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The effect of productive spending on regional economic growth

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ABSTRACT

Regional expenditure is often considered productive merely because it is recorded as capital spending, although its growth effect depends on targeting, execution timing, asset quality, program complementarity, and local institutional capacity. This study examines how productive expenditure influences regional economic growth in Indonesia using a qualitative library research design and document analysis. The corpus covers scholarly articles, international institutional reports, regulations, Statistics Indonesia growth data, and the national regional-budget posture reported in the Ministry of Finance's Regional Financial Information System. Evidence was processed through data reduction, thematic coding, cross-source comparison, and explanatory synthesis. Productive expenditure operates through five channels: expanding infrastructure stock, strengthening human capital, reducing transaction costs, improving the productivity of leading sectors, and generating demand multipliers. These effects are conditional and time-lagged. The budgeted capital-spending share ranged from 15.83 to 18.20 percent of total regional expenditure in 2020–2024, while execution levels and timing fluctuated. Economic growth recovered from a 2.07 percent contraction in 2020 to 5.03 percent in 2024, but this aggregate pattern cannot be interpreted as direct causal evidence. The study's novelty is the Productive Expenditure Transmission Matrix, which integrates allocation, execution, output quality, complementarity, and lagged outcomes. The findings imply that local governments should move from a spending-volume orientation toward portfolio quality and asset functionality.



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Introduction

Fiscal decentralization places local governments as important actors in the provision of infrastructure, education, health, connectivity, and basic services that shape regional productivity. The large amount of regional transfers and expenditures provides opportunities to accelerate growth, but budget expansion does not automatically result in additional economic capacity. Differences in the quality of planning, spending structure, procurement accuracy, asset maintenance, and bureaucratic capabilities lead to different results between regions. Therefore, the relevant question is not only how much local governments spend the budget, but also on what activities, when they are realized, how well the outputs are, and whether these outputs are actually used by households and business actors.

The endogenous growth theory explains that certain public expenditures can enter the production function and increase the productivity of private capital (Barro, 1990). Road, water, sanitation, energy, educational facilities, and health infrastructure can reduce production costs while expanding the capacity of human

resources. Aschauer (1989) points out the relevance of public capital to productivity, while Easterly and Rebelo (1993) assert that the fiscal components related to transportation and communication have an important relationship with growth. However, Devarajan et al. (1996) remind that a priori classifications of productive do not necessarily result in growth if the composition is excessive, not in accordance with needs, or poorly managed.

In the Indonesian context, the main problem is not only the lack of capital expenditure. Lewis and Oosterman (2011) show that some regional investment has been directed to administrative assets whose economic benefits are lower than service infrastructure. Lewis (2013) also found that transfer design affects the type of capital expenditure chosen by local governments. A World Bank study (2020a) confirms that quality, efficiency, and implementing institutions determine whether public spending results in services and development outcomes. In the education sector, variations in the planning and implementation capabilities of district and city government budgets cause the relationship between the amount of expenditure and the quality of services to be not always in the same direction (World Bank, 2020b).

Macro data shows the importance of reading fiscal and growth relationships carefully. Indonesia's economy contracted by 2.07 percent in 2020, then grew by 3.70 percent in 2021, 5.31 percent in 2022, 5.05 percent in 2023, and 5.03 percent in 2024 (BPS, 2021, 2022, 2023, 2024, 2025). At the same time, the SIKD Portal shows that the portion of the capital expenditure ceiling to total regional expenditure is in the range of around 15.83–18.20 percent during 2020–2024 (DJPK, 2026). The similarity in the direction of change in a given year does not prove causality because growth is also influenced by household consumption, exports, private investment, commodity prices, monetary policy, post-pandemic recovery, and the character of regional economic structures.

Previous literature generally follows two paths. The first track examines the quantitative relationship between government spending, public capital, and growth; the second track evaluates governance and spending efficiency. This separation leaves an analytical gap: spending is often measured in terms of nominal or ratio, while the process of transmission from budget to functional assets, utilization, productivity, and growth has not been mapped in an integrated manner. In addition, the term productive spending is often equated with capital expenditure, whereas spending on goods and services for maintenance, training, service digitization, preventive health, or supply chain support can also increase production capacity when designed as part of a single output portfolio.

