Ang Yen Chi | Lim Fong Kai | Li Kaiyuan, Kevin | Ryan Tan Yan Tong | Sriraman Pritheksh

EXECUTIVE SUMMARY

Under the Jokowi Presidency, infrastructure spending has been on a sustained increase, with efforts to partially fund projects via targeting foreign investors, albeit with concerns regarding loan financing risk, risks of budget overruns and the potential failure of alternative investment instruments, coupled with uncertainties regarding diplomacy and competition.

The infrastructure projects themselves have included enhanced connectivity via improved transport infrastructure, a goal for even development, and a growing focus to invest in comparative advantage and technologies with sustainability considerations. Given the context of Indonesia's infrastructure deficiencies and the Jokowi Government's economic goals, the infrastructure push has largely been beneficial.

CONTEXT OF INFRASTRUCTURE DEFICIENCIES IN INDONESIA

Infrastructure deficiencies have long plagued Indonesia. Urbanisation and economic development have outpaced infrastructural development, with the length of asphalt roads relative to the number of vehicles has fallen since the 1990s[1]. This has led to congestion and high transportation costs — estimated at $4.6 billion per year[2] — constituting a significant challenge for businesses operating in the country and in turn undermining the attractiveness of Indonesia's investment climate. Additionally, development has tended to be concentrated in Jakarta, with regions outside major cities being more prone to power outages[3]. Moreover, Indonesia's geographical location means ageing physical infrastructure is often damaged by natural disasters and harsh weather conditions like earthquakes and floods.

To address these challenges, the presidency of Joko Widodo (starting in 2014) has set out to build newer, higher-quality infrastructure, while targeting more even development across Indonesia.

OVERVIEW OF INFRASTRUCTURE PROJECTS

To date, there has been significant progress in infrastructure development under Jokowi compared to previous presidencies. Aside from ongoing landmark projects like the Jakarta-Bandung High-Speed Railway and the Trans-Sumatra Railway, 1700 km of toll roads were built — 8.7 times longer than those built during the Susilo Presidency — along with 18 ports and 21 airports[4], aimed at improving connectivity and logistics across the archipelago. The plan to shift Indonesia's capital from Jakarta to

[1] https://doi.org/10.1177/10245294211043355

[2] https://indonesiaexpat.id/news/jakarta-traffic-costs-65-trillion/

[3] https://www.indonesia-investments.com/business/risks/infrastructure/item381

[4] https://www.pwc.com/id/en/media-centre/infrastructure-news/september-2022/jokowi-builds-1700-km-toll-roads-2-1-times-the-length-of-the-previous-era.html

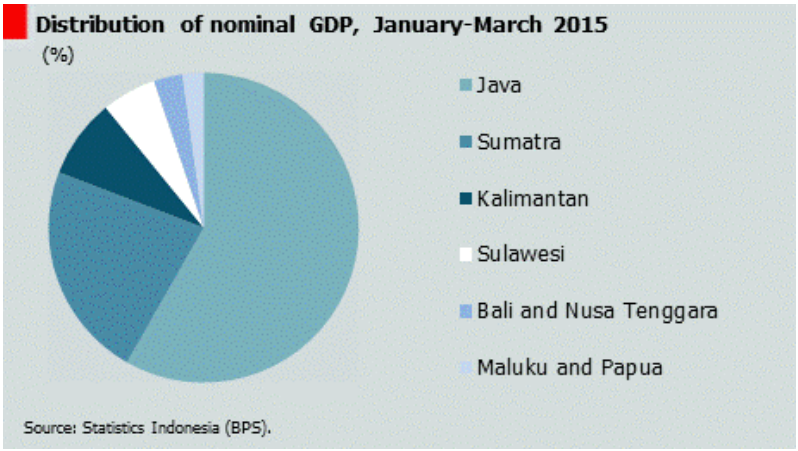
Nusantara in East Kalimantan is also noteworthy, as is the emphasis on environmental sustainability via investments in renewable energy[5] and green industrial parks[6].

INDONESIA'S ECONOMIC GOALS

In planning and building infrastructure projects, the Jokowi Presidency is likely to have three main economic goals in consideration.

First, increasing the productive capacity of Indonesia. The existing problems with congestion and logistical costs are in large part due to inadequate or ageing infrastructure, and addressing them is key to removing constraints to growth. Furthermore, prevailing skills and educational gaps in Indonesia's workforce — illustrated by Indonesia ranking below other middle-income economies like Vietnam and Thailand in assessments such as the Programme for International Student Assessment (PISA)[7] — meant investors and employers had previously struggled to source skilled workers[8], despite the large labour pool available in Indonesia. Therefore, as demand for semi- and high-skilled workers rises, growth in Indonesia will need to be supported by improvements to worker productivity. Accordingly, Jokowi's initiatives will not only need to increase and improve the level of infrastructure in Indonesia but also aim to enhance the quality of the workforce through skills training and technological transfer, to heighten productive capacity.

Second, reducing inequality. Inequality in Indonesia has been a growing problem, with the Gini index of inequality on a sustained rise before the Jokowi Presidency — from 29.5 in 2000 to 40.8 in 2013[9]. In particular, there has been marked regional inequality, with Java alone constituting 58.3% of the national nominal GDP in 2015, dwarfing other regions like Sumatra (10%) and Kalimantan (4%). Furthermore, low consumption growth from the poorest 40% in Indonesia indicates that parts of the population are lagging behind the overall growth of Indonesia, hindering the expansion of a consuming middle class and potentially threatening future national economic growth[10]. It is therefore important that infrastructure projects also contribute towards spreading out development across Indonesia and closing inequality gaps.



[5] https://en.antaranews.com/news/234525/jokowi-calls-on-steinmeier-to-develop-renewable-energy-potential

[6] https://www.afr.com/world/asia/joko-says-green-economy-the-key-to-indonesia-s-future-20220816-p5bae1

[7] https://www.worldbank.org/en/news/press-release/2014/06/23/indonesia-more-infrastructure-skills-better-market-regulation-needed-for-higher-growth

[8] https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Asia%20Pacific/The%20archipelago%20economy/MGI_Unleashing_Indonesia_potential_Full_report.pdf

[9] https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Asia%20Pacific/The%20archipelago%20economy/MGI_Unleashing_Indonesia_potential_Full_report.pdf

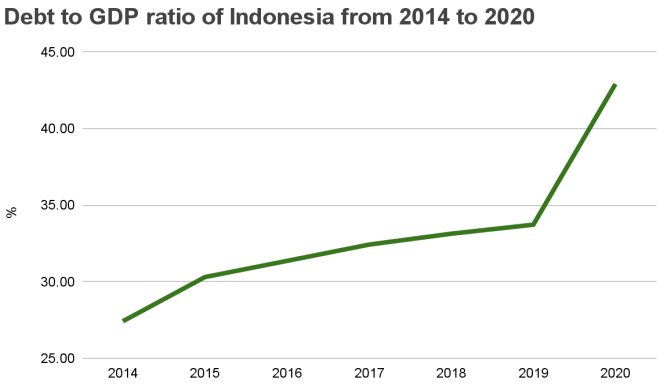
[10] https://www.worldbank.org/en/country/indonesia/brief/reducing-inequality-in-indonesia

Third, sustainable development. At the beginning of the Jokowi Presidency, Indonesia heavily relied on fossil fuels for its energy needs, with coal and oil accounting for 73% of energy consumption in 2014[11]. With problems like congestion contributing to air pollution, and the repeated flooding and gradual sinking of Jakarta, coupled with Indonesia's huge potential for renewable energy sources like hydropower and solar[12], developments in Indonesia should therefore take into account environmental impacts, and ideally make use of green energy and green technologies.

FINANCING INFRASTRUCTURE DEVELOPMENT

Indonesia's uphill task of infrastructure financing takes on a bipartite structure. While the government has apportioned part of its budget for infrastructure, there is still a $180 billion hole (as of July 2020) to be filled with private investments[13].

