

**PROGRAM IMPACT ASSESSMENT
STEPPING UP INVESTMENTS FOR GROWTH ACCELERATION PROGRAM
INDONESIA**

I. Executive Summary

1. The Stepping Up Investments for Growth Acceleration Program (SIGAP) has implemented reforms designed to boost investment led economic growth and increase efficiency in Indonesia through improving the business investment climate, strengthening the efficient provision of infrastructure through public-private partnerships (PPP), and increasing the efficiency and quality of public procurement. Reforms funded by the program started in 2012. Subprogram 3's reforms were implemented from 2016 to 2018 and help achieve the Indonesian Government Work Plan theme of 2018, which is "Encouraging Investment and Infrastructure for Growth and Equity".

**Costs and Benefits of Subprogram 3
Present Values in USD million**

Output	Benefits	Costs	Net Benefits
Reducing time to start a business	4,814	313 (of land registration system)	4,501
PPP reforms	1,843	7	1,836
e-procurement reforms	2,466 (from improvements to national system)	145 (of new Jakarta system)	2,321

II. Development Problem and Constraints

2. Indonesia faces twin challenges of lifting its medium-term economic growth rate and addressing rising income inequalities. Economic growth slowed from 6.4% in 2010 to approximately 5.0% in 2013, where it has substantively remained. While accelerating global demand suggests modest improvements in growth to 5.3% in 2018,¹ current projections remain significantly below the bottom of the government's target range of 7.0%–9.0%, stated in the National Medium-Term Development Plan (RPJMN), 2015–2019.² Moreover, since 2000, Indonesia has experienced one of the largest increases in inequality in the region. The Gini index, used to measure household income inequality, increased from 0.30 in 2000 to 0.40 in 2015.

3. Low levels of public and private investment have constrained inclusive growth in Indonesia. A medium-term perspective reveals a five-year average investment growth rate of just 4.7%.³ Public infrastructure spending and private infrastructure investment averaged only 1.5% and 0.6% of gross domestic product (GDP), respectively, from 2008 to 2012. Central and subnational governments have increased capital expenditures in recent years but closing the investment gap will require increased private investment. In 2016, the Central Government spent IDR169 trillion on capital expenditures, a tenth of its total expenditure. Capital injections to state-owned enterprises (SOEs) mostly to undertake priority infrastructure projects were

¹ ADB projects Indonesia's growth to pick up to 5.3% in 2018.

² ADB. 2017. Asian Development Outlook; World Bank. 2017. Indonesia Economic Quarterly December 2017; IMF. 2018. Article IV.

³ Investment is measured by gross fixed capital formation adjusted to price inflation.

IDR50.5 trillion. Subnational capital expenditures have also increased, amounting to an allocated IDR250.6 trillion in the same year (actual expenditure figures weren't available), summing to IDR470.1 trillion (\$34.7 billion), a 50% increase on 2015, but less than half of the annual target.⁴

4. For private investment, Indonesia's poor business climate has been a major barrier. In 2011 Indonesia ranked 121 of the 183 countries surveyed by the World Bank for its annual Doing Business and ranked in the lowest 25th percentile for starting a business (155 out of 183).⁵ A 2012 opinion survey of World Bank stakeholders in Indonesia found they thought the most important development priorities in Indonesia were "bureaucratic reform and governance". It was still the top priority in the 2015 survey.⁶ Additionally, an ADB survey found the biggest problem facing business in Indonesia was economic and regulatory policy uncertainty. Businesses complain that bureaucrats pass rules hastily, without even trying to understand their effect on the private sector. The average number of regulations by both national and subnational governments was 1,789 per year in 2010–14.

5. The high cost of starting a business also exacerbates inequality because it discourages businesses from joining the formal sector. Indonesia has a larger informal sector than other East Asian and Pacific and lower middle-income countries. A larger proportion of its formal firms (65%) compete with informal firms and a smaller portion were registered when they started operations. Using labor force surveys, researchers have found that the informal sector employs between 61% and 70% of the total labor force.⁷ Furthermore, a large informal sector may represent a challenge to competing formal firms as informal firms are able to engage in practices that can give an unfair advantage over formal firms which must comply with the prevailing rules and regulations.

6. Low levels of public and private investment restrict adequate provision of infrastructure in Indonesia. Infrastructure constraints are consistently identified by firms as an impediment to their operations and investment. The public capital stock per head in Indonesia is only 40% of the average for other emerging markets and developing economies. The quantity of infrastructure in Indonesia is among the lowest in the region and its perceived quality also lags ASEAN and other emerging market peers.⁸ Poor infrastructure creates development challenges for Indonesia. Extensive research finds that infrastructure has a significantly positive impact on economic growth through increasing productivity, lowering transport and production costs and facilitating market access for business. Infrastructure can also supply direct benefits to consumers, not measured in GDP, such as reduced travel time and better health.⁹

7. The World Bank (2013) found core infrastructure investment fell markedly following the 1997/98 crisis. From 1995–97 infrastructure investment averaged around 8% of GDP, it then fell rapidly to fluctuate between 2% and 4 % from 1999 to 2005. It rose to average 5.7% from 2007 to 2009, but then fell back to just over 3% in 2010 and 2011, well below most of Indonesia's neighbors, such as China, Thailand and Vietnam, who average over 7% of GDP. The fall was broad-based, across government, SOEs and the private sector. In constant price terms (using the national accounts investment deflator), average infrastructure investment during 2010–11 was

⁴ World Bank (2017) p.39.

⁵ World Bank enterprise data (2015).

⁶ World Bank (2015).

⁷ Hasoloan, Maruli A. (2006), "The Indonesia Labor Market", OECD.

⁸ World Bank (2013a) pp.38-3, (2017) p.35–37.

⁹ World Bank (2013b) pp.36-42.

about a third lower than its level in 1995–97.

