educational technology could improve education outcomes.

Closing the infrastructure gap will require a combination of reforms targeting SOEs, tariff levels, and sectoral regulations governing private investment and PPPs. The authorities will need to: (i) improve the efficiency of SOEs, harden their budget constraints, and ensure

competitive tenders for infrastructure projects; (ii) adjust tariffs levels to achieve cost recovery and finance new investments without disregarding affordability or equity criteria; (iii) improve the regulatory and institutional environment to attract private investment in renewable energy and digital infrastructure; and (iv) support the development of PPPs by strengthening project preparation, enhancing inter-agency coordination, creating more effective concession agreements, and enhancing the back-to-back arrangement of project contracts before commercial investments can be secured.

Closing the financial gap will require increasing the depth, efficiency, and resilience of the financial system. Key measures include: (i) increasing physical and digital access to financial institutions and promoting the spread of financial technology; (ii) expanding the range of financial products; and (iii) mobilizing long-term savings. Increasing the efficiency of the financial system will require: (i) promoting competition and encouraging the use of financial technology; (ii) protecting consumers and enhancing transparency; and (iii) strengthening financial infrastructure. To increase the resilience of the financial system, the authorities will need to strengthen sectoral oversight and improve the resolution and crisis-management framework.

The private sector can help close these four gaps directly by increasing the supply of capital in a cash-constrained environment and by pioneering innovative solutions in health, education, and financial technology. An infusion of private capital would be especially valuable in the infrastructure, health, and education sectors, as Indonesia's low fiscal revenue relative to GDP constrains public spending. In addition, the private sector is well positioned to leverage technological solutions to enhance the provision of health, education, and financial services and extend their reach to underserved populations. For example, digital peer-to-peer lending platforms could expand access to credit among unbanked individuals and firms, while digital health systems could reduce the costs of the first

point of contact with the healthcare system. This report provides specific recommendations to increase private participation in each of these

sectors, and near-term priorities are presented in Table E1 below.

Table E.1: Near-Term Policy Priorities for Unlocking the Dynamism of the Indonesian Private Sector

Policy Area	Recommended Actions to be Implemented over the Next 1-3 Years	Key Stakeholders
1. Closing the Competition Gap		
1.1 <i>Connecting Indonesian firms to international markets</i>	<ul style="list-style-type: none"> Eliminate import tariffs on key intermediate products Eliminate pre-shipment inspections Eliminate letters of recommendation for imports of industrial inputs Replace third-party verification of product standards (SNI) with self-certification for products without health and safety risks Conclude the European Union Comprehensive Economic Partnership Agreement and Regional Comprehensive Economic Partnership negotiations 	Ministries of Finance, Trade, Industry, and Foreign Affairs
1.2 <i>Enhancing competition by lowering barriers to entry in key sectors</i>	<ul style="list-style-type: none"> Raise foreign-equity limits on investments to 100 percent in the electricity and gas supply, paper products, construction, tourism, food service, and retail subsectors 	Coordinating Ministry for Economic Affairs; relevant sectoral ministries
1.3 <i>Reducing regulatory uncertainty for investors</i>	<ul style="list-style-type: none"> Establish a regulatory oversight body to mainstream good regulatory practices across central government agencies and ministries 	Cabinet Secretariat; Ministry of National Development Planning; Ministry of Law and Human Rights; President's Office
2. Closing the Human Capital Gap		
2.1 <i>Increasing the availability of critical workforce skills</i>	<ul style="list-style-type: none"> Ease restrictions on work permits to temporarily fill critical skills gaps Provide tax breaks and other incentives for firms to provide on-the-job training 	President's Office; Indonesia Manpower Agency; Ministry of Law and Human Rights, Directorate General of Immigration
2.2 <i>Improving the quality of health services and expanding access to healthcare</i>	<ul style="list-style-type: none"> Increase the private provision of health services through targeted action (see sectoral recommendations below) 	Ministry of Health; Social Insurance Administration Organization – Health
3. Closing the Infrastructure Gap		
3.1 <i>Reforming the role of SOEs to promote and enhance private investment in infrastructure</i>	<ul style="list-style-type: none"> Restructure incentives to encourage SOEs to mobilize private capital and improve efficiency Revise the Public Service Obligation and related operating subsidy formulas to include efficiency benchmarks 	Ministry of State-Owned Enterprises; Ministry of Finance; relevant sectoral ministries

3.2. <i>Getting prices right</i>	<ul style="list-style-type: none"> Adjust tariff levels to reflect operating costs and financing needs while maintaining affordability for end users Eliminate fuel subsidies 	Ministry of Finance; relevant sectoral ministries
3.3. <i>Improving laws, regulations, and institutions to attract private investment in renewable energy and digital infrastructure</i>	<ul style="list-style-type: none"> Improve the framework for power-purchase agreements with independent power producers 	Ministry of Energy; Ministry of State-Owned Enterprises
3.4. <i>Strengthening digital infrastructure and expanding access to information technology</i>	<ul style="list-style-type: none"> Provide additional spectrum to mobile operators Create agreements for sharing all passive infrastructure among telecom service providers 	Ministry of Communication and Information Technology
3.5. <i>Enhancing the legal, regulatory, and institutional framework to support public-private partnerships</i>	<ul style="list-style-type: none"> Improve concession agreements and tender documents Strengthen back-to-back arrangements for project contracts 	Relevant sectoral ministries; Ministry of National Development Planning; Ministry of Finance; Ministry of State-Owned Enterprises
4. Closing the Financial Gap		
4.1 <i>Increasing the size of the financial system</i>	<ul style="list-style-type: none"> Promote the expanded use of financial technology to increase access to financial services (see sectoral recommendations below) Reform the regulatory and tax regimes to encourage the use of innovative financial products 	Financial Services Authority; Bank of Indonesia; Ministry of Finance
4.2 <i>Improving the efficiency of the financial system</i>	<ul style="list-style-type: none"> Promote competition among banks Establish interoperable and interconnected payment system infrastructure Develop the financial-technology ecosystem (see sectoral recommendations below) 	Financial Services Authority; Bank of Indonesia; Ministry of Finance
5. Closing Sectoral Gaps		
5.1. Health Services		
<i>Strengthening the Social Insurance Administration Organization to expand the supply of private health services</i>	<ul style="list-style-type: none"> Improve performance-based capitation and hospital payments to boost the supply of private (and public) health services Update National Health Insurance (JKN) premiums to reflect actuarial analysis Introduce a benefits package that is commensurate with available resources 	Ministry of Health; Social Insurance Administration Organization – Health; private healthcare providers and related firms
<i>Increasing the availability of essential healthcare skills</i>	<ul style="list-style-type: none"> Relax restrictions on the hiring of foreign healthcare professionals 	Ministry of Health; Indonesia Doctors' Association

	<ul style="list-style-type: none"> Ease the process of converting the medical qualifications of Indonesian physicians who studied abroad 	
<p>5.2. Education Technology <i>Ensuring protection of consumers' data</i></p>	<ul style="list-style-type: none"> Improve data privacy and security standards for education technology products 	<p>Ministry of Communications and Information Technology; Ministry of Education; private education technology providers and related firms</p>
<p><i>Strengthening partnerships between the public education system and private education technology providers</i></p>	<ul style="list-style-type: none"> Support the rigorous evaluation and eventual diffusion of effective education technology products 	<p>Ministry of Education; private education technology providers and related firms</p>
<p>5.3. Financial Technology <i>Strengthening digital identity protections for consumers</i></p>	<ul style="list-style-type: none"> Implement cost-effective and accessible electronic know-your customer (e-KYC) processes, including the use of biometrics as appropriate Enable digital identity and e-signature providers to access the national identification system under an appropriate regulatory framework 	<p>Financial Services Authority; Bank of Indonesia; Ministry of Communication and Information Technology; Directorate General of Population and Civil Registration</p>
<p><i>Supporting the distribution and uptake of financial technology products</i></p>	<ul style="list-style-type: none"> Allow financial technology firms to employ Digital Financial Services (LKD) agents as individuals, not only as legal entities Build partnerships between banks and financial technology firms to facilitate the distribution of Government-to-People (G2P) payments 	<p>Financial Services Authority; Bank of Indonesia</p>
<p><i>Encouraging responsible peer-to-peer lending</i></p>	<ul style="list-style-type: none"> Expedite the licensing process for peer-to-peer lending platforms Clarify data protections and authorized uses of data derived from mobile phones 	<p>Financial Services Authority; Indonesian Joint Funding Fintech Association; private financial technology firms</p>

1. Country Context

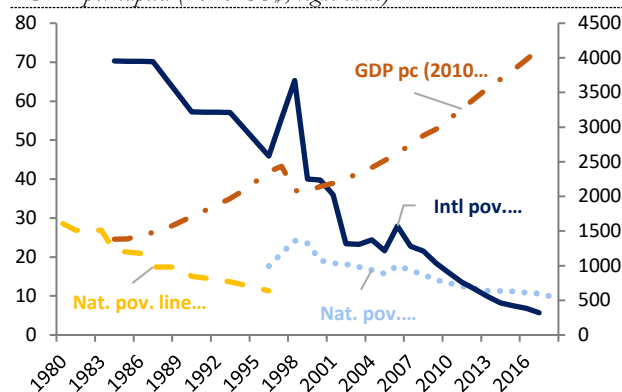


Three decades of robust economic growth have greatly reduced poverty rates in Indonesia. The country's GDP growth rate has averaged 5 percent per year since 1990, with a significant acceleration following the Asian financial crisis in the late 1990s (Figure 1.1). Favorable international commodity markets, a large and youthful population, and a solid macroeconomic policy framework supported growth during the period. While Indonesia's expansion has moderated in recent years as the tailwinds generated by commodity prices and global financing conditions have turned to headwinds, the average annual GDP growth rate has remained above 5 percent since 2014. GDP per capita increased six-fold between 1990 and 2018, contributing to a sharp decline in the extreme poverty rate, which fell from 57 percent to less than 6 percent over the period.¹

However, many Indonesians remain vulnerable to shocks, and most households that have escaped poverty still lack the economic security that marks a sustainable transition into the middle class. Despite important gains in poverty reduction, around 20 percent of Indonesians remain close to the poverty line and could be pushed back below it by a financial or nonfinancial shock (Figure 1.2).² While the share of Indonesians who have sufficient disposable income to be considered part of the middle class is increasing, it remains below 25 percent of the total population. The small size of the middle class and the persistent economic vulnerability of a large share of the population have negative implications for health, education, and other aspects of household wellbeing.

Figure 1.1: As Indonesia's economy has grown, the extreme poverty rate has fallen...

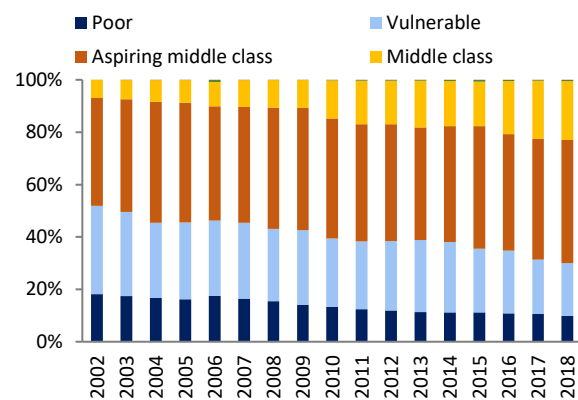
Poverty rate (percent of population) with various poverty lines and GDP per capita (2010 US\$, right axis)



Source: World Development Indicators, Indonesia Country Poverty Brief, Statistics Indonesia (BPS), Susenas, and World Bank calculations.

Figure 1.2: ...and the middle class has expanded, but economic vulnerability remains widespread.

Distribution by class (percent of population)



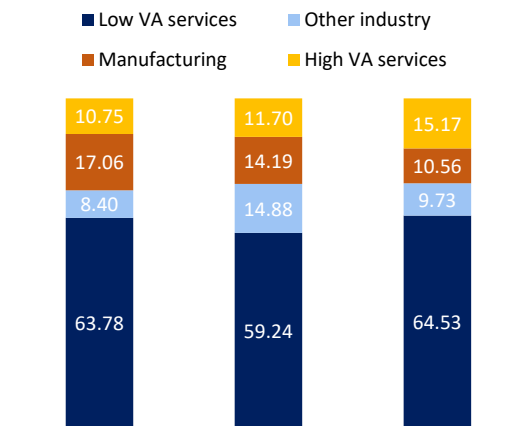
Source: Susenas and World Bank calculations. Note: Classes are defined in terms of consumption.

¹ This figure is based on the international poverty line, which allows for a longer comparison of poverty rates over time. It is slightly lower than the official poverty rate of 10.6 percent in 2017, which is based on the national poverty line.

² The vulnerability line is defined as 1.5 times the poverty line, which is Rp 531,000 per person per month or US\$2.20-3.30 per person per day (World Bank, 2018a). In Indonesia, the bottom 40 percent includes the poor, the vulnerable, and a small share of the aspiring middle class.

Indonesia's heavy reliance on commodity production and limited integration into global markets and value chains is inhibiting the expansion of the middle class. Over the past decade, investment and growth have been closely tied to commodity prices (World Bank, 2015a), with little diversification away from natural resources (World Bank, 2015b).³ This pattern has been compounded by the inward-looking nature of the Indonesian economy, which is marked by low exposure to international trade, limited participation in global value chains, and small non-commodity tradable sectors. Between 2002 and 2017, agriculture and low-wage, low-value-added services drove employment growth, while manufacturing and high-value-added services accounted for just one-quarter of all new jobs, a smaller share than in the preceding decade (Figure 1.3). However, the country's nascent digital sector is generating a small but rising share of employment and income, and this trend could spark the development of a wider range of high-value services if sectoral growth patterns remain on their current trajectory.

Figure 1.3: Most new jobs are in low value-added services



Source: World Bank staff projections using Sakernas (August round). Note: Sectoral projections assume 2013-2017 average sectoral growth shares. "Other industry" comprises mining and quarrying, construction and utilities; "high-value-added services" comprise financial, business, real estate, transport, communications, and storage. "Low-value-added services" comprise wholesale and retail trade, hotels and restaurants, and other personal services.

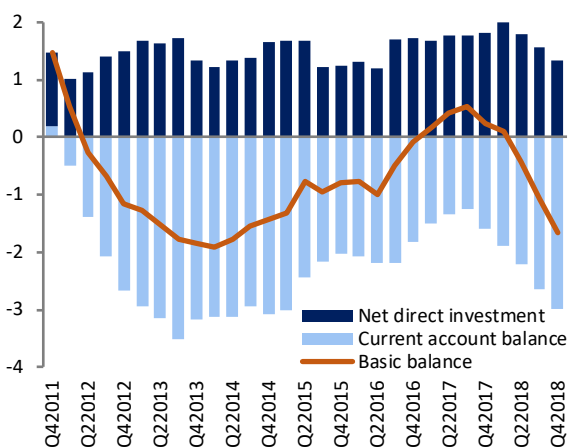
Due to its focus on commodity production, the Indonesian economy is highly sensitive to trends in global commodity markets, and the recent decline in commodity prices has contributed to the widening of the current-account deficit and increased the economy's reliance on volatile portfolio capital flows. The weakening of commodity prices since 2011 has reduced export growth, and diminishing export competitiveness—especially in manufacturing—has compounded this trend. Since 2018, robust import growth, driven by a sharp increase in capital goods imports, has widened the current-account deficit (Figure 1.4).⁴ Low and declining foreign direct investment (FDI) inflows have forced Indonesia to rely more heavily on volatile short-term portfolio inflows to fund the current-account deficit, which has put pressure on the balance of payments. In mid-2018, external factors spurred a sudden outflow of portfolio funds, which led to a sharp depreciation of the rupiah (Figure 1.5) despite healthy macroeconomic fundamentals and tight domestic monetary and fiscal policies.

³ Sluggish investment growth in a context of softening commodity prices drove the decline in GDP growth observed between 2013 and 2016, and the partial rebound in commodity prices in 2017-18 was accompanied by a marginal increase in investment and economic growth.

⁴ This figure is based on a four-quarter rolling average.

Figure 1.4: The current-account deficit has increased along with the basic balance...

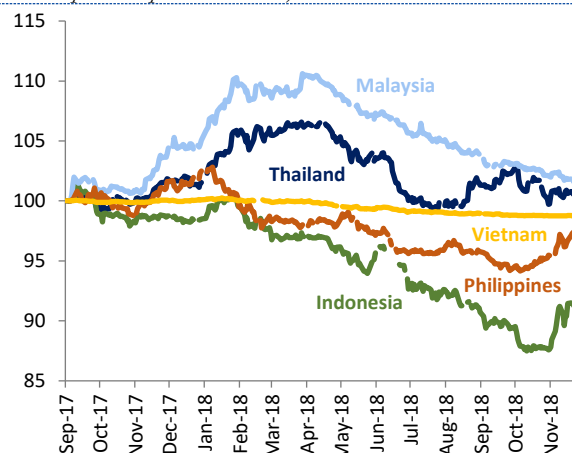
(4-quarter rolling average, % of GDP)



Source: World Bank staff calculations based on Bank Indonesia data.

Figure 1.5: ...and the Indonesian rupiah has depreciated more than other regional currencies.

(US\$/Rp – 1 Sep 2017 = 100)

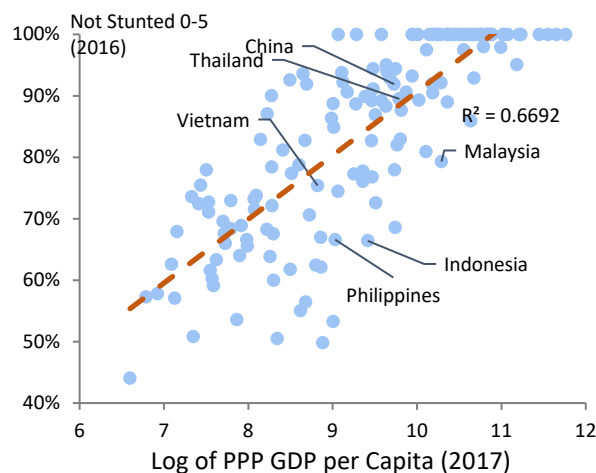


Source: World Bank staff calculations based on Bank Indonesia data.

Low levels of human capital slow productivity growth, limit Indonesia's ability to move to high-value-added activities, and undermine household welfare.

Indonesia performs poorly on various measures of health and education compared to countries with similar income levels. This is confirmed by the World Bank's Human Capital Index (HCI), which quantifies the contribution of health and education to the productivity of the next generation of workers. For example, Indonesia has one of the highest stunting rates among middle-income countries (Figure 1.6). The adverse impact of stunting on long-term cognitive and physical development weakens the ability of individuals to learn and conduct a productive life. Similarly, the country's relatively high rates of noncommunicable diseases (NCDs) and functional illiteracy reduce earnings potential and diminish the quality of life.

Figure 1.6: Indonesia has a higher rate of stunting than its peers.



Source: World Bank (forthcoming).

The country's commodity-based growth model has also contributed to serious health and environmental challenges, which further undermine the wellbeing and economic prospects of Indonesians. The lowland development model, dominated by palm oil, has contributed to deforestation and forest degradation, as land is continually cleared to expand agriculture (World Bank, forthcoming). This process increases greenhouse gas emissions, threatens some of the most biodiverse areas in Indonesia, and causes deep and lasting economic damage.⁵ Similarly, the widespread use of coal for energy and exports has contributed to air pollution, which disproportionately affects low-income households. Between 2012 and 2030, respiratory diseases due to pollution are projected to cause 238 premature deaths per million people per year and impose economic costs totalling US\$805 billion (World Bank, forthcoming). A transition to more sustainable models for energy and food production,

⁵ Four-fifths of the forest fires that blanketed Sumatra and Kalimantan in 2015 occurred in the lowlands, imposing an estimated cost equal to 1.9 percent of GDP (World Bank, 2016b).

transportation, and land use could dramatically reduce these negative effects while boosting the annual GDP growth rate by as much as 2 percentage points (Government of Indonesia and New Climate Economy, 2019).

While the government has implemented important measures in recent years, deeper reforms will be necessary to accelerate growth, ensure economic and environmental sustainability, and create high-quality jobs. The government has achieved stable economic growth through sound macroeconomic management, and the progressive reallocation of public expenditures from energy subsidies to productive investments in infrastructure is a highly positive trend. However, completing the transition to a more outward-oriented, less commodity-dependent, and more human-capital-driven growth pattern will require coordinated action across a range of policy areas. A forthcoming World Bank modelling exercise suggests that this transformation could spur the annual economic growth rate to about 6 percent over the next decade, a full 2 percentage points above the baseline scenario.

Unlocking the dynamism of the private sector will be essential to the success of Indonesia's economic transformation. The private sector must dramatically expand its role in the economy and become the main engine of growth. The private sector accounts for over 90 percent of all jobs in Indonesia,⁶ and eliminating obstacles to its development will be critical to enhance productivity, accelerate economic growth, ensure economic and environmental sustainability, and create high-quality jobs. A more dynamic private sector can also help improve health and educational outcomes, leading to further gains in productivity, wages, and quality of life.

This joint IFC-World Bank Country Private Sector Diagnostic (CPSD) analyzes key constraints and opportunities, both economy-wide and in selected sectors, and proposes recommendations to help unleash the private sector's potential to advance the government's development objectives. The CPSD evaluates cross-cutting challenges that inhibit private-sector development, and it proposes recommendations designed to address both these issues and sector-specific constraints in the key areas of financial technology, educational technology, and health services. The recommendations presented in the CPSD will underpin a joint IFC-World Bank implementation plan that leverages the full range of World Bank Group tools and expertise. The CPSD will also support the World Bank Group's cascade approach to catalyzing private-sector-led growth and sustainable development. The report is organized as follows: Chapter 2 discusses the current state of the Indonesian private sector; Chapter 3 identifies and analyzes key cross-cutting constraints to private-sector development; and Chapters 4 presents recommendations to address these constraints.

⁶ This figure is calculated using data from Indonesia's 2018 Labor Force Survey.

2. The Limited Competitiveness and Domestic Orientation of Indonesia's Private Sector

The Indonesian private sector suffers from a lack of dynamism, with weak indicators for productivity, innovative capacity, and integration into the global economy. These features reinforce one another, undermining the private sector's ability to drive robust and sustainable growth, create high-quality jobs, and build human capital.

2.1. The Composition of the Indonesian Private Sector

In Indonesia, a vast array of micro, small, and medium enterprises (MSMEs) accounts for the overwhelming majority of employment, while SOEs dominate much of the formal sector.⁷ In sectors other than agriculture and public administration, more than 89 percent of firms have fewer than 5 workers and are classified as microenterprises; 9 percent have between five and 19 workers and are classified as small enterprises, and less than 2 percent have 20 workers or more (Table 2.1). Micro and small enterprises together employ 76 percent of all workers outside agriculture and public administration (54 million people), and 80 percent of Indonesian firms are located on the islands of Sumatra and Java.

Table 2.1: Distribution of Nonagricultural Private-Sector Firms by Size

Size	Definition	No. of firms	Firms (%)	Employment	Employment (%)
Micro	Total labor < 5	23,864,230	89.34%	41,032,298	58.35%
Small	5 < Total labor < 20	2,399,419	8.98%	12,609,226	17.93%
Medium	19 < Total labor < 100	412,208	1.54%	8,132,148	11.56%
Large	Total labor > 99	35,144	0.13%	8,546,794	12.15%
		26,711,001	100%	70,320,466	100%

Source: 2016 Economic Census by Indonesia Statistics (Badan Pusat Statistik, BPS).

