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THE EFFECT OF BALIKPAPAN-SAMARINDA TOLL ROAD CONSTRUCTION WITH A PPP SCHEME ON THE FORMATION OF ECONOMIC STRUCTURE IN EAST KALIMANTAN

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ABSTRACT

Economic effects are just one of the many effects of the massive infrastructure investment in Indonesia made over the past ten years. The aim of connecting Indonesia between regions is the basis for massive infrastructure growth, especially toll road infrastructure. Several funding schemes have been implemented to build toll road infrastructure, including the Public-Private Partnership (PPP) financing scheme. This PPP financing scheme was also implemented in the Balikpapan-Samarinda toll road construction. Therefore, this research attempts to capture the impact of the construction of the Balikpapan-Samarinda toll road with a PPP scheme on the formation of the economic structure in East Kalimantan province using the Input-Output (I-O) table. The investment value for the Balikpapan-Samarinda toll road is IDR 9.97 trillion was injected (shock) into gross fixed capital formation in the construction sector. The calculation results in this research show that the construction of the Balikpapan-Samarinda toll road contributed 9.8% of total demand. Apart from that, there is a significant impact on the economic structure of East Kalimantan Province, as seen from the expenditure multiplier figure with an output total of IDR 15,111 billion, a total income of IDR 2,471 billion, and a total workforce of 25,095 workers due to investment in the construction of the Balikpapan-Samarinda toll road.

Keywords: *Toll Road Investment, Input-Output, Economic Structure, PPP Scheme*

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ABSTRAK

Investasi infrastruktur yang masif dilakukan di Indonesia dalam satu dekade terakhir ini menimbulkan beragam dampak, salah satunya pada sisi perekonomian. Tujuan agar Indonesia dapat terkonektivitas antar daerah menjadi landasan masifnya pertumbuhan infrastruktur, terutama infrastruktur jalan tol. Beberapa skema pembiayaan dilakukan dalam membangun infrastruktur jalan tol, salah satunya melalui skema pembiayaan Kerjasama Pemerintah dan Badan Usaha (KPBU). Skema pembiayaan KPBU ini juga dilakukan dalam pembangunan jalan tol Balikpapan-Samarinda. Oleh karena itu, penelitian ini berusaha memotret dampak dari adanya pembangunan jalan tol Balikpapan-Samarinda dengan skema KPBU terhadap pembentukan struktur perekonomian

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di provinsi Kalimantan Timur menggunakan tabel Input-Output (I-O). Nilai investasi jalan tol Balikpapan-Samarinda sebesar Rp9,97 Triliun diinjeksi (shock) ke dalam pembentukan modal tetap bruto pada sektor konstruksi. Hasil perhitungan dalam penelitian ini menunjukkan bahwa pembangunan jalan tol Balikpapan-Samarinda berkontribusi sebesar 9,8% pada total permintaan. Selain itu, terdapat dampak signifikan pada struktur perekonomian di Provinsi Kalimantan Timur yang dilihat dari angka pengganda pengeluaran dengan total sebesar Rp15.111 miliar, pendapatan dengan total sebesar Rp2.471 miliar, dan tenaga kerja dengan total sebesar 25,095 pekerja akibat adanya investasi pembangunan jalan tol Balikpapan-Samarinda.

Kata Kunci: *Investasi Jalan Tol, Input-Output, Struktur Ekonomi, Skema KPBU*

JEL : C67; O11; H54; R15

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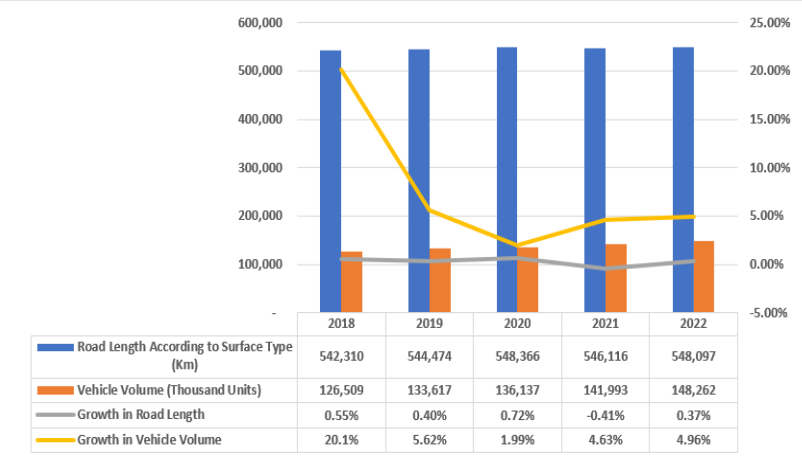
Introduction

The existence of adequate infrastructure is often cited as a factor that encourages growth and development in a country. The argument is based on the observation that infrastructure expansion, such as railway lines, has happened concurrently with periods of fast economic growth in Europe, Asia, Japan, and America, particularly the United States (Banerjee et al., 2020). Road infrastructure is a very important piece of infrastructure because it connects intra-regions and between regions, whether used to distribute goods or as a means of community mobility (Usman, 2020). