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Golden Vision 2045: Making The Most Out of Public Investment

Tsendsuren Batsuuri, Raju Huidrom, and Philippe Wingender

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Asia and Pacific Department

Golden Vision 2045: Making The Most Out of Public Investment: Indonesia

Prepared by Tsendsuren Batsuuri, Raju Huidrom, and Philippe Wingender

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ABSTRACT: Aside from horizontal structural reforms, raising public investment should be a key pillar of Indonesia's pursuit of its Vision 2045. However, this must be complemented by policies aimed at enhancing the efficiency of public investment, thereby maximizing its impact. Mobilizing additional revenues will create the fiscal space needed to scale up the public investment while maintaining compliance with Indonesia's longstanding fiscal rules.

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Author's E-Mail Address:	TBatsuuri@imf.org, RHuidrom@imf.org , PWingender@imf.org

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Golden Vision 2045: Making The Most Out of Public Investment

Indonesia

Prepared by Tsendsuren Batsuuri, Raju Huidrom, and Philippe Wingender[1]

[1] We thank Agnes Isnawangsih and Shutong Niu for research support and Patricia Tanseco for editorial assistance.

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INDONESIA

SELECTED ISSUES

December 16, 2025

Approved By
Asia and Pacific Department

Prepared by Raju Huidrom (APD), Philippe Wingender and Tsendsuren Batsuuri (both RES) with research support from Agnes Isnawangsih and Shutong Niu (both APD).

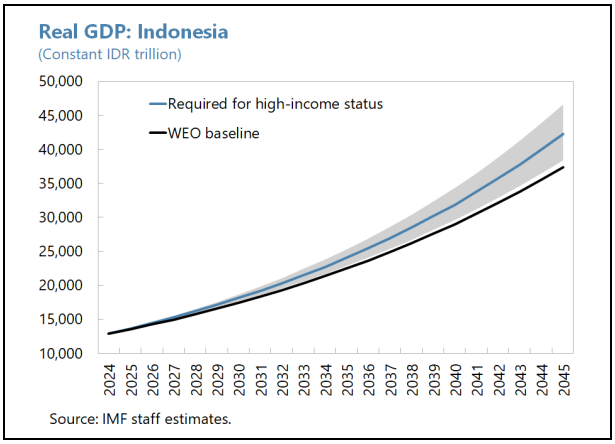
CONTENTS

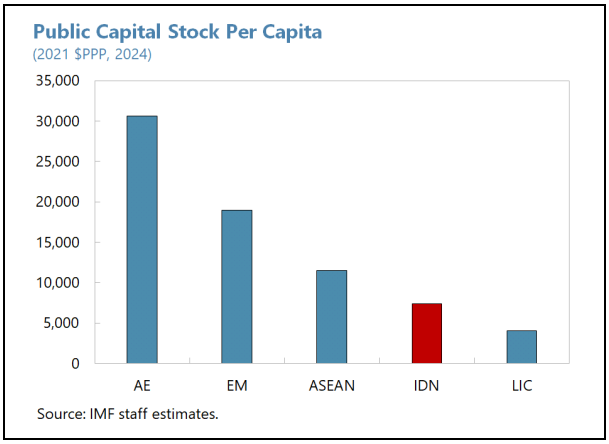
GOLDEN VISION 2045: MAKING THE MOST OUT OF PUBLIC INVESTMENT[1]

Aside from horizontal structural reforms, raising public investment should be a key pillar of Indonesia's pursuit of its Vision 2045. However, this must be complemented by policies aimed at enhancing the efficiency of public investment, thereby maximizing its impact. Mobilizing additional revenues will create the fiscal space needed to scale up the public investment while maintaining compliance with Indonesia's longstanding fiscal rules.

A. Introduction

1. Indonesia has set an ambitious target of achieving high-income status by 2045. Currently classified as an upper-middle income country, reaching this goal—Golden Vision 2045—would require a sustained high rate of real growth—estimated around 5½ -6½ percent annually over the next two decades (Annex I.A). As highlighted in previous IMF work, achieving this target would require broad-based structural reforms (IMF 2024).



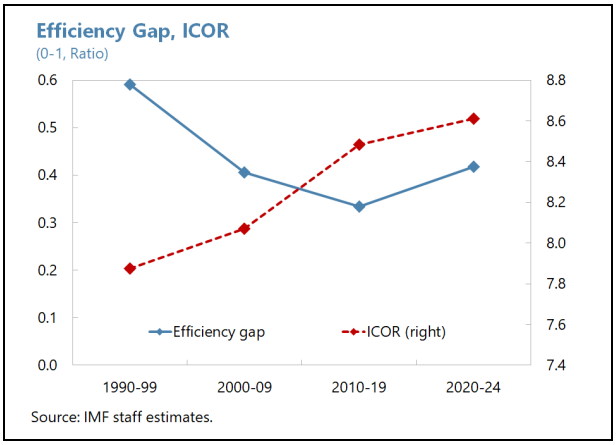


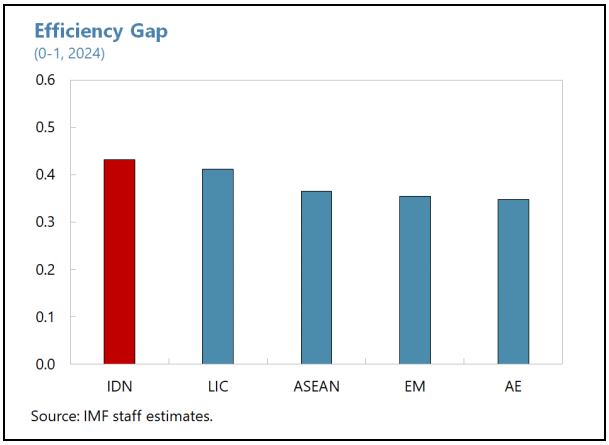
2. Boosting public investment—efficiently and prudently—is crucial for the growth agenda. This would help close current gaps in physical—and human—capital needed to bolster growth. Indonesia's public stock of capital per-capita is only a quarter of that of the advanced economies. Enhancing the efficiency of public investment is also important. Indonesia's efficiency gap—the difference between actual public spending outcomes and the best achievable outcomes with the same resources (IMF 2025)—remains large in international comparison.[2] After a steady decline beginning in the 1990s, the efficiency gap edged up in recent years, indicating a

[1] This chapter was prepared by Raju Huidrom (APD), Philippe Wingender and Tsendsuren Batsuuri (both RES). We thank Agnes Isnawangsih and Shutong Niu for research support and Patricia Tanseco (all APD) for editorial assistance.

[2] The efficiency gaps show distances to the spending efficiency frontier, where the frontier is estimated using a stochastic frontier analysis (details are in Online Annex 1.2 of IMF 2025). Efficiency gaps range from 0 (fully efficient) to 1 (fully inefficient).

deterioration in spending efficiency. This recent trend is also mirrored by a rise in the Incremental Capital Output Ratio (ICOR), implying that a larger investment is required for the same unit increase in output. Finally, fiscal prudence is a key pillar of this agenda with plans for boosting investment accommodated within Indonesia's longstanding fiscal rules (Indonesia's Staff Report 2025).





3. This paper presents a quantitative assessment of the impact of public investment on activity—the multiplier—and the role of spending efficiency therein. The public investment multiplier is the change in real output for a unit increase in real public investment.[3] We use two complementary approaches to assess the size of the public investment multiplier for Indonesia.

- *Empirical model.* Using a cross-country panel, we estimate the impact of public investment shocks on real output in the short run, deploying a local projections model. The model includes the efficiency gaps and also public capital stock per capita as (joint) interacting variables. Interacting with efficiency gaps allows us to derive conditional estimates of the multiplier that depends on efficiency gaps. The model includes interactions with public capital stock (per capita) because economic theory suggests that a lower stock of public capital should imply larger returns from public investment. Using the panel estimate, we then infer the size of public investment multiplier for Indonesia based on its levels of efficiency gap and public capital stock per capita.

- *Structural model.* To assess the size of the public investment multiplier over the medium-to-long term, we use the IMF's GIMF (Global Integrated Monetary and Fiscal Model) model—a dynamic structural model with a rich production structure (Section B). The model also features a fiscal sector with various financing options, which we exploit to assess how public investment can be scaled up while complying with Indonesia's fiscal rules, in particular the 3 percent of GDP fiscal deficit cap.