A large share of micro and small enterprises are not traditional firms, but rather self-employed workers with low average productivity and income levels. Based on data from the 2016 Census and Labor Force Survey, as many as 23 million of the 26.7 million Indonesian firms identified by the census are self-employed workers, most of whom operate alone, though some may employ temporary, unpaid, or family labor. Self-employed workers are concentrated in non-tradable services sectors. Their average income is about half of the median wage for employed workers in 2018, indicating that they are involved in relatively unproductive activities that use less-sophisticated forms of capital, including motorcycle or tuk-tuk taxi services, street vending, and independent trash collection. Due to the limited scalability of many of these activities, some self-employed workers are more likely to increase their income by transitioning into wage employment rather than by expanding their businesses.⁸ Though populated by a large number of firms, Indonesia's informal sector represents just 24.1 percent of its economy, a smaller share than the informal sectors of peer countries such as Malaysia (31.4 percent) and the Philippines (39.3 percent).⁹

⁷ This analysis includes SOEs in its definition of the private sector, as Indonesian SOEs typically operate as at least partially profit-driven corporate entities, and SOEs and private sector firms often exert a similar influence on policymaking.

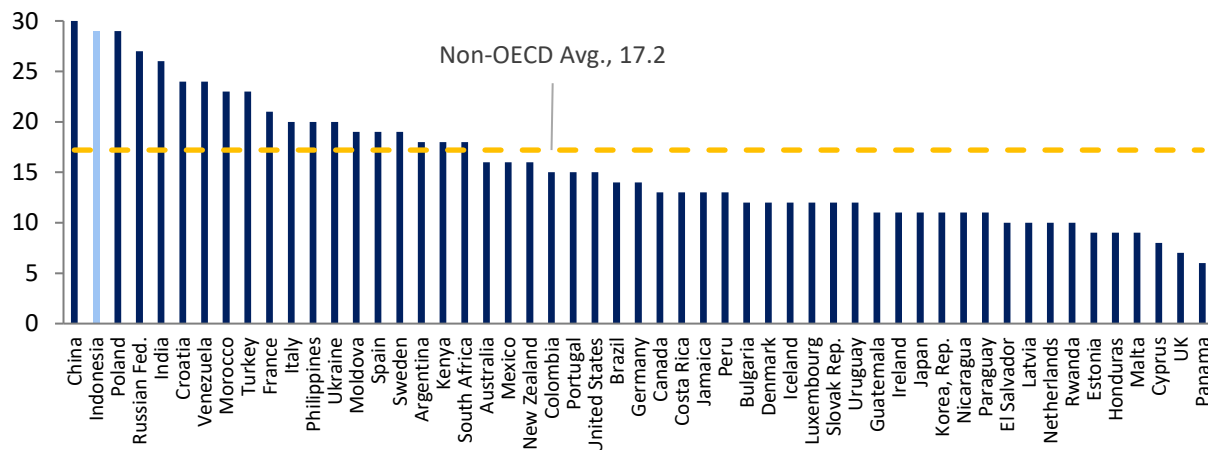
⁸ Indonesian Family Life Survey data suggest that around 11 percent of self-employed workers in 2007 had become wage employee by 2014, while 13.3 percent had become casual or family workers. Meanwhile, only 3.2 percent of self-employed workers in 2007 had hired permanent workers by 2014. The median monthly nominal profits of these expanding self-employed workers increased from Rp 900,000 in 2007 to Rp 3,000,000 in 2014.

⁹ Medina and Schneider, 2018. The National Labor Force Survey (2015) estimates that the informal economy employs over 50 percent of the labor force and that over 70 percent of the labor force is employed in rural areas. Informal firms are largely micro and small enterprises; they are less productive and pay lower wages than formal firms (Rothenberg et al., 2016).

SOEs are an important part of the formal sector. Recent data collected by the World Bank suggest that about 142 national SOEs and 782 regional SOEs operate in Indonesia.¹⁰ While only 17 SOEs are listed on the Indonesian stock exchange, they account for 25 percent of market capitalization. While SOE revenues total about 15 percent of GDP, SOEs employ less than 1 percent of workers (1.1 million people). This disparity reflects the concentration of SOEs in relatively capital-intensive sectors such as manufacturing, finance and insurance, and transportation and storage. SOEs are also active in a wider range of sectors in Indonesia than in many comparable countries (Figure 2.1).

Figure 2.1: Indonesia has a very high number of economic subsectors with at least one SOE.

(number of sub-sectors with at least one SOE, out of 30)



Source: OECD Product Market Regulation database, and OECD-World Bank Group Product Market Regulation database. Latest data available for all countries, 2013 data for Indonesia.

Indonesian SOEs receive public subsidies and hold monopoly positions in several key economic sectors.

While data on SOEs finances is limited, they receive a large share of government subsidies to producers. Recent estimates suggest that in 2015, 38 of the largest SOEs (with average commercial revenues over US\$280 million each) received fiscal transfers totaling roughly US\$6.3 billion net of the corporate taxes paid by the SOEs.¹¹ These subsidies accounted for at least 4.6 percent of total government spending in 2015, and this figure does not include the 85 smaller national SOEs. In addition, SOEs hold monopoly or quasi-monopoly positions in sectors where competition would be viable, such as energy generation and distribution, seaports, toll roads, and imports of agricultural inputs and cereal grains.

¹⁰ These figures include SOEs owned in whole and in part by the government. Full privatization of SOEs has been rare, and in most cases the government is the majority shareholder.

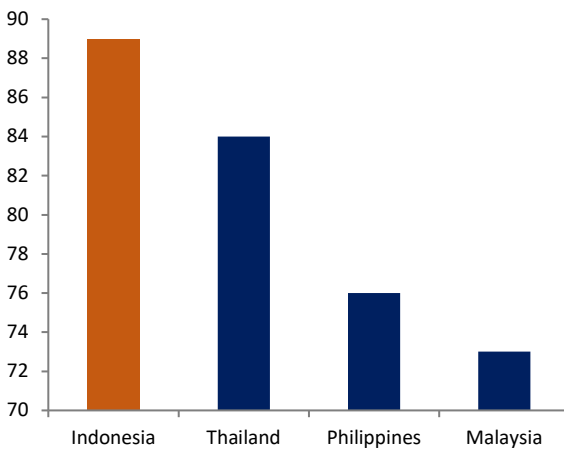
¹¹ These data are from AIPEG (2016), based on SOE financial reports, and Laporan Keuangan Pemerintah Pusat (2015).

2.1. The Limited Integration of Indonesian Firms into the Global Economy

Indonesian firms tend to be focused on the domestic market, with little exposure to international trade and limited participation in global value chains. By regional standards, Indonesian firms are exceptionally likely to produce primarily for the domestic market (Figure 2.2). Modest and declining levels of imports by Indonesian exporters have reduced the country's participation in global value chains, in stark contrast to the experience of other Southeast Asian countries (Figure 2.3). Indonesian firms also employ a smaller share of foreign workers than do firms in any other country in the region (see Section 3).

Figure 2.2: Indonesian firms primarily serve the domestic market...

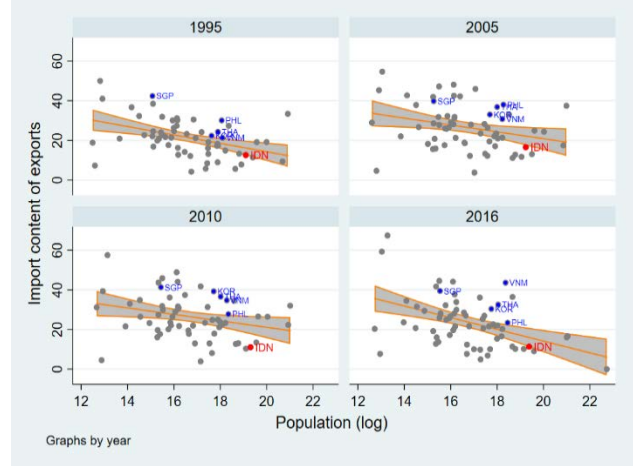
(Share of domestic market in total enterprises' sales)



Source: World Bank Enterprise Survey. Data for 2015.

Figure 2.3: ...and Indonesia's participation in global value chains is low and declining.

(Import content as a share of exports)



Source: Staff estimates on the basis of OECD (for import content of exports) and WDI (for population) data.

Moreover, Indonesian firms tend to export relatively unsophisticated products, including many that are commodity-based, with little structural transformation observed in recent decades. Merchandise exports are concentrated in commodity-related products (Figure A1a in the appendix), and this focus has remained broadly unchanged over the past 20 years (Figure A1b).¹² By contrast, the export structures of regional comparator countries such as Vietnam have undergone dramatic transitions from commodities and simple light manufactures to an increasingly sophisticated range of machinery, electronics, and other complex products (Figure A2). Although service exports are expanding, driven by travel and tourism, services continue to account for just over 10 percent of total exports.

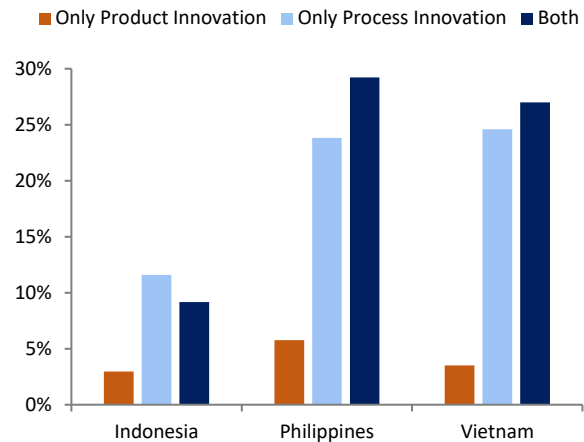
¹² In terms of the geography of exports, Indonesia's top five destinations are the United States, China, Japan, Singapore, and India. Together, they account for almost 50 percent of Indonesia's exports.

2.2. The Low Productivity Levels of Indonesian Firms

This inward-looking nature of the Indonesian private sector limits its access to global knowledge and technologies, which are a key source of innovation and productivity growth. Indonesian firms are less likely to innovate than are firms in the Philippines or Vietnam (Figure 2.4). Consistent with low levels of innovation, the productivity of labor, measured as the median real value added per worker, is also lower among Indonesian firms than among firms in other countries in the region. This pattern persists across sectors (and data sources), ranging from the labor-intensive textile industry (using UNIDO industrial statistics) to the capital-intensive nonmetallic mineral industries (using World Bank enterprise data) (Figure 2.5). Low productivity puts Indonesian firms at a competitive disadvantage vis-à-vis their peers in global markets. Furthermore, low exports and low FDI inflows further reduce firm-level productivity growth and weaken incentives to innovate by reducing firms' exposure to global technologies, markets, and competition.

Figure 2.4: Low innovation of Indonesian firms vis-à-vis comparators

(Percentage of firms)

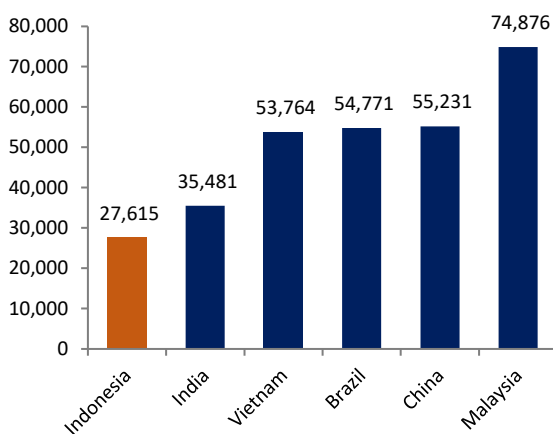


Source: WBES 2015.

Note: Product innovation is defined as the creation of a new product or significant product improvement. Process innovation includes improvements in manufacturing systems, logistics and distribution networks, management practices, organizational structures, and marketing methods.

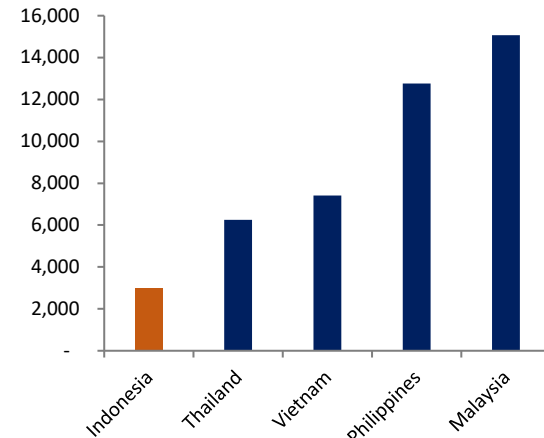
Figure 2.5: Labor productivity in Indonesia is below the levels of comparator countries.

(a) Average output per worker, current U.S. dollars, 2006-10 average (finishing, weaving, and spinning of textiles)



Source: World Bank staff estimates on UNIDO industrial statistics data.

(b) Median value added per worker, 2015 U.S. dollars (non metallic minerals)



Source: World Bank staff estimates on World Bank Enterprise data. Note: Data for all countries is from 2015 except for Thailand (2016).

However, Indonesia's nascent digital sector appears to be an exception, as its rapid growth, increasing competition, and expanding presence in international markets set it apart from other economic sectors. The growth of Indonesia's digital sector has outpaced its regional comparators (Google and Temasek 2018). For example, the Indonesian e-commerce subsector expanded at an average rate of 94 percent per year between 2015 and 2018, compared with annual growth rates of 87 percent in Vietnam and less than 50 percent in Thailand, the Philippines, Malaysia, and Singapore. As a result, Indonesia's e-commerce turnover now exceeds the combined turnover of these comparator countries. Indonesia is also the largest

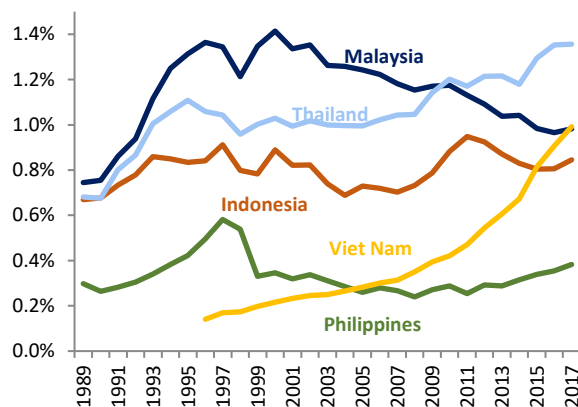
and fastest growing market for other major digital services, including ride-hailing, media, and travel booking. The robust growth of the digital sector is attracting top regional firms to Indonesia, and the resulting influx of competition, capital, services, and know-how is driving the sector's continued development.¹³ Meanwhile, successful Indonesian digital firms are attracting large amounts of foreign and domestic funding¹⁴ and have started expanding into international markets.¹⁵

2.3. Deteriorating Competitiveness: The Case of Manufacturing

The rise of Indonesia's robust and dynamic digital sector contrasts sharply with the diminishing competitiveness of manufacturing. Indonesia's overall export performance has been worsening since 2000, with the exception of the 2007-2011 commodity-price boom (Figure 2.6).¹⁶ By contrast, Vietnam and Thailand have both increased their shares in global goods and services exports since 2000. This divergence is especially evident in the manufacturing sector (Figure 2.7), which is particularly constrained by the limited global exposure and low rates of innovation that characterize much of the Indonesian economy.¹⁷ The deterioration of Indonesia's manufacturing competitiveness has also been reflected in the decreasing share of manufacturing in GDP. While this pattern is common in countries shifting from middle- to high-income status, Indonesia is experiencing deindustrialization at an unusually low income level relative to comparators such as Malaysia and Thailand (Figure 2.8).¹⁸ This process of premature deindustrialization is undermining employment creation and slowing productivity growth, which is typically faster in manufacturing than in other sectors.¹⁹

Figure 2.6: Indonesia's export competitiveness has been declining vis-à-vis its regional comparators...

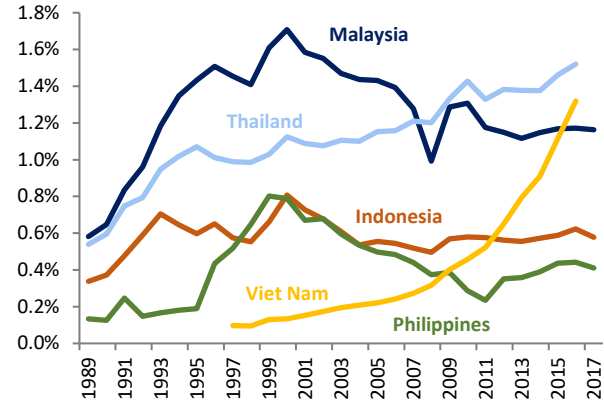
(Share in global exports of goods and services)



Source: World Development Indicators.

Figure 2.7: ...with manufacturing competitiveness leading the trend.

(Share in global manufacturing exports)



¹³ For example, the e-commerce firms Lazada and Shopee and the ride-hailing service Grab recently made large investments in Indonesia.

¹⁴ Google and Temasek (2018) estimate that Indonesia-based digital startups raised US\$3 billion in 2017, up from US\$1.2 billion in 2016, and that this increasing trend continued through the first half of 2018. Recent high-profile foreign investments include a US\$1.1 billion investment by TenCent in Go-Jek and a US\$1.2 billion investment by Alibaba in Tokopedia.

¹⁵ A case in point is the digital ride-hailing service Go-Jek, which has recently launched operations in Singapore, Vietnam, Thailand, and the Philippines.

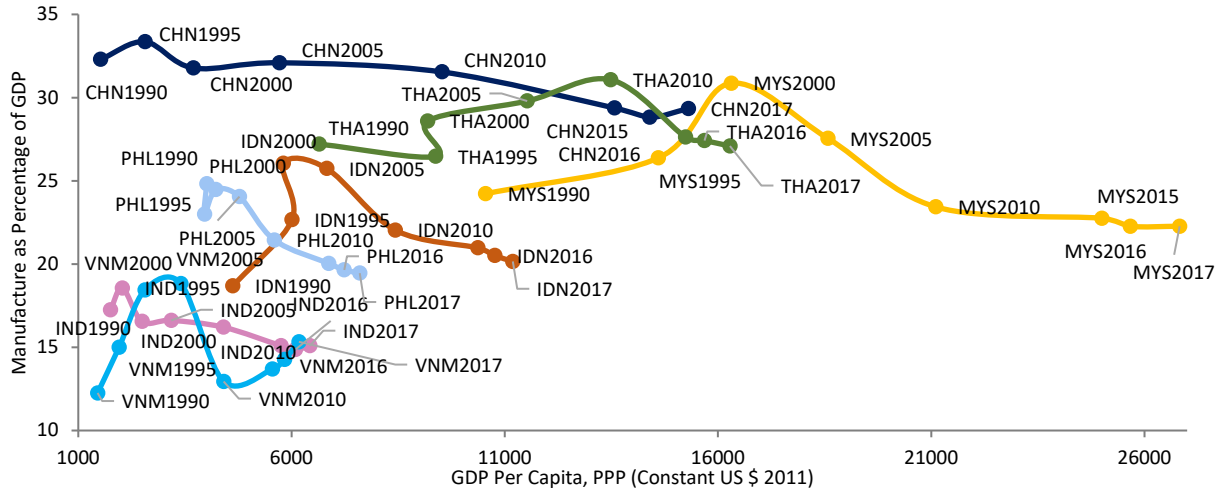
¹⁶ In 2017, the last year for which comparable global trade data are available, Indonesia's share in global goods and services exports was 0.85 percent, down from 0.91 percent on the eve of the Asian financial crisis.

¹⁷ Indonesia's market share in global manufacturing exports was 0.6 percent in 2016, well below its peak of 0.8 percent in 2000 and below its 0.7 percent share in 1993. During the same period, Indonesia's share in global commodity exports hovered around 1.7 percent, except for a spike in 2007–11.

¹⁸ A similar pattern also applies when the commodity sector is excluded from GDP (results not shown but available upon request).

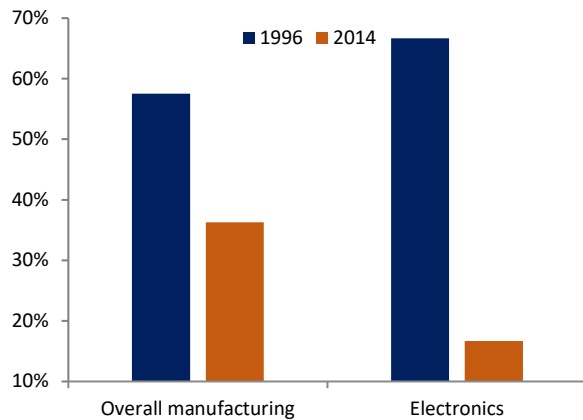
¹⁹ Rodrik (2012).

Figure 2.8: Indonesia appears to be experiencing a process of premature deindustrialization.
(Manufacturing as a percentage of GDP versus nominal GDP per capita)



Source: Authors' elaboration based on World Development Indicators and Diop (2016).
 Note: CHN = China; IND = Indonesia; PHL = Philippines; THA = Thailand; and VNM = Vietnam.

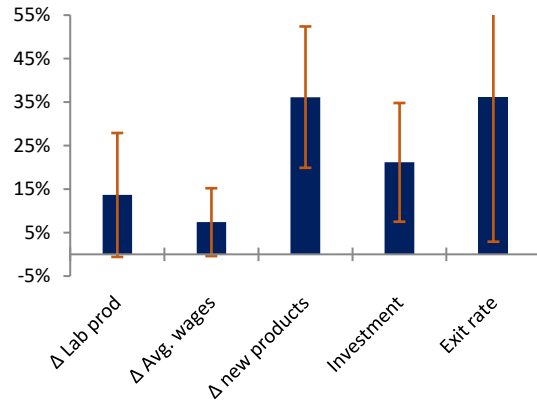
Figure 2.9: The share of export-oriented foreign investment in manufacturing is declining over time.
(Share of export-oriented plants in total foreign plants)



Source: World Bank staff calculations based on Statistik Industri data.
 Note: New plants are three years old and younger; old plants are older than three years. Foreign plants are defined as having more than 50 percent foreign ownership. Export-oriented plants are defined as exporting more than 50 percent of their sale value.

Figure 2.10: Export-oriented FDI outperforms domestically oriented FDI in manufacturing, but export-oriented production is more likely to leave Indonesia.

(Percentage change relative to domestically oriented foreign plants, 2008-15)



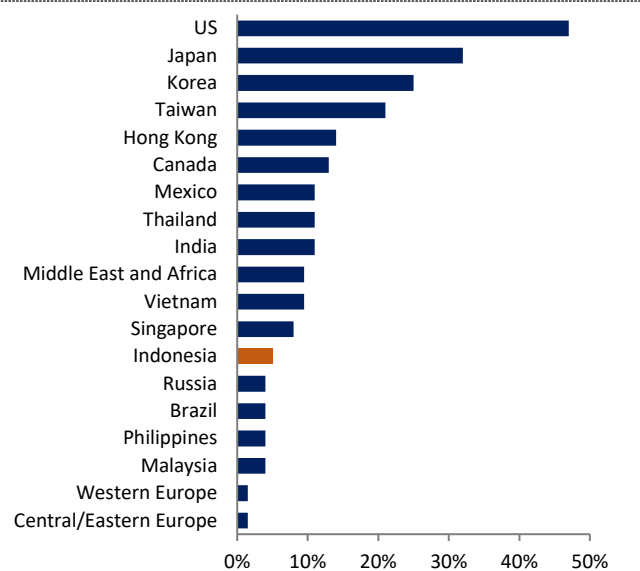
Source: World Bank staff calculations based on Statistik Industri data.
 Note: The bars depict the point estimates along with the 95 percent confidence interval of plant-level regressions of the outcome variables in the graphs (computed over 2008-15 period) on a dummy for export-oriented plants (defined as exports greater than 50 percent of sales) in the sample of foreign plants included in the data, controlling for two-digit Indonesia Standard Industrial Classification (KBLI) sector dummies.