This research aims to answer three questions. First, how should productive expenditure be defined in the regional financial framework? Second, through what mechanism is the expenditure related to regional economic growth? Third, what conditions strengthen or weaken the transmission? The theoretical contribution of the research is to move the unit of analysis from the expenditure account to the fiscal value chain. The methodological contribution is in the form of triangulation of literature, regulations, and fiscal-economic data. The practical contribution is the Productive Expenditure Transmission Matrix or MTBP which can be used to assess the readiness of a program to produce economic impact.

The novelty of the research lies in the integration of five dimensions that have often been analyzed separately: the quality of allocation, the accuracy of execution, the quality and functionality of outputs, the complementarity of policies, and the time lag and outcome. With this framework, increasing productive spending is not understood as a mechanical addition to capital expenditure, but as an effort to convert fiscal resources into production capacity that is used and maintained. This perspective is in accordance with the direction of strengthening central and regional financial relations in Law Number 1 of 2022, which emphasizes improving the quality of spending, harmonizing fiscal policies, and achieving public services.

Literature Review and Theoretical Framework

The Concept of Productive Spending

Economically, productive spending is public spending that increases the stock of physical, human, technological, institutional, or connectivity capital so that the region's production capacity increases in the medium and long term. This definition is function- and outcome-based, not just account-based. Capital expenditure is usually central because it generates fixed assets, but budget productivity also depends on operational spending that makes assets work. Health centers without manpower and medicine, roads without maintenance, digital devices without interoperability, or schools without improved learning quality are examples of assets that are recorded but not fully productive.

The composition of expenditure must be read together with life-cycle costs. Kneller et al. (1999) show that the classification of expenditure and the way it is financed affect the estimation of fiscal relationship with growth. Gupta et al. (2005) found that expenditure composition and fiscal position are equally relevant for the growth of low-income countries. From the perspective of public investment, the IMF (2015, 2018) emphasizes that the economic value of a project is determined by appraisal, selection, budgeting, implementation, procurement,

asset management, and evaluation. Thus, projects that are on the priority list cannot be called productive before passing through the entire chain.

This study distinguishes four groups. First, economic capital expenditure in the form of roads, irrigation, markets, drinking water, sanitation, energy, and digital infrastructure. Second, social and human capital expenditure in the form of facilities and education and health systems. Third, complementary operational expenditure that maintains asset functions, including maintenance, information systems, competency development, and essential service materials. Fourth, catalytic spending that lowers investment barriers, strengthens innovation, increases climate resilience, or connects MSMEs with the market. This grouping does not mean that every rupiah in this category is automatically productive; productive status is determined by evidence of needs, benefits, quality of implementation, and utilization.

Table 1. Operationalization of Productive Expenditure in Regional Finance

Groups	Example	Economic path	Verification indicators
Economic capital	Roads, irrigation, markets, drinking water, sanitation, energy, digital connectivity	Logistics costs fall; market access and productivity rise	Asset condition, travel time, scope of service
Social and human capital	Relevant educational, health, laboratory, training facilities	Improved quality of labor, health, and economic participation	Learning outcomes, health status, certifications, work participation
Complementary operations	Maintenance, service, drugs/materials, data systems, asset security	Functional assets and continuous service	Function level, downtime, maintenance costs, user satisfaction
Catalytic shopping	Innovation, digitalization, supply chain support, risk mitigation, investment facilitation	Transaction barriers and business risk decreased	Service time, inbound investment, technology adoption, resilience
Unproductive or low-benefit spending	Excess assets, unnecessary administrative buildings, fragmented projects	Small impact; increased operating costs and opportunities	Low utilization, stalled projects, high cost per output

Source: Author's synthesis based on the IMF (2015, 2018), OECD (2014), World Bank (2020), and Lewis & Oosterman (2011).