With the 2008 crisis still looming over investors' heads, banks have generally shifted their focus away from securitising. It is therefore unlikely that CDO-type investments in Indonesian infrastructure will be prominent in the market. Additionally, given insurers and pension funds primarily invest in bonds, the lack of securitisation naturally means fewer investments in debt instruments.

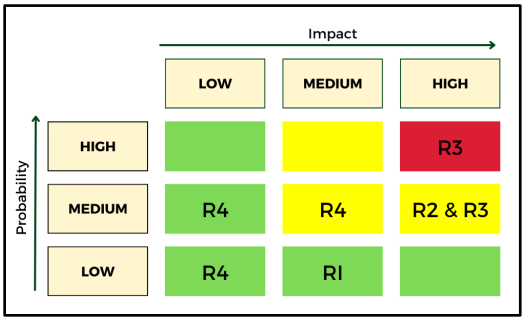


Even though it has been increasing since Jokowi took office, Indonesia's relatively low debt-to-GDP ratio (39.0% as of Sep 2022[14]) suggests that state-owned special purpose vehicles like PT Indonesia Infrastructure Finance (IIF) will likely not be overleveraged by extension. This ratio is also lower in comparison to regional peers (53.4% for Thailand as of Sep 2022[15]) This gives institutional investors more assurance when contemplating investing in debt instruments. Additionally, debt instrument holders have first dibs on assets and cash flows before asset holders do, as part of capital structures.

RISKS AND UNCERTAINTIES

1. Loan financing risk (R1)

The biggest challenge posed by current infrastructure financing means is **financing through loans**, where international investors who are unfamiliar with *foreign infrastructure contract documentation* may be hesitant to



[11] https://ourworldindata.org/energy/country/indonesia

[12] https://www.sciencedirect.com/science/article/abs/pii/S0301421516304542?fr=RR-2&ref=pdf_download&rr=78975315bcfa460d

[13] https://www.infrastructureinvestor.com/indonesia-plans-430bn-infra-spend-by-2024/

[14] https://www.ceicdata.com/en/indicator/indonesia/government-debt--of-nominal-gdp

[15] https://www.ceicdata.com/en/indicator/thailand/government-debt--of-nominal-gdp

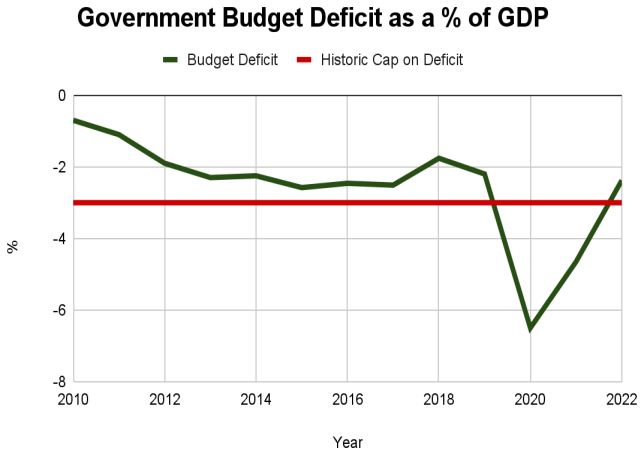
provide **non-recourse loans.** In comparison to recourse loans, non-recourse loans require higher interest payments from the borrower. However, the lender is not allowed to pursue assets beyond the collateral upon loan default. SOEs which are heavily involved in long-term infrastructure construction — like PT Pertamina — in general have a preference for non-recourse loans, due to the constant stream of funding coming in from the lender. Limited recourse financing and recourse financing are other alternatives that can be explored to mitigate this risk, however.

Likelihood: Low | Impact: Medium

2. The potential failure of alternative investment instruments, including SPVs (R2)

Other popular methods of financing includes investing through equity, either through listed or unlisted means, as well as mezzanine debt. These means have become more popular, especially after the 2008 crisis. The relative nascence of equity investments in Indonesian infrastructure, done especially through project finance valuations, could however still induce some friction in investment markets. Investors may still gravitate toward debt instruments, which tend to generally make up the biggest portion of infrastructure investments.