The loss of manufacturing competitiveness has also been reflected in Indonesia's reduced attractiveness for export-oriented FDI, which is associated with higher rates of product and process innovation than are other types of investment.²⁰ Since the Asian financial crisis, FDI to Indonesia has moved away from efficiency-seeking investments in export-oriented sectors in favour of investments in natural resources and production for the domestic market. In 2014, only 35 percent of new foreign manufacturing plants in Indonesia were export-oriented, down from 58 percent in 1996 (Figure 2.9).²¹ This drop is even more marked for electronics, where the share of export-oriented plants to total new foreign plants fell from 67 percent to 17 percent over the period. This experience of Samsung, a leading global electronic firm, exemplifies this trend, as Samsung has been gradually re-orienting its production in Indonesia from exports to the domestic market (Box 1).

The decline in export-oriented manufacturing FDI is problematic, as it outperforms domestically oriented FDI across multiple dimensions. Export-oriented manufacturing FDI is associated with faster labor productivity growth, higher average wages, larger numbers of new products, and higher investment rates (Figure 2.10). Moreover, foreign-owned manufacturing plants produce about half of Indonesia's manufacturing exports. However, export-oriented FDI appears more likely to leave Indonesia, as it is more sensitive to relative changes in the business climate than are other forms of manufacturing FDI, which depend more on the large domestic market. These patterns are reflected in Indonesia's position among large Asian economies as one of the least-preferred destinations for investors relocating production out of China due to rising costs and ongoing US-China trade tensions (Figure 2.11).

Figure 2.11: Firms are moving production out of China, but not to Indonesia.

(Share of companies surveyed which have moved production out of China in 2018)



Source: UBS Evidence Lab.

²⁰ Efficiency-seeking FDI refers to FDI that comes into a country seeking to benefit from factors that enable it to compete in international markets.

²¹ Data from the medium and large manufacturing plant survey (*Statistik Industri*) show that export-oriented foreign plants were 36 percent more likely to leave Indonesia than were domestically oriented foreign plants during the 2008–2015 period.

Box 1: Indonesia's Competitiveness Challenges in the Electronics Industry

In contrast to the experience of many peer countries, Indonesia is becoming less engaged with globally integrated manufacturing over time. The export-oriented manufacturing sector that existed prior to the Asian financial crisis has gradually transformed into a domestically oriented sector in which very few foreign manufacturers are choosing to locate production. This pattern is particularly acute in the electronics industry.

For instance, Samsung established production in Indonesia in 1992 with the aim of producing consumer electronics for world markets. Indonesia was the first Southeast Asian country in which Samsung chose to locate production, and it was selected due to its competitive advantages in the region. The Samsung plant is based in the Cikarang bonded zone, which allows inspection- and duty-free imports of manufacturing inputs via Tanjung Priok Port. In return, Samsung must export a minimum of 50 percent of its production.

Over time, Samsung has expanded its productive capacity. When it reached peak production about a decade ago, the company employed 3,000 workers and generated US\$1 billion in exports. Since then, however, Samsung has greatly downsized its export production, as Indonesia's competitiveness relative to that of other Southeast Asian countries, such as Thailand and Vietnam, has deteriorated. Meanwhile, FDI in electronics fell dramatically between 1996 and 2014, and the share of export-oriented foreign electronics plants in Indonesia sharply declined (Figure 2.7). Moreover, while U.S. import tariffs on Chinese electronics are prompting investors to move production out of China, very few plan to relocate to Indonesia (Figure 2.11).

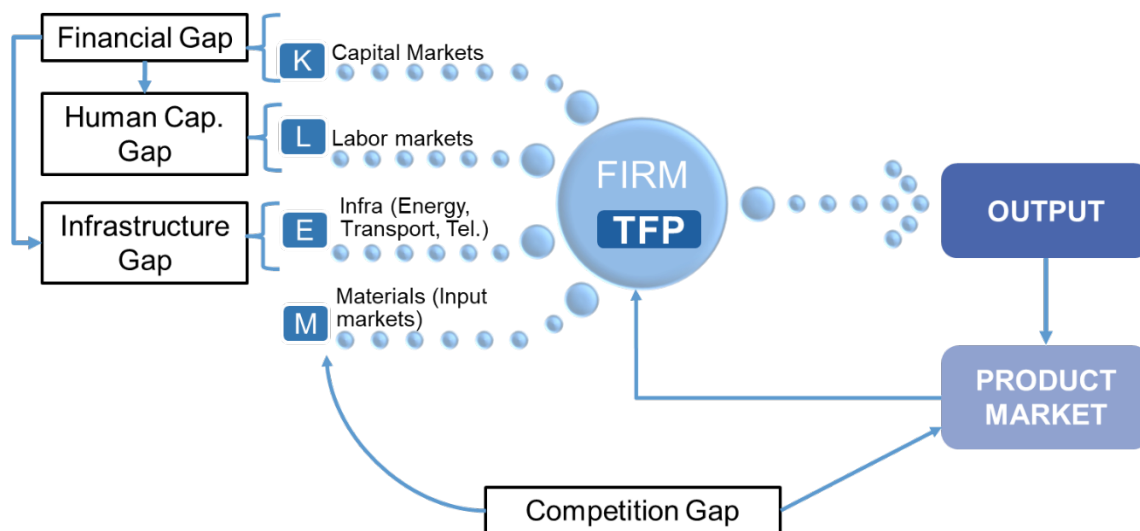
While export production has declined, Samsung has increased its activity in the domestic market, due in part to favorable government policies and regulations. In 2012, the company established a research and development center to develop apps and other software for internal purposes. In 2015, Samsung developed a factory to produce smartphones solely for the domestic market in order to comply with a 2015 local-content regulation issued by the Ministry of Information (KomInfo), which required a minimum of 30 percent domestic value addition for smartphones sold in Indonesia. This requirement was difficult for Samsung to comply with, as smartphones are a highly import-dependent sector, and the Ministry of Industry issued a regulation allowing firms to comply with the 30 percent requirement through assembly alone. Under this new regulation, the research and development center alone makes Samsung more than compliant with the law, though at the expense of regulatory consistency. Samsung's domestic production is subject to import tariffs of between 5 and 10 percent on components, such as batteries and adaptors. This policy framework is encouraging Samsung to transform itself into another primarily domestic manufacturer.

Source: Authors' elaboration based on interviews

3. Cross-Cutting Constraints on Private-Sector Growth

Unlocking the dynamism of the private sector will require addressing four interrelated gaps in competition, infrastructure, human capital, and finance. These gaps constrain firms' access to factor and product markets and weaken their incentives to innovate (Figure 3.1). The competition gap is mainly due to policies and regulations limiting competition in Indonesia's factor and product markets. These restrictions are compounded by the inadequate supply of job skills and relatively low productivity of the labor force (the human-capital gap) and by deficiencies in vital productive infrastructure that increase the costs of production (the infrastructure gap). These gaps are also compounded by an underdeveloped financial sector that constrains the supply of capital for production and investment (the financial gap), inhibiting the private sector's ability to help close the human-capital and infrastructure gaps.²²

Figure 3.1: The Impact of the Four Gaps on the Productivity of Indonesian Firms



Source: Authors' elaboration.

3.1. The Competition Gap

While Indonesia's development strategy focuses on enhancing competitiveness and increasing private investment, government policies have constrained the growth of the private sector by stifling competition. The National Medium-Term Development Plan (*Rencana Pemerintah Jangka Menengah Nasional*, RPJMN) for 2014-19 aims to boost competitiveness and encourage private investment,²³ and both the president and key ministers have affirmed the private sector's central role in achieving the plan's ambitious growth targets and ensuring sustainable economic growth.²⁴ While recent reforms have attempted to improve the business climate, the government's policy framework continues to rely on a

²² This analysis of constraints on the private sector does not include labor regulations, including the minimum wage and required severance payments, even though representatives of the business community have cited them as part of the problematic investment climate in Indonesia. See, e.g., WBES (2015). However, a lack of rigorous evidence of the adverse effects of these regulations on firms' performance, or on investment in Indonesia, prevents a thorough assessment. In addition, the enforcement of such regulations is limited across firms, and the cost of Indonesian labor compares favorably with that of other middle-income countries in the region. For these reasons, the analysis focuses on labor productivity.

²³ While the RPJMN for 2020-24 has not yet been published, preliminary indications suggest that increasing competitiveness will remain a centerpiece of the strategy.

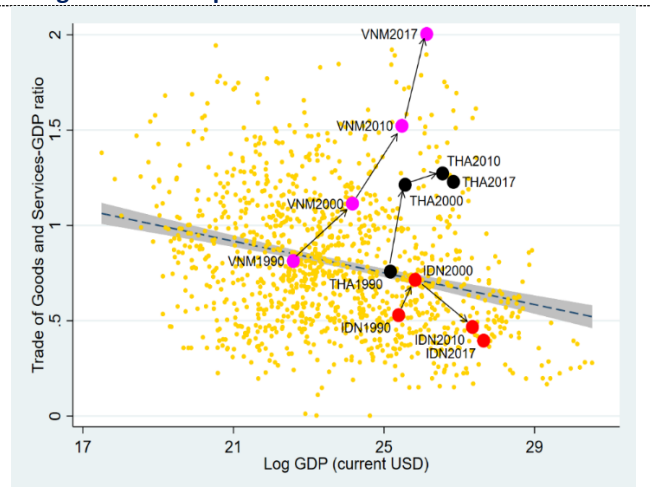
²⁴ In addition, several key Indonesian businesspeople are formal or informal advisors to the Cabinet and the Offices of the President and Vice President.

combination of protectionism and subsidies to shield domestic producers from competition. The available evidence suggests that this approach may have helped some incumbent firms, but it has also undermined the development of a competitive private sector by sharply restricting trade and investment.

3.1.1. Barriers to Trade, Investment, and Market Entry

In recent decades, the government has sought to support the growth of the domestic private sector through trade and investment protectionism, and this approach has reinforced the inward-looking nature of the Indonesian economy. Indonesia has become significantly more closed to global trade since 2000. After a period of trade liberalization in the 1990s, the share of international trade in Indonesia's economy has declined significantly, indicating decreasing global integration (Figure 3.2). This is contrary to the trend of other Southeast Asian countries, such as Vietnam and Thailand, where a combination of foreign and domestic investment has increased their engagement in global markets and value chains. Similarly, Indonesia's FDI inflows represent a smaller share of GDP than do FDI inflows in comparator countries, including Vietnam, Thailand, and Malaysia. Furthermore, exports of goods and services only equal about 20 percent of Indonesia's GDP, roughly half of their share in 2000 (Figure 3.2).

Figure 3.2: Wrong direction? Indonesia's trade (dis-) integration in the past two decades



Source: Authors' elaboration based on World Development Indicators.
Note: IND = Indonesia; THA = Thailand; and VNM = Vietnam.

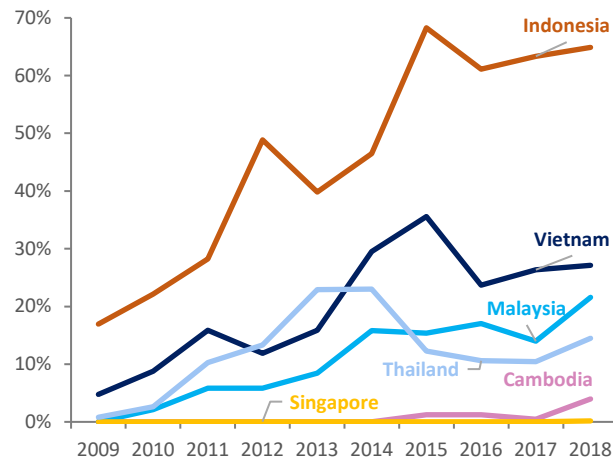
The government has gradually increased barriers to goods imports over the past decade, including both tariffs and nontariff measures (NTMs), which has raised the cost and reduced the availability of inputs. Between 2009 and 2017, Indonesia introduced a range of new import barriers, and its share of import value subject to new import restrictions is much higher than those of other countries in the region (Figure 3.3). These barriers have increased the nominal rate of protection (NRP) in the economy (Figure 3.4).²⁵ For example, domestic food prices in 2015 were, on average, 33 percent higher than they would have been in absence of trade restrictions, and the NRP for food crops in 2015 was twice as high as it was in 2008.²⁶ The NRP for other major sectors also increased, including sectors that produce productive inputs, such as crops, livestock, capital equipment, and metals. Overall, Indonesia's trade policies impose high and rising costs on domestic producers and households.

²⁵ NRP is computed as the difference between the observed price and the price that would prevail under a free-trade regime.

²⁶ Marks (2017).

Figure 3.3: Indonesia has increased its trade barriers significantly since 2009...

(Share of import value subject to new import restrictions)

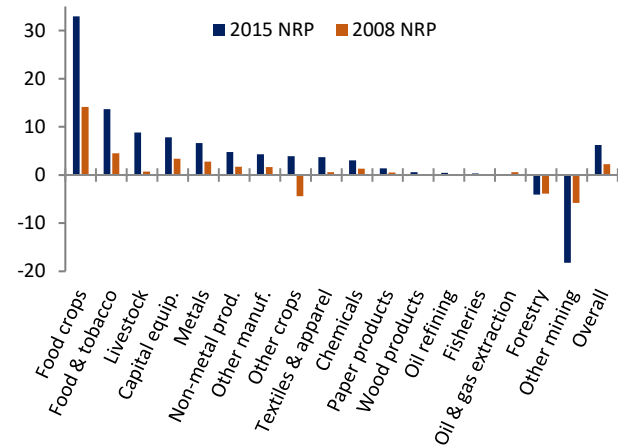


Source: Global Trade Alert, https://www.globaltradealert.org/data_extraction (accessed September 2019).

Note: capital control and exchange rate interventions are not included in the trade

Figure 3.4: ...and as trade barriers have risen, so has the nominal rate of protection.

(Price differential compared to a free-trade scenario, %)



Source: Marks (2017).

Note: negative NRP indicates production and/or export subsidy.

While Southeast Asian countries have exhibited an overall trend toward tariff reduction, Indonesia has hiked import tariff rates in recent years, further increasing the cost of productive inputs and consumer goods. Between 2000 and 2017, Indonesia's average import tariff rate rose by 1.3 percentage points, and its tariff rate on productive inputs increased by 0.3 percentage points.²⁷ While Indonesia's initial import tariff rates were relatively low, its trend contrasts with those of most regional countries, which have substantially reduced their tariff rates in recent decades. Import tariffs have included the imposition of anti-dumping measures on numerous products (e.g., steel and yarn), ostensibly to protect domestic producers from unfair import competition. However, empirical evidence has shown that increasing tariff rates tends to reduce the productivity and output of firms in protected sectors, as diminished import competition weakens incentives to invest and increase efficiency.²⁸ In Indonesia, higher tariffs have also been shown to harm the competitiveness of downstream sectors by increasing the costs and/or reducing the quality of productive inputs.²⁹

Indonesia has expanded NTMs on goods imports, further increasing domestic prices. NTMs are often justified on health, safety, or environmental grounds, and the increased use of NTM has extended across import categories, particularly capital goods and productive inputs (Figure 3.5). NTMs primarily consist of import licenses and certifications aimed at ensuring that imported goods are safe for consumers and do not pose excessive risks to public health or the environment. While some NTMs reflect legitimate concerns, others appear to unnecessarily increase the costs of imports. A recent World Bank analysis³⁰ found that SOE import monopolies significantly increase the costs of imports without generating a clear economic benefit (Figure 3.6). Similarly, the high costs of conforming with product-quality requirements suggest the need to review both the requirements and the certification system.³¹ Rationalizing NTMs

²⁷ These figures are World Bank estimates based on TRAINS data.

²⁸ Pavnick (2002); Amiti and Khandewal (2013).

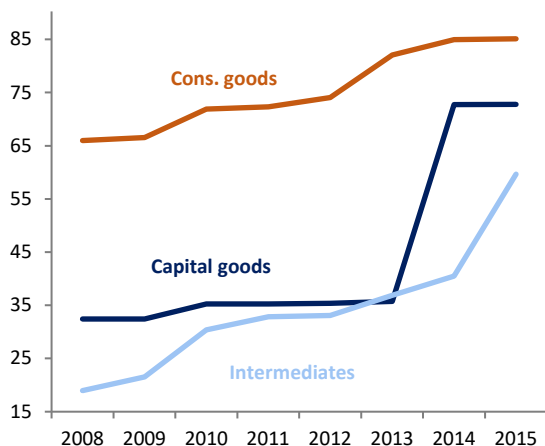
²⁹ Amiti and Konings (2007); Narjoko, Anas and Herdiyanto (2018); Rahardja and Varela (2014).

³⁰ Cali and Puzello (2018).

³¹ A March 2018 dispute over high-grade salt, a key input in various manufacturing industries, illustrates the costs imposed by certain NTMs. High-grade salt was subject to an import quota controlled by the Ministry of Maritime Affairs and Fisheries aimed

could greatly reduce import costs. For example, World Bank analysis suggests the elimination of import licenses for eight large manufacturing categories at the end of 2015 reduced import costs by 6.7 percent.³²

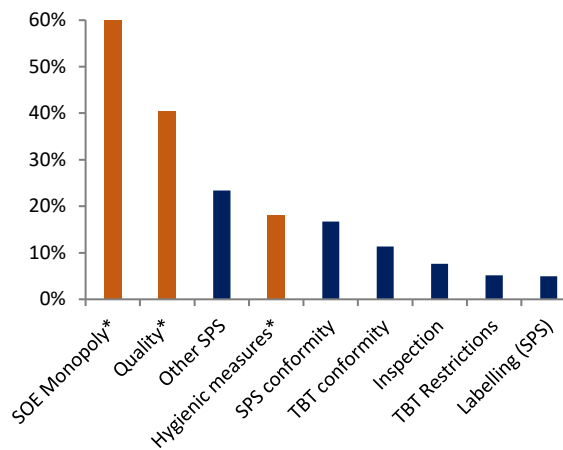
Figure 3.5: Indonesia has expanded its application of non-tariff measures across import categories...
(Percentage of imports covered by at least one NTM)



Source: Cali and Puzzello (2018).

Note: * Indicates estimate is statistically significant at least at the 10 percent level. SPS stands for Sanitary and Phytosanitary standards (applied to food products and other agricultural goods) and TBT is Technical barriers to trade (applied to manufactured goods).

Figure 3.6: ...and some non-tariff measures have significantly increased the cost of imports.
(Effect of NTMs on import prices in ad valorem equivalent terms)



Substantial barriers on service imports weaken competitiveness by reducing the quality and increasing the costs of domestic services, many of which are key inputs in production. For example, foreign lawyers are not permitted to establish a commercial presence or practice law in Indonesia; foreign investments are not allowed in a large segment of retail distribution, including supermarkets and minimarkets; and foreign companies cannot transport goods between Indonesian ports, which severely restricts competition in the logistics subsector. According to the OECD Services Trade Restrictiveness Index (STRI), Indonesia has some of the tightest restrictions on trade in services among the 44 high- and middle-income countries surveyed. Recent evidence shows that barriers to trade in services stifle the competitiveness of Indonesian manufacturing subsectors that rely on tradable services.³³ This finding aligns with the international experience, which indicates that such barriers diminish the quality and/or increase the price of domestic services.³⁴

Free-trade agreements (FTAs) have partly offset the increase in trade barriers. Indonesia is currently a signatory to thirteen FTAs. Nine have come into effect, include bilateral agreements with Pakistan and Japan; ASEAN agreements with the Republic of Korea, China, India, Japan, Australia, New Zealand, and the ASEAN countries; and a preferential tariff agreement with eight developing countries across South Asia, Sub-Saharan Africa, Europe, and Central Asia.³⁵ Four more FTAs have been signed but are not yet

at protecting domestic producers. However, due to a decline in domestic salt production, the recommended yearly quota of 2.2 million tons was not sufficient to meet domestic demand in 2018. The resulting scarcity of salt severely constrained production in various industries, including food processing and pharmaceuticals, which came close to stopping production. This situation led to the issuance of an emergency presidential decree shifting the responsibility for the import quota to the Ministry of Industry. See Reuters (2018).

³² Cali (2017).

³³ Duggan, Rahardja, and Varela (2013).

³⁴ Arnold, Javorcik, and Mattoo (2007); Arnold et al. (2016).

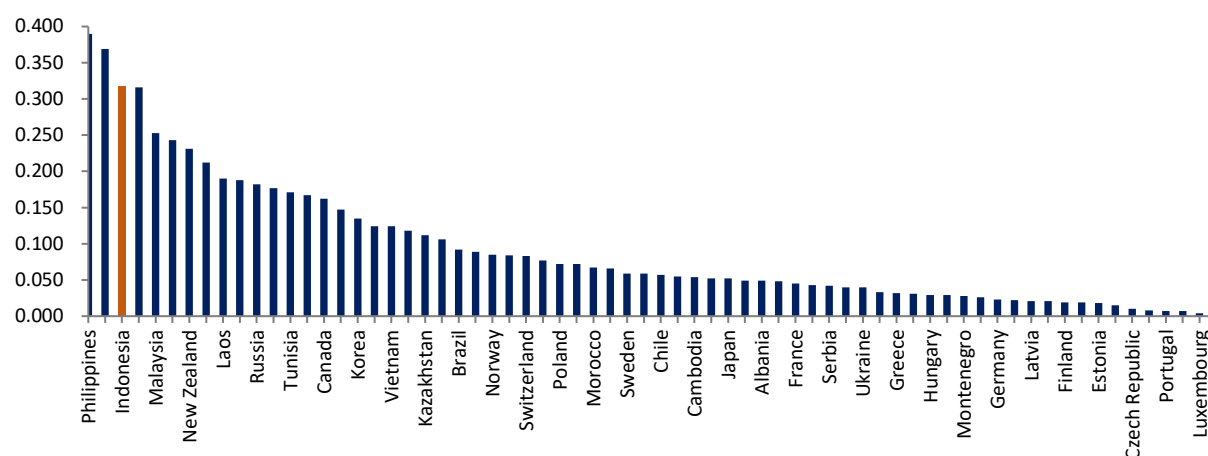
³⁵ ADB (2017).

effective, including the recent Comprehensive Economic Partnership Agreement with Australia, and the government is currently negotiating seven additional FTAs.³⁶

In addition to trade barriers, various domestic policies increase the cost of investing in Indonesia, particularly for foreign investors. Among 68 middle-income countries surveyed by the OECD, Indonesia was found to have some of the tightest restrictions on FDI (Figure 3.7). Indonesia's Negative Investment List (*Daftar Negatif Investasi*, DNI) imposes foreign-equity limits, sectoral reservations for MSMEs, special licensing regimes, and minimum local content requirements. The DNI applies at least one investment restriction in 28 percent of all economic sectors, and in 20 percent it either limits foreign-equity participation or prohibits foreign investment altogether (e.g., onshore oil and gas upstream production installation, power plants with capacities below one megawatt, and supermarkets smaller than 1,200 square meters). In addition, the DNI reserves many agricultural, industrial, and services subsectors exclusively for MSMEs, effectively barring foreign investors.

Figure 3.7: Indonesia imposes exceptionally tight regulatory restrictions on foreign investment.

(FDI regulatory restrictiveness index, 0 = lowest; 1 = highest)



Source: OECD.

Barriers to investment tend to be especially high in the services sector, which is particularly problematic given the importance of services as productive inputs. A large share of the foreign-equity restrictions in the DNI apply to services, particularly transportation and communications, education, finance, real estate, and healthcare (Figure 3.8). These restrictions reduce the quality and/or increase the costs of domestic services, with negative implications for the productivity of firms in downstream sectors.³⁷ Such restrictions may also inhibit the introduction of new technologies by foreign firms. Restrictions on services provided directly by foreign providers are especially binding, and Indonesia has the smallest share of foreign workers in its labor force of any country in the region. For example, just 41 of the country's 100,000 practicing doctors are foreign citizens; these foreign doctors are exclusively allowed to train Indonesian doctors and are forbidden from treating patients.