Growth Mechanism and Institutional Role

Public capital can influence growth through the supply and demand sides. On the supply side, infrastructure and human capital increase the productivity of factors of production, expand agglomeration, and encourage private investment. On the demand side, procurement and construction create income, jobs, and demand between. The demand effect tends to be faster but temporary, while the supply effect takes longer and depends on the quality of the asset. The meta-analysis of Bom and Ligthart (2014) shows that the productivity of public capital varies according to the type of asset, level of government, period, and estimation method. Calderón et al. (2015) also affirm the heterogeneity of infrastructure productivity.

The quality of governance is a conditioning variable. Rajkumar and Swaroop (2008) found that good governance strengthens the relationship between public spending and outcomes. At the regional level, the ability to prepare projects, manage contracts, complete land acquisitions, monitor quality, and maintain assets determines the conversion of inputs into benefits. When capacity is low, additional budgets can increase prices, encourage projects that are easy to spend but are less needed, or pile up jobs at the end of the year.

Decentralization provides information benefits because local governments are closer to the needs of citizens, but it also poses the risk of fragmentation, capacity inequality, and short-term political incentives. The OECD (2019) emphasizes the importance of clarity of responsibility, coordination between levels of government, subnational capacity, and a fiscal system that supports results. In Indonesia, Law Number 1 of 2022 changed the framework of central-regional financial relations and expanded the orientation on fiscal synergy and the quality of spending (Lewis, 2023). Thus, the impact of productive spending is not only determined by spending autonomy, but also by the incentive and accountability architecture.

Synthesis of Previous Studies**Table 2.** Main Literature Matrix

Studies	Scope/method	Focus	Relevant findings
Aschauer (1989)	United States; time series	Public capital and productivity	Public capital is positively related to productivity; the issue of causality remains important.
Barro (1990)	Endogenous growth model	Productive government spending	Productive spending can boost growth, but taxes and the scale of spending pose trade-offs.
Easterly & Rebelo (1993)	Cross country	Fiscal policy and growth	Transportation-communication spending shows a relatively strong relationship with growth.
Devarajan et al. (1996)	43 Developing Countries	Shopping composition	Productive labels are not enough; excessive spending or miscomposition can negatively impact.
Kneller et al. (1999)	OECD countries	Spending, taxes, and growth	Fiscal effects must assess expenditure along with the source of financing.
Gupta et al. (2005)	39 low-income countries	Fiscal composition	Capital expenditure and a good fiscal position support growth.
Romp & de Haan (2007)	Survei empiris	Public capital and growth	The majority of studies found positive effects, but the magnitude was sensitive to methods and contexts.
Rajkumar & Swaroop (2008)	Cross country	Spending, governance, outcomes	Spending effectiveness increases when governance quality improves.
Bom & Ligthart (2014)	Meta-analysis	Elasticity of public capital output	Asset type, government level, and time horizon explain the heterogeneity of outcomes.
Lewis & Oosterman (2011)	Subnational Indonesia	Level, structure, capital financing	Capital expenditure needs to increase while shifting from administrative assets to useful infrastructure.
Lewis (2013)	Indonesia; Dynamic panel	Transfers and capital expenditures	DAK triggers additional capital expenditures differently according to the type of asset; the design of the transfer determines the composition.
World Bank (2020a)	Indonesia; public expenditure review	Quality and shopping results	Additional budgets must be accompanied by efficiency, coordination, and results-oriented.
Wiryawan & Otchia (2022)	Decentralized Indonesia	Local and industrial shopping	Regional capital expenditure plays a role in the development of the non-oil and gas industry, with variations across regions.
Sofilda et al. (2023)	484 District/City	Decentralization, human capital, growth	Central transfer, PAD, and human development are positively correlated with regional growth.
ADB (2023)	Subnational Indonesia	SDGs and regional capacities	Data, coordination, financing, and local capacity are prerequisites for achieving development results.

Source: Processed by the author from the listed publications. The matrix summarizes the direction of the findings, not the similarity of the design of each study.

Method

The research uses a qualitative approach with library research design and document analysis. This design was chosen because the purpose of the research is not to calculate new causal coefficients, but to explain the mechanisms, conditions, and patterns of the relationship between productive spending and regional economic growth based on evidence triangulation. Document analysis allows researchers to read policy content, administrative data, and research findings as evidence that has a different production context (Bowen, 2009). Literature review is positioned as a transparent research method in the selection, evaluation, and synthesis of knowledge (Snyder, 2019).

The source corpus is constructed purposively. Academic sources are selected when they discuss at least one of the five themes: public capital productivity, composition of expenditures, quality of public investment, fiscal decentralization, or regional growth. Policy sources include Law Number 1 of 2022, Government Regulation Number 12 of 2019, Regulation of the Minister of Home Affairs Number 77 of 2020, and Regulation of the Minister of Finance Number 24 of 2024. The main data sources are the release of BPS economic growth 2020–2024 and the national APBD posture of the DJPK SIKD Portal. World Bank, IMF, OECD, ADB, and Bappenas reports are used to strengthen readings on the quality of spending, public investment, subnational capacity, and development priorities.

The search used a combination of keywords in Indonesian and English, including productive spending, regional capital expenditure, quality of spending, regional economic growth, public capital productivity, subnational expenditure, fiscal decentralization, public investment management, and regional growth. The search principle follows the flow of identification, relevance screening, feasibility assessment, and source recording as recommended by Tranfield et al. (2003) and, in the aspect of reporting transparency, Page et al. (2021). Because this study is an integrative review and not a meta-analysis, the heterogeneity of definitions and methods is not forced into a single measure of effect.

The analysis was carried out in four stages. First, data reduction to extract definitions, variables, contexts, methods, mechanisms, and key findings. Second, thematic coding into categories of allocation, execution, output quality, complementarity, institutional capacity, time lag, and outcome. Third, cross-source comparisons to identify suitability, contradictions, and limiting conditions. Fourth, the preparation of conceptual explanations through data display and iterative conclusion drawing following Miles et al. (2014). Validity is maintained through triangulation of source types, separation between factual and interpretive data, and marking of numerical comparability boundaries.

The unit of analysis is the transmission chain of local government spending, not individual local governments. The term influence in this study refers to the influence that is theoretically explained and supported by the synthesis of evidence, not causal estimates from primary data. Therefore, the aggregate data of BPS and DJPK function as an empirical context and a test of narrative fairness, not as a basis for concluding that changes in one aggregate cause changes in aggregates.

Table 3. Analysis and Quality Assurance Procedures

Stages	Procedure	Exodus
Source selection	Direct relevance; official sources; indexed articles; foundational works retained	List of sources and literature matrix
Extraction	Definitions, contexts, units, methods, outcomes, limitations	Thematic extraction sheet
Coding	Allocation, execution, output, complementarity, institutionality, lag, outcome	Theme and relationship maps
Triangulation	Compare articles, reports, regulations, BPS, and DJPK	Claims supported by more than one type of evidence
Sintesis	Explanation building and pattern comparison	MTBP and transmission typology
Inference restrictions	Not equating aggregate correlation with causality	Conditional conclusions and further test agenda

Sumber: Disusun penulis berdasarkan Bowen (2009), Tranfield et al. (2003), Snyder (2019), Page et al. (2021), dan Miles et al. (2014).

Results and Discussions

Regional Growth and Capital Expenditure Landscape

National economic growth is used as a context to understand the macro environment faced by regions. The contraction in 2020 reflects the shock of the pandemic, mobility restrictions, and a decline in production activities. The recovery in 2021–2022 occurred at the same time as the opening of activities, stimulus, improved consumption, and external conditions. Growth then held slightly above five percent in 2023–2024. This pattern shows that the relationship between regional spending and growth must be placed alongside cyclical factors and the structure of the national economy.

Spatial variation remains large. By 2024, the provincial group on the island of Java will contribute 57.02 percent to the national economy and grow by 4.92 percent, while other regions have different combinations of contributions and growth (BPS, 2025). Commodity-based regions, manufacturing, tourism, service centers, and agriculture face unequal fiscal multipliers. Port infrastructure can be highly productive in the logistics region of

the archipelago, while irrigation, raw water, or digital connectivity may be more relevant in other regions. Therefore, productivity must be assessed against key barriers and local flagship structures.