Additionally, state-run Special Purpose Vehicles (SPV) — a blend of State-Owned Enterprises (SOE) and private firms overseas — are used to finance larger infrastructure projects. In fact, a portion of SOE's liabilities is funded by the Indonesia Investment Authority (INA) - Indonesia's sovereign wealth fund (SWF). Hence, the failures of SPVs or SOEs are likely to shift debt burdens to the government although these debts are not reflected under public debt. This would place undue stress on the government budget deficit[16], which has been improving but remains precariously close to the historic cap on deficit owing to the COVID-19 pandemic.



Likelihood: Medium | Impact: High

3. Navigating challenges with diplomacy and competition (R3)

The bidding war between China and Japan over the high-speed rail project is a testament to the potential geopolitical tensions that can arise over investment opportunities. With the objective of outbidding its competitor, countries/investors may be incentivised to submit bids with highly ambitious timelines and

[16] https://tradingeconomics.com/indonesia/government-budget

unusually relaxed financing agreements. This may additionally set the tone for future financing agreements, which investors may stray away from.

Likelihood: Medium to High | Impact: High

4. Budget Overruns (R4)

Before 2020, there have been a few examples of budget overruns for infrastructure projects in Indonesia. One example is the construction of the Jakarta-Bandung high-speed railway, which faced significant delays and budget overruns due to issues with land acquisition, budget overruns and the COVID-19 pandemic. The project was initially slated for completion in 2019 but was delayed till 2023.

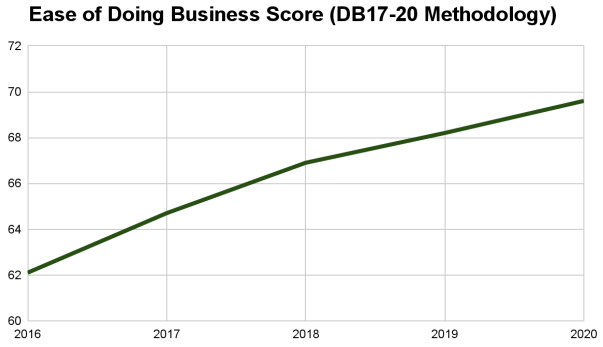
Another example is the Jakarta Mass Rapid Transit (MRT) project, which had been in the pipeline for 15 years. The project faced delays and budget overruns due to a lack of funding and concerns over its potential impact on the city's already-strained infrastructure. These examples show that budget overruns and delays are fairly common in similar large-scale infrastructure projects in Indonesia and could potentially be a cause for concern for the government.

Likelihood: Medium | Impact: Low to Medium

ENCOURAGING FOREIGN INVESTMENTS

Under the Omnibus Law, Indonesia currently has several initiatives in place aimed at streamlining the process of investing in infrastructure projects. The service is intended to make it easier for foreign investors to navigate the bureaucratic process of investing in Indonesia by bringing together various government agencies and departments. This reduces the time and cost for the investors, making the process more efficient and transparent and stimulating foreign investment in infrastructure projects.

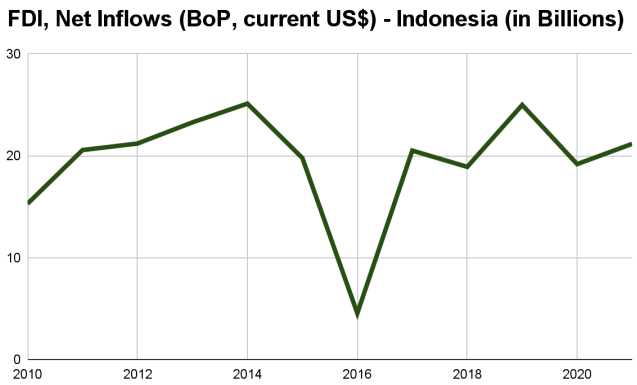
Indonesia offers a variety of tax incentives for foreign investors to encourage investment in infrastructure projects. For one, foreign investors in certain infrastructure projects may be eligible for a tax holiday, which allows them to temporarily postpone paying taxes on their income from the project. This can be applied to power plants, water and sanitation facilities and some transportation projects such as toll roads, airports and seaports. Moreover, some individuals or corporate taxpayers may be eligible for tax exemptions on their dividend returns under the requirement that they re-invest around 30% of their income in Indonesian companies. However, to prevent promised investments in the companies from being indefinitely prolonged, there are deadlines for such exemptions. Such incentives clearly improve Indonesia’s openness to foreign investments, especially for infrastructure development.