4. The main findings are as follows. First, cross-country evidence suggests the size of the public investment multiplier tends to be larger when the efficiency gap is smaller—i.e., when public

[3] More generally, the multiplier, for a given horizon over time, is defined as the discounted cumulative change in real output divided by the cumulative discounted increase in real public investment (see Huidrom and others 2020).

spending is more efficient—and when the initial public capital stock per capita is lower. Second, based on the level of efficiency gap and initial public capital stock per capita for Indonesia, the implied short-term multiplier for Indonesia is quite modest, around 0.5. Third, the model-based analyses using GIMF suggest that the supply-side effects of public investment would strengthen over time, contributing to a larger multiplier, reaching around 2 in the long term. Moreover, the long-term multiplier would be even larger (at around 2.6), if the efficiency of public spending is enhanced. Finally, the model's simulations suggest that a sustained increase in public investment, implemented efficiently and supported by revenue mobilization, would bring Indonesia closer to its Golden Vision of reaching high-income status by 2045.

B. Methodology

Empirical Model

5. The empirical approach follows a two-step process. First, we identify public investment shocks as unexplained residuals in a public investment equation (Abiad, Debuque-Gonzales, and Sy 2018). This approach isolates shocks to public investment that can plausibly be deemed exogenous to macroeconomic conditions. Second, we trace the impact of these identified shocks on real output, using a local projections framework (Jordà 2005).

6. Identification of public investment shocks. Following a flexible accelerator framework, we regress, in a panel setting, public investment as percent of GDP ($Pinv$) on a set of independent variables as follows:

$$Pinv_{i,t} = \alpha_i + \gamma_t + \beta X_{i,t} + \varepsilon_{i,t}$$

where $X_{i,t}$ denotes the set of independent variables: lags of public investment, GDP growth, and public debt. We also control for country and time fixed effects. We estimate the model covering a global sample of countries during the period 1981-2024. We then take public investment shocks as the estimated residuals from this equation. Details of the database are described in Annex I.B.

7. Local projections model. In a second step, we regress real GDP on the identified public investment shocks, again in a panel setting, controlling for country and time fixed effects. The estimated regression is as follows:

$$y_{i,t+h} - y_{i,t-1} = \alpha_i^h + \gamma_t^h + \beta^h Shock_{i,t} + \delta^h Shock_{i,t} * Pcap_{i,t} + \varphi^h Shock_{i,t} * Gap_{i,t} + \varepsilon_{i,t+h}$$

where $y_{i,t+h}$ denotes real GDP level in logs at time $t + h$ for country i, and $Shock$ denotes the public investment shocks as derived above. The novelty is to include efficiency gap (Gap) and public capital stock per capita ($Pcap$) as (joint) interaction terms in the local projections. For comparability and ease of inference, we normalize both efficiency gaps and public capital stock per capita to lie between 0 and 100. In this specification, the marginal impact of a public investment shock depends on both the efficiency gap and public capital stock per capita. To assess the role of efficiency gap in determining the output response, we evaluate the marginal impact for different percentiles of the efficiency gap while public capital stock per capita, without loss of generality, at Indonesia's level.

We use a similar scheme to assess the role of public capital stock per capita. We use the same estimation sample as before (global sample of countries during 1981-2024) which allows us to exploit heterogeneities—both temporal and cross-sectional—in efficiency gaps and public capital stock per capita, which is key to estimate the conditional multipliers.

GIMF Model

8. Model structure. The GIMF is a micro founded and forward-looking dynamic general equilibrium (DSGE) model designed for policy analysis across multiple regions. It incorporates overlapping generations (OLG) and liquidity-constrained households to break Ricardian equivalence, and features various tax and spending instruments. The production side features price-setting firms and unions in monopolistic competition and sectoral differentiation between non-tradables, tradables, and a Global Value Chain (GVC) sector, which introduces roundabout production and amplifies trade linkages.[4] Monetary policy operates via inflation-forecast-based rules, interacting with nominal rigidities like sticky prices and wages. In this paper, we use GIMF with six regions. In addition to Indonesia, remaining countries and regions include the United States, Euro Area, China, the Rest of Asia, and remaining all other countries. National accounts, and bilateral trade flows are calibrated using the GLORIA multi-region input-output (MRIO) database for 2023 (Lenzen and others 2017) and the fiscal data is calibrated using 2023 Government Finance Statistics (GFS).