8. Private sector investment fell the most. The share of core infrastructure investment financed by the private sector has steadily declined from an average of 19% in 2006–2010 (0.8% of GDP) to 9% in 2011–2015, or 0.2% of GDP.¹⁰ This trend partly reflects Indonesia's difficulty in attracting PPPs owing to regulatory and institutional challenges. Meaningful increases in private infrastructure spending requires lifting key constraints that inhibit private sector involvement in infrastructure. The ADB estimated Indonesia's infrastructure investment in 2015 as \$23 billion and its annual needs (from 2016–30) to be \$74 billion, leaving a \$51 billion gap (5.1% of GDP).¹¹

9. The government of Indonesia recognizes the need to increase investment and address the infrastructure deficit as national priorities. The 2015 RPJMN targeted additional investments in transport, water, energy and other key sectors, setting out 245 projects. In total, these investments will require IDR4,796.2 trillion (approx. \$360 billion) worth of infrastructure investment over 2015–2019,¹² about 40% of Indonesia's annual GDP, which implies spending an average of IDR959.2 trillion per year (\$72 billion). Under the plan, 22% will come from SOEs, 19% from sub-national governments, 22% from the central government, leaving 37% from the private sector. Even with planned revenue increases, public resources alone cannot meet these large infrastructure needs – even if all the revenue increases were devoted to infrastructure. Even if the target was met, it would take 20 years for the capital stock to reach the average for emerging economies.¹³

10. Leveraging private sector investment can help Indonesia meet its large infrastructure needs and distribute the costs of funding more widely. In Australia and other Organisation for Economic Co-operation and Development (OECD) countries, infrastructure projects involving PPPs are more likely to conclude on budget and on time. Studies from developing countries also show that private sector participation in telecommunications, electricity and water distribution tend to elevate labor productivity and operational efficiency.¹⁴ Private firms can be used to efficiently access funding for infrastructure provision from users. Boosting the participation of the private sector in infrastructure development will require improvements in: (i) the complex legal and regulatory environment for PPPs; (ii) project planning, appraisal and selection processes; (iii) transparency and efficiency of SOEs that dominate the infrastructure sector; and (iv) the depth of local banking and capital markets.¹⁵

11. Procurement is the government activity most vulnerable to corruption and fraud. The Corruption Eradication Commission (KPK) in 2013 found that from 43 corruption cases studied, about 77 % involved corruption in procurement.¹⁶ According to a survey conducted by Indonesia's

¹⁰ World Bank (2017) p.39.

¹¹ Asia Development Bank (2017) p.xvi, 50.

¹² <https://www.indonesia-investments.com/news/todays-headlines/infrastructure-development-indonesia-new-funding-schemes-required/item7611?> (Feb 2017), Rinaldi (2017) and Committee for Acceleration of Priority Infrastructure Delivery (KPPIP) (2016) p.17.

¹³ World Bank (2017).

¹⁴ World Bank (2017) p.39.

¹⁵ World Bank (2017) p.35.

¹⁶ <http://www.thejakartapost.com/news/2015/04/09/toward-better-implementation-e-procurement.html>.

Procurement Watch in 2010, 89% of companies said they need to bribe public officials to get a contract.¹⁷

12. Governments are the single largest purchaser of a national economy. The procurement of goods and services on behalf of Government of Indonesia (GoI) agencies accounts for approximately IDR684 trillion (\$50 billion), or 30% of the national budget. In addition, approximately 60% of foreign development assistance is spent on procurement.¹⁸ According to Indonesia's Commission for the Eradication of Corruption (Komisi Pemberantasan Korupsi), potentially about IDR36 trillion or about 30% of the procurement budget is lost due to corruption each year.¹⁹

III. Reform Program

13. The SIGAP reform program is structured around three outputs: 'More predictable and open business environment'; 'improving the framework for private participation in the infrastructure market; and 'More efficient and transparent public procurement'. It builds on the accomplishments of subprograms 1 and 2 to further increase the three outputs.

14. The reforms are complementary. Higher government infrastructure expenditure increases procurement. Better procurement practices give higher returns on the money spent. Using PPPs to provide infrastructure requires creating investor confidence that returns will not be expropriated through regulatory changes. The actions and policy milestones in subprogram 3 producing these outputs are:

Output 1 More predictable and open business environment

15. To improve the regulatory reform process, the Government has established an interministerial task force to oversee a Regulatory Impact Assessment (RIA) program. The RIA program will monitor and evaluate regulations on a regular basis. The government issued a presidential instruction which requires line agencies to apply the RIA methodology for new regulations and creates a new RIA unit in the Coordinating Ministry for Economic Affairs (CMEA) to oversee the line agencies to ensure compliance and quality.

16. The government has piloted RIA methodology in the Ministry of Trade, assessing proposed regulatory changes in three key areas: trade on beef/cattle, trade on coconut, and the consolidation of business licensing (SIUP) and Company Registration Certificates (TDP) into a single unified document. All reforms are aimed at facilitating trade and reducing the costs of doing business in Indonesia. ADB has supported these pilots.

17. Regulatory policy can harm the investment climate by imposing unnecessary costs, by increasing uncertainty and risks, and by erecting unjustified barriers to competition. Tackling the regulatory reform agenda requires efforts to systematically review existing regulations, as well as assessing new regulatory proposals more carefully. The key is to minimize the adverse impact of uncertainty on firms.

18. A RIA sets out the problem the regulation addresses, the regulation's objectives, different options to achieve them, an assessment of the impacts of each option, and the consultation undertaken, and recommends an option (usually the one with the greatest net benefit). The idea

¹⁷ Transparency International (2011).

¹⁸ Millennium Challenge Account-Indonesia. (2016), Buehler (2012), (Procurement Fact sheet which is MCA 2014).