Table 4. Indonesia's Economic Growth 2020-2024

Year	Growth c-to-c (%)	Remarks
2020	-2,07	Contractions due to the pandemic; weakening of activity base
2021	3,70	Early stages of recovery
2022	5,31	Recovery strengthens
2023	5,05	Normalization in the range of five percent
2024	5,03	Growth is stable; slower by 0.02 points than 2023

Source: BPS (2021, 2022, 2023, 2024, 2025). The 2021 figure in the initial release was recorded at 3.69 percent and then presented at 3.70 percent in the BPS comparison series.

Postur APBD memperlihatkan dua hal. Pertama, porsi pagu belanja modal terhadap total belanja menurun dari 18,20 persen pada 2020 menjadi sekitar 16 persen pada 2021–2024. Kedua, tingkat realisasi berfluktuasi dan informasi antarperiode tidak sepenuhnya sebanding. Portal mencatat data 2020–2022 sebagai realisasi sampai Perda/tahun penuh, sedangkan 2023–2024 pada tampilan yang diakses merupakan realisasi sampai September. Oleh karena itu, angka realisasi 2023–2024 hanya menggambarkan ritme pelaksanaan pada titik waktu tersebut, bukan pencapaian akhir tahun.

Table 5. Capital Expenditure Posture of the 2020-2024 National Budget

Year	Shopping in the Ceiling Area (Rp T)	Ceiling capital expenditure (Rp T)	Portion of the ceiling (%)	Realization of capital (Rp T)	Realization/payment (%)	Status period
2020	1.300,35	236,67	18,20	157,57	66,58	Perda/full year
2021	1.230,11	196,82	16,00	167,35	85,03	Perda/full year
2022	1.200,87	190,16	15,83	195,11	102,60	Perda/full year
2023	1.286,19	213,48	16,60	72,61	34,01	Until September
2024	1.440,46	238,19	16,54	85,55	35,92	Until September

Source: Processed from the DJPK SIKD Data Portal (accessed September 17, 2026). The portion of the ceiling is calculated as capital expenditure divided by total regional expenditure. The 2022 figure is above 100 percent following the portal data and needs to be read along with the updates/changes to the APBD and the disclaimer of anomalies on the portal.

Table 5 is not used to estimate the elasticity of growth. However, the data corroborates the issue of execution quality. Projects that are late in tender or accumulate at the end of the year reduce the duration of benefits in the current year, increase quality risk, and shift the economic impact to the next period. Realization is also not synonymous with success because payments can occur on assets that are of low quality, unconnected, or underutilized. Conversely, slightly lower realizations can still yield high benefits if projects are prioritized selectively and maintained in quality.

The framework for regional financial management in Government Regulation Number 12 of 2019 and the technical guidelines of Permendagri Number 77 of 2020 provide a basis for planning, budgeting, implementation, administration, and accountability. PMK Number 24 of 2024 adds an instrument for compliance with mandatory spending. However, meeting the minimum percentage does not necessarily guarantee productivity. The challenge is to connect mandatory spending with service standards, outcome targets, and cost-benefit evaluation.

Five Productive Shopping Transmission Lines

The framework for regional financial management in Government Regulation Number 12 of 2019 and the technical guidelines of Permendagri Number 77 of 2020 provide a basis for planning, budgeting, implementation, administration, and accountability. PMK Number 24 of 2024 adds an instrument for compliance with mandatory spending. However, meeting the minimum percentage does not necessarily guarantee productivity. The challenge is to connect mandatory spending with service standards, outcome targets, and cost-benefit evaluation.

First, the accumulation of physical capital. Roads, bridges, irrigation, drinking water, sanitation, markets, ports, and digital networks enlarge the public capital stock used by the private sector. The right infrastructure

lowers travel times, yield losses, energy costs, and distribution uncertainty. The effect is stronger when projects close real bottlenecks and connect with other networks. Straub (2011) emphasizes that quality, access, and networks determine the relationship between infrastructure and development, not the number of assets alone.

Second, the formation of human capital. Education and health spending increases learning ability, work productivity, participation, and household resilience. The effect has a longer pause than physical construction. Building spending must be combined with labor, curriculum, medicine, governance, and referral systems. The results of Indonesia's subnational education studies show that quality improvement requires the support of different planning and implementation capacities according to regional conditions (World Bank, 2020b).

Third, reduced transaction costs and uncertainty. Digitization of licensing, data integration, logistics structuring, spatial certainty, and fast administrative services reduce non-production costs. These expenditures are sometimes recorded as goods and services, but can be productive when they result in shorter service times, process certainty, and interoperability. Assessments should use indicators of time, user costs, and adoption rates, not the number of applications.

Fourth, strengthening of leading sectors and structural changes. Productive spending yields higher when aligned with the economic base. Wiryawan and Otchia (2022) show the relevance of local government spending to industrial development in decentralized Indonesia. However, policies should not lock regions into low-productivity commodities; infrastructure and skills need to be directed to increase added value, diversification, and local business connectivity.

Fifth, the demand multiplier effect. Procurement, construction, and purchasing of inputs increase the income of suppliers and workers. The magnitude of the multiplier is influenced by local content, production capacity, import leakage between regions, cyclical conditions, and financing. These effects can appear quickly, but they are not enough to be the basis for calling productive spending. Long-term productivity only occurs when the project builds capacity that continues to function after the demand stimulus ends.

Why the Impact of Spending Differs Between Regions

First, fiscal capacity and transfer dependency form the space of choice. Transfer can reduce service gaps, but its design affects compositional incentives. Lewis (2013) found that additional DAK relates to additional capital expenditures that differ between traditional infrastructure, social sectors, and other assets. This means that earmarking, companion funds, formulas, and performance requirements can direct regional behavior. The findings of Sofilda et al. (2023) also show that transfer, PAD, and human development need to be seen as a combination in regional growth.

Second, absorption capacity determines how quickly a budget turns into output. Capacity includes data on needs, design readiness, procurement, contract management, engineering supervision, land settlement, and coordination. Areas with large budgets but projects that are not ready are at risk of delays. The OECD (2014) places cross-level coordination, capacity, and fiscal frameworks as effective public investment principles. The IMF (2018) adds the importance of appraisal and asset management throughout the investment cycle.

Third, the quality of governance affects selection and quality. When accountability is absorption-oriented, organizations tend to choose projects that are easy to spend. When accountability is outcome-oriented, decisions pay more attention to functions and users. The relationship between spending and outcome that depends on governance as shown by Rajkumar and Swaroop (2008) is relevant to explain why similar nominals can produce different benefits.

Fourth, complementarity determines functionality. Production roads without connecting bridges, markets without access to logistics, medical devices without power, and applications without shared data are examples of missing links. Indonesia's public expenditure review shows that program fragmentation and weak coordination reduce the value of money (World Bank, 2020a). Bappenas (2024) emphasizes the synchronization of planning and budgeting in the 2025 RKP, while ADB (2023) points to the need to strengthen subnational capacity to achieve development targets.

Fifth, time lag and maintenance cause benefits not always to accrue in the same budget year. Physical projects require construction time and user adaptation; educational investments can take several years; maintenance prevents a decline in service but the benefits are in the form of avoided cost of damages. Therefore, one-year evaluations tend to underestimate long-term programs or mistakenly reward spending that only results in temporary activities.

Novelty Productive Shopping Transmission Matrix

The Productive Expenditure Transmission Matrix was developed to bridge the budget composition approach and the investment quality approach. The matrix does not provide a universal score; its function is to ensure

that productivity claims are tested on each chain. The five dimensions are arranged sequentially, but can generate feedback. Failure on one dimension can cut off the influence of the entire portfolio.

The first dimension assesses allocation: whether the project addresses key bottlenecks, has socio-economic benefits, and does not duplicate assets. The second dimension assesses execution: readiness, timeliness, procurement, and contract quality. The third dimension assesses output: whether the asset is completed, compliant, maintained, and used. The fourth dimension assesses complementarity: whether there is manpower, regulation, network connections, and cross-region integration. The fifth dimension assesses lag and outcomes: when realistic benefits arise, who are the recipients, and what productivity indicators are changing.