The successes of such investment liberalisation efforts undertaken by Jokowi, however, have to be carefully evaluated. According to the World Bank's "Doing Business" report, Indonesia has improved significantly from a score of 62.1 for ease of doing

business in 2016 to 69.6 in 2020[17]. There is also greater ease of obtaining construction permits after the initiative began. Yet, statutory restrictions on FDI continue to have a significant negative effect on Indonesia's ability to attract FDI, such that compared to its peers in ASEAN, Indonesia remains one of the most restrictive countries for FDI as measured by the OECD FDI Regulatory Restrictiveness Index. Moreover, discriminatory policies for foreign companies persist, including one in which the establishment of local investments by foreign investors is explicitly disallowed by Indonesia. In this way, foreign companies are forced to conduct investments through locally incorporated companies (in the form of a limited liability company with foreign shareholding), whereby the locally incorporated companies are required to invest a minimum of IDR 10 billion, excluding land and buildings — 200 times the minimum amount of paid-up capital required from domestic investors and applies on top of any applicable foreign equity limitation[18].

In this respect, we note that policies involving minimum capital requirements for investments in Indonesian companies run counter to the aim of promoting FDI — which may go some way towards explaining why FDI inflows have not increased dramatically during the Jokowi Presidency[19]. Regardless, with a huge workforce and land space to offer, Indonesia still holds considerable appeal for foreign companies to invest in.



TRANSFORMATION OF ECONOMY

The focus of the infrastructure developments under the Jokowi Presidency can be classified into three main categories — enhancing connectivity, pursuing even development, and enhancing comparative advantage and resilience.

1. Enhancing Connectivity

Indonesia's vast improvements in transport infrastructure have brought about a much-needed boost in connectivity to its cities and greatly improved accessibility for its population. Some examples of the projects that are underway not only reduce transport time significantly but also improve the notorious traffic congestion of the current capital of Jakarta[20] which will improve the productive capacity within the country.

A key focus of the infrastructure push has been on improving the railway systems which include the Jakarta-Bandung high-speed railway and the Mass Rapid Transit (MRT). Slated to be open to the public in June 2023, the high-speed railway — one of China's Belt and Road Initiative projects — between

[17] Ease of doing business score, Historical data - Doing Business - with scores (Excel), World Bank Group Archives, Washington, D.C., United States.

[18] https://www.oecd-ilibrary.org/sites/70aed0d7-en/index.html?itemId=/content/component/70aed0d7-en#figure-d1e7248

[19] https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD?locations=ID

[20] https://thediplomat.com/2015/02/indonesias-capital-has-worlds-worst-traffic/

Jakarta and Bandung completed its first trial run on 16 November 2022. Meanwhile, the MRT project has been in the pipeline for 15 years, having completed Phase 1 (North-South section) in 2019 with Phase 2 (East-West section) projected to be completed in 2027.[21]

With extensive transport infrastructure in place, communications and logistics can be significantly improved. When operational, the high-speed railway can reduce travelling time between Jakarta and Bandung — Indonesia's top and fourth most populated city respectively — from 3 hours to 40 minutes[22]. Similarly, with the MRT system in place, the travel time for locals from the densely populated residential neighbourhood of Lebak Bulus to the central business district will be reduced by an hour.[23] By reducing travel times and addressing congestion, better transport infrastructure can potentially also improve worker effectiveness[24]. Therefore, these projects represent the opportunity for considerable gains in productivity.

Moreover, during the construction of the high-speed railway, China employed 2000-3000 local workers, providing training and transferring technology to Indonesian companies. They also agreed to train the local operating and management companies of the high-speed railway once operations begin.[25] This upskilling of the workforce allows for more productive workers that can transfer their knowledge to other workers, fostering a self-sustaining ecosystem where Indonesia can reduce reliance on foreign investments — going some way towards preventing Indonesia from falling into the trap of insurmountable debt to China.