These restrictions significantly reduce both foreign and domestic investment, inhibit market entry, diminish commercial performance, and increase prices in the sectors to which they are applied. World Bank analytical work indicates that raising the maximum foreign-equity limits allowed in a sector

³⁶ Ibid.

³⁷ Duggan et al. (2013).

substantially increases the number of foreign and domestic investment projects.³⁸ The results also suggest that reserving certain subsectors for MSMEs reduces the number of FDI projects, while local-content requirements³⁹ negatively affect both foreign and domestic investment.⁴⁰ Investment restrictions also erode the competitiveness of the manufacturing sector by discouraging competition.⁴¹

Each time a DNI restriction is introduced,⁴² investment in new foreign manufacturing plants declines and the exit of less-competitive domestic plants slows. DNI restrictions have an especially negative impact on export-oriented plants. Reduced competition benefits incumbent firms through higher prices and profits, and as competition declines, so does average plant performance.⁴³ Investment restrictions also hinder the adoption of new productive technologies, which are most often found in foreign-financed plants, and they increase the cost of key productive inputs, particularly intermediate goods and services, which reduces the profitability of downstream industries.

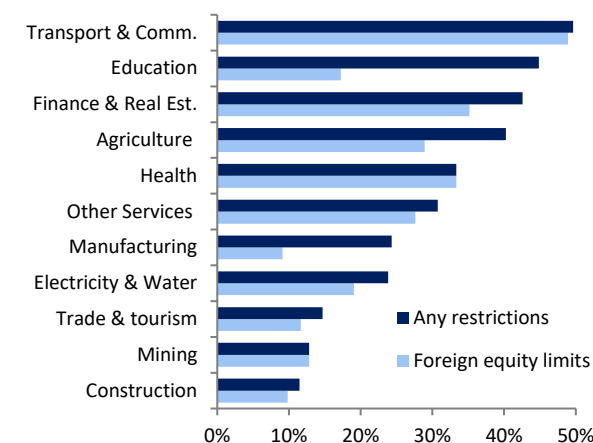
3.1.2. Regulatory Uncertainty

An unpredictable regulatory process further weakens the business environment, inhibits competition, and deters potential investors. The national legislature and both the central and local governments pass business-related laws and regulations. The uncoordinated design and uneven implementation of these laws and regulations exacerbates deficiencies in the business climate. In some cases, the government has been forced to annul or rescind ministerial regulations after receiving complaints from the business community, including a policy on expatriate work permits that had been announced only a year earlier. Parliament is currently discussing a draft law that would bar the commercialization of all financial products that do not conform to Islamic law, which has raised serious concerns in the business community. In addition, it is unclear how various transportation-related laws and regulations apply to digital ride-hailing services such as Go-Jek and Grab. Regulatory uncertainty increases the costs for businesses and limits their planning horizon, and it is especially daunting for prospective investors, who are typically less willing to deal with such uncertainty than are incumbent businesses, further stifling competition.

Ongoing government efforts to improve the business climate have focused on rationalizing the regulatory process and streamlining business procedures. For example, Presidential Instruction No.

Figure 3.8: Investment restrictions tend to be highest in the services sector.

(Share of KBLI 5-digit subsectors subject to at least one restrictions)



Source: Authors' calculations based on presidential regulations on DNI.

³⁸ World Bank (2017a). This analysis is based on data for 514 subsectors coded according to the four-digit KBLI classification.

³⁹ The government recently local-content requirements for certain electronics, IT equipment, mobile phones, and agri-business.

⁴⁰ In the case of foreign investment, the analysis finds that local-content requirements reduce the number of approved investments but do not significantly affect the number of realized investments. These requirements appear more binding for domestic investments, as the number of both approved and realized investments declines.

⁴¹ World Bank (2018b).

⁴² These restrictions include foreign-equity limits, subsector MSME reservations, and special licensing regimes.

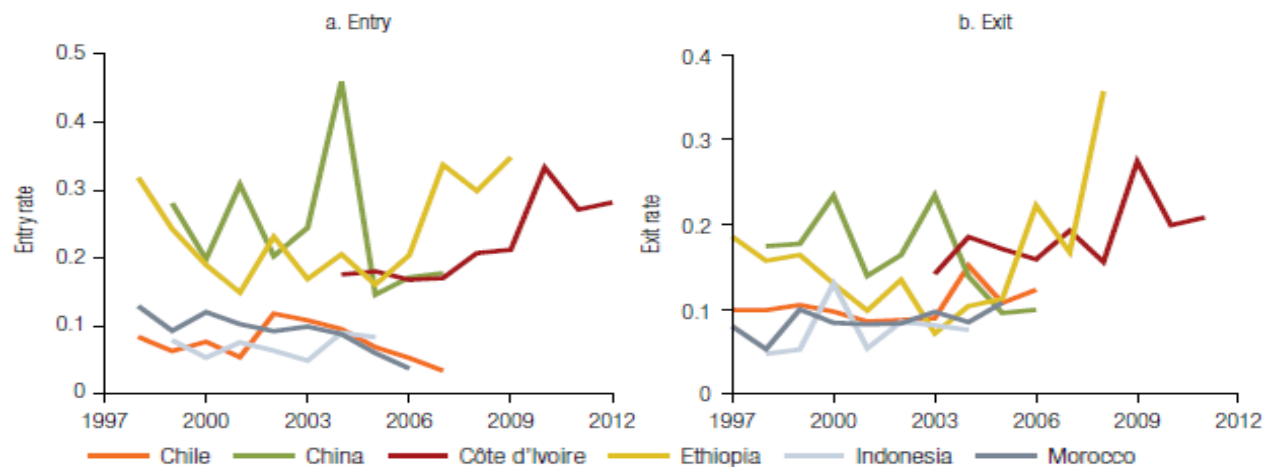
⁴³ The change in plant performance is measured by reductions in the probability of investing, labor productivity, average wages paid, and output levels.

7/2017 presents a more stringent framework for introducing new regulations. However, due to a lack of statutory clarity and routine enforcement, line ministries do not regularly consult with their respective coordinating ministry before issuing regulators and have a significant degree of discretion over the policy process. The preparation of new regulations rarely includes an implementation plan or a systematic assessment of their impact on competitiveness, barriers to entry, and the public finances.⁴⁴ The government's recent focus on streamlining business procedures related to the Ease of Doing Business ranking appears to have addressed some marginal procedural constraints, and while Indonesia's ranking has improved for three consecutive years—rising from 120th to 72nd between 2015 and 2018—its progress has not led to any measurable improvements in economic performance or investment.

3.1.3. Weaknesses in Competition Policy and Enforcement

These restrictions contribute to a business environment that is less conducive to competition than those of most regional comparators. Indonesia's scores on the Global Competitiveness Indicators for the perceived intensity of local competition and the prevalence of market dominance are below the average for the East Asia and Pacific region. The degree of market power among large firms in Indonesia, proxied by the level of markups, is significantly higher than it is in China, Malaysia, or South Korea, and an increase in markups between 1980 and 2016 indicates that competition may be thwarted by dominance or collusion.⁴⁵ Limited competition is consistent with the low rates of market entry and exit observed in Indonesia vis-à-vis other developing countries for which firm-level census data are available (Figure 3.9). Anticompetitive practices are often concentrated in intermediate sectors,⁴⁶ where they further undermine competitiveness by raising the cost of productive inputs.

Figure 3.9: Indonesia has a relatively low rate of market entry and exit.



Source: Cusolito and Maloney (2018). Elaborations using firm-level census data.

A lack of robust competition increases the profit margins of large incumbent firms, which often adopt a rent-seeking approach to ensure restrictions on competition remain in place. The close relationship between the state and the private sector is reinforced by the dual role of prominent members of the business community as government advisors and by Indonesia's strong business associations, led by the Indonesian Chamber of Commerce and Industry (*Kamar Dagang dan Industri Indonesia*, KADIN) and the

⁴⁴ Indonesia is ranked 84th out of 186 countries on the World Bank's Global Regulatory Governance Indicators, and in the 50th percentile of countries on the Worldwide Governance Indicator's Regulatory Quality index.

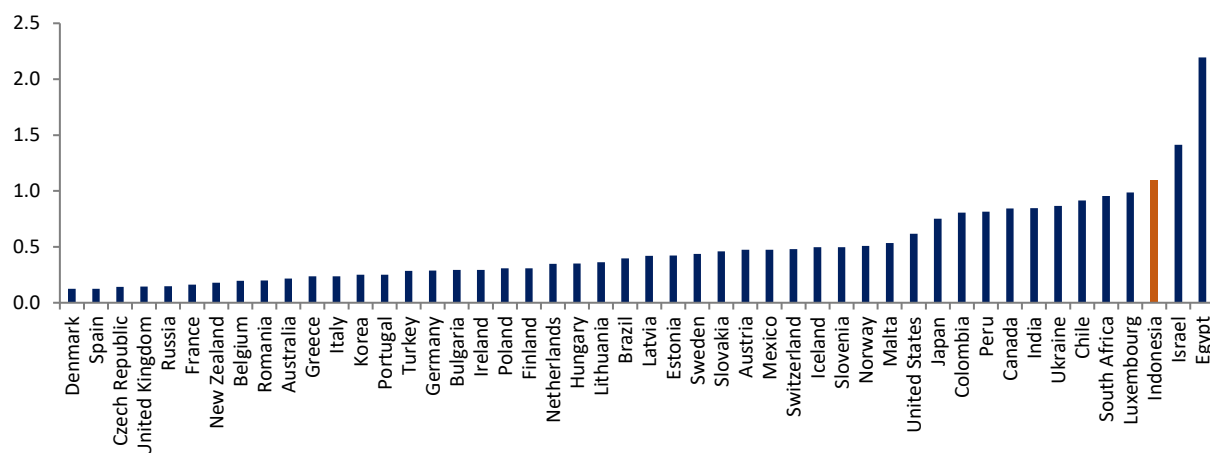
⁴⁵ De Loecker and Eeckhout (2018).

⁴⁶ Ivaldi, Jenny and Khimich (2016).

Indonesian Employers Association (*Asosiasi Pengusaha Indonesia*, APINDO). This relationship dates back at least to the Suharto regime, during which political connections were among the key assets of Indonesian firms,⁴⁷ and while the fall of Suharto may have changed some aspects of the relationship, a dense network of connections between the public and private sectors continues to prevent any meaningful increase in competition in markets dominated by politically connected firms.⁴⁸ These connections not only influence policies, but also the allocation of import licenses,⁴⁹ credit,⁵⁰ and concessions to extract natural resources.⁵¹ Recent literature shows that close business-government connections are associated with lower rates of productivity enhancing investment and innovation,⁵² as well as inefficient and inequitable public policies.⁵³

Figure 3.10: Indonesia's competition regime performs poorly by international standards.

(Scale of 0-6, from most to least conducive to competition)



Source: World Bank estimates based on Alemani et al. (2013).

The limited authority and capacity of the Business Competition Commission (*Komisi Pengawas Persaingan Usaha*, KPPU) prevent it from effectively discouraging anticompetitive behavior. The 1999 Indonesian Competition Law established the KPPU, which is tasked with enforcing competition policy. However, both the competition framework and the KPPU still suffer from limitations that make Indonesia's competition regime one of the least effective among 49 countries surveyed by the OECD (Figure 3.10). For example, the KPPU is the only competition agency that cannot perform unannounced inspections to gather evidence at the premises of firms investigated for antitrust infringement. Similarly, the KPPU cannot act against firms located abroad, even if their behavior directly affects competition and/or consumers in domestic markets. As a result, the number of cartels detected by the KPPU has been very limited, even compared to smaller economies.⁵⁴ In addition, the KPPU has few deterrence powers:

⁴⁷ Fisman (2001).

⁴⁸ Konchanova et al. (2018).

⁴⁹ Mobarak and Purbasari (2006).

⁵⁰ Jiangtao et al. (2015).

⁵¹ In some cases, the skewed allocation of rents may backfire. For example, the original concessionaire of the East Kutai Coal Project, Churchill Mining, took Indonesia to international arbitration claiming economic losses of US\$1.3 billion due to the local government revoking the concession in favor of a domestic company, PT Nusantara Group. After a four-year dispute, the tribunal eventually dismissed Churchill Mining's claims.

⁵² Akcigit et al. (2018).

⁵³ Rijkers et al. (2017).

⁵⁴ In the 2000–17 period, the KPPU investigated only 11 cartel cases, excluding collusion with government officials in public procurement tenders (source: KPPU decisions published online). In comparison, in South Africa, whose economy is three times

the maximum penalty it can levy is less than US\$2 million, significantly lower than the maximum penalty for comparable agencies in other jurisdictions. While most of KPPU's advisory opinions have focused on anticompetitive practices under government regulations, in the absence of formal feedback mechanisms from the government the impact of its opinions on policymaking remains unclear.

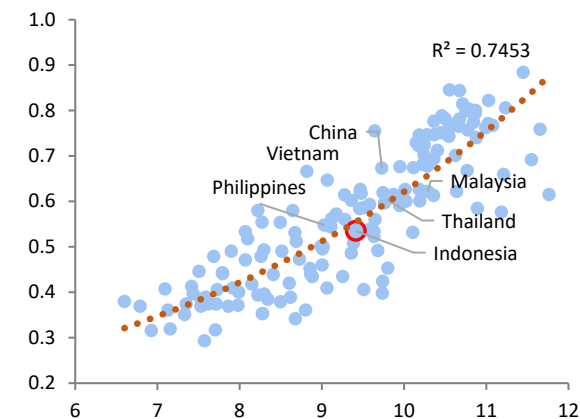
The effective implementation of the Competition Law would require both a stronger KPPU and a more robust political commitment from the government. To prevent anticompetitive behavior and foster fair and open competition, policymakers must implement the KPPU's recommendations. The groundbreaking air-transportation reforms of the early 2000s are a case in point. Until the early 2000s, the air-transportation sector was highly regulated via a system of licenses and floor prices set by the Ministry of Transport. Two SOEs, Garuda Indonesia and Merpati Nusantara, dominated the sector, which experienced rapid increases in airfares and no growth in passenger volumes.⁵⁵ Following an investigation into price-fixing by the Indonesian National Air Carrier Association, the KPPU recommended opening the sector to competition. The Ministry of Transport developed the necessary regulatory framework for competition, and the easing of entry restrictions in 2001, followed by the abolition of floor prices in 2002, triggered the rapid expansion of the air-transportation sector. The number of airlines increased from seven to 27 between 2000 and 2004, the number of domestic passengers tripled between 2001 and 2005, and air fares dropped substantially between 2001 and 2004.⁵⁶

3.2. The Human-Capital Gap

Deficiencies in human capital further constrain private-sector development in Indonesia, with gaps in both education and health outcomes diminishing labor productivity and slowing economic growth. Indonesia ranked 87th out of 157 countries on the most recent HCI, with an overall score of 0.53.⁵⁷ Although Indonesia has achieved important progress in improving educational and health outcomes in recent years, decades of underinvestment have contributed to a deep and persistent deficit in human capital. An HCI score of 0.53 indicates that a child born in Indonesia today is expected to be just 53 percent as productive by age 18 as she could have been if she had received a complete education and was in full health. Indonesia underperforms peer countries in East Asia and the Pacific, as well as the region's average HCI score of 0.62 (Figure 3.11). The HCI enables an assessment of how much income Indonesia foregoes because of its human-capital gap, as well as the gains that closing the gap could

Figure 3.11: Indonesia underperforms peer countries on measures of human capital.

(Human Capital Index score vs. log PPP GDP per capita, 2017)



Source: World Bank (forthcoming) on the basis of the HC index and World Development Indicators.

smaller than Indonesia's, some 76 cartels were detected and sanctioned between 2005 and 2015, excluding construction projects (World Bank 2016a).

⁵⁵ Domestic passengers hovered around 9 million throughout the 1990s.

⁵⁶ APEC (2017).

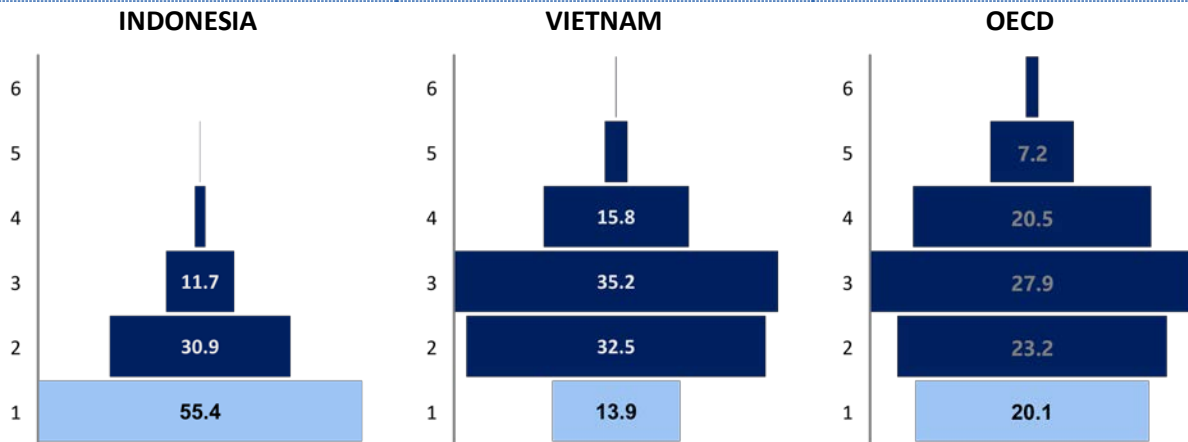
⁵⁷ World Bank (2018c). The HCI has three components: survival; expected years of learning-adjusted school; and health. The health and education components of the index are combined in a way that reflects their contribution to worker productivity. The HCI ranges between 0 and 1. A country in which a child born today can expect to achieve full health (no stunting and 100 percent adult survival) and receive a complete education (14 years of high-quality schooling by age 18) will score a value of 1 on the index.

generate: a forthcoming World Bank analysis estimates that closing the human-capital gap could increase Indonesia's GDP by 31 percent through higher labor productivity.⁵⁸

The learning gap reduces the economic impact of gains in education access and undermines the productivity of the labor force. Large-scale public investment in education more than doubled the number of schools between 2003 and 2016, contributing to a massive increase in number of workers with secondary and tertiary education. The government funds 12 years of compulsory education, and the average Indonesian child attends 12.3 years of school, consistent with international good practices. However, the average number of learning-adjusted school years is just 7.9 years, reflecting serious weaknesses in education quality.⁵⁹ While learning gaps are common among middle-income countries, Indonesia underperforms its peers on international standardized tests. Over 55 percent of Indonesians who finish basic education are functionally illiterate, a much larger share than in Vietnam (14 percent) and the OECD countries (20 percent) (Figure 3.12).⁶⁰

Figure 3.12: Learning outcomes in Indonesia lag those of comparator countries.

(Share of the population by level of achievement and country, percentage points)



Source: World Bank (2018d). World Bank estimates based on data from PISA 2015 (OECD, 2016).

Note: Students with achievement levels below 2 on the PISA achievement scale are considered functionally illiterate.

Poor learning outcomes largely reflect the inefficiency of public education spending and a lack of human resources, which have weakened the impact of a rapid increase in the education budget. Indonesia's public education spending has increased eleven-fold since 2001, due to the introduction of a rule that 20 percent of the budget must be spent on education.⁶¹ While education expenditure per student remains low relatively to the level of countries that participated in the 2015 Programme for International Student Assessment (PISA) test (Figure 3.13), the additional resources for education have financed a significant expansion in student enrollment, especially at the secondary level. Nevertheless, the quality of education remains generally poor, as reflected in the low scores of Indonesian students on the PISA and the National Examination (*Ujian Nasional*). The introduction of teacher certification, combined with a significant increase in salaries, has thus far failed to improve learning outcomes,⁶² and the quality of teaching remains one of the key challenges in the education system.⁶³ In addition, much of the education budget is managed

⁵⁸ World Bank (forthcoming).

⁵⁹ Ibid.

⁶⁰ A person is considered functionally illiterate if she is not equipped with the skills necessary to successfully enter the labor market. Students that receive a PISA score below 2 are classified as functionally illiterate.

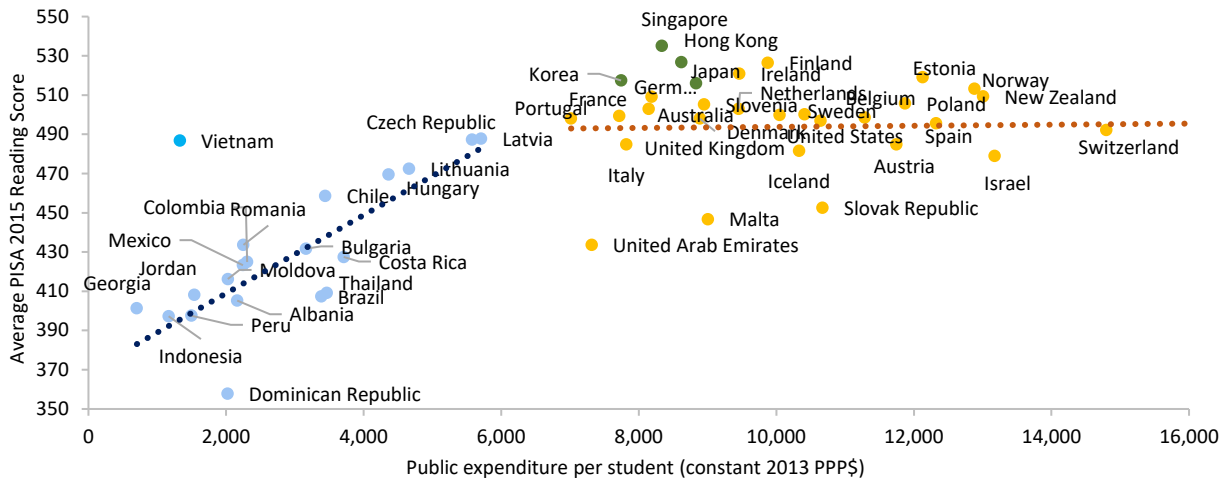
⁶¹ World Bank (2019d).

⁶² de Ree et al. (2017).

⁶³ For example, Ragatz, et al. (2015), quoted in World Bank (2018d), found that Indonesian teachers rarely pose strategic or openended questions requiring complex and specific responses that would demonstrate student understanding. Almost 90 percent of the students observed responded to teacher questions with a single word, indicating weak pedagogical practices.

autonomously by district authorities, and smaller districts—which typically have lower levels of administrative capacity—receive a proportionately greater share of the budget. This system leads to expenditure inefficiencies and considerable heterogeneity in the type and quality of spending across the country. Due in part to the inefficiency of education spending, only 30 percent of children in poor households have access to early childhood education and development (ECED) services, even though ECED is associated with the highest returns of any education level.

Figure 3.13: Indonesia’s education spending per student is lower than almost any other PISA participant.

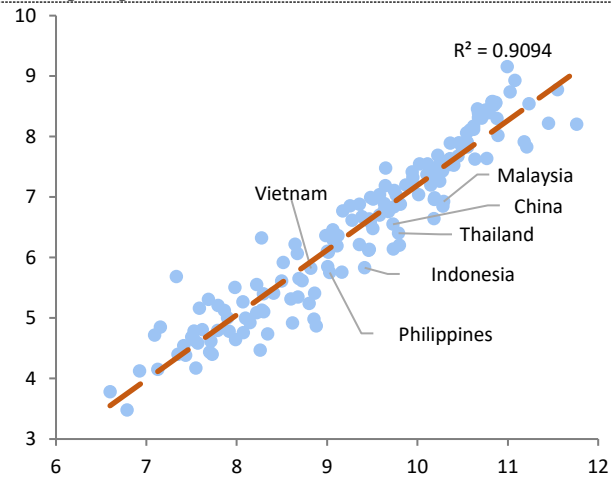


Source: World Bank EdStats and PISA 2015 (OECD, 2016).