¹⁹ Asia Development Bank (2010), <http://www.kpk.go.id/modules/news/article.php?storyid=401>.

of an RIA is to make regulation more efficient and effective by having its designers justify the reasons for implementing a new regulation. The RIA considers the costs and benefits of different options at an early stage and takes a community-wide perspective of their effects to ensure that the benefits to society (broadly conceived) of a regulation are greater than the costs (also broadly conceived). The RIA process also encourages the design and adoption of the regulation with the greatest net benefit. 'Ideally, it is used to raise the right questions at the right stages in the policy-making processes with the right people'.²⁰

19. RIAs have proved popular with governments trying to improve the quality of their regulation. By 2005, 26 of 30 OECD countries, and many non-OECD countries, had adopted formal policies mandating the use of RIA in domestic policy-making.

20. The government has reduced the costs of starting and running a business in Indonesia by consolidating and simplifying the process of getting SIUP and TDP, introducing a new online single submission platform, and removing the need to renew SIUP and making TDP renewals free. Further, the Jakarta local government has reduced the time to setting up a business allowing businesses to obtain construction permits from local one-stop-service for business licenses. Improving the ease of doing business increases access to economic opportunities, rather than discouraging individuals from pursuing businesses and joining the formal sector. Reducing the number of step required to start and run a business reduces the opportunity for corruption. It also reduces business costs, which ultimately lowers price to consumers.

21. The government set up an online land registration system which speeds up the acquisition or transfer of land and property. Further, the Jakarta local government implemented a system for online payment of Tax on Acquisition of Land and/or Building, reducing compliance costs and times for businesses.

Output 2: Improved framework for private sector participation in the infrastructure market

22. PPPs are complex and require governments to anticipate and plan for contingencies and conduct monitoring and enforcement of long-term contracts. Institutional capacity is a key determinant of PPP success. An understanding of project finance, negotiation practices, project selection methodologies, risk analysis and allocation, contract management and effective oversight of commissioned projects is needed by the public sector to ensure the long-term sustainability of national PPP strategies.

23. The government has taken a number of policy actions to improve the design and management of PPP projects. The government strengthened the PPP policy framework by: (i) enabling local governments to use availability-based PPP schemes; (ii) enhancing the Project Development Fund (PDF) mechanism to allow the use of development partner funds for project development, and strengthening standard operating procedures (SOPs) for more effective use of the PDF; and (iii) clarifying the treatment of unsolicited PPP proposals to take advantage of cost savings afforded by good unsolicited projects, while managing the risks of poor ones.

24. In February 2017, the government established the Joint PPP Office of Indonesia. The office comprises Bappenas, Ministry of Finance (MOF), Indonesia Investment Coordinating Board (BKPM), Ministry of Home Affairs (MOHA), National Public Procurement Agency (LKPP) and Indonesia Infrastructure Guarantee Fund (IIFG). Together with the MOF PPP unit, these bodies support local governments in project planning and planning for local PPP infrastructure projects

²⁰ Radaelli and Meuwese 2009: 7.

–coordinating the key players, improving information management and capacity building to Government Contracting Agencies.

25. The MOF streamlined the approval process and increased the budget allocation (IDR500 billion in 2018) for viability gap funding (VGF), which helps ensure that strategically important infrastructure projects which may have commercial viability shortfalls can be executed with government support. For example, this can help ensure investors find it commercially attractive to undertake infrastructure investments with high economic and social benefits.

26. The government accelerated land registration, improving regulation from 2017 and targeting full completion of an accurate land registry database by 2025. It streamlined land acquisition for national strategic project and infrastructure investments: by improving the issue of land permits, establishing audit mechanisms to monitor the process, and improving grievance mechanisms for timely resolution of conflicts.

27. The government has established a task force comprising OJK, MOF, BI and Committee for Infrastructure Priorities Development Acceleration (KPPIP) to oversee and facilitate long term financing of PPPs through project bonds or equity investments. This allows companies to leverage debt from the banking sector in support of infrastructure projects and for the government infrastructure financing company (PT SMI) and state-owned pension funds to own equity in infrastructure project companies.

28. The government increased the number of sukuk infrastructure projects. The Project Based Sukuk amount was increased to IDR16.8 trillion in 2017 National Budget, up from IDR13.7 trillion in 2016. The government has drafted new guidelines to improve the selection process and criteria for Project Based Sukuk (PBS) financed projects.

29. Finally, the government has established a new framework for sub-national infrastructure support by establishing new SOP and signing a Memorandum of Understanding (MoU) between CMEA, PT SMI, MOF and MOHA to improve coordination and processing of financing requests. As a result of these efforts, processing times for local government borrowing requests have shrunk from approximately 6 months to just 40 days.

Output 3: More efficient and transparent public procurement system

30. Improvements to public sector procurement under output 3 are designed to reduce the burden of corruption and increase competition. The government has responded to these problems by developing e-procurement platforms. An e-procurement system provides a more transparent electronic bidding process, reducing the opportunities for corruption. The winner is made known to all the bidders. These are auditable processes which enhance integrity in public procurement.

31. In the SP3 reforms, the LKPP developed and operationalized the ability of the e-procurement system to conduct reverse auctions of goods. Sellers (providers of goods and services) compete to win a tender from government, lowering bids along the way, and ensuring cost competitiveness and value for money in public procurement. The LKPP also assisted the Jakarta local government introduce reforms to reduce the time and complexity of procurement including an electronic platform for competitive bidding on procurement of local goods and services; and a local electronic catalogue with list prices for standard goods and services.

32. The government has also conducted procurement benchmarking exercises focusing on those with largest procurement budgets: The Ministry of Public Works, Ministry of Transport and Ministry of Education and Culture, as well as cities of Jakarta and Bandung. Benchmarking

activities will continue into the future. These activities improve the monitoring and evaluation function of LKPP and provide critical performance information to both central government and spending agencies. It has introduced e-learning modules to build capacity on procurement of goods and services in large infrastructure projects.

33. The government has strengthened the legal framework on public procurement by introducing procurement compliance controls to track and evaluate spending agency compliance with government procurement procedures.