However, there have been instances of delays in the construction of such projects, with the high-speed railway in particular suffering from multiple delays due to issues with land acquisition, budget overruns and logistical challenges during the COVID-19 pandemic, pushing its completion far past the initial deadline in 2019. While these delays may be indicative of inadequacies in planning and over-ambitious timelines, considerable benefits are expected to be reaped once the projects are completed, given the severity of the congestion problem and the state of existing transport infrastructure.

2. Pursuing even development

Infrastructure projects have also targeted the persistent problems of inequality and uneven development across Indonesia. The most prominent of those projects is the planned shift of Indonesia's capital from Jakarta to Nusantara — the IKN Nusantara development plan. With this move, the Jokowi Presidency is aiming to enhance development and economic activity in Kalimantan and eastern Indonesia[26] — a region that had been relatively undeveloped relative to Jakarta, but would now receive more attention from businesses and investors owing to its status as the planned future capital, with South Korea, Malaysia and China among the countries expressing interest in participating in Nusantara's development.

Furthermore, a series of policies are in place to enhance the soft infrastructure in Indonesia. Efforts at encouraging digital preparedness through upskilling and reskilling are in line with the goal of developing digital infrastructure in Indonesia. The government also aims to strengthen investments in standardised

[21] https://www.indonesia-investments.com/projects/public-projects/mass-rapid-transit-mrt-jakarta/item5198

[22] https://thediplomat.com/2022/10/indonesia-gears-up-to-start-its-first-high-speed-rail-line/

[23] https://www.channelnewsasia.com/asia/jakarta-new-mrt-to-save-indonesia-city-traffic-congestion-910161

[24] https://www.irmbrjournal.com/papers/1438578538.pdf

[25] https://asia.nikkei.com/Spotlight/Caixin/How-China-helped-build-Indonesia-s-high-speed-railway

[26] https://www.channelnewsasia.com/asia/indonesia-new-capital-nusantara-civil-servants-reluctant-relocation-2554976

education, particularly with the Smart Indonesia Card initiative[27], the adoption of information technology and the establishment of world-class universities.

If successful, equal access to education for all individuals, regardless of their socio-economic background, can help to greatly reduce inequality in Indonesia by providing an opportunity to break free from the intergenerational cycle of poverty. It can also expand economic opportunities across the country, including the rural regions outside of Java that have previously been neglected due to differing education standards. A new generation of digitally trained Indonesians under these policies will also allow Indonesia to better thrive in the new digital era.

The effect of such efforts has been appreciable: after Jokowi's term presidency began in 2014, there has been a steady decrease in the Gini Index from 40.2 in 2014 to 37.9 in 2021[28], which shows the inequality gap closing — a trend reversal, with inequality increasing since 2000. It can thus be said that his policies have been successful at addressing the rising inequality prior to his tenure.

3. Enhancing resilience and comparative advantage

Aside from aiming to reduce stressors from congested and sinking Jakarta, the plan to move Indonesia's capital to Nusantara also places an emphasis on sustainability, building resilience into Indonesia's economy by leaning on green technologies and renewables, while potentially developing a new comparative advantage.

The first phase of the IKN Nusantara development plan will begin with efforts to revitalise and reforest the forests[29]. Animal corridors, with canopies and animal signs, will be developed in accordance with the Minister of Environment and Forestry Regulation No. 23 of 2019 and some 75 per cent of the planned site of the capital city will be green open space, of which 65 per cent is protected area and 10 per cent is for food production[30].

There are also plans in place to stimulate the shift towards electrification. The IKN Nusantara will be equipped with Public Electric Vehicle Charging Stations (SPKLU) to create a new eco-friendly urban ecosystem. This electrification and penetration of the EV market aim to capitalise upon Indonesia's comparative advantage of natural resources. In particular, the ban on nickel exports in 2014 helped to fuel foreign investments into local infrastructure for the processing of the raw material[31]. The recent move to capitalise on the EV market further bolsters Indonesia's comparative advantage in nickel extraction since nickel is a vital raw material in the production of EVs.