High rates of stunting and NCDs significantly diminish the health, quality of life, and labor productivity of Indonesians, and public health spending is inadequate to address these challenges. At 1.4 percent of GDP, Indonesia’s public health spending is among the lowest in the world. While health outputs and outcomes have improved in recent years, access to quality primary health care remains limited, especially in Eastern Indonesia, and progress in addressing disparities in health outcomes has been slow. Indonesia’s stunting rate is 31 percent, above even the average for lower-middle-income countries. Stunting impairs the development of cognitive skills, which negatively impacts labor productivity and has long-term adverse health implications. Meanwhile, NCDs reduce the productivity of the labor force and shorten the lifespan of the population. Indonesia has one of the world’s highest rates of smoking prevalence among adult men at 68 percent, which contributes to the increased risk of NCDs and early death. Indonesia also has second-highest burden of tuberculosis worldwide, which further lowers the adult survival rate.

Figure 3.14: Indonesia’s health spending is low by the standards of peer countries.

(Log of nominal health spending per capita in US\$ vs. log of PPP GDP per capita)



Source: WDI, World Bank staff analysis (quoted in World Bank, forthcoming).

Low levels of health spending and high prices for nutritious food are major contributors to the prevalence of stunting and NCDs in Indonesia. Indonesia’s levels of public and private health spending per capita are well below what its level of GDP per capita would predict (Figure 3.14). High prices for

nutritious food, including fruits and vegetables, encourage households to reduce their intake of micro- and macro-nutrients. These high prices reflect a combination of low agricultural productivity, restrictive trade policies and high logistics costs, especially in remote regions.

Limited access to financial services reduces the ability of millions of households to invest in education and health. In 2017, just half of the population had access to formal financial products and services, and poor individuals were 20 percentage points less likely than rich individuals to have a formal financial account.⁶⁴ Twenty million people still pay their bills and other expenses in cash, even though they have bank accounts, cellphones, and internet access. The limited use of formal financial services discourages households from investing in nutrition, health, education, and household enterprises, which in turn exacerbates the human-capital gap.⁶⁵

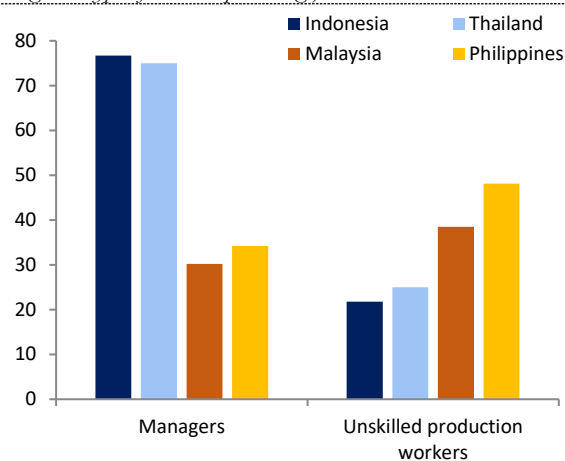
The human-capital gap is particularly salient given the increased automation and sophistication of production technology that characterize the modern economy, which has increased the importance of workforce skills and boosted the returns to high-skilled labor.

The quality of labor-force skills, particularly those of specialized professionals and managers, is a key concern for Indonesian firms. The share of firms that cited inadequate skills as a top constraint when hiring managers and professionals is the highest in the region (Figure 3.15). Meanwhile, firms hiring unskilled production workers are less likely than their regional comparators to report a lack of adequate skills. This pattern is consistent with a 2018 joint assessment by the Indonesian government and the World Bank, which

highlighted critical shortages of skills in dozens of managerial and professional positions such as head of chemical manufacturing control, biochemistry supervisor, microbiology supervisor, food technologist, chemical engineer, cloud-solutions architect, and UI/UX designer.

Firms that reported difficulties in hiring managers and other high-level employees experienced 50 percent lower rates of employment growth. Challenges finding employees with foreign-language abilities and technical, leadership, and management skills were correlated with weaker firm performance and lower productivity.⁶⁶ Poor management quality is typically associated with low rates of innovation,⁶⁷ which may help explain the small share of firms generating product or process innovation in Indonesia. Moreover, the share of Indonesian firms that provides on-the-job training is one of the lowest among middle-income countries.⁶⁸

Figure 3.15: Indonesian firms face a deep skills mismatch, particularly for managers and professionals. (Share of firms that cited inadequate skills as the key barrier to hiring each type of worker, percentage)



Source: Gomez-Mera and Hollweg (2018) based on WBES data.

⁶⁴ Demirgüç-Kunt et al. (2018). This income disparity is larger than the developing-economy average of 15 percentage points.

⁶⁵ Demirgüç-Kunt et al. (2018) and Ellis et al. (2010). Prina (2015) found that female-headed households in Nepal spent 15 percent more on nutritious foods (meat and fish) and 20 percent more on education after receiving free savings accounts.

⁶⁶ Gomez Mera and Hollweg (2018).

⁶⁷ Cirera and Maloney (2017).

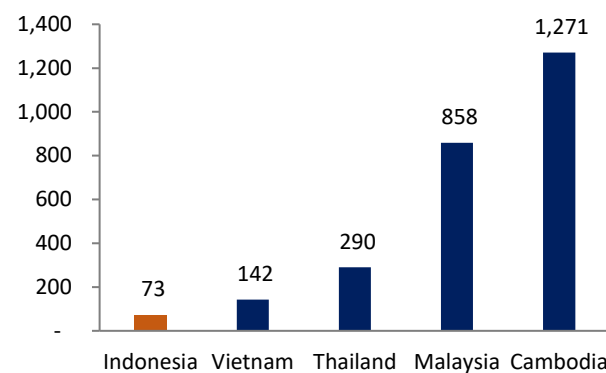
⁶⁸ Gomez Mera and Hollweg (2018).

The human-capital gap is compounded by tight government restrictions on hiring foreign workers, which limit firms' ability to access global talent in areas where local skills are in short supply. Stringent requirements apply to the hiring of foreign workers, including professionals. Employers must present a detailed foreign employment plan for approval by the Ministry of Manpower; foreign workers are subject to performance requirement; and company-specific caps limit the share of foreign employees relative to domestic employees. Due in part to these restrictions, skilled foreign workers account for just 73 of every 100,000 workers in Indonesia, a much smaller share than in other countries in the region (Figure 3.16). The recent Presidential Regulation No. 28/2018 is designed to relax some of these restrictions, but its implementation is incomplete, and many restrictions are still in effect.

The analyses of the health services, education technology (EdTech), and financial technology (FinTech) sectors presented below highlight the potential role of the private sector in filling the human-capital gap. Increased private-sector participation could help expand the supply and improve the quality of health and education. In tertiary education and healthcare, the entry of foreign universities and hospitals could facilitate technology transfer and increase competition in these skill-intensive sectors. The government's 2018 decision to open universities to foreign investment is a positive step.⁶⁹ The diffusion of FinTech could accelerate the uptake of financial services across household income levels, enabling poorer households to invest in nutrition, health, and education.

Figure 3.16: Indonesia does not yet tap into foreign skills to fill domestic gap

(Number of skilled foreign workers per 100,000 workers, 2018)



Source: World Bank (2018b).

3.3. The Infrastructure Gap

A long period of chronic underinvestment has contributed to an estimated US\$1.5 trillion infrastructure deficit, which hinders the development of Indonesia's private sector. The windfall revenues from the commodity boom in the second half of the 2000s were spent on fuel subsidies rather than infrastructure investment. Meanwhile, private investment in infrastructure has been limited, as SOEs increasingly dominate infrastructure sectors. In addition, administrative decentralization has transferred much of the responsibility for road investment to local governments, despite their limited institutional capacity. As a result, by 2015 the value of the public capital stock per capita was 2.5 times lower than in other emerging economies. Inadequate infrastructure constrains the provision of vital productive inputs and services, especially energy and transportation.

The government has recently increased infrastructure spending, but a huge gap remains. The central government's infrastructure budget more than doubled, in nominal terms, between 2010 and 2017. Phasing out energy subsidy in 2014 freed up fiscal resources, enabling the central government to increase infrastructure investment by 77 percent between 2014 and 2015, which financed the construction of new ports, upgrades to secondary ports, and several hundred kilometers of toll roads. The RPJMN includes an ambitious infrastructure investment target of US\$415 billion, or about half of Indonesia's GDP.

⁶⁹ *The Straits Times* (2018).

Because Indonesia's infrastructure investment needs far exceed what public resources can provide, private financing and PPPs could play an important role in closing the infrastructure gap. The government estimates that about 37 percent of its US\$415 billion investment target will need to come from the private sector, with an additional 22 percent coming from SOEs. However, private infrastructure investment declined from 17 percent of total infrastructure investment, or 0.5 percent of GDP, in 2010–12 to 9 percent, or 0.2 percent of GDP, in 2011–15.⁷⁰

Key deterrents to private-sector participation in infrastructure include the dominant role of SOEs and the presence of regulatory barriers to competition. The government's SOE-driven investment model makes it difficult for the private sector to participate and compete in infrastructure sectors. SOEs also dominate key markets, especially in network industries that influence the productivity of other sectors.⁷¹ Indonesia's regulatory frameworks in network sectors are restrictive. The regulatory frameworks for electricity and railways are restrictive in absolute terms, while the frameworks for telecommunications and airlines are restrictive in relative terms (Figure 3.17). Restrictions that inhibit the development of competitive markets in network sectors include: (i) a lack of effective vertical separation the railway system to encourage entry in the transportation services market; (ii) ineffective economic regulation of airports that does not allow for yardstick competition; and (iii) insufficient separation between the regulatory, policy, planning, and commercial functions in the electricity sector.

Consequently, private-sector participation in infrastructure is difficult, especially in remote areas and specific regions.

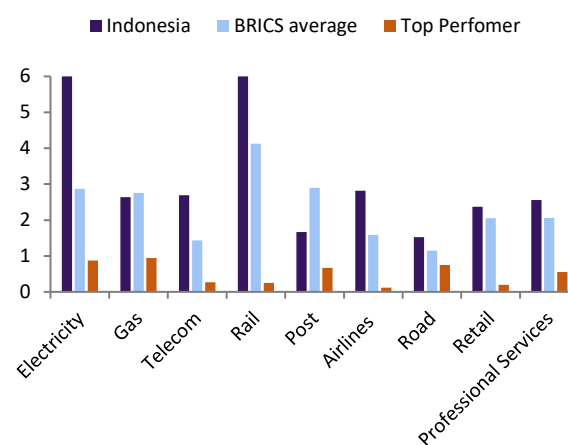
In addition, tariffs in most infrastructure sectors are too low to provide a sustainable foundation for public and private investment. Low tariffs are also a binding constraint on the development of financially viable projects that would attract private investors. In many sectors, a lack of regulatory capacity thwarts efforts to implement tariff reforms. Regulatory agencies in line ministries are relatively weak, and dominant SOE operators can often resist regulators' efforts to control them.

3.3.1. The Energy Gap

Power generation is far below demand. Electricity demand has grown at an average rate of 7.1 percent per year since the late 2000s, and the government projects demand growth to average 8.8 percent per year between 2015–2024. To meet this anticipated increase in demand, power production would have to more than double from 219.1 to 464.2 terawatt hours. The government estimates that investments in generation, transmission and distribution infrastructure will total US\$95 billion by 2025.⁷²

Figure 3.17: Rules restrict competition in infrastructure sectors

(Scale is 0–6, from least to most restrictive of competition)



Source: Elaboration based on OECD Product Market Regulation database.

Note: BRICS average includes countries for which information is available.

⁷⁰ World Bank (2018e).

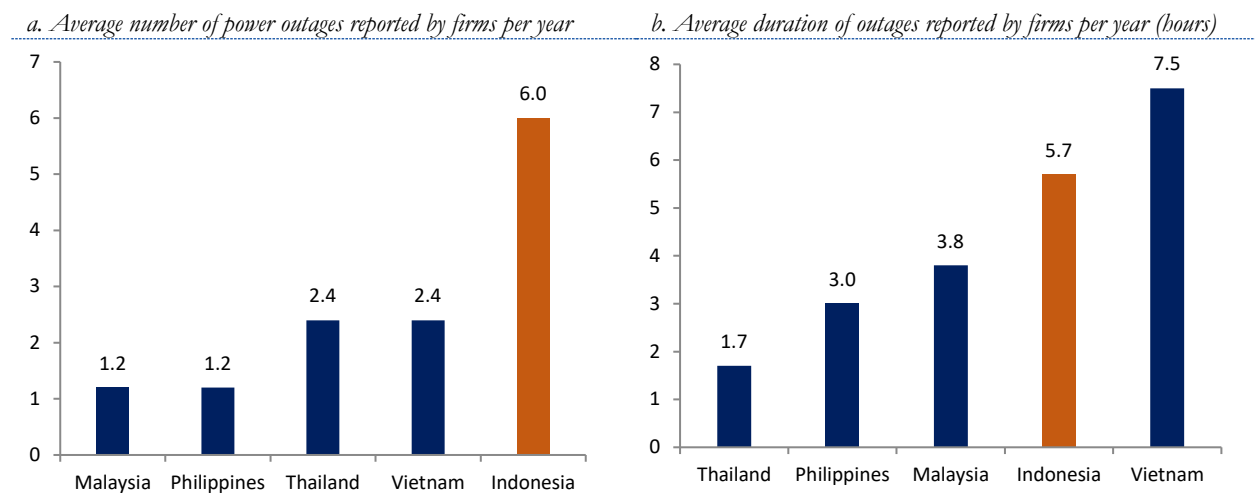
⁷¹ Market-dominant SOEs include Pertamina (oil and gas), Perusahaan Listrik Negara (electricity), Jasa Raharja (insurance), Pupuk Indonesia (fertilizer), Perkebunan Nusantara III (agricultural products); and Pelindo II (ports).

⁷² World Bank (2017b).

Subsidized energy prices and below-cost tariffs have contributed to underinvestment in generation capacity and sectoral infrastructure. The government has a longstanding policy of subsidizing energy prices, particularly fuel. While energy subsidies were largely removed from the national budget in 2015, by 2018 around 27 percent of their value had been reintroduced into the government budget.⁷³ Energy subsidies create perverse incentives for firms to use outdated and inefficient fuel-powered machines rather than more modern electricity-powered machines. A 10 percent increase in fuel prices could boost manufacturing plant productivity by 1.4 percent as firms switch to more productive and energy-efficient equipment.⁷⁴

The electricity supply is unreliable, which increases production costs. While firms are widely connected to the grid, at least on the main islands, Indonesian firms experience significantly longer and more frequent power outages than do their regional counterparts (Figure 3.18). The electricity supply is especially unreliable in central Java. Power outages disrupt production and increase energy costs by forcing firms to suspend production or use generators to secure a reliable power supply, both of which reduce productivity, particularly for smaller firms.⁷⁵

Figure 3.18: Indonesian firms face a less reliable power supply than do firms in peer countries.



Source: World Bank staff estimation on the basis of WBES data (data for 2015 for all countries except Thailand [2016]).

Regulations keep average electricity tariffs below cost recovery.⁷⁶ The Indonesian State Electricity Company (*Perusahaan Listrik Negara*, PLN) receives inadequate government subsidies to cover its operating costs, meet its debt-service obligations, and finance new investments, which has contributed to deficiencies in infrastructure and an inadequate energy supply. Although power generation is now open to private investment, distribution is still the sole responsibility of PLN, and the entirely electricity sector remains subject to its inefficiencies.⁷⁷

In addition, the installed generation capacity is dominated by environmentally damaging energy sources, and the share of renewable energy is modest. In 2015, coal plants account for 49 percent of installed capacity, and natural gas accounted for 28 percent. Meanwhile, hydroelectricity contributed 9

⁷³ This excludes off-budget subsidies, which are mainly absorbed by Pertamina.

⁷⁴ Cali et al. (2019).

⁷⁵ Poctzer (2017). Gomez-Mera and Hollweg (2018) find that more frequent power outages are associated with lower levels of total factor productivity, labor productivity, and employment growth.

⁷⁶ 2017 Electricity Cost of Service and Tariff Review.

⁷⁷ World Bank (2018e).

percent and other renewables just 3 percent. In 2014, the National Energy Council aimed to increase the share of renewable energy to 23 percent of installed capacity by 2025, implying a nine-fold increase in renewable energy generation. Without radical policy changes, the government is unlikely to achieve this target.

3.3.2 The Transportation Gap

Massive infrastructure gaps in the national road network, airports, and seaports increase transportation costs and diminish the competitiveness of the Indonesian private sector. The current backlog of network capacity in the road system is estimated at about 20 percent, or 16,000 lane km of road space. Accommodating a projected growth rate of 5 percent per year in traffic demand will require an estimated 3,000-4,000 lane km of additional road space each year. The Expressway Development Program targets the creation of over 6,220 km of expressways by 2025 at a projected cost of US\$54 billion. Meanwhile, port development will require an estimated US\$47 billion by 2030.⁷⁸

Inadequate transportation infrastructure causes congestion, increases costs, and erodes the competitiveness of Indonesian firms. Recent World Bank data indicate that transportation costs, especially road and sea transportation, account for the largest share of logistics costs for Indonesian manufacturers. In addition, the share of transportation costs in manufacturing sales is higher in Indonesia than it is in Vietnam or Thailand. Subsidies for diesel fuel and the limited enforcement of road-safety rules encourage firms to transport goods by road rather than by sea, contributing to congestion. In addition, the large infrastructure gap in the seaport sector, which is particularly acute among secondary ports, slows port operations and prevents ports from accommodating the increase in demand anticipated in the near term.⁷⁹ High transportation costs reduce the ability of firms to fully exploit economies of scale, even within the large island economies of Java and Sumatra.

As in other infrastructure sectors, the inadequate provision of transportation infrastructure reflects a combination of underinvestment and market-dominant SOEs. A recent increase in public investment in transportation infrastructure has not been sufficient to substantially narrow the infrastructure gap. Meanwhile, the dominance of SOEs and the weak enforcement capacity of sectoral regulators negatively affected the operational performance of transportation infrastructure, including roads, airports, and seaports. Transportation SOEs include Jasa Marga, which dominates toll roads, Angkasa Pura I & II, which dominate the airport sector, and Pelindos I through IV, which dominate the seaport sector.

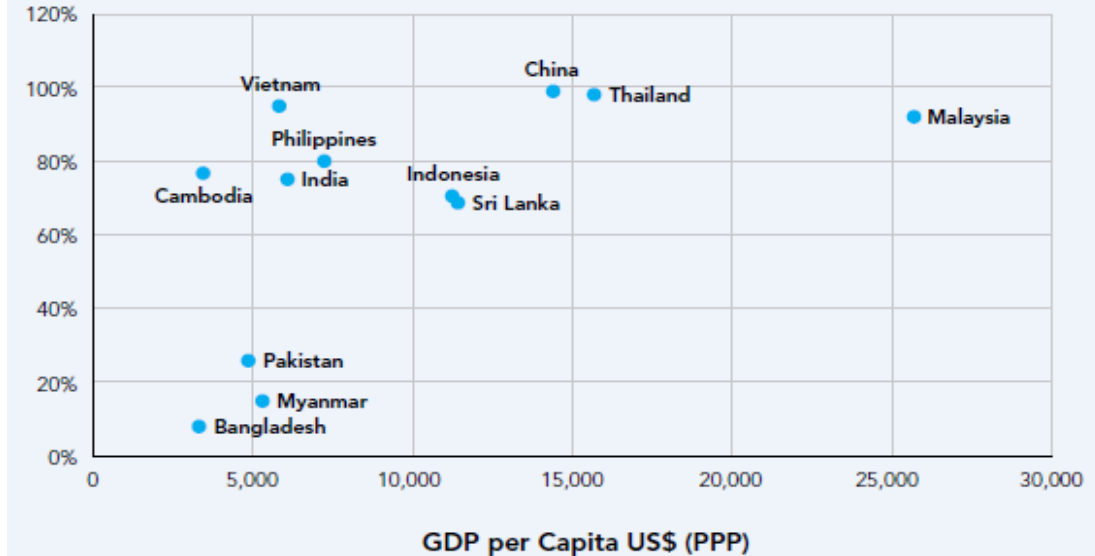
3.3.3 The Digital Gap

Digital infrastructure is critical to support Indonesia's burgeoning digital economy, but a large gap persists. While digital infrastructure in Indonesia has expanded in recent years, reforms to sectoral policies and regulations will be necessary to promote competition, support the sharing of digital infrastructure, address the dominance of SOEs (e.g., Telkom and Telkomsel), and accelerate private investment in digital infrastructure. For instance, 4G network coverage in Indonesia is well below the levels of regional peers such as the Philippines, Thailand, and Vietnam (Figure 3.19). The digital gap is especially pronounced on islands other than Java and Sumatra, and the lack of nationwide broadband backbone connectivity combined with an underdeveloped last-mile fiberoptic/broadband network is a serious obstacle to the continued development of the digital economy.

⁷⁸ World Bank (2017b).

⁷⁹ World Bank (2015c).

Figure 3.19: Indonesia's Lags Many of Its Regional Peers on Measures of Digital Infrastructure Development.
(4G network coverage at end-2016)



Source: World Bank (2019c).

Limited sharing of digital infrastructure restricts competition and prevents efficiency gains. Telecom operators in Indonesia have typically invested in proprietary network infrastructure, which has resulted in duplication and cost inefficiencies. For example, most investment in fixed broadband focuses on passive infrastructure such as ducts, poles, rights-of-way, building access points, and civil works. However, telecom operators are not required to share most passive infrastructure, and they typically do not do so.⁸⁰ The sharing of mobile network towers is an exception, due to a 2009 regulation on tower sharing. However, the regulatory framework for sharing other forms of infrastructure between telecom companies is not yet well established.⁸¹ Consequently, infrastructure-sharing regulations present tremendous scope for efficiency gains.⁸²

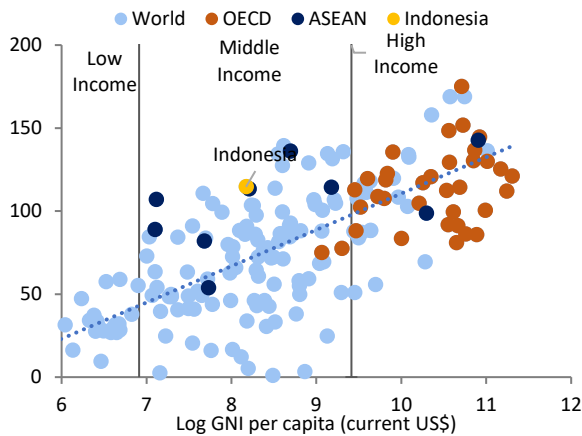
The digital infrastructure gap limits access to broadband services and diminishes their quality and affordability. Although the uptake of mobile broadband in Indonesia is comparable to that of its regional peers, fixed broadband penetration is substantially below the levels of many countries in the region (Figure 3.20 and Figure 3.21). In addition, mobile and fixed broadband speeds in Indonesia are well below the levels of regional peers (Figure 3.22), while the median price per Mbps (US\$) is much higher than it is in many regional comparators and OECD countries (Figure 3.23).

⁸⁰ The digital infrastructure challenge in Indonesia is mainly on broadband/fiber infrastructure because there is limited sharing of this type of infrastructure. On the other hand, Indonesia has one of the more established tower sharing markets in the region, with a number of large independent tower companies in the country.

⁸¹ World Bank Group (2019a).