Table 6. Productive Expenditure Transmission Matrix

Dimensions	Test questions	Minimum proof	Transmission disconnect risk
Allocation	Does shopping close major barriers and pass benefit assessments?	Ceiling, location, target, appraisal, lifecycle cost	Popular but low-demand projects
Execution	Is the project ready, on time, competitive, and of good quality?	Document readiness, tender schedule, cost/time deviation	Year-end build-up; contract changes
3 Output works	Are the assets/services finished, standardized, worn, and maintained?	Asset condition, utilization, downtime, quality of service	Idle assets; maintenance fees are not available
Complementary	Are other inputs, networks, regulations, and human resources available?	Connectivity, power, SOPs, interoperability, coordination	Missing links and program fragmentation
Lag dan outcome	When do benefits arise and what productivity outcomes are expected?	Logistics costs, access, productivity, investment, GDP per capita	Evaluation too quickly; over-attribution

Source: Developed by the author as a novelty based on the synthesis of growth theory, public investment management, decentralization, and evidence of Indonesia.

The matrix generates four practical typologies. Transformational portfolios have precise priority and high execution and functionality. Restrained portfolios have high allocation but low execution or complementarity. Budget-specific portfolios have relatively small budgets but are highly targeted and functional, so the impact per rupiah is high. Absorption trap portfolios have weak priority, late execution, and unmeasurable outcomes. This typology explains why the increase in the portion of capital expenditure does not always align with the increase in growth in the same period.

Table 7. Typology of Productive Expenditure Portfolio

Typology	Quality of allocation	Execution/functionality	Growth implications	Policy response
Transformational	Height	Height	Assets function; costs fall; investment and productivity rise	Replication and reinforcement of maintenance
Held back	Height	Low or late	Delayed benefits; high opportunity costs	Project preparation and execution reform
Cost-effective	Limited but focused	Height	Impact per rupiah is high; scale may be limited	Scale after evaluation
Absorption traps	Low or mistarget	Low	Assets idle; weak outcomes; increased operating expenses	Stop, redesign, and reallocate

Source: Author's formulation from MTBP.

Policy Implications

First, local governments need to establish definitions of outcome-based productive expenditure in planning and budgeting documents. Program labels should be supplemented with change theory, baseline, target users, function indicators, and benefit horizons. Account classification is still necessary for accounting, but it should not be the sole basis for productivity evaluation.

Second, appraisal and project preparation must be completed before the budget is set. Regions can build a list of ready projects, including needs studies, initial design, land readiness, estimated life-cycle costs, environmental-social risks, and operational plans. This step reduces changes in specifications and accumulation of realizations. This principle is consistent with the IMF (2015) and OECD (2014) frameworks.

Third, performance indicators need to move from absorption to services and benefits. Absorption remains important as an indicator of execution, but it must be paired with asset conditions, utilization, travel time, logistics costs, service coverage, learning outcomes, health status, private investment, and sector productivity. Target outcomes need to be adjusted to realistic intervals.

Fourth, intergovernmental transfers need to be more strongly linked to readiness, performance, and needs. Formula-based funds ensure equity, while performance-based incentives can encourage quality. Design should avoid penalties for low-capacity areas; technical support and financing for project preparation need to be provided so that capacity inequality does not widen.

Fifth, cross-regional spending must be coordinated for network projects. Roads, watersheds, transportation, waste management, and health referral systems often exceed administrative boundaries. Without coordination, one part of the network can be completed while another becomes a bottleneck. Interregional cooperation and harmonization with the central government increase the scale of benefits.

Sixth, maintenance should be treated as part of the investment. Budgeting that only pursues new assets creates an accumulation of maintenance obligations and depreciation. Every project needs to have an operating financing plan, service standards, inspection schedule, and a person in charge of the asset. Net productivity should take into account the lifetime costs of the asset.

Seventh, the evaluation should combine an administrative dashboard and an impact assessment. The MTBP dashboard can monitor readiness, physical progress, payments, asset condition, and utilization. For strategic programs, quasi-experimental evaluation, spatial analysis, or difference-in-differences can be used in advanced research to test causality more robustly.