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[27] http://103.76.16.8/en/frequently-asked-questions-faqs/cluster-i-2/the-smart-indonesia-programme-through-the-smart-indonesia-card-kip/

[28] https://data.worldbank.org/indicator/SI.POV.GINI?locations=ID

[29] https://setkab.go.id/en/remarks-of-president-of-the-republic-of-indonesia-at-beranda-nusantaras-towards-the-new-national-capital-february-23-2022/

[30] https://en.antaranews.com/news/220845/balancing-new-capital-development-with-orangutan-habitat-preservation

[31] https://www.channelnewsasia.com/asia/indonesia-nickel-mining-electric-vehicles-environment-2680276

In regard to new and renewable electricity, Perusahaan Listrik Negara (PLN) has prepared a 50-megawatt (MW) Solar Power Plant (PLTS) and a 70 MW Wind Power Plant (PLTB) in Tanah Laut, which remains in an early stage. For the long term, PLN is also preparing a hydroelectric power plant (PLTA) to produce some 1,000 MW, which will be ready to support the IKN Nusantara area[32]. Beyond Nusantara, the $17 billion Kayan Cascade project comprises five dams with a combined power generation capacity of 9 gigawatts by 2035, which will make it Southeast Asia's largest hydroelectric station[33]. Given the overall costs of exposure to ambient PM reached 2.1% of GDP in Indonesia in 2017[34], such initiatives to pivot to renewable energy are estimated to provide cost-savings between USD 400 – 600 billion cumulatively to 2050, with an additional as much as USD 600 billion in external cost savings from lower air pollution[35].

However, with just 17 months left in his final term, President Jokowi is struggling to find international investors to fund 80% of the USD $34 billion Nusantara project. Many countries are either already in or are facing recessions while many investors remain cautious, citing massive delays in similarly large infrastructure projects, including the MRT project which faced almost 30 years of delays. Yet, broad political support for the project remains with confidence in the follow-through of the project; the most pertinent issue, in fact, is how fast the project will be completed.

All in all, although the real returns are not immediately obvious, these plans seem promising over the long term. Considering that over the course of Jokowi's presidency, the share of renewables in electricity production has already been steadily increasing, the push towards renewable energy and green development seems poised to succeed, thereby improving Indonesia's resilience to global energy supply shocks[36]. Meanwhile, the penetration into the EV market further capitalises on Indonesia's comparative advantage as the largest producer of nickel.

CONCLUSION

On the whole, the infrastructure push has sought to address the prevailing infrastructure deficiencies and has largely done so while progressing positively towards Indonesia's economic goals of increasing productive capacity, reducing inequality, and pursuing sustainable development.

While landmark projects have faced delays and longer-term plans like pivoting towards renewable energy might not reap immediate rewards, the projects have been steadily advancing without drastic negative consequences. Furthermore, projects that have been completed under the Jokowi Presidency have appreciably improved upon the state of infrastructure in Indonesia which Jokowi inherited. Meanwhile, the reversal in the longstanding trend of rising inequality is a significant achievement.

However, aside from improving physical infrastructure, more can be done in terms of soft infrastructure, given the size of the labour pool in Indonesia, and the skills and education gap that remains to be closed. With 43% of Indonesia's 280 million residents under the age of 25, Indonesia must continue to invest heavily to improve the quality of its human capital, in order to truly unlock its potential for growth.

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[32] https://en.antaranews.com/news/233369/ikn-nusantara-electricity-to-use-new-renewable-energy

[33] https://asia.nikkei.com/Business/Energy/China-pushes-ahead-with-Indonesia-s-largest-hydro-plant-project

[34] https://wedocs.unep.org/20.500.11822/33585

[35] https://www.irena.org/News/pressreleases/2022/Oct/Renewable-Pathway-More-Cost-Effective-than-Fossil-Fuels-in-Indonesia

[36] https://www.enerdata.net/estore/energy-market/indonesia/