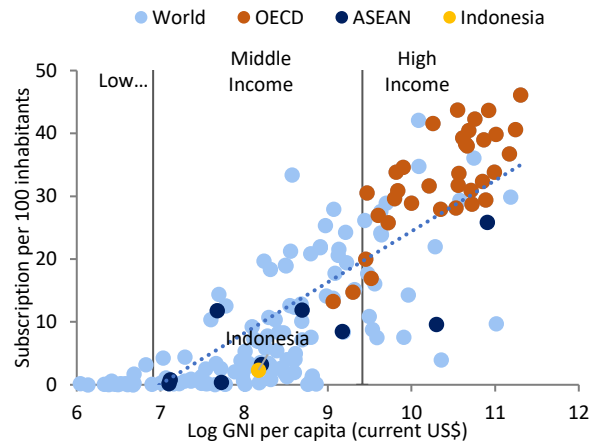
⁸² For example, the Bandung municipal office has sought to regulate the optical cable network through Mayor Regulation No. 589/2013, an underground optical cable shared-duct provision, which mandates operators to utilize a shared duct for their broadband services (World Bank Group 2019a).

Figure 3.20: Mobile broadband penetration is broadly in line with the levels of comparator countries....



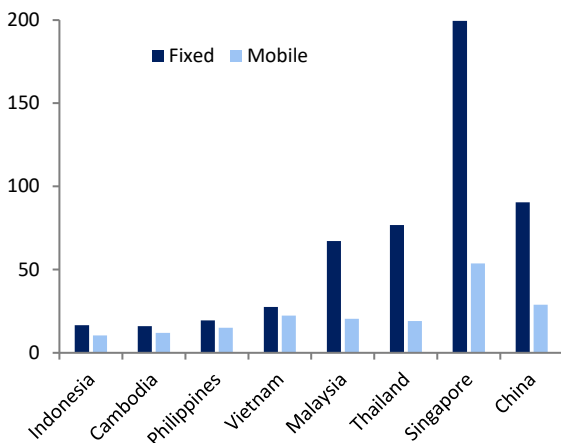
Source: World Development Indicators and ITU 2018.

Figure 3.21: But fixed broadband penetration continues to lag....



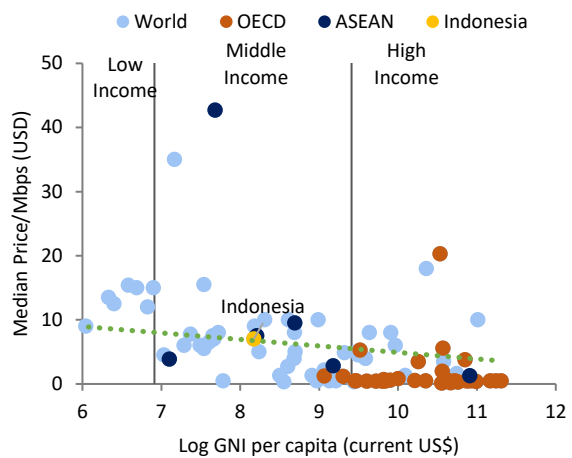
Source: World Development Indicators and ITU 2018.

Figure 3.22: Indonesia’s average download speeds are among the slowest in the region...



Source: Ookla.

Figure 3.23: ...and the marginal costs of broadband services is exceptionally high.



Source: Telegeography 2018.

Closing the infrastructure gap will require a combination of increased public spending, SOE reform, tariff reform, and regulatory reform to expand private-sector participation in infrastructure, including through PPPs. While the reallocation of subsidies and reforms to the SOE-led investment model have boosted public investment and increased the stock of infrastructure, Indonesia’s infrastructure gap will continue to widen under the baseline scenario. Infrastructure funding remains a major challenge: capital injections have fallen due to fiscal limits, and the Ministry of State-Owned Enterprises has requested that SOEs access the financial markets, leading some SOEs to become highly leveraged and face significant financial stress. Some SOEs are approaching the single-borrower limits imposed by local lenders and operating with high debt-to-equity ratios.

The government has made significant progress in establishing the institutions, instruments, and processes necessary to launch PPPs, but the decision framework for prioritizing PPP arrangements needs to be strengthened, the capacity to prepare PPP projects and assess their fiscal implications needs to be increased, interagency coordination needs to be improved, and the efficiency of government

support instruments needs to be enhanced.⁸³ There are no clear criteria for determining which projects should be competitively tendered or assigned to an SOE. The decision to launch a PPP is made far too early in the screening process, without adequate technical and financial analysis to determine its appropriateness, and the preliminary analysis provided by the government contracting authority (GCA)⁸⁴ is frequently incomplete or of questionable reliability. Detailed project preparation is only carried out after the decision has been made not to seek funding through the state budget. This creates an incentive for the GCAs to prioritize delivery through the state budget or SOEs, irrespective of potential commercial viability, as those processes are seen as more straightforward.

Another key constraint on PPP formation is the poor quality of the initial preparatory work. GCAs lack the willingness, funding, and human resources necessary to adequately prepare PPP projects. The resulting PPP project structures, including risk-allocation provisions, often fail to meet international standards, which limits their appeal to private investors. While fiscal affordability is assessed, no specific methodology is used to estimate the fiscal implications of PPPs, and a 2017 World Bank Group PPP benchmarking exercise highlighted this weakness in the procedural framework.⁸⁵

In addition, the main public instruments for supporting PPPs are viability-gap financing and availability payments, which are regulated and administered by different government institutions. Administrative fragmentation can make the application process daunting for both the contracting party and private investors. Moreover, the applicable regulations do not permit the blending of viability-gap financing and availability payments, preventing the combined use of these instruments to achieve maximum value.

3.4. The Financial Gap

Underdeveloped financial markets constrain Indonesian firms' access to credit, weakening their competitiveness. According to data from the 2015 World Bank Enterprise Surveys, about 60 percent of Indonesian firms that require a loan do not request one, a much larger share than prevails in comparator countries (Figure 3.24). Indonesian firms cite financial-market inefficiencies, including high interest rates, high collateral requirements, and complex procedures, as their main reasons for not requesting a loan. Indonesia's collateral-to-loan ratio is almost three times the average for East Asia and the Pacific. Credit constraints undermine the competitiveness of Indonesian firms, as they are associated with lower rates of productivity and employment growth.⁸⁶

Limited access to credit is due in part to the country's relatively shallow banking system and capital markets, which do not provide a competitive funding alternative to banks. Although credit to the Indonesian private sector has been growing since 1999, by September 2018 it had reached just 33 percent of GDP (Figure 3.25), one of the lowest levels among peer countries and well below the peer-group median of 48 percent of GDP. Domestic bank deposits equaled 36 percent of GDP, much lower than the regional median of 64 percent, and stock-market capitalization and turnover equaled 46 percent of GDP, compared with a peer-group median of 72 percent.⁸⁷ Despite the recent growth of the number of listed companies

⁸³ The primary PPP regulation, Presidential Regulation No. 38/2015 (PR 38/2015), provides the basis for the PPP project-development process, which is overseen by the Ministry of National Development Planning and the Ministry of Finance.

⁸⁴ A GCA is any government entity with legal authority to contract the delivery of an infrastructure project, both at the central and subnational government levels. The relevant GCA is responsibility for selecting and preparing infrastructure projects.

⁸⁵ See : <http://bpp.worldbank.org/en/data/exploreconomies/indonesia/2018>

⁸⁶ These are results of the analysis in Gomez Mera and Hollweg (2018) based on a panel of firms from the World Bank Enterprise Survey. Poor access to credit is measured as higher reliance on internal funds for fixed assets investment and as collateral; to loan ratio requirement.

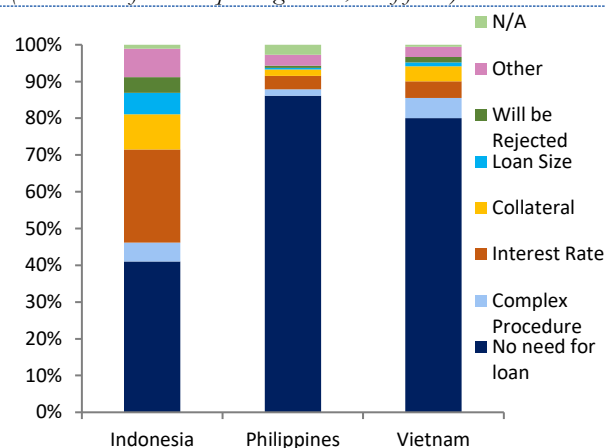
⁸⁷ Data from Finstats.

and listed shares, the Indonesian equity market remains small by international standards, as do the markets for fixed-income securities, including government bonds. A shallow financial system also increases Indonesia's exposure to foreign capital and heightens its vulnerability to shocks.

Shallow bond markets further constrain funding options. While government bond markets are relatively developed, there is scope to enhance liquidity and the price-referencing role of its yield curve.⁸⁸ Corporate bond markets are particularly shallow despite their recent growth. Bank loans remains the preferred, and sometimes only, funding option for companies. While outstanding loan amounts are still low by international standards, corporate issuance has grown rapidly. Most instruments are plain vanilla bonds, due in part to the nascent stage of bond-market development, limited investor literacy, and tax and regulatory impediments for certain products (e.g., infrastructure bonds). Importantly, investors appear to prefer to invest in SOE instruments due to the perception that SOEs provide less risk or higher expected recovery ratios than do non-SOE issuers, even in cases where both have similar credit ratings.⁸⁹

Figure 3.24: High loan costs and collateral requirements are major constraints on credit access.

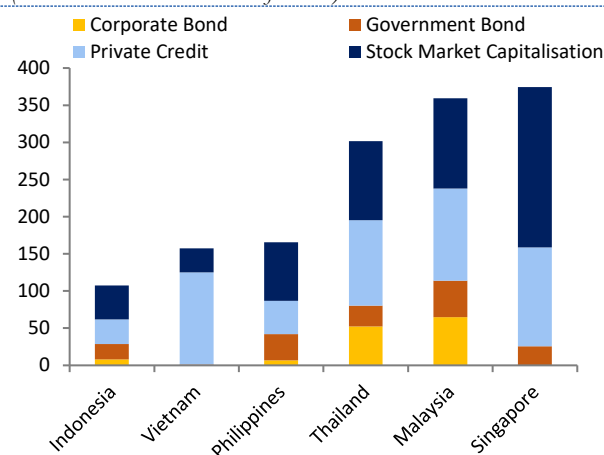
(Reason cited for not requesting a loan, % of firms)



Source: World Bank staff calculations based on ES data.

Figure 3.25: Indonesia's combined financial assets are small relative to the size of the economy.

(Financial assets as a share of GDP)



Source: Finstats.

The highly concentrated banking sector dominates the financial system. Banks account for 78 percent of total financial assets, and while 115 commercial banks currently operate in Indonesia, most are small and have limited capital. The small size of most banks prevents them from leveraging economies of scale, which contributes to high intermediation costs. The large number of small banks also increases the administrative cost of financial regulation. The Financial Services Authority (*Otoritas Jasa Keuangan, OJK*), which supervises and regulates the banking system to reinforce financial-sector stability, has been advocating for the consolidation of smaller banks. The OJK has allowed foreign investors to have shares of local banks exceeding 40 percent for deals that involve the merging of two lenders.

MSMEs face binding credit constraints. The MSMEs finance gap in Indonesia is estimated at US\$166 billion per year, or nearly 17 percent of GDP.⁹⁰ The movable assets of MSMEs, such as inventories and accounts receivable, can be pledged as secondary security for loans. However, financial institutions are often reluctant to extend credit backed by movable assets to MSMEs given the weak legal, regulatory, and institutional framework for secured transactions. In addition, few MSMEs are included in the credit-

⁸⁸ World Bank (2017c).

⁸⁹ Ibid.

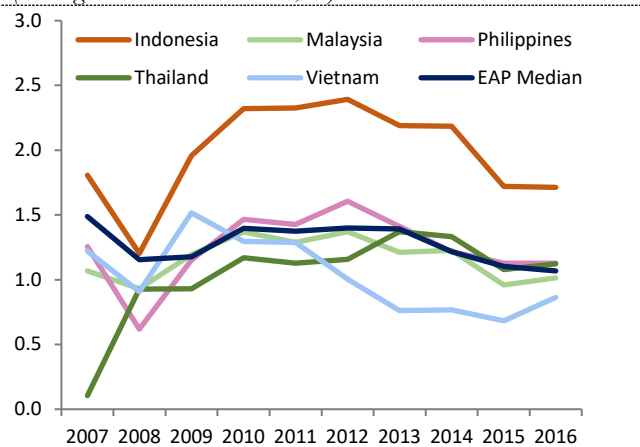
⁹⁰ IFC (2017).

information system due to lack of awareness or inability to meet the requirements. Consequently, lenders often have limited information on the credit history of MSMEs, which further constrains their access to credit. Only one in four Indonesian MSMEs reports receiving a bank loan, and most rely on internal resources to finance investment in fixed assets.

The Indonesian financial system is relatively small, and financial services are costly. Net interest-rate margins (NIMs), which are a proxy for bank efficiency, averaged 4.6 percent from 2010 to 2015, well above the global average of 2.97 percent.⁹¹ Despite high cost-to-income ratios and high capitalization rates, returns on equity and assets are well above the average for peer countries (Figure 3.26), indicating that a lack of competition is allowing banks to charge higher markups for credit and other services. Lack of scale economies drives the high level of NIMs, which is compounded by elevated operating costs, lack of product diversification, high equity-to-assets ratios, high levels of liquidity risk, and lack of competition.⁹²

Figure 3.26: Indonesian banks are unusually profitable, indicating a lack of competition.

(Average returns on bank assets, %)



Source: Finstats.

The government channels credit to SOEs and provides subsidized credit to MSMEs, which may exacerbate overall constraints on credit access. The banking system is dominated by state-owned banks, which skew the allocation of credit toward SOEs, potentially crowding out the supply of credit to private firms. Meanwhile, the government provides subsidized credit to MSMEs through the People's Business Credit (*Kredit Usaha Rakyat*, KUR) program. KUR has grown rapidly, and in 2016 it accounted for 22 percent of all outstanding loans to MSMEs.⁹³ The subsidization of credit to MSMEs via KUR decreases the cost of credit but narrows its focus.

The small size of the financial system, combined with the shallowness and inefficiency of financial markets, constrains the private sector's ability to access the finance necessary to help close the infrastructure and human-capital gaps. The limited capital available in the domestic market, including both assets from local banks and institutional investors, is not sufficient to meet the demand for infrastructure financing by the private sector. Local banks are able to increase infrastructure financing by an estimated US\$10-US\$20 billion before they reach an appropriate allocation limit, yet the need for private financing is estimated at US\$49 billion per year.⁹⁴ Limited financing also constrain the private sector's ability to invest in education and health, which are crucial to close the human-capital gap.

Domestic lending practices are not conducive to infrastructure financing, as most bank loans have relatively short tenures of three to five years. Infrastructure lending takes place on a corporate, on-balance-sheet basis to relationship clients, most of which are SOEs. While local banks dominate the financial sector, they appear to lack sufficient technical skills, experience, or motivation to lend on a limited-recourse basis. Instead, lenders continue to attach considerable importance to the name of the borrower or the sponsor, crowding out less well-established private sponsors. In addition, three of the

⁹¹ World Bank (2017c).

⁹² Ibid.

⁹³ World Bank (2017d).

⁹⁴ World Bank (2018e).

four local banks that dominate the local market for rupiah-denominated infrastructure loans are SOEs, and they primarily lend to other SOEs. This arrangement may limit future borrowing, as these borrowers are more likely to reach a prohibitive level of financial leverage and/or banks' single-borrower limits.

Financing for infrastructure investment is also limited by the small size and the short-term focus of domestic institutional investors. Pension funds, social security funds, and insurance companies have total assets of approximately US\$119 billion, or 12 percent of GDP, with negligible growth observed in recent years. A reasonable reallocation of their portfolio to infrastructure investment would add only around US\$10 billion in the medium term. However, the conservative stance of institutional investors and their focus on short-term returns are preventing even this relatively modest increase in infrastructure investment. Employees have weak incentives to put their savings into the pension or social security funds, and there are no penalties for early withdrawal. Regulatory restrictions and tax differentials over the medium term further limit the ability of institutional investors to invest in project bonds, project funds, or other infrastructure-specific financial products.

The government should renew its efforts to reform the financial sector, including the capital markets, to expand and deepen the financial system, increase its efficiency, and enhance its resilience to shocks. These reforms would enable individuals and firms, including MSMEs, to access financial services at competitive interest rates. Greater private sector funding could be mobilized to finance infrastructure investment and establish PPPs, and a buffer of domestic financing would help stabilize the rupiah when foreign funds exit the country.

3.5. Gaps at the Sector Level

Along with the cross-cutting gaps described above, specific constraints also deter private investment in health services, EdTech, and FinTech. While the government's overall reform priorities should reflect these four cross-cutting constraints, their implications vary across sectors. For example, the financial gap limits investment in some sectors more sharply than in others. Likewise, the impact of the infrastructure gap reflects the types of infrastructure used in different industries and its effect on competitiveness. In addition, specific sectors may face constraints that are not captured by the cross-cutting gaps. The in-depth analyses of health services, EdTech, and FinTech presented below are designed to illustrate these sector-specific constraints and to inform the government's reform agenda at the sector level. These three sectors were selected based on: (i) their potential to increase private investment;⁹⁵ (ii) their mix of economic and environmental benefits;⁹⁶ and (iii) the extent to which they can help address cross-cutting constraints, especially the financial and human-capital gaps.

3.5.1 Health Services⁹⁷

As rising income levels, expanded social health insurance coverage, and demographic and epidemiological transitions have boosted the demand for healthcare in Indonesia, the overall supply of health services has increased. However, the public sector is struggling to keep pace with demand, due to low fiscal revenues and the small size of the health budget. Consequently, out-of-pocket healthcare

⁹⁵ This criterion reflects the feasibility of private investment in a broad range of sectors and the global experience regarding the determinants of successful private investment. The related modelling work and results are available upon request.

⁹⁶ This criterion is based on computable general equilibrium modelling, which assesses the expected impact of additional investment in a range of economic sectors on GDP, exports, employment, and greenhouse-gas emission. The related modelling work and results are available upon request.

⁹⁷ This criterion is drawn from the complementary analysis presented in World Bank Group (2019a).

expenditures are high and rising, spurring private providers to increase investment. Since 2014, private investment in the health and human services subsector has grown by 130 percent per year, reaching US\$148.7 million in 2018.⁹⁸ However, Indonesia's annual inpatient admission rates, bed-to-population ratio, and doctor-to-population ratio remain among the lowest in the region and well below the levels recommended by the World Health Organization. The quality of health services also remains relatively low, even for wealthier Indonesians who can afford more expensive forms of care.

The unmet demand for quality health services presents an opportunity for the private sector to both increase the supply of healthcare and introduce better health products and medical technologies. Increasing private investment to improve service quality, access, and efficiency will be crucial to close the gap between supply and demand. In addition to providing scarce and much-needed capital, greater private investment could promote local innovation, accelerate technology transfer, and encourage the development of low-cost solutions and products, including medical devices and pharmaceuticals.

However, increased private involvement in the health sector poses its own challenges and will require effective regulation. Regulating private healthcare providers can be difficult without effective regulatory mechanisms and incentives. The international evidence does not support the assumption that increasing the private provision of healthcare will automatically improve service quality or promote efficiency, and an expanded role for the private sector could actually worsen inequities in the quality and distribution of health services. Similarly, the international experience with health-sector PPPs has been mixed, and their effectiveness largely depends on government commitment and capacity. Nevertheless, increasing private-sector involvement in the health sector appears, on balance, to offer more benefits than costs. The challenge will be to manage tradeoffs between equity and efficiency, between the growth of supply and access to care, and between private- and public-sector participation.

In Indonesia, the private sector is already active in all major healthcare subsectors, including primary care, specialty care, and diagnostics. Data on utilization rates suggest that the private sector provides close to half of all outpatient health services and 30-40 percent of inpatient services. The private sector's presence in primary care is highly fragmented. Most private providers are general practitioners operating out of single-doctor offices and small multiple-doctor clinics. By providing online access to consultations, medications, and information, the emergence of digital health providers such as HaloDoc, YesDoc, and Alodokter can help ease constraints on access to primary health services, particularly among underserved populations in remote areas or impoverished communities.

Private investment in secondary and specialized healthcare has grown rapidly following the recent opening of the subsector to foreign investment and the rapid expansion of the National Health Insurance Scheme (*Jaminan Kesehatan Nasional, JKN*). Unlike primary care, private investments in secondary and specialized care are dominated by hospital groups, including Siloam, Hermina, Mitra Keluarga, and Awal Bros. Despite its recent expansion, this subsector remains relatively small by international standards and has considerable scope for further growth. The diagnostics sector is similarly concentrated. A few specialized groups, including Prodia, BioMedika, and Paramita, dominate private service provision, and there is ample room to increase investments to meet rapidly rising demand.

Fostering greater private participation in the health sector will require addressing several key regulatory and non-regulatory constraints. The government lacks a clearly articulated strategy for private involvement in health services. The supply of skilled health professionals is inadequate across the sector. Regulatory restrictions largely prevent foreign healthcare workers from filling the gap, and foreign investment restrictions slow the expansion of private service provision. Regulations on e-health services

⁹⁸ Investment Coordinating Board, 2018.

are unclear and, in some cases, overly restrictive, while the accreditation system for hospitals and primary care providers requires substantial improvement. The Social Health Insurance Agency (*Badan Penyelenggaraan Jaminan Sosial – Kesehatan*, BPJS-K) does not fully utilize strategic purchasing to drive improvements in service provision and quality. As the BPJS-K is the largest source of demand for private providers, its sustained and increasing financial deficit may constrain the ability of private providers to plan their business strategies. Finally, deficiencies in the policy framework for PPPs further inhibit investment in private health services.

3.5.2 Education Technology (EdTech)⁹⁹

Over the past several decades, the government has significantly expanded access to education, yet Indonesia’s learning outcomes continue to lag those of comparable countries. In addition to much-needed improvements in the quality of public education spending, the increased use of EdTech could enable the education sector to rapidly improve outcome indicators. Globally, the private sector has driven the rise of EdTech and especially the development of products that are commercially viable. In India, for example, the MindSpark software individually customizes educational content to match the level and rate of progress of each student, while Byju improves learning by increasing access to high-quality teachers. In the United States, Coursera provides an online platform for acquiring a bachelor’s or master’s degree. In China, VIPKid connects learners with English-speaking tutors in the United States and Canada.

The following overview of the Indonesian EdTech startup ecosystem draws on three main sources of information. The first is publicly available data. The second is information collected via an online questionnaire sent to 60 EdTech players, who together representing the vast majority of the major players in the subsector. The third is 18 structured, in-depth face-to-face interviews. The analysis reveals that the Indonesian EdTech sector is starting to catch up with the global frontier, driven by the growth of platforms based on successful international models. These include Harukaedu (online university degrees), Ruangguru (interactive e-learning for K-12 students) and Cakap by Squire (language tutoring).

Indonesian EdTech products fall under three main categories. These include learning products for students, teaching and student-management products for educators, and administration products for educational institutions. Companies like Ruangguru, Zenius, and Quipper develop autodidactic e-learning content, interactive learning platforms, study tools for K-12 students, and online services to help students with assignments and test preparation. Companies like Arsa Kids, Digikids, and Educa Studio develop game-based and blended-learning experiences, including interactive storybooks and mobile apps designed to boost the effectiveness of early childhood educators.

The Indonesian EdTech sector is still in its nascent stage, and almost all firms exhibit high levels of product and market experimentation. Among the EdTech firms surveyed, 90 percent report changing their original business models to improve efficiency and/or address newly identified gaps in the education sector. Most Indonesian EdTech firms provide some features or content for free or offer free trial periods for their products. Most free users do not upgrade to paid accounts after the trial period ends, which contributes to the EdTech sector’s low profitability. However, early losses are a common feature of many technology-intensive fields.