Table 8. Regional Productive Expenditure Reform Agenda

Stages	Main action	Key actors	Indicator
Planning	Ready project list and benefit-cost appraisal	Bappeda and technical equipment	Percentage of projects with documents ready before the APBD
Budgeting	Portfolio based on bottlenecks and lifecycle costs	TAPD and DPRD	Portion of spending with function and outcome indicators
Implementation	Early tendering, quality-based contracts, risk monitoring	UKPBJ and technical tools	Time/cost deviation; concentration of realization in the fourth quarter
Asset management	Funding operations, inspections, and maintenance	Goods and service device managers	Functional and utilization asset levels
Evaluation	MTBP dashboard and selective impact evaluation	Inspectorate, academics, Bappeda,	Cost per outcome; changes in productivity and access
Coordination	Cross-regional schemes and central-regional synchronization	Local governments, provinces, ministries/institutions	Complete network; missing link resolution

Source: Author's recommendation based on research findings.

The findings of the study confirm the argument that public spending can be productive, but reject the simplification that the greater the capital expenditure the higher the growth. Barro (1990) points out the possible contribution of productive spending as well as the trade-off of financing. Devarajan et al. (1996) show that composition and context can reverse the direction of influence. Thus, the proper relationship is nonlinear and conditional: the impact increases until the main need is met, then it can decrease when additional projects have low marginal benefits or burden operations.

The results also expand the Indonesian literature. Lewis and Oosterman (2011) highlight the level and structure of assets; Lewis (2013) highlight the role of transfer; Wiryawan and Otchia (2022) assess the relationship between spending and industrial development; Sofilda et al. (2023) link decentralization, human capital, and growth. MTBP brings these findings together into a chain process. This framework shows a point

of intervention: allocation issues are not solved by accelerating tenders alone, while utilization issues are not solved by simply increasing ceilings.

From a fiscal policy perspective, the portion of capital expenditure of around 16 percent in some years cannot be optimally assessed without information on needs, asset conditions, and functional composition. Areas with a disadvantaged basic network may require a higher portion; areas with large asset stocks may benefit more from maintenance, digitalization, and service improvement. Therefore, the national composition target should be an orientation boundary equipped with regional diagnosis, not a uniform number.

The 2020–2024 growth pattern also supports the need for the use of lag. The economy recovers quickly after the pandemic, while the benefits of public projects can emerge after construction is completed. If the analysis only uses spending and growth for the same year, the coefficients can mix cyclical effects, reverse causality, and delays. The next empirical agenda needs to use district/city data, functional spending, asset condition, governance quality, and a lag of one to three years. A spatial approach is needed because infrastructure benefits can spill over into neighboring areas.

Normatively, Law Number 1 of 2022 opens up space to align transfers, revenues, financing, and expenditures with service performance. The challenge is to keep performance measurements from turning into new administrative compliance. Indicators must be few, verifiable, relevant to users, and stable enough to read trends. Transparency of project data and the involvement of citizens and business actors can strengthen information about the functioning of assets.

Conclusions

Productive spending has the potential to encourage regional economic growth through physical capital accumulation, human capital formation, reduction of transaction costs, strengthening of leading sectors, and demand multiplier effects. However, this impact does not automatically follow the increase in the nominal or portion of capital expenditure. The effect is determined by the accuracy of allocation, the quality and timing of execution, the functioning of outputs, complementarity, institutional capacity, and time lag. Official data shows that Indonesia's economic growth recovered from -2.07 percent in 2020 to 5.03 percent in 2024. The portion of the national APBD capital expenditure ceiling is between 15.83 and 18.20 percent during 2020–2024, with fluctuating realizations and reporting periods that need to be distinguished. The aggregate figures provide context, but they are not enough to prove causality. The main conclusion of the study lies precisely in the chain of mechanisms: the new budget is productive when it turns into a quality asset or service, used, maintained, connected, and produces changes in productivity. The Novelty of the Productive Expenditure Transmission Matrix offers a conceptual instrument to assess the five chains. For local governments, the implication is to shift the focus from account uptake and classification to portfolio quality, project readiness, lifecycle costs, and outcomes. For central governments, transfer design and evaluation need to combine equity, capacity support, and performance incentives. For researchers, MTBP can be operationalized into an index and tested using regional panels, dynamic lag, quasi-experimental evaluation, and spatial analysis.

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