IV. Estimations of the Benefits and Costs of the Reforms

Costs and Benefits for output 1: More predictable and open business environment

34. Reforms targeted under this output seek to improve the business climate to stimulate investment. Specifically, this output creates measurable benefits by reducing the time and cost of starting a business in Indonesia, as well as stimulating investment and registration of new businesses due to the increased attractiveness of the business environment. The analysis uses concrete data from the World Bank's Ease of Doing Business diagnostics to measure the cost reductions (both monetary and time-related) for improvements in the business environment. The analysis then applies a regression analysis to determine the relationship between cost reductions and new business registrations for the purposes of estimating benefits in 2018. It is assumed that current policy settings and number of registrations post-2018 remain unchanged. Costs are derived from the national roll out of the online land registry system.

35. There is evidence that the reforms have improved the business climate. After languishing in the bottom third of countries, Indonesia has dramatically improved its ranking on the World Bank's widely used Ease of Doing Business index. Indonesia's rating jumped 57 places since 2012, rising to almost the top third (190 countries were ranked). Indonesia jumped one decile in the past year, reflecting the reform packages, introduced since 2016, aimed at reducing the burden of regulations.

Indonesia's ranking on the World Bank's Ease of Doing Business index

Year	2012	2013	2014	2015	2016	2017	2018
Ranking	129	128	120	114	109	91	72

Source: <http://www.doingbusiness.org/data/exploreeconomies/indonesia>.

36. Despite its improvement on the overall ranking, Indonesia ranks 144th on ease of starting a business (in the bottom quartile). This measures procedures, time, cost and paid-in minimum capital to start a limited liability company. Yet the scores are steadily improving when comparing consistent methodologies (the Bank does not give historical rankings on the sub-categories).²¹ The Bank presents data from 2014 to 2018. Over that time Indonesia's score (on a 0–100 scale) rises from 61 to 78. The Bank estimates it took 75.5 person says to open a business in 2014 and this had fallen to 23.1 in 2018, more than halving from 2015. Minimum capital requirements fell from 38.5% of per capita income to 0 from 2017. The monetary cost fell from 21.9% to 10.9% (halved), reflecting the reduction in fees from the reforms.

²¹ The scores show the closeness of each economy to the "frontier," which represents the best performance observed on the indicator across all economies in the Doing Business sample since 2005.

Days and direct costs to start a business, Indonesia

Year	2014	2015	2016	2017	2018
Days to start a business	75.5	52.5	47.8	24.9	23.1
Cost (% of per capita income)	21.9	21.1	19.9	19.4	10.9
Score	60.97	65.9	67.51	76.43	77.93

Source: World Bank ease of doing business spreadsheet.

37. The World Economic Forum's (WEF) Global Competitiveness index also indicates success in improving the business climate.

Ranking on World Economic Forum's Global Competitiveness index

	2011–12	2013–14	2015–16	2017–18
Overall	46/142	38/148	37/140	36/137
Institutions	71	67	62	47
Burden of government regulation	44	31	41	27
Efficiency of legal framework in challenging regulations	61	50	46	40
Transparency of government policy making	87	65	66	51
Time to start a business (days)	121	128	129	105
No. of procedures to start a business	94	104	116	121

Source: World Economic Forum (2017).

38. The rankings show a steady and substantial improvement in the quality of institutions, increasing both by 24 places in 6 years. Looking at the more detailed measures of the business environment targeted by SIGAP's regulatory reforms, Indonesia has steadily improved its ranking on the Transparency of government policy making (by 36 places) and Efficiency of legal framework in challenging regulations (21 places). It has improved on the burden of government regulation (17 places).

39. On time to start a business, Indonesia's ranking deteriorated from 2011–12 to 2015–16 but then improved by 24 places in the following two years, indicating an improvement—but still ranking only 105th (almost in the bottom quartile). Indeed, its ranking on the number of procedures to start a business has got steadily worse down to 121st (almost the bottom decile). The WEF finds it takes much longer to open a business in Indonesia than the World Bank does. But it also finds the reforms substantially reduced the time taken to open a business (by 24 days).

40. The reforms reduced the fixed cost of starting a business, both time and money costs, a benefit to the business owner and customers—it will increase profits and/or decrease prices. And the reforms have certainly had a large effect, with the number of annual business registrations more than doubling from 2015 to 2017 (see the table below)

Year	2013	2014	2015	2016	2017	2018
New registrations	21,319	28,652	84,210	97,352	182,741	190,772 (est)
Growth		34.40%	193.90%	15.60%	87.70%	4.40%
Total cost of starting a business, USD.		\$7,888	\$5,711	\$5,226	\$3,069	\$2,574

41. The benefit estimates use the more comprehensive World Bank data (which only goes back to 2014 on a consistent basis). The reforms reduced the number of days to start a business from 2015 to 2018 by 29.4 days. The benefit depends on how potential business owners value their time. It is assumed here that those starting a business would otherwise receive the average salary of IDR316,274,529 (\$23,341) a year.²² If work 250 days a year, that is \$93.35 a day. Further, the direct money cost falls by 10.2% of per capita income from 2015 to 2017 (from \$808 to \$4,127 using 2017 per capita income of \$3,828).

42. The estimates for the average total cost of starting a business is set out in the final row of the table above. Reform has steadily lowered the cost of starting a business, and the number of registrations has risen. Regression analysis was used to estimate a simple linear demand curve relating the number of registrations to the price. It had an r-squared of 0.98 and price had a p value of 0.009. Adding GDP or a time trend or using logs performed poorly. The linear demand regression was used to estimate new registrations in 2018. The assumption of linear demand is used to estimate the benefit from lowering the cost of registration in 2016, then lowering it again in 2017 and again in 2018.

43. The lower cost of registration benefits all those who register their firms. Those who would have registered even at the higher price gain from the reduced time cost and reduced fees. But the lower fees mean the government raises less in fee revenue from them, so their gain from lower fees is not a net gain to society, but a transfer from the government. Those who are induced to register their firm by the lower price (i.e. the increase in registrations) gain from the lower price, but their gain is half of other users (the so-called rule of half, which is a consequence of linearity). On the other hand, as they represent extra demand, the extra fee revenue raised from them is an additional social benefit. (to the government).

44. The estimated benefit is \$49.840 million in 2016, \$412.630 million in 2017 and \$391.191 million in 2018. It is assumed benefits continue at the 2018 level each subsequent year (i.e. that current policy settings and number of registrations are unchanged). At a discount rate of

²² <http://www.averagesalarysurvey.com/indonesia>. According to <https://www.emolument.com/salary-reports/locations/indonesia/7222>. The average salary in Indonesia is \$41,000 per year. The average bonus in Indonesia is \$3,300.

9%, the net present value at the end of 2017 is \$4,814 million. The net benefit would be greater if the number of new registrations grows over time.

45. There is a positive relationship between cost of business entry and the informal sector.²³ There would be a further benefit if there were positive externalities from businesses joining the formal sector. If firms find it beneficial to formally register, then they gain more than the extra taxes paid and the cost regulation imposes on them. The extra taxes paid and any benefits from the regulations now obeyed would be a further benefit from making registration cheaper. A larger formal sector also makes the tax base broader and less distorting.

46. Moreover, a quicker registration process means these benefits from businesses that register would start accruing sooner. As the size of these externalities is unknown, this benefit has not been quantified.

47. In the World Bank Ease of Doing Business survey, on the ease of registering property Indonesia ranks 106th. The World Bank's score has been constant, and then improving from 52.4 to 59 over the past two years. The time taken to register property has stayed constant since 2014 at 27.6 days, and the direct financial cost was 10.8% of property value, until 2018 when it fell to 8.3%. According to the World Bank indices, there has been a large improvement in the reliability of the land registration infrastructure from 2017, a small improvement in the quality of land administration over the same period, and no improvement in the transparency of information or land dispute resolution, since 2015 (when these measurements started).

48. The evidence is that the reforms have improved the land registration system. The number of land registrations increased from 1.1 million parcels in 2016 to 5.2 million in 2017. The benefits from this have not been quantified because of lack of information on the value of improvements. But part of the improvements in the speed of starting a business are driven by a more complete land registry, as one of the major constraints to starting a business before was absence of accurate and timely data on land ownership/land registration—it would take significant time to go through old paper records, demonstrate ownership, engage in transactions involving land.

49. The benefit of an institutionalized central review process for new regulation is that improves the quality of new regulations, minimizes the disruption from unexpected rule making, minimizes unintended adverse consequences, promotes transparency, strengthens private sector participation, and facilitates communication of successful reforms. It curbs discretion and expands consultation.

50. To the extent the reforms reduce burdensome regulations, it would further encourage the expansion of the formal sector. A World Bank study found that an improvement of 10 points in the overall measure of business regulations (an average of nine of the World Bank doing business indicators) is linked to an increase of around 0.5 new businesses per 1,000 adults. In Indonesia that would mean 175,000 new firms, almost doubling the 2017 level, which would increase the benefits from reducing the time cost of business registration. From 2014 to 2018 Indonesia's score on the Ease of Starting a Business indicator increased by 17 points, and by 9 points from 2016 to 2017. Further, moving from the lowest quartile of improvement in business regulations to the highest quartile is associated with a significant increase in annual per capita income growth of around 0.8 percentage points.²⁴ For Indonesia, that would be a benefit of IDR108,710 billion (\$8 billion) in 2017 alone (but Indonesia's overall Ease of doing Business ranking did not improve

²³ Garcia-Bolivia (2006) p.6.

²⁴ Divanbeigi and Ramalho (2015).

by that much, and it remains in the bottom quartile for Ease of Starting a Business). Previous studies also found better performance on business reform indicators is linked to higher investment and growth.

51. So, the potential benefits from the reforms are large, but it is too early to judge the success of the reforms. That depends on how many regulations are likely to be reviewed, their likely costs and the effectiveness of the regulatory impact statements (RIS) process – information that is not available.

52. There is a positive relationship between degree of regulation and corruption. Regulation facilitates bribes to avoid it. As strictness of regulation was not observed to relate to low product quality or a greater degree of environmental degradation, the study contradicts public interest theories of regulation and supports public choice models in that the primary benefactor of regulation appears to be bureaucrats.²⁵

53. The benefits from regulatory reform are not quantified. It is difficult to put a number on the benefits of improving the business climate or work out the marginal contribution of regulatory reform to that improvement. International studies, however, question whether an RIA process improves regulatory outcomes. Common themes include non-compliance with the regulatory process and poor-quality RIAs.

54. The costs of the output 1 reforms are the administrative cost to the government, including the cost of policy formulation and implementation, of reducing the costs of starting a business and of setting up a regulation review process (including the ongoing costs of the new RIA unit). The revenue cost of reducing the fees for business registration has already been accounted for in the benefit estimates.

55. Improving the land registration system involved substantial development costs, with lots of GIS, data visualization, and huge amounts of data. It was rolled out in approximately 6,000 districts, involving significant capacity development costs and staff operating costs (administration, auditing, IT and managerial support). It is assumed the initial development, roll out and capacity building costs were \$80 million (assumed to be evenly spread over 2016 and 2017), and then additional annual costs of \$20 million.²⁶ The net present value of these changes at the end of 2017 is \$313 million.

Costs and Benefits for output 2: Creating an efficient market for infrastructure through Public Private Partnerships

56. Improvements in the PPP framework generate measurable benefits by facilitating the development of new/additional infrastructure and by the social return which is generated as a result of this new infrastructure development. Benefit estimation uses World Bank data on private sector investment in infrastructure to determine the extra investment generated as a result of policy changes since 2016. The most common way of quantitatively assessing the effective relevance of infrastructure spending is to estimate social economic rates of return of past and new investments using a production function. Most of the academic literature estimates these returns using macroeconomic growth regressions. These are usually calculated using data for a specific country or group of countries over several years. In recent years these methods have

²⁵ Garcia-Bolivia (2006) p.6.

²⁶ Source of cost estimates: ABD advice.

suggested economic returns on investment projects averaging 30%–40% for telecommunications, more than 40% for electricity generation, and more than 200% for roads (although, when the outliers are excluded, the average is about 80% for roads).²⁷ For the purposes of this assessment, a conservative rate of social return of 20% is used, and a 2-year build time is assumed. A sensitivity analysis gives a range of benefits under different assumptions.

57. The WEF’s Global Competitiveness index indicates success in improving infrastructure, with Indonesia’s ranking steadily increasing 24 places over the past 6 years. Indonesia’s ranking on the Quality of overall infrastructure showed no gain until the final 2 years, when it jumped 13 places.

	2011–12	2013–14	2015–16	2017–18
Overall	46/142	38/148	37/140	36/137
Infrastructure	76	61	55	52
Quality of overall infrastructure	82	82	81	68

Source: World Economic Forum (2017).

58. A number of studies have found a positive relationship between infrastructure capital stocks and growth, although the estimated magnitude varies by country depending on factors such as the type of infrastructure, the measure of infrastructure, period of analysis, and quality of investment. Although the responsiveness of growth to infrastructure differs across countries, the relationship is strongly positive, with an output-to-infrastructure elasticity in the range of 0.20 to 0.41. The World Bank assumed an elasticity of output to infrastructure capital stock of 0.15 was assumed, along the lines of the empirical findings of Ligthart and Bom (2009) and Corong et al (2012) i.e. a 10% increase in the capital infrastructure stock is assumed to lead to a 1.5% rise in GDP.

59. The social return to infrastructure investment is greater than the direct return. The increase in GDP understates the benefits from infrastructure provision as it doesn’t measure the non-market benefits (e.g. savings in travel time) and the value placed on reduced unemployment, underemployment, and poverty. When these additional objectives are taken into account, the social returns to PPPs and own investment diverge dramatically.

60. The main benefit of a PPP program is that it facilitates extra infrastructure. It provides a way of unlocking additional sources of finance, such as user fees. If the social benefits are greater than the social costs of the extra infrastructure, the difference is a gain to society. Moreover, PPPs are a way of exploiting the superior efficiency of the private sector. For example, the private partner brings to the table: superior technical expertise, greater implementation capacity, and less pressure to meet political objectives—such as hiring more workers than needed and purchasing from favored suppliers—that hinder efficiency. Evidence from developed markets also suggests that PPPs deliver more quickly and more cost-effectively (a lower cost for a given amount of benefits).

61. These advantages translate into shorter construction time and better, more productive

²⁷ Estache, A. 2006. See also Canning and others 2000 and Briceño and others 2004.

infrastructure.²⁸ Higher on-time completion by PPPs is a big plus in low-income countries plagued by acute bottlenecks in transportation, power, telecommunications, and irrigation. When projects pay a 25% return and can be financed at 10%, it is best to complete them as fast as possible. Buffie et al (2016) conclude that the higher quality and on-time completion of PPPs is an important source of benefits.

62. Private sector investments are particularly important in telecommunications and power generation where the high feasibility and desirability of cost recovery make private financing possible. Also, some parts of transport and water. On the other hand, there are some extra costs. The administrative costs of writing and tendering bids for complicated long-term contracts are often substantial, while limited competition and the difficulty of designing auctions that prevent collusive behavior are apt to result in inflated bid prices. Complex contracts, the impossibility of enumerating all contingencies in partnerships that last 20 to 30 years, and cumbersome legal systems often lead to repeated, costly renegotiations of the original contract. Further there is the extra cost of monitoring compliance by the private partner.²⁹ PPPs also impose costs on the private partner, but they will be reflected in the price paid by the government.

63. The benefits from the reforms then depend on how much extra infrastructure investment they induce and the social rate of return on that investment. For example, if PPPs do not induce any extra investment, then they would produce a net benefit only if the rate of return was higher on PPPs than on government provided infrastructure. On the other hand, if PPP induce extra investment, the benefit would be the social return on that investment. Someone has to pay for the investment—either taxpayers or users, and so the net benefit comes from the social rate of return on the investment—the extent to which benefits exceed the costs of investment.

64. The only available measure of PPP investment in Indonesia is the World Bank's Private Participation in Infrastructure database. This database does not measure annual investment but measures PPP investment commitments—private investment commitments at the time of financial closure in energy, transport, and water projects serving the public, including natural gas transmission and distribution, but excluding oil and gas extraction. That is, it measures total investment over the whole PPP contract period and attributes it to the year of financial closure (when the data usually becomes publicly available). These amounts represent commitments, not actual executed investments. The figures include both national and sub-national PPPs, but may miss small scale PPPs, under-stating investment. On the other hand, total PPPs projects commitments may include financing or maintenance costs, over-stating annual investment.

65. The following table sets out the World Bank and IMF investment in PPP figures The IMF uses the World Bank data to estimate annual PPP investments—smoothing the PPP project commitments over five years.³⁰ (see column 4 in table below).

²⁸ Monteiro, 2005; Sarmiento, 2010.

²⁹ Buffie et al (2016).

³⁰ International Monetary Fund (2017a) p.5.

Year	Projects	Investment commitments USD Million (World Bank)	PPP investment real 2017 IDR Billion (IMF)	Growth rate	PPP investment as a proportion of GDP
2002	1	187.6	22,899.60	-55.5%	
2003	3	829.0	14,988.80	-34.5%	
2004	2	158.0	7,134.34	-52.4%	
2005	1	32.0	4,591.72	-35.6%	
2006	7	662.0	6,807.88	48.3%	
2007	3	423.2	10,239.21	50.4%	
2008	6	2,885.2	16,426.31	60.4%	0.19%
2009	2	NA	15,880.64	-3.3%	0.18%
2010	2	2,900.0	18,486.64	16.4%	0.20%
2011	3	366.0	15,576.57	-15.7%	0.16%
2012	7	1,901.0	22,331.67	43.4%	0.21%
2013	3	1,930.7	21,714.29	-2.8%	0.19%
2014	2	1,690.5	27,233.35	25.4%	0.23%
2015	1	191.0	23,998.36	-11.9%	0.19%
2016	5	8,068.8			
2017 Jan-June	5	7,646.7			

Source: <https://ppi.worldbank.org/data>, author's calculations derived from International Monetary Fund (2017b), Real IDR are in 2017 IDR using the 2010 base GDP deflator.

66. There were no financial closures of PPPs between 1998 and 2002. There were jumps in PPP investment commitments in 2008 and especially 2016, which has continued into 2017, when \$7 billion of commitments were made in the first half of the year alone. The data suggests that the PPP reforms have been successful in stimulating PPP activity. But that also reflects slow progress on previously tendered projects (and the low level of commitments in 2015). The Central Java Coal-Fired Power Plant and the Umbulan Springs Bulk water project reached financial close in 2016 but were tendered in 2009 and 2011 respectively.³¹ Nonetheless, the reforms could have been responsible for sparking the progress that led to financial closure after such a long delay.

³¹ World Bank (2017) p.39).

67. To estimate the benefits from the improved PPP policies from 2016, it needs to be determined how much extra investment they induced and the return on that investment. All that can be done is to give reasonable estimates based on current information and are indicative of the benefits that could result.

68. The assumptions that will be made are: the 2016 annual commitment of \$8,068.8 million (or 2017 IDR112,124 billion)³² will be made each year (in real terms) until 2019 and that the social return on that investment is 20%. There is a large pipeline of available projects. Commitments in the first half of 2017 were nearly at the target level and there is a pool of prospective and potential infrastructure projects available for PPPs. For example, 245 infrastructures were identified in the 2014 RPJMN. Of these KPPIP selected 30, now increased to 37, Priority Projects. Planned PPP funding for these projects is \$95,210 million.³³ Haryanto (2017) presents a list of 31 National Strategic Projects with the potential for private sector involvement. Their total value is \$61,708 million, well above the level of investment assumed here (which totals 2016 \$32,275.2 million from 2016–19).

69. Further, it is reasonable to assume that these projects have been selected for high returns and PPP suitability. It will be assumed the social return on PPP investment is 20%, which is a conservative average of the returns on infrastructure investment in the past. It is assumed PPPs give at least as high a return as public projects. Superior private sector efficiency would raise the return, the costs of running PPPs would lower it.

70. Examining the IMF's PPP investment data (column 4), it is clear PPP investment started to recover in 2006 and grew strongly until 2008 but then flattened out until 2012, where is jumped again but was flat until 2015. From 2008 to 2015, investment grew at the same (geometric) rate as GDP but fluctuated a lot more. PPP investment averaged 0.19% of GDP (see column 6) –which is what it was in 2008 and 2015. Annual investment averaged 2017 real IDR16,592.54 billion from 2008–11 and IDR23,819.42 billion from 2012–15, close to the 2015 figure.

71. It is assumed that without the reforms, infrastructure investment would have stayed at the 2015 level (for the next 4 years) and any extra PPP investment above that is attributed to the PPP reforms. That is, the reforms encouraged extra PPP investment of 2017 IDR88,125 billion in 2016.

72. It is assumed that the extra annual infrastructure investment commitments encouraged by the reforms last for the planning period—for 4 years only, from 2016 until the end of 2019. This is conservative, the reforms may continue to encourage new PPP projects beyond 2019. But it seems reasonable to assume the policy only has affects through the planning period. After that the policy is likely to be assessed and revised. But the resulting investment may take some years to be realized (we assume it is spread out over 2 years on average) and will have an effect (produce benefits) for many years (these are long lived assets).

73. Not all of the investment commitments represent additional infrastructure investment. The government also funds PPPs, for example through viability gap funding, the project development facility and guarantees. As the government could have used that money to build infrastructure itself, only the extra private funding (which ultimately comes from users) represents additional infrastructure.

³² Using the GDP deflator with a 2010 base to convert to 2017 IDR and then using the OECD 2017 average exchange rate of 13,333.

³³ Haryanto (217) p.15.

74. There is little information on the extent of government subsidy to PPPs. Murti (2017) tells us one large PPP receives a subsidy of 35%. Another receives 55%. It is assumed the average level is 45%, so the amount of additional infrastructure investment attributable to the reforms will be 2017 IDR88,125 billion x0.55 = IDR48,468 billion or \$3,642 million for each of 2016, 2017, 2018 and 2019. Subtracting the estimated amount of government support accounts for the opportunity cost of moving funds from direct infrastructure investment to PPPs.

75. What are the benefits from this investment? The IMF assumes public infrastructure investments in medium income countries depreciate at 3.55% per year (infrastructure assets tend to be long lived). If the social return on investment was 20% and the social discount rate were 12% (a slightly higher discount rate deemed more appropriate given the higher market risk these investments bear), and benefits start in one period's time (with payments received or made at the beginning of the period), then \$100 of investment produces a stream of benefits with a net present value of \$137. The project has a net benefit of \$37 and a benefit cost ratio of 1.37

76. To the extent infrastructure construction takes longer than one year, the benefits must be discounted, 12% for each additional year. Also, the costs will be spread out. If we assume the costs are spread equally over each year of construction, then if the average investment takes 2 years, then the net present value for a \$100 investment is \$50. For 3 years, it would be \$34. Infrastructure projects seems to take from 2 to 4 years to build. We assume a 3-year average.

77. Under these assumptions, the reforms encourage extra annual infrastructure investment of \$3,642 million, which produces benefits with a present value of \$469 million. It is assumed the reforms encourage this extra investment for four years giving an estimated benefit (using a 12% discount rate) of \$1,843 million at the end of 2017. These estimates assuming project selection and administration manages to produce projects with these high (20%) social returns and the PPP is run so as to reap these returns. The benefits will be less if risk is not properly allocated between the private and public sector. For example, if the private sector bears risks that it is cheaper for the government to bear.