Most Indonesian EdTech products and services target junior high school, senior high school, higher education, or professional upskilling. Due to challenges reaching some consumer segments, especially

⁹⁹ This is drawn from the accompanying deep dive, i.e. World Bank Group (2019b).

young children, few EdTech products target primary or pre-primary education. While older consumers are easier to reach, this focus on later school years is problematic, as returns to learning decrease with age.¹⁰⁰ Most EdTech firms directly target students, while less than one-third of survey respondents reported targeting parents, and only a handful targeted teachers. However, parents and teachers play a key role in the dissemination of EdTech products, and a failure to reach them may inhibit firm profitability. Finally, the EdTech subsector also produces a limited range of technical and vocational training products.

Funding poses another important challenge for Indonesia's EdTech subsector. Most of the surveyed firms reported acquiring funding from more than one source, the most common of which being angel investors. Interviews with venture-capital firms and other investors suggest that the EdTech sector has yet to garner significant attention. The surveys also found that investors generally perceived EdTech as being largely composed of low-yielding social enterprises with less profit potential than other technology startups. However, the available data indicate that the Indonesian EdTech sector has considerable untapped market potential, as it still lags far behind other emerging economies such as China and India. In 2017, around half of all EdTech companies in the world that raised more than US\$100 million in capital were in China, and China's EdTech sector is projected to grow by 20 percent per year over the next several years.¹⁰¹ Similarly, the Indian online education sector is expected to grow by about 800 percent between 2016 and 2021.¹⁰²

The Indonesian EdTech subsector faces major bottlenecks that prevent it from replicating the successes of similar subsectors in other emerging economies. Supply-side constraints include: (i) limited access to funding; (ii) high marginal costs, especially to acquire and retain new customers; and (iii) a shortage of qualified talent to develop new products and services. Demand-side constraints include: (i) limited willingness to pay among consumers, especially schools and parents; (ii) a lack of digital literacy among education providers and other potential consumers; and (iii) weak digital infrastructure and online connectivity, particularly in remote areas. These bottlenecks are compounded by the structure of the public education system, in which the local and central governments have overlapping responsibilities regarding the acquisition of new educational tools, as well as limited capacity to evaluate the potential of EdTech products and weak incentives to innovate. Finally, Indonesia's underdeveloped consumer-protection regulations, particularly on data security and privacy, could put student and school data at risk.

3.5.3 Financial Technology (FinTech)¹⁰³

FinTech has emerged as a key tool for expanding financial inclusion in developing countries. Indonesia's vibrant and dynamic FinTech subsector is rapidly transforming financial services across the country. Technology startups, established technology firms, commercial banks, and mobile-network operators are offering a growing range of FinTech services to individuals and MSMEs. Technology startups are among the most important players in the FinTech subsector, and they are driving the growth of digital payments and digital lending.

Digital payment services is a small but rapidly growing industry in Indonesia. Service providers include banks and FinTech startups falling under the following categories: e-money issuers, e-wallet providers, payment-gateway operators, merchant acquirers, switching providers, and money-transfer services. Bank Indonesia is responsible for regulating the digital-payments industry. It requires all payment service providers to be licensed, and it is working to improve interoperability between service providers. Bank

¹⁰⁰ Heckman (2006).

¹⁰¹ Adkins (2018); Liu (2018).

¹⁰² KPMG (2017).

¹⁰³ World Bank Group (2019c).

Indonesia also launched the LKD program to increase FinTech access through the use of digital financial services agents.

Digital lending includes both partnerships between existing firms and the creation of new FinTech platforms. Most FinTech platforms operate as peer-to-peer (P2P) lending systems that match borrowers and investors. To operate effectively, digital lending platforms require: (i) know-your-customer (KYC) and digital identity services and (ii) credit-risk assessment mechanisms. The OJK regulates the digital lending industry and imposes registration and licensing requirements, capital thresholds, maximum loan amounts, limits on foreign ownership, and credit insurance requirements.

Multiple policy and regulatory constraints inhibit the expansion of FinTech products and services, and key challenges involve agent networks, KYC and digital identification systems, and P2P lending. Agent networks are vital to the distribution of digital financial products, but three regulatory barriers limit the effectiveness of agents: (i) under the LKD program, FinTech firms are only allowed to use agents that are legal entities, not individuals; (ii) the LKD does not allow the use of third-party agent-network managers; and (iii) agent exclusivity is limited to a single service provider in the OJK's *Laku Pandai* branchless banking program. Direct access to the national population database (SIK, managed by the Ministry of Home Affairs) is limited to selected government entities and companies. In addition, most FinTech firms cannot use the Population Information Database (*Sistem Informasi Administrasi Kependudukan*, SIAK) to authenticate digital identity, which makes it difficult to provide KYC services. Some P2P lending regulations require further clarity and may negatively impact the growth of P2P lending platforms, including licensing processes, automated/programmable lending, trust frameworks, debt collection, taxation, and resolution plans. As Indonesia's P2P lending market matures, the securitization of loans could facilitate its expansion, but current regulations do not allow this. Finally, non-regulatory barriers further limit the expansion of FinTech, including low levels of digital literacy, deficiencies in internet and mobile infrastructure, a lack of skilled workers, limited interoperability of digital payment systems, and technical issues in the credit market. While this list is not exhaustive, these are major constraints on the expansion of FinTech.

4. Reforms to Accelerate Private-Sector Development

Unlocking the potential of the Indonesian private sector will require closing the gaps in competition, human capital, infrastructure, and finance described above. This section discusses policy reforms designed to alleviate binding constraints on private-sector growth and development. An in-depth look at health services, EdTech, and FinTech highlights the potential for private-sector led strategies to overcome Indonesia's limited stocks of financial and human capital. .

4.1. Closing the Competition Gap¹⁰⁴

The competition gap undermines Indonesia's competitiveness and limits private-sector participation in export markets and international value chains. Closing this gap will require a range of policy measures, most of which can be implemented in the short term. Key reforms include reducing import barriers, implementing ambitious FTAs, revising the DNI, reducing regulatory uncertainty, and revamping the competition framework.

Substantial reductions in both tariff and nontariff import barriers could expand the availability and reduce the cost of productive inputs, enabling the development of more competitive and sophisticated exports. Recent increases in import tariffs should be reversed, particularly those affecting intermediate inputs, and the authorities should thoroughly review the conditions that justify anti-dumping tariffs. The government's efforts to reduce NTMs should prioritize the most burdensome nontariff barriers based on an assessment of opportunities to reduce their coverage across goods and the costs of applying them. For example, a review of the Indonesian National Standards certification should evaluate the costs and benefits of compulsory certification for the products subject to it and identify ways to reducing the cost of certification. Another option would be to replace the cumbersome third-party certification process under the Indonesian National Standard (*Standar Nasional Indonesia, SNI*) system with self-certification by producers whose products pose no significant health and safety risks. In line with international best practices, the government should consider eliminating pre-shipment inspections, which currently apply to over 30 percent of imports.¹⁰⁵ In addition, the government should increase the transparency of the agencies involved in the administration of these measures by, for example, eliminating the recommendation letters required to import industrial inputs. These letters afford a high degree of discretion to the ministries, increasing the costs and uncertainty involved in importing without generating any clear benefit.

FTAs provide an external mechanism to accelerate domestic trade and investment reforms while expanding opportunities in export markets. However, FTAs are not a substitute for unilateral reforms. While Indonesia has recently signed FTAs with Australia and with the European Free Trade Association block, other important agreements are still being negotiated, including the EU Comprehensive Economic Partnership Agreement and the Regional Comprehensive Economic Partnership, which involves 16 Asian economies.¹⁰⁶ The inclusion of ambitious investment chapters in these agreements could help Indonesia attract foreign investment, as several key bilateral investment treaties have expired.

¹⁰⁴ This section draws heavily on World Bank (2018).

¹⁰⁵ UNCTAD (1994)

¹⁰⁶ Based on dynamic general equilibrium modeling, Cali et al. (forthcoming) suggest that both agreements would have positive effects—particularly the EU agreement, which would significantly reduce bilateral tariffs and NTMs. The study suggests that Indonesia could also benefit from joining the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, which has replaced the original Trans-Pacific Partnership agreement.

Relaxing restrictions on investment would accelerate private-sector growth and help close the infrastructure gap. The DNI should be revised to ease investment restrictions, particularly foreign-equity limits, which affect over one-quarter of all economic sectors. The World Bank estimates that removing foreign-equity limits in all sectors that are open to investment could generate an additional US\$4 billion and US\$2 billion in foreign and domestic investment, respectively.¹⁰⁷ This increase in investment would have an especially positive impact on the electricity and gas supply, paper products, construction, tourism, and food-service industries. Further DNI reforms should target sectoral reservations for MSMEs and local-content requirements. The former creates perverse incentives for firms to remain small and prevents large investors from contributing to the growth of certain sectors, while the latter are less effective than positive incentives, such as tax breaks and advantages in public procurement. Some of these restrictions must be addressed through revisions to laws, such as the Horticultural Law and the Education Law, while other require amendments to sectoral regulations, such as local-content requirements for electronics. Over the longer term, policymakers should review local government regulations, especially at the district level, that may deter investment.

Revising the existing Competition Law (no. 5/1999) will be crucial to improve the ability of Indonesia's competition framework to identify and sanction anticompetitive behavior. Parliament is discussing revisions to the law designed to enhance its effectiveness at deterring anticompetitive behavior by firms. The KPPU requires stronger tools to enforce regulations against collusion and cartelization, including the power to conduct unannounced searches,¹⁰⁸ the ability to impose higher maximum fines and other sanctions, the latitude to grant leniency to businesses that cooperate with investigations, and the means to prevent anti-competitive mergers.¹⁰⁹ The revised law should also clarify the application of administrative and criminal sanctions on firms and individuals, explicitly define “business actor” to include all legal entities operating as a single economic unit, and introduce a settlement mechanism to improve the efficiency of the enforcement process.

Over the medium term, mainstreaming competition considerations in the policy process will be crucial to ensure that regulations do not unduly restrict competition. Many Indonesian regulations deter market entry and restrict imports, which encourages market dominance and facilitates cartel formation. To enhance the effectiveness of the regulatory framework, the authorities should implement Presidential Instruction No. 7/2017, which mandates that coordinating ministries vet new regulations and that implementing ministries conduct an impact analysis and hold broad-based public consultations regarding the proposed reforms. Revisions to the 2011 Law of Making Laws could improve future competition policymaking. The KPPU should be included in the consultation process to ensure a systematic assessment of regulatory impacts on barriers to entry, expansion, and competition. The KPPU and sectoral regulators could also refine their assessment methodology to identify current regulations and interventions that hinder competition and recommend alternatives designed to minimize market distortions.

Strengthening the KPPU's technical capacity to enforce competition laws and advocate for pro-competition policies will be necessary to ensure the long-term success of these reforms. To fulfill its mandate, the KPPU will require improved analytical and investigative capacity, especially if the revised competition law entrusts the KPPU with greater investigative and deterrence powers. The KPPU should also streamline its internal procedures for managing cases, making decisions, and monitoring compliance.

¹⁰⁷ This computation is based on the estimated response of investments to foreign equity limits from the empirical model mentioned above and described in World Bank (2017a).

¹⁰⁸ To gather evidence of anticompetitive practices.

¹⁰⁹ By moving from the current post-merger to a mandatory pre-merger notification regime; and clarifying the standard of theory of harm and the definition of merger (as combining two or more previously independent economic units through a lasting change in control).

An improved policymaking process and the introduction of a regulatory oversight body will be needed to reduce regulatory uncertainty and improve the quality of competition policies. Compulsory regulatory impact assessments and a simplified process for the incorporation and operation of companies should be complemented by the establishment of a regulatory oversight body designed to promulgate good regulatory practices across the central government. Over the longer term, introducing compulsory public consultation standards into the regulatory process and providing incentives for local governments to improve business licensing could further enhance the competition framework.

4.2. Closing the Human-Capital and Infrastructure Gaps

Closing both the human-capital and infrastructure gaps solely through public spending would require a vast increase in fiscal resources coupled with greatly enhanced expenditure efficiency at the sector level. The government would need to dramatically improve both fiscal revenue collection and the impact of public expenditures, particularly spending on health, education, nutrition, and infrastructure. For reasons of space and scope, this report does not examine public spending, but instead focuses on the private sector's potential to help close these gaps.¹¹⁰

As a provider of both financing and expertise, the private sector has a critical role to play in bridging the human-capital and infrastructure gaps. The government estimates that the private sector will need to contribute about 37 percent of the RPJMN's US\$415 billion investment target. In addition to being a source of financing, the private sector can help implement infrastructure projects and expand the supply of health and education services more cost-effectively than traditional government procurement, yielding gains in operational efficiency and higher service quality for end users.

4.2.1. Closing the Human-Capital Gap

While closing the human-capital gap will require enhanced public expenditure efficiency, fostering greater private participation in the health and education sectors could build Indonesia's human capital at no fiscal cost. Given an appropriate regulatory framework, the private sector could help ensure that the supply of healthcare services meets the country's burgeoning demand. As noted above, rising income levels, combined with demographic and epidemiological transitions, are increasing pressure on the health system, and public-sector providers are already strained. The private sector could also introduce efficiency improvements and technological innovations in areas such as digital health, telemedicine, diagnostics, and radiology. Similarly, facilitating the growth of the EdTech subsector can improve educational outcomes, as demonstrated by the success of MindSpark, Byju, VIPKid and other products.

While investments in health and education are necessary to build Indonesia's human capital over the long run, in the short run admitting a larger number of highly skilled foreign professionals could alleviate the shortage of critical workforce skills, which is a key constraint on firms' competitiveness. The reforms initiated by the recent Presidential Regulation No. 28/2018, which deals with worker permits, has not yet been fully implemented. Moreover, several of the most restrictive requirements on hiring foreign professionals remain in place, including the need for governmental approval of plans for employing foreign workers and the stringent foreign-to-domestic worker ratios. The government should consider relaxing these requirements, which have contributed to Indonesia having one of the smallest shares of foreign workers in the region at just 0.06 percent of the total workforce.

¹¹⁰ Other analytical work has examined the role of the government's revenue and expenditure policies in building human capital and addressing the infrastructure deficit in Indonesia. See: World Bank (2019a) for fiscal policy reforms; World Bank (2018d) and (2019d) for education policy reforms; Tandon et. al. (2016), Rajan et al. (2018) and Hafez et al. (forthcoming) for health policy reforms; and World Bank (2018f) for policies to fight stunting.

The government could also provide incentives to firms to train their workers. The scarcity of on-the-job training by Indonesian firms and the positive externalities that such training would likely produce highlight the importance of evaluating potential training incentives. These incentives could include tax breaks to cover training costs, the provision of training to the domestic workforce as a requirement for foreign-worker visas, or the possibility of recovering part of the cost of training in the event that trained workers voluntarily leave the firm.

4.2.2. Closing the Infrastructure Gap¹¹¹

Reforming the role of SOEs could create new opportunities for private investment in infrastructure. The government should strive to increase the operational and financial efficiency of SOEs, harden their budget constraints, and issue more competitive tenders for infrastructure projects. First, the Ministry of State-Owned Enterprises should reform SOE incentives to encourage SOEs to mobilize private capital and improve efficiency. Second, the Public Service Obligation and related operating subsidy formulas should be revised to include efficiency benchmarks that encourage cost-effective service delivery. Third, joint-venture agreements should be reviewed and amended to include revenue-sharing arrangements and align the operational and financial efficiency of SOEs with that of their private-sector partners. Fourth, all financially viable new projects should be open to competitive bidding. Finally, existing infrastructure assets held by SOEs should be leveraged to provide an additional source of financing for new projects and benefit from private efficiencies. The government should encourage SOEs to pursue asset recycling within an overarching framework that maximizes value and ensures fiscally prudent decision-making. The government should also unbundle the national electric utility over the longer term.

Getting prices right is crucial to attract private investment in infrastructure. Tariffs must reflect operating costs and new financing objectives while incorporating affordability and equity criteria. Tariff reforms will enable the government to better leverage public funds by reducing or eliminating the need for subsidies and increasing the private sector's ability and willingness to invest in infrastructure projects. A careful assessment of each infrastructure sector and its market segments will be necessary to design a tariff structure that balances operational cost recovery and investment financing with the need to ensure affordability for end users, and a World Bank analysis of the electricity sector is already underway. Once the assessment is complete, an independent and capable regulator with a clear mandate and adequate resources must progressively phase in tariff adjustments over time. While end-user tariffs are the cornerstone of sustainable financing, the government should also cultivate indirect or secondary revenue sources. As tariff reform is politically sensitive, implementing the policy adjustments necessary to attract private sector investment to help close the infrastructure gap will require substantial political will.

Eliminating fuel subsidies will shift incentives away from fossil fuels and encourage the use of cleaner energy sources, while also enhancing Indonesia's competitiveness and reinforcing its resilience to external shocks. Despite previous efforts to reform fuel subsidies, the government estimates that in 2018 fuel subsidies accounted for about 5 percent of budgeted central government expenditures, or 0.7 percent of GDP. Eliminating fuel subsidies would promote the use of cleaner sources of energy and could spur efficiency gains in the industrial sector by encouraging investment in more efficient productive technologies. The fiscal resources currently devoted to fuel subsidies could be reallocated to finance priority expenditures on critical infrastructure. While eliminating fuel subsidies would generate some short-term inflationary pressures, rising domestic fuel prices would also reduce demand for fossil fuels, attenuating Indonesia's reliance on imported oil and gas and improving the country's external balance.

¹¹¹ This subsection draws heavily on World Bank (2018e).

Strengthening the laws, regulations, and institutions that underpin private investment in renewable energy is vital to the long-term sustainability of the Indonesian energy sector. The government should focus on reforms designed to: (i) improve the framework for power-purchase agreements with independent power producers to enhance risk allocation and integrate bankability provisions, and (ii) reform regulations to promote private-sector engagement in the gas sector. Enhancing the investment climate would attract the interest of private firms in pioneering renewable energy projects based on blended finance and investing in liquefied natural gas infrastructure in Western and Eastern Indonesia. While Indonesia has recently started developing municipal waste-to-energy facilities in partnership with the private sector, further improvements to the PPP framework for these projects are needed.

To enhance digital connectivity the government should promote both active and passive sharing of backbone and last-mile infrastructure, including by harmonizing rights of way for the last mile. Providing additional spectrum to mobile operators would strengthen the performance of mobile broadband.¹¹² Meanwhile, the authorities should implement regulations requiring that telecom service providers share all passive infrastructure for fixed broadband, including ducts, poles, access points to buildings, and other rights of way. The government should also mandate cross-sector infrastructure sharing: for example, the construction of new roads should be accompanied by the installation of a duct for fiberoptic cables. Finally, the Universal Service Obligation Fund should accelerate the completion of the Palapa Ring fiberoptic backbone and the deployment of base stations in villages that currently lack mobile services.

The government should enhance the quality of PPPs by strengthening the decision-making framework for PPP-eligible projects, building the capacity of public agencies to design PPP projects and assess their fiscal implications, enhancing interagency coordination and promoting efficiency of the use of government support, and developing more effective concession agreements and tender documents. First, the decision-making framework and capacity to prepare projects could be strengthened by requiring: (i) the contracting government agency to meet clear project-data requirements; (ii) the Ministry of National Development Planning (*Badan Perencanaan dan Pembangunan Nasional*, Bappenas) to more efficiently screen proposals; (iii) the Ministry of Finance to be proactively engaged in the preparation process; and (iv) the project development facility to receive payments from successful projects, enabling it to become partially self-financing. Second, the government should improve its coordination mechanism across agencies—possibly through the Ministry of Finance—and allow the use of viability gap financing and availability payments in the same project. Third, the PPP Unit at the Ministry of Finance should lead the development and implementation of standard concession agreements and tender documents that conform to international best practices.¹¹³ In addition, back-to-back arrangements of project contracts (e.g. the waste-to-energy project contract) should be improved before commercial investment is secured. A recent World Bank report¹¹⁴ provides a complete set of recommendations for strengthening institutions, enhancing project preparation, and managing contingent liabilities related to PPP projects.

¹¹² Prime bands that should be released for mobile broadband use include: the 700 MHz band (90 MHz of mobile spectrum) for mobile broadband in the rural areas; the 2.6 GHz band to add capacity in urban centers; the 3.4 – 3.8 GHz band to add capacity on top of the 2.6 GHz band and enable the early introduction of 5G; and the mmWave spectrum.

¹¹³ World Bank (2018e) identifies a potential pipeline of bankable PPP and commercially financed projects, including the development of: (i) a further 1,700 kilometers of the national toll road network; (ii) a national urban transport program supporting mass-transit investments in up to 20 cities; and (iii) a geothermal risk-mitigation facility to unlock up to US\$3.5 billion in commercial and private financing for geothermal exploration. Through sector-oriented programs, the government can bring more projects to market more quickly by using a common structure, tendering process, and financial support mechanism.

¹¹⁴ InfraSap (2018).

4.3. Closing the Financial Gap¹¹⁵

Increasing the depth, efficiency, and resilience of the financial system will be critical to close the financial gap. The Indonesian financial system is too small to serve the needs of a growing economy. Financial services are too costly, and there is still ample room to improve the efficiency of the system. Moreover, strong oversight will be crucial to mitigate the risk of a financial crisis, and improved risk-management practices could enhance the system's resilience to financial and nonfinancial shocks.

The further development of FinTech subsector could expand financial access and deepen the financial sector, but several barriers constrain its growth. Indonesia's FinTech subsector has expanded rapidly in recent years, driven by digital payment and lending services, which has helped broaden and deepen the financial sector. Nevertheless, multiple regulatory and non-regulatory factors still inhibit FinTech's development. Section 4.4, below, presents policy options for addressing these constraints.

Deepening the financial system will increase the availability of funds and expand access to financial services. Accomplishing this objective will require a set of coordinated policy actions in various areas, including: (i) increasing physical and digital outreach, including through the development of the FinTech subsector, to enable more individuals and MSMEs to access and use financial services; (ii) broadening the range of financial products, including the securitization of infrastructure assets or revenues, covered and project bonds, and supply-chain finance, by strengthening the regulatory and taxation regimes; and (iii) mobilizing long-term savings by improving the governance, efficiency, and sustainability of the pension industry, integrating non-salaried and informal workers into the pension system, and applying more generous tax incentives to encourage long-term savings via pension and insurance programs.

Increasing the efficiency of the financial sector will help channel savings to productive investment opportunities more quickly, securely, and transparently. Accomplishing this goal will require: (i) promoting competition in the financial sector and facilitating the development of FinTech by leveling the playing field for all financial institutions and reforming government policies and interventions; (ii) enhancing consumer protections and transparency through financial education designed to inform consumers of their rights and responsibilities, coupled with market-conduct supervision of financial service providers; and (iii) strengthening financial infrastructure through reforms and investments designed to establish interoperable and interconnected payment-system infrastructure and an inclusive credit-information system that effectively reaches MSMEs and other underserved segments.

Finally, increasing the resilience of the financial system will enable it to withstand financial and non-financial shocks. Achieving this outcome will require: (i) improving financial-sector oversight through integrated supervision and the harmonization of legal and regulatory frameworks across sectoral authorities, including OJK and Bank Indonesia; (ii) strengthening the resolution and crisis-management framework by enabling the Depot Guarantee Board (*Lembaga Penjamin Simpanan*, LPS) to fulfill its role as the deposit-insurance agency and resolution authority and by building the capacity of the Financial System Stability Committee (*Komite Stabilitas Sistem Keuangan*, KSSK) secretariat to coordinate the authorities responsible for crisis prevention and financial-sector oversight.

¹¹⁵ The reforms in this area draw from the work in World Bank (2017c) and World Bank (2019b).