9. Key calibration. The calibration of the structural parameters of the model follows previous studies; a detailed overview of the GIMF model and its calibration conventions are in Kumhof and others (2010) and Anderson and others (2013). In this paper, the central parameter of interest is the elasticity of output with respect to public capital (α_{KG}), which is set at 0.14 for all countries in line with the meta-analysis by Bom and Ligthart (2014). Once this elasticity is calibrated, the GIMF model endogenously determines medium- to long-term fiscal multipliers through its dynamic interaction of investment, capital accumulation, and output. In the model, investment efficiency—the amount of productive capital created per unit of investment—is embodied in α_{KG}, which governs how public investment translates into output via the public capital stock. To simulate higher efficiency, we raise α_{KG} by 30 percent (from 0.14 to 0.18), which reflects a permanent improvement in efficiency. A higher α_{KG} raises output by converting more investment into productive capital, with the effects unfolding gradually as the capital stock accumulates.[5] Consequently, the impact of improved investment efficiency is most pronounced in the long run, operating primarily through supply-side channels in the production function.

10. Transmission mechanism of public investment. The impact of higher public investment in GIMF operates through a set of channels that link government spending, the accumulation of productive public capital, private sector behavior, and long-run macroeconomic adjustment. A

[4] Recent applications of GIMF that include a GVC sector can be found in Wingender and others (2024) and Carton and Muir (forthcoming).

[5] In the GIMF model, higher investment efficiency can be represented either by increasing the elasticity of output with respect to public capital or by raising the share of investment converted into productive capital. Since both approaches yield similar long-run effects when efficiency gains are permanent, we adopt the first for simplicity.

central feature of the model is that government investment augments the stock of public infrastructure, which in turn raises the productivity of private firms. This supply-side mechanism differentiates public investment from public consumption and underpins the persistent medium- and long-run gains in output in the model simulations. Public investment also has important short-run demand effects. In the near term, it boosts demand: people get jobs, firms get contracts, and overall activity picks up.

11. Simulation set up. The simulation involves the following under both baseline efficiency and enhanced efficiency scenarios:

- *Public investment scale-up scenario.* Public investment progressively increases from 0.25 to 1 percentage points of GDP over the next twenty years.

- *Financing.* Initially, the higher public investment is fully deficit-financed. Over time, however, the labor income tax is gradually increased to reduce the reliance on deficit financing. This reform sequencing allows for less drag on the economy initially from a higher tax burden. The choice of using labor income tax, among the financing schemes, to mobilize revenue is illustrative.

- *Monetary policy.* While long-run supply side effects are key to understanding the simulation results, short-run demand dynamics also play a key role. Higher public investment, by increasing aggregate demand, raises inflation which results in an endogenous monetary policy rate tightening in the model. We introduce exogenous negative shocks to the policy rate such that overall monetary policy rate remains slightly expansionary or broadly neutral over the projection period (Annex I.C).[6]

- *Labor market.* Higher public investment endogenously raises labor demand in the model. It can also be expected to raise labor supply over time reflecting positive externalities from improved infrastructure and other public facilities—which is not fully modeled. We, therefore, introduce an exogenous labor supply increase of 0.5 percent. Together, this implies a reasonable contribution of labor to output gains in the model simulation.

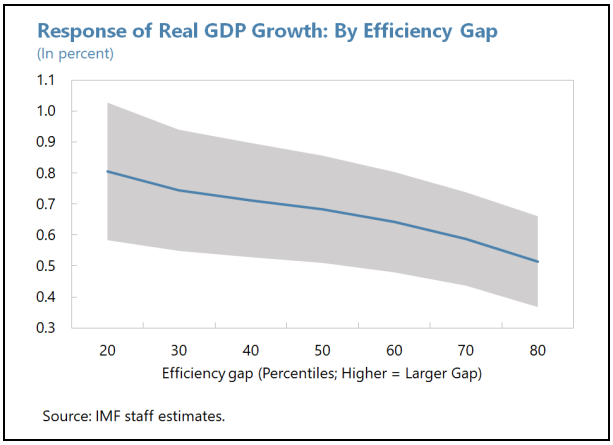
C. Results

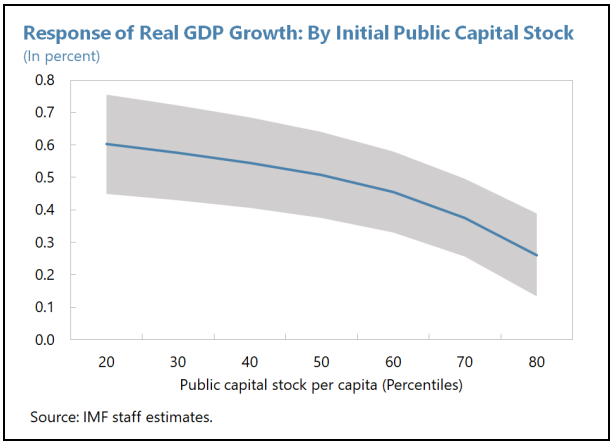
Empirical Model

12. Public investment tends to have a larger impact on output when the efficiency gap and the initial public capital stock per capita are smaller. The figures below show the response of real output on impact due to a 1 percentage point increase in public investment for different levels of efficiency gaps and public capital stock per capita. The output response on impact of the shock is larger—and also statistically significant (at the 90th percentile)—when the efficiency gap is smaller. The estimates would imply a short-term multiplier of about 0.8 when the efficiency gap is at the

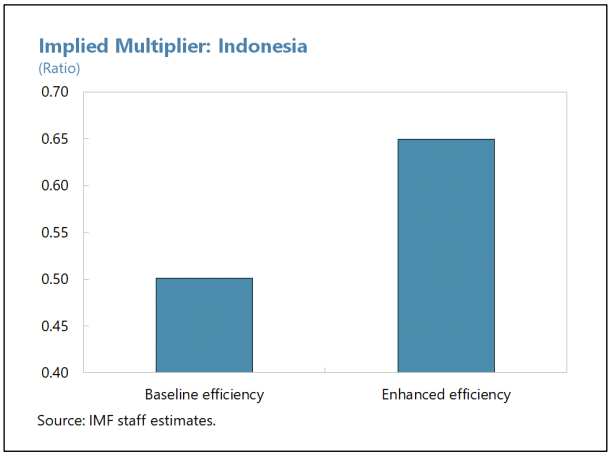
[6] Indonesia's monetary policy is determined by the joint use of multiple instruments, including the policy rate, open market operations, macroprudential policy tools, and FXI. An elaborate discussion of these instruments is beyond the scope of this paper.

20th percentile of the sample, falling to about 0.5 at the 80th percentile. These results are consistent with the findings in the literature (Abiad, Furceri, and Topalova 2016; Baum and others 2020). The dependency of the multiplier on the initial public capital stock per capita—larger multiplier for a lower stock—is also consistent with economic theory and empirical evidence (IMF 2020).



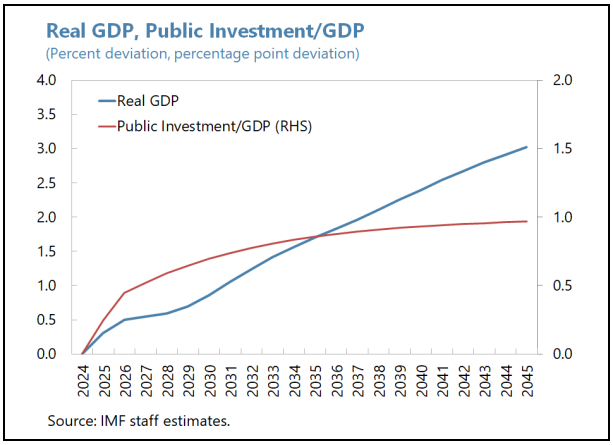


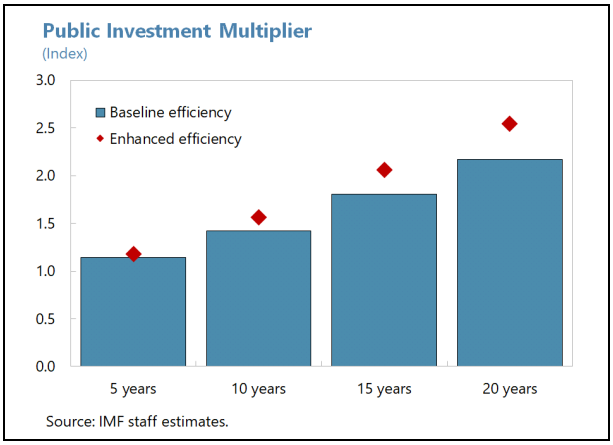
13. Based on its level of Indonesia's efficiency gap and public capital stock per capita, the estimated short-term multiplier for Indonesia is quite modest. To infer the multiplier for Indonesia from the panel estimate, we evaluate the marginal effects in the local projections model based on Indonesia's efficiency gap and capital stock per capita in 2024. We obtain an estimated short-term multiplier of 0.5, which is quite modest. Counterfactual analysis suggests that the multiplier could be larger, close to 0.7, if Indonesia's efficiency gap were narrowed to similar levels as in advanced economies. Thus, improving spending efficiency—reducing the efficiency gap—would deliver a greater bang for the buck.



GIMF Model

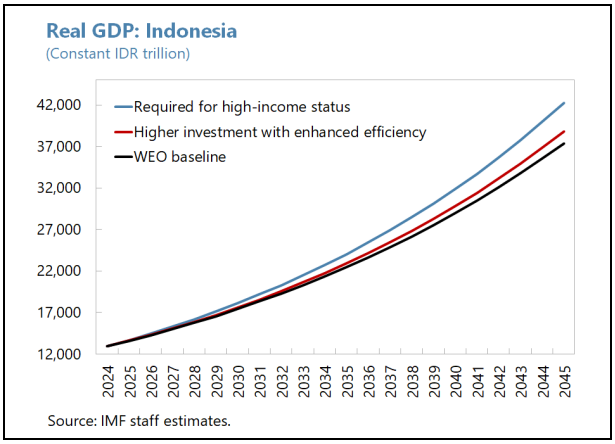
14. Effects of higher public investment would strengthen over time through its supply side effect. To complement the short-run empirical analysis of the previous section, we rely on our fully structural model to trace out the impact of higher investment on GDP over the medium to long run. In response to the public investment scale-up, under baseline efficiency, real GDP would increase by about 0.7 percent relative to the baseline in the medium term (5 years), increasing to about 3 percent in the long term (20 years). This translates into a multiplier of about 1.2 in the medium term, rising to about 2 in the long term as the supply-side effects of public investment strengthen. Our results are broadly in line with other studies that find large multipliers from public investment in the medium to long terms (Adarov, Clements, and Jalles 2024; IMF 2020).

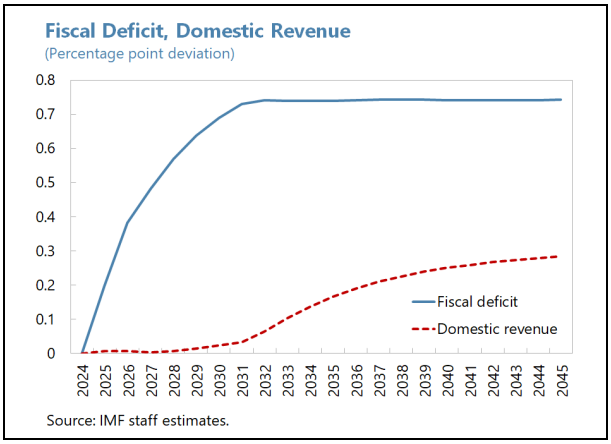




15. The multiplier would be larger with enhanced efficiency. With higher investment efficiency, the long-run multiplier rises substantially, reaching around 2.6 in the long run. In GIMF, this difference arises because efficiency determines how much of each unit of public investment is converted into productive public capital. When efficiency is higher, the same fiscal spending produces a larger increase in the public-capital stock, accelerating the accumulation of effective public capital at unchanged fiscal cost. This stronger capital build-up generates greater crowding-in of private investment, faster gains in potential output, and larger increases in real wages and consumption relative to the baseline scenario. Consequently, the supply-side mechanisms that underpin medium- and long-term multipliers become markedly stronger under enhanced efficiency.

16. Higher public investment—implemented efficiently—would make a meaningful contribution to lifting Indonesia toward high-income status. Our simulations suggest that the boost in public investment under enhanced efficiency would raise Indonesia's real GDP sizably, closing about one-third of the long-run income gap relative to the high-income benchmark. At the same time, the results underscore that the distance to the target is large, and that public investment—more broadly, fiscal policy—cannot be the sole instrument to bridge it. Achieving full convergence would require broad-based structural reforms centered on sustained productivity improvement, human capital development, and strengthening the business environment (IMF 2024).





17. With revenue mobilization, public investment scale-up can be achieved while remaining compliant with the 3-percent of GDP deficit cap. In our simulations, revenue measures gradually yield around 0.3 percentage point of GDP. These shifts—taken together—would keep the overall fiscal deficit within the 3-percent ceiling (compared with a starting point of 2.3 percent of GDP in 2024).[7] While illustrative, this underscores the broader point that the deficit cap can comfortably accommodate a boost in well-targeted priority spending, if supported by enhanced domestic revenue mobilization.

D. Conclusions and Policy Issues

18. Scaling up public investment should be a key pillar of Indonesia's pursuit of its Golden Vision, but this should be complemented by efforts to enhance its efficiency. Enhancing efficiency will require strengthening public investment management (PIM) practices throughout government levels, boosting project selection through rigorous project appraisal considering positive spillovers, while securing agile gatekeeping safeguards to minimize risks while avoiding bottlenecks. Implementing multi-year budgeting frameworks can effectively connect strategic spending plans with annual budgets. While the analyses in this paper focus on (on-budget) public investment, the quantitative findings and call for enhancing efficiency broadly apply to investments by Danantara (Indonesia's newly created sovereign wealth fund). There is also a role for broad-based structural reforms and private investment as Indonesia pursues its Golden Vision.

[7] Boosting public investment should also be accompanied by broad-based structural reforms (¶15). The latter would deliver additional growth and revenue dividends. Thus, in a holistic reform package, the impact on fiscal deficit would be smaller than the one illustrated in the current simulation.

Annex I. Technical Details

A. Real Growth Required for High-Income Status

1. The calculations underpinning the required growth are as follows. The high-income status threshold is defined in terms of the nominal GNI per-capita. To project the threshold in 2045, we take the threshold set for 2026 by the World Bank Group, and apply a nominal annual growth of 2.3 percent, based on historical trends of the threshold. We assume an average annual population growth of about 0.5 percent (broadly in line with UN projections) and inflation of 2.5 percent (mid-point of Indonesia's inflation target range). These result in a required annual real GDP growth of 5.3 percent over the next two decades. A higher required growth of 6.3 percent would come from assumptions of a combination of higher high-income threshold growth, lower headline inflation, and higher population growth. For the WEO baseline, the long-term projection assumes the WEO annual real growth at end of the medium term.

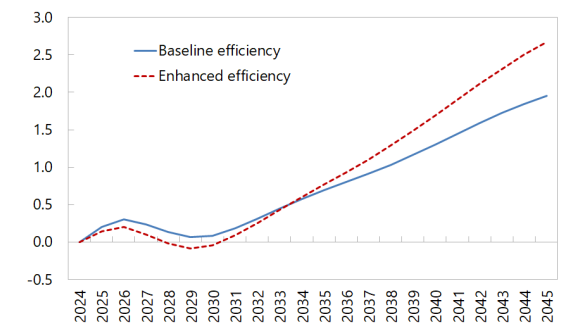
B. Database

2. The database is compiled from multiple sources. Public investment and efficiency gap are taken from the Fiscal Monitor October 2025 database (IMF 2025). Public capital stock per capita is based on the IMF's Investment and Capital Stock Dataset (ICSD 2021), which is extended using public investment flow data, adjusting for depreciation. For Indonesia, the database and the analyses in the paper take public capital investment (above-the-line) from the fiscal accounts as public investment. Data for the rest of the macroeconomic variables are sourced from IMF (2020), which are extended to 2024 using the IMF's WEO database. For the ICOR calculation, the change in capital stock is proxied by the investment flow which abstracts away from depreciation.

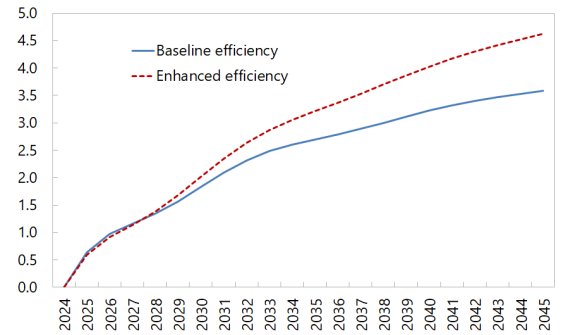
C. GIMF Extra Results

3. We present the dynamics of key macro variables in response to the scale-up in public investment. The results are presented for both the baseline and enhanced efficiency versions.

Annex I. Figure 1. Indonesia: GIMF Model Simulations



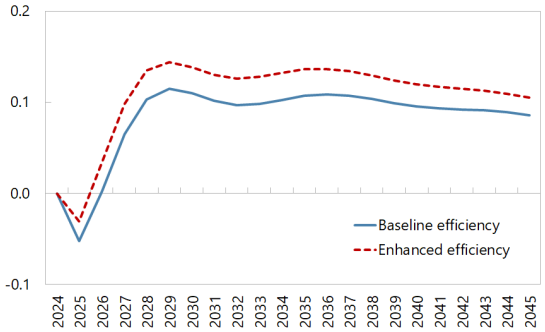
Source: IMF staff estimates.



Source: IMF staff estimates.

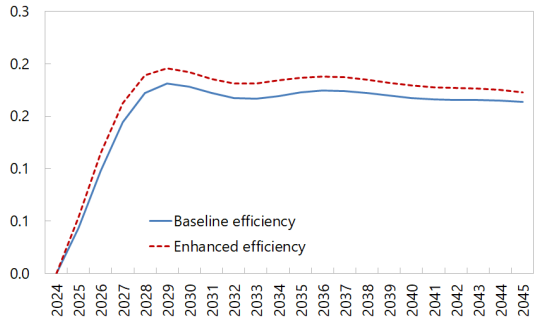
Annex I. Figure 1. Indonesia: GIMF Model Simulations (Concluded)

Policy Rate
(Percentage point deviation)



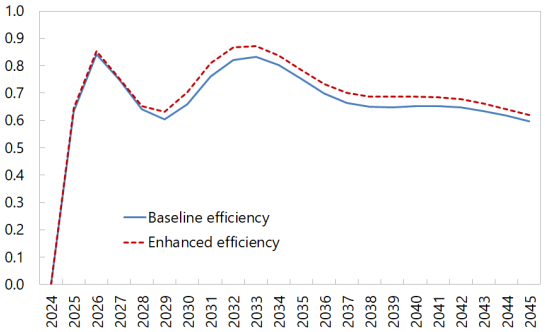
Source: IMF staff estimates.

Headline Inflation
(Percentage point deviation)



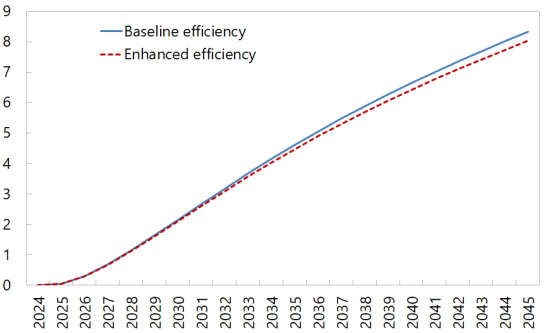
Source: IMF staff estimates.

Aggregate Labor
(Percent deviation)



Source: IMF staff estimates.

Government Debt / GDP
(Percentage point deviation)



Source: IMF staff estimates.

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