78. If the average proportion of government funding increased from 0.45 to 0.5 then the extra investment would only be 50% of the value of the PPP rather than 55% and the benefits would fall by 10% (=5/50). A further 5%-point rise would reduce the benefit by 11.1% (=5/45). A given percentage point rise in the proportion has a greater percentage effect on benefits.

79. As these assumptions very uncertain, some sensitivity analysis is done, which identifies how project benefits are affected by changes in parameter values. The following table shows what happens to benefits if we vary the assumptions on the rate of return and construction time.

Annual benefit from extra annual infrastructure investment of \$3,642 million, under different assumptions, 2017 \$M.

Rate of return	Construction time (years)		
	2	3	4
10%	-1,356	-1,399	-1,430
15%	-310	-465	-597
20%	735	469	237
25%	1,781	1,402	1,070
30%	2,827	2,336	1,904

80. The sensitivity analysis shows the importance of choosing investments with a high rate of return. If the rate of return were only 10%, then the investments would lower wealth (with a 12%

social discount rate). To increase the return from 20% to 30% would more than double net benefits. An increase in construction times significantly lowers net benefits, which provides a case for PPPs, which are more likely to be built on time.

81. The policy has a cost to the public sector. The government has established a PPP unit to facilitate the development of infrastructure projects. Assuming that the unit is staffed by a team of thirty, at an average wage of \$40,000 per annum, plus 50% on-costs (accommodation, computers, office supplies), gives an annual cost of \$1.8 million. The present value of the cost (at the end of 2017) over four years is \$7.55 million. Cost are very small, less than one-tenth of 1% of net benefits. So large changes in the cost assumptions have little effect on net benefits.

Costs and Benefits for output 3: Faster and more transparent public procurement

82. This output generates measurable results by facilitating an increase in the use of electronic procurement across the public sector. This increase is observed in data from the LKPP on competitive e-procurement; reforms do not focus on e-purchasing, which does not exhibit corresponding increases over the reform period in the data; as such, e-purchasing benefits are excluded. Benefits are estimated using conservative savings assumptions (driven by increased efficiency/cost competitiveness under e-procurement) which are at the conservative end of the internationally accepted range.

83. An e procurement system benefits the private sector as well as governments. It promotes transparency by collecting and publishing public procurement information and enhancing access for suppliers and other stakeholders through standardized and simplified processes and increases government accountability. It provides better value for money for governments because it promotes competition, which lowers prices and facilitates participation of suppliers. Economies that have implemented the use of electronic means to conduct public procurement have reported efficiency gains from 10% to 20% of the total volume procured through electronic means.³⁴

84. Moving procurement online reduces bureaucrat's chances to extort bribes (a gain because it reduces rent-seeking behavior). The following chart shows that the number and amount of tenders conducted electronically.

Year	e-tendering			e-purchasing		
	Number of Auctions	Ceiling Value (IDR Million)	Growth	Package Count	Transaction Value (IDR Million)	Growth
2008	33	525				
2009	1,724	3,372,032	642192%			
2010	6,397	13,424,756	298%			
2011	24,475	5,328,654	-60%			
2012	91,356	151,286,703	2739%	1,264	634,392	
2013	131,908	249,394,629	65%	10,508	9,572,474	1409%
2014	136,097	310,050,601	24%	17,827	15,705,176	64%

³⁴ World Bank (2016) p.28.

Year	e-tendering			e-purchasing		
	Number of Auctions	Ceiling Value (IDR Million)	Growth	Package Count	Transaction Value (IDR Million)	Growth
2015	161,513	318,434,775	3%	76,562	31,124,643	98%
2016	147,555	398,995,119	25%	242,920	50,795,177	63%
2017	123,779	395,711,860	-1%	310,667	46,841,138	-8%

Uses ceiling value on ADB advice. Source: <http://report-lpse.lkpp.go.id/v2/beranda>

85. Looking at the value of e-tenders, it grows rapidly and then levels out in 2015, then grows rapidly in 2016 and levels out in 2017. From this pattern, it is assumed the SP3 reforms (in 2016) were responsible for the increase in tendering from 2015. That is, by IDR78,918,715 million (\$5,824 million)—the difference between the 2015 level and the average of the 2016 and 2017 levels. There is no evidence that the reforms have affected the amount of e-purchasing, which grew more rapidly before the reforms than after.

86. The LKPP estimates that from 2008–2016 the movement to e-tendering saved 9.64% on tenders. If so, the annual savings on the extra tenders induced by the reforms is IDR7,607,764 million (\$634 million). There is no reason why the reverse auction system would not continue to be used for government procurement. Benefits are estimated to accrue for the next 5 years, at which point full compliance with e-procurement is assumed—that is, 100% of procurement is undertaken electronically. The present value (at 9%) of these reforms is IDR29,591,548 (\$2,466 million). If the expected life of the reforms is shorter, but the benefit would be less, but with a high discount rate (9%), it would not make a large difference to the net present value. On the other hand, it is assumed the annual benefit remains constant, because tenders appear to have flattened out. If it is assumed that the extra tenders grow with GDP at 5% per year, the present of the benefit flow is IDR190 trillion (\$16 billion). Benefits from Jakarta local government e-tendering—not quantified as have no information.

87. So, benefits are a 10% gain on extra e-procurement induced by the change. But a reverse auction aims to increase competition and increase that gain—so there would be a further benefit on all procurement, not quantified here.

88. The reforms require development of e-procurement system and ongoing administrative and maintenance costs. The estimated costs are \$20 million for development costs and ongoing annual costs of \$5 million (forever).³⁵ It is assumed the administrative costs grow with GDP, at 5% per year. The present value of costs at a 9% discount rate is \$145 million. Again, the costs are relatively small compared with the benefits, and so large changes in these assumptions will have little impact on net benefits.

³⁵ Cost estimates from ADB advice.

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