4.4. Closing the Sectoral Gaps

4.4.1. Solutions for Health Services¹¹⁶

Targeted policy actions will be necessary to address the specific constraints facing the health sector. To fully leverage the BPJS-K's strategic-purchasing capacity, the authorities must clarify the roles and responsibilities of the Ministry of Health and BPJS-K with regard to strategic purchasing. Expanding the use of performance-based capitation and hospital payments would incentivize improvements in service quality across the health sector, and the authorities should introduce incentives for service providers to target underserved areas and populations. The Ministry of Health should develop regulations governing the referral process and reform health-information systems to make service quality more patient-centric, transparent, and evidence-driven. The guidelines on quality of care could be improved by introducing clinical pathways, instituting clinical audits, strengthening monitoring mechanisms, and embedding quality-based criteria in the reimbursement formula for healthcare providers.

The sustained and increasing financial deficit of the BPJS-K underscores the urgency of measures to restore its financial equilibrium. The government should simplify the tobacco tax structure, increase tobacco excise taxes at the national level, and earmark a share of tobacco tax revenue for the BPJS-K. JKN premiums should be updated based on actuarial analysis, and the government should subsidize premiums for informal workers to reduce adverse selection by attracting and retaining a larger pool of healthy members. The authorities should introduce an explicit benefits package commensurate with available resources and replace open-ended hospital payments with a budget and/or volume ceiling.

The inadequate supply of human resources is a major challenge across the healthcare sector. To address the shortage of both general practitioners and specialists, the authorities should expand the capacity of the tertiary education sector with a focus on healthcare programs. In the near term, the government should relax restrictions to the hiring of foreign health professionals and facilitate the process of recognizing the medical qualifications of Indonesian physicians who studied abroad.

Restrictive establishment rules for private healthcare providers, especially foreign providers, constrain the supply of health services. The Ministry of Health should eliminate the requirement that local governments provide a recommendation letter to authorize the establishment of hospitals and replace it with a transparent set of investment criteria endorsed by local governments. The Ministry of Health should also remove restrictions on the scope of services provided by foreign hospitals. The president, via a decree on the DNI, should increase foreign-equity limits to 100 percent in all healthcare subsectors.

The lack of a clearly articulated strategy for private-sector engagement inhibits investment in the health sector. The Ministry of Health and the BPJS-K should prepare a database of private and public healthcare providers using multiple information sources. The Ministry of Health, the BPJS-K, and Bappenas, should prepare a private-sector engagement strategy, with specific actions in various subsectors, designed to close supply-side gaps by improving the quality, efficiency, and accessibility of health services.

An enabling policy framework for designing, managing, and monitoring PPPs could further increase the supply of healthcare and essential health infrastructure. The Ministries of Health and Finance, the BPJS-K, and Bappenas should establish an interagency coordination mechanism that incorporates the Indonesia Infrastructure Guarantee Fund, local governments, and public-private platforms for each sub-sector and identify a pipeline of high-impact PPPs that have attracted the interest of the private sector. The Ministry

¹¹⁶ The recommendations presented in this subsection are drawn from World Bank Group (2019a).

of Health and the BPJS-K should identify gaps that could be filled by the private sector, including PPPs, based on demand criteria (e.g., population dynamics, disease burden, utilization of services) and data on public and private health services. The Ministries of Health and Finance, the BPJS-K, and Bappenas should clarify their respective roles and responsibilities for designing and managing the PPP transaction process, managing and monitoring PPPs, and evaluating PPP outcomes.

The hospital and primary-care accreditation systems lack the capacity to meet BPJS-K empanelment requirements. The Ministry of Health should build the capacity of the Primary Health Facility Accreditation Commission (*Komisi Akreditasi Fasilitas Kesehatan Tingkat Primer, KAFKTP*) and enable it to become a fully independent institution. Meanwhile, the Ministry of Health should also build the capacity of the Hospital Accreditation Commission (*Komisi Akreditasi Rumah Sakit, KARS*) to meet the rising demand for hospital accreditation.

The Ministry of Health and the BPJS-K should develop data-privacy standards in consultation with stakeholders and submit data-privacy legislation to Parliament. The Ministry of Health and BPJS-K should develop protocols for sharing data that include adequate privacy protections and consider using digital health providers for data analytics and service delivery. The Ministry of Health and BPJS-K should also develop legislation to improve online access to prescription medications while maintaining the necessary safeguards. The Ministry of Health should lift restrictions on foreign telemedicine providers, specifically in the fields of pathology and radiology. Finally, the government should focus on upgrading mobile infrastructure in remote regions to expand the reach of digital health technologies.

4.4.2. Solutions for EdTech¹¹⁷

As in the health sector, the government should establish clear data-privacy and security standards for EdTech products. Inadequate safeguards have been a major issue in other markets and have contributed to a backlash against EdTech in some school districts. EdTech firms should also partner with academia and government to establish clear standards for performance and conduct transparent and rigorous evaluations of leading products. Government-backed verification of EdTech teaching and learning tools is crucial to increase trust and willingness of pay among potential customers.

As a successful EdTech sector generates positive externalities, the government should consider offering incentives for investors in products that have been proven effective. Such incentives could include tax breaks for investors or support to sector-specific startup incubators. Meanwhile, the government should continue investing in improved digital infrastructure and connectivity, particularly in underserved areas and communities.

Facilitating the expanded use of EdTech will require more effective engagement between the public and private sectors. Private firms need to better understand the needs of teachers, schools, and parents, while the public sector must become more effective at engaging with the private sector, clarifying its governance structure, and promoting PPPs for product development. The public education system could partner with EdTech firms to improve teachers' ability to deliver technology-focused content. An effective partnership with EdTech firms could also help the public education system update the content of the national curriculum to include technology-related subjects and competencies.

¹¹⁷ The recommendations presented in this subsection are drawn from World Bank Group (2019b).

4.4.3. Solutions for FinTech¹¹⁸

The FinTech sector faces a combination of regulatory and nonregulatory barriers. Regulatory barriers affect agent networks, e-KYC processes and digital identification, and P2P lending. Nonregulatory barriers include deeper constraints, some of which are common to multiple sectors and relate to the cross-cutting gaps described above, such as inadequate workforce skills, limited technological infrastructure, and low levels of financial literacy.

The government should allow nonbank financial institutions to recruit individual agents under the LKD program. Regulatory restrictions on the recruitment of individual agents significantly hinder the ability of nonbank financial institutions to reach underserved groups. Removing these restrictions will help create a level playing field with banks, which are already allowed to recruit individual agents.

The government should allow third-party agent network managers for both the LKD and Laku Pandai programs. Current regulations do not permit banks or nonbank financial institutions to use third-party agent network managers. However, these managers can greatly assist financial service providers in identifying agents and overseeing agent operations efficiently. In addition to agent recruitment and supervision, third-party agent network managers can also provide training, marketing support, liquidity management, and monitoring services.

The government should further improve the e-KYC process by making it easier for financial institutions to authenticate their customers using identity data held by the Ministry of Home Affairs with appropriate privacy and consent safeguards. The OJK and Bank Indonesia are working together to develop an e-KYC process that combines digital certificates with biometric recognition. This process is expected to be operational in 2019 and should greatly accelerate the opening of financial accounts. Enabling the use of automated biometric authentication against the identity data in the SIAK database of the Ministry of Home Affairs – as well as other methods of authentication – would allow financial institutions to verify the customer’s identity more efficiently than would be the case if the process relied solely on physical identity documents.

Expanding the use of P2P lending platforms will require reforms in multiple areas, including licensing, automated/programmable lending, resolution plans, the trust framework, and the securitization of loans. The OJK should clarify and streamline the licensing process for platforms that have been registered for at least one year. The OJK should also clarify the legal definition of P2P lending and specifically address programmable lending in sectoral regulations. The OJK should require P2P platforms to have a resolution plan and designate a backup third-party servicer to service outstanding loans in the event the P2P lending platform goes bankrupt or ceases operations. Bank Indonesia and the OJK should introduce a trust structure that would better protect users of P2P platforms and other FinTech products. Finally, the OJK should consider modifying P2P regulations to allow the securitization of loans, which could boost capital investment in P2P lending platforms.

Additional policy measures should be implemented to address nonregulatory barriers to the development of the FinTech subsector. Greater regulatory consistency and coordination could enable partnerships between FinTech firms and banks. These partnerships could, in turn, enable FinTech firms to assist with the distribution of cash transfers and other payments from the government to individuals. Participation in the ASEAN Financial Innovation Network (AFIN) industry sandbox could facilitate the development of strong partnerships between banks and FinTech services. Finally, incentivizing

¹¹⁸ The recommendations presented in this subsection are drawn from World Bank Group (2019c).

partnerships between large banks and other deposit-taking institutions could expand the availability of FinTech solutions in rural areas and among underserved populations.

Table 4.1: Matrix of Policy Recommendations

Reform area	Priority Recommendations (to be implemented within 1-3 years)	Medium- to Long-Term Recommendations
1. Closing the competition gap		
1.1 <i>Connecting Indonesian firms to international markets</i>	<ul style="list-style-type: none"> Eliminate import tariffs on key intermediate products Eliminate pre-shipment inspections Conclude EU CEPA and RCEP Eliminate letters of recommendation for imports of industrial inputs Replace third-party verification of product standards (SNI) with self-certification for products without health and safety risks 	<ul style="list-style-type: none"> Narrow the range of products covered by SNI requirements Increase the efficiency of NTMs by empowering INSW to review them Join ambitious FTAs with countries in which Indonesia currently lacks market access
1.2 <i>Enhancing competition by lowering barriers to entry in key sectors</i>	<ul style="list-style-type: none"> Raise foreign-equity limits on investments to 100 percent in the electricity and gas supply, paper products, construction, tourism, food services, and retail services subsectors. 	<ul style="list-style-type: none"> Review local government regulations that deter private investments Introduce tax and nontax incentive systems for firms to use domestic inputs
1.3 <i>Reducing regulatory uncertainty for investors</i>	<ul style="list-style-type: none"> Establish a regulatory oversight body to mainstream good regulatory practices across central government agencies and ministries 	<ul style="list-style-type: none"> Introduce public consultation standards and mandatory regulatory impact assessments via a Presidential Instruction Provide incentives for local governments to streamline the process of business licensing
1.4 <i>Increasing the effectiveness of competition policy</i>		<ul style="list-style-type: none"> Revise competition laws to strengthen the KPPU's ability to detect and deter anticompetitive behavior, and clarify the application of administrative and criminal sanctions Embed competition considerations in the policy process and strengthen the KPPU's technical capacity to enforce competition law and promote reform
2. Closing the Human-Capital Gap		
2.1 <i>Increasing the availability of critical workforce skills</i>	<ul style="list-style-type: none"> Ease restrictions on work permits to temporarily fill critical skills gaps 	<ul style="list-style-type: none"> Encourage the private provision of EdTech products to improve post-

Reform area	Priority Recommendations (to be implemented within 1-3 years)	Medium- to Long-Term Recommendations
	<ul style="list-style-type: none"> • Provide tax breaks and other incentives for firms to provide on-the-job training 	secondary education (see sectoral recommendations below)
2.2 <i>Improving the quality of health services and expanding access to healthcare</i>	<ul style="list-style-type: none"> • Increase the private provision of health services through targeted action (see sectoral recommendations below) 	<ul style="list-style-type: none"> • Continue to foster the growth of the private healthcare sector (see sectoral recommendations below)
3. Closing the Infrastructure gap		
3.1. <i>Reforming the role of SOEs to promote and enhance private investment in infrastructure</i>	<ul style="list-style-type: none"> • Restructure incentives to encourage SOEs to mobilize private capital and improve efficiency • Revise the Public Service Obligation and related operating subsidy formulas to include efficiency benchmarks 	<ul style="list-style-type: none"> • Review joint venture agreements to bring SOEs in line with private-sector partners • Apply competitive bidding to new, financially viable projects • Encourage SOEs to pursue asset recycling and make fiscally prudent decisions • Unbundle the national electric utility
3.2. <i>Getting prices right</i>	<ul style="list-style-type: none"> • Adjust tariff levels to reflect operating costs and financing needs while maintaining affordability for end users • Eliminate fuel subsidies 	<ul style="list-style-type: none"> • Establish an independent regulator with a clear mandate and resources
3.3. <i>Improving laws, regulations, and institutions to attract private investment in renewable energy</i>	<ul style="list-style-type: none"> • Improve the framework for power-purchase agreements with independent power producers 	<ul style="list-style-type: none"> • Revise regulations to promote private investment in the gas sector
3.4. <i>Strengthening digital infrastructure and expanding access to information technology</i>	<ul style="list-style-type: none"> • Provide additional spectrum to mobile operators • Create agreements for sharing all passive infrastructure among telecom service providers 	<ul style="list-style-type: none"> • Encourage competition in the fixed broadband market • Complete the Palapa Ring fiberoptic backbone and connect the remaining districts • Deploy base stations in villages that currently lack mobile services
3.5. <i>Enhancing the legal, regulatory, and institutional framework to support public-private partnerships</i>	<ul style="list-style-type: none"> • Improve concession agreements and tender documents • Strengthen back-to-back arrangements for project contracts 	<ul style="list-style-type: none"> • Enhance interagency coordination and improve the efficiency of government support instruments • Strengthen the decision-making framework to prioritize private financing and PPPs • Build the country's capacity to prepare PPP projects and assess their fiscal implications

Reform area	Priority Recommendations (to be implemented within 1-3 years)	Medium- to Long-Term Recommendations
4. Closing the Financial Gap		
<i>4.1. Increasing the size of the financial system</i>	<ul style="list-style-type: none"> Promote the expanded use of financial technology to increase access to financial services (see sectoral recommendations below) Reform the regulatory and tax regimes to encourage the use of innovative financial products 	<ul style="list-style-type: none"> Mobilize long-term savings by: (i) improving the governance, efficiency, and sustainability of the pension industry; (ii) introducing schemes to facilitate non-salaried/informal workers into the pension system; and (iii) applying more generous tax incentives to long-term savings
<i>4.2. Improving the efficiency of the financial system</i>	<ul style="list-style-type: none"> Promote competition among banks Establish interoperable and interconnected payment system infrastructure Develop the financial-technology ecosystem (see sectoral recommendations below) 	<ul style="list-style-type: none"> Expand financial education to increase consumers' awareness of their rights and responsibilities, Implement market conduct supervision among financial services providers Establish an inclusive credit information system
<i>4.3. Increasing the resilience of the financial system</i>		<ul style="list-style-type: none"> Strengthen the resolution and crisis management frameworks Improve financial-sector oversight
5. Closing the Sectoral Gaps		
5.1. Health Services		
<i>Strengthening the Social Insurance Administration Organization to expand the supply of private health services</i>	<ul style="list-style-type: none"> Improve performance-based capitation and hospital payments to boost the supply of private (and public) health services Update National Health Insurance (JKN) premiums to reflect actuarial analysis Introduce a benefits package that is commensurate with available resources 	<ul style="list-style-type: none"> Improve the guidelines on quality of care Subsidize premiums for the informal sector to address adverse selection by attracting and retaining a larger pool of healthy contributors
<i>Increasing the availability of essential healthcare skills</i>	<ul style="list-style-type: none"> Relax restrictions on the hiring of foreign healthcare professionals Ease the process of converting the medical qualifications of Indonesian physicians who studied abroad 	<ul style="list-style-type: none"> Expand the capacity of the tertiary education sector to increase the domestic supply of highly trained health professionals
<i>Enhancing collaboration between the public health sector and private healthcare providers</i>		<ul style="list-style-type: none"> Prepare a private-sector engagement strategy, differentiated by sub-sector, to

Reform area	Priority Recommendations (to be implemented within 1-3 years)	Medium- to Long-Term Recommendations
		<p>improve healthcare access, quality, and efficiency</p> <ul style="list-style-type: none"> • Build the government's capacity to design, manage and monitor PPPs • Expand the capacity of the hospital and primary care accreditation systems to meet BPJS-K empanelment requirements
5.2. Educational Technology		
<i>Ensuring protection of consumers' data</i>	<ul style="list-style-type: none"> • Improve data privacy and security standards for education technology products 	
<i>Strengthening partnerships between the public education system and private education technology providers</i>	<ul style="list-style-type: none"> • Support the rigorous evaluation and eventual diffusion of effective education technology products 	<ul style="list-style-type: none"> • Update the national curriculum by adopting demonstrably effective EdTech tools • Clarify the governance and oversight structure for EdTech products • Promote PPPs for product development
5.3. Financial Technology		
<i>Strengthening digital identity protections for consumers</i>	<ul style="list-style-type: none"> • Implement cost-effective and accessible electronic know-your customer (e-KYC) processes, including the use of biometrics as appropriate • Enable digital identity and e-signature providers to access the national identification system under an appropriate regulatory framework 	<ul style="list-style-type: none"> • Introduce data-protection laws and regulations aligned with international best practices
<i>Supporting the distribution and uptake of financial technology products</i>	<ul style="list-style-type: none"> • Allow financial technology firms to employ Digital Financial Services (LKD) agents as individuals, not only as legal entities • Build partnerships between banks and financial technology firms to facilitate the distribution of Government-to-People (G2P) payments 	<ul style="list-style-type: none"> • Allow financial institutions to use third-party agent network managers for both Laku Pandai and LKD agents • Establish the necessary infrastructure to support real-time payments • Build better partnerships between banks and financial-technology startups by connecting them through the AFIN industry sandbox
<i>Encouraging responsible peer-to-peer lending</i>	<ul style="list-style-type: none"> • Expedite the licensing process for peer-to-peer lending platforms • Clarify data protections and authorized uses of data derived from mobile phones 	<ul style="list-style-type: none"> • Introduce provisions for resolution plans, backup servicing, and, potentially, scaling capital as loan liabilities increase • Clarify the tax treatment of peer-to-peer (P2P) lending activities

Reform area	Priority Recommendations (to be implemented within 1-3 years)	Medium- to Long-Term Recommendations
		<ul style="list-style-type: none">• Precisely define the standards for collections by P2P platforms, including monitoring and enforcement

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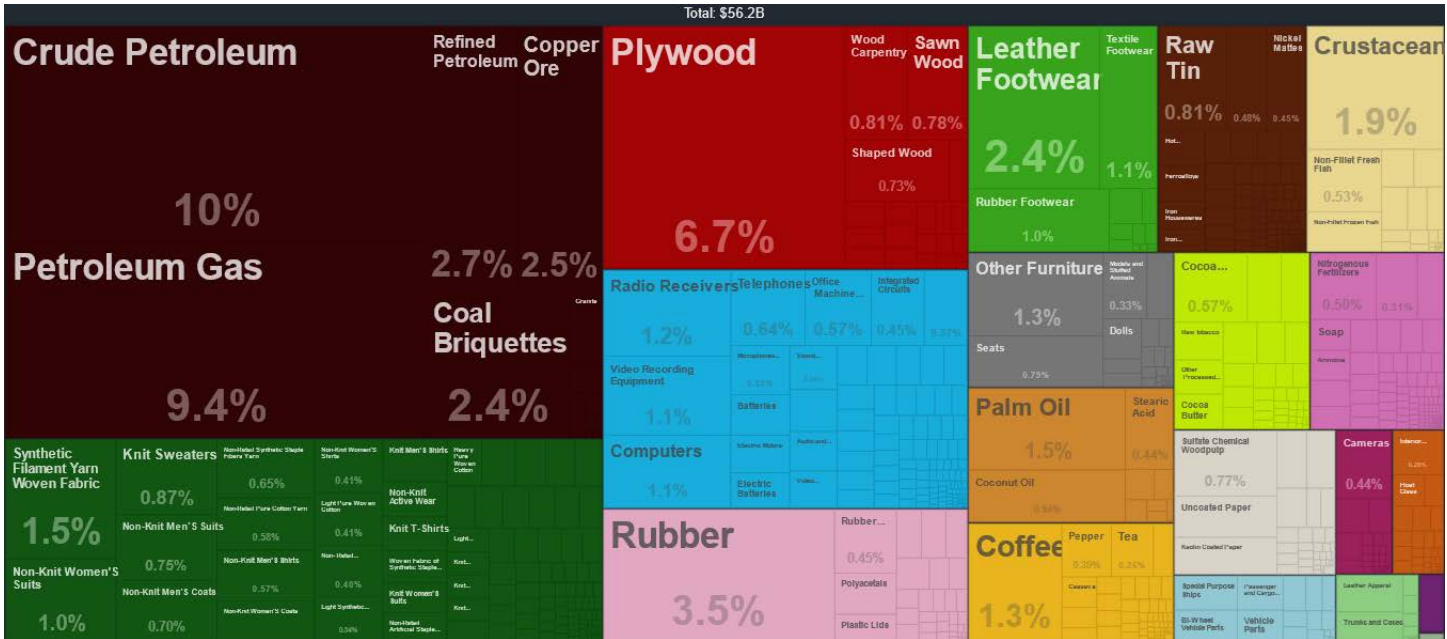
Appendix

Figure A1: The persistence of Indonesian export structure, 1996-2017

(a) Exports in 2017



(b) Exports in 1996



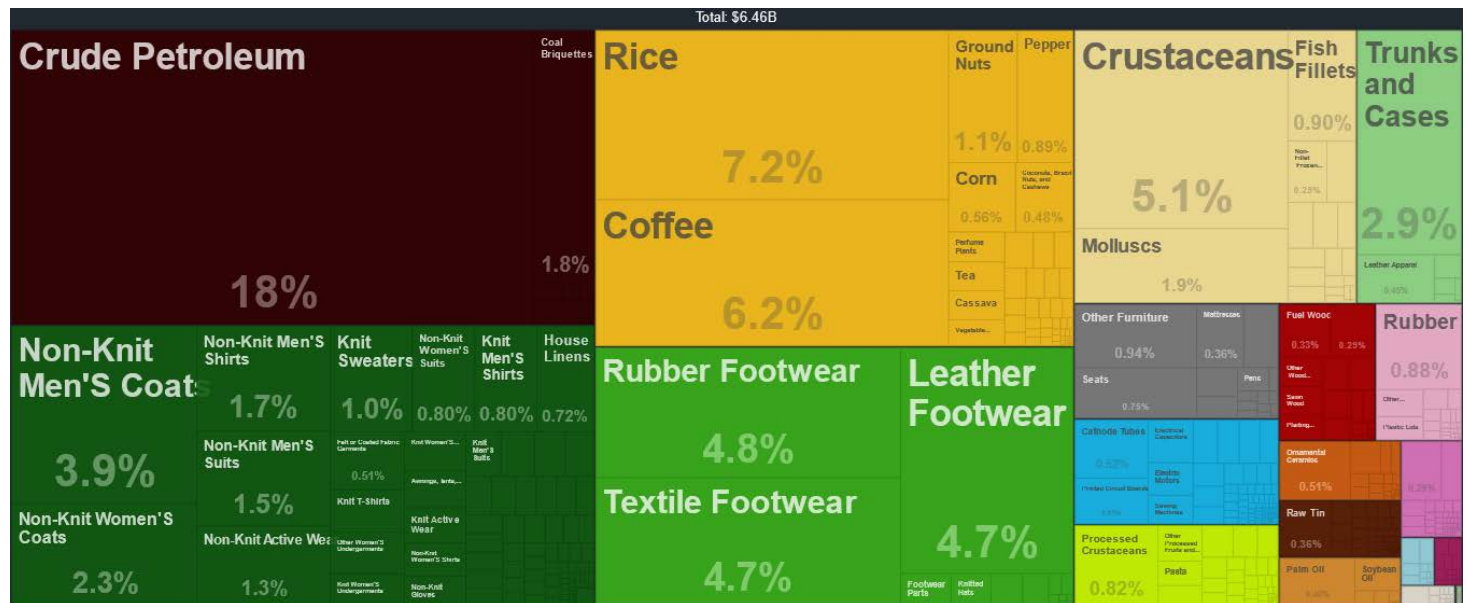
Note: data using HS4-1992 classification. Source: MIT Observatory of Economic Complexity

Figure A2: The changing nature of Vietnamese exports, 1996-2017

(a) Exports in 2017



(b) Exports in 1996



Note: data using HS4-1992 classification. Source: MIT Observatory of Economic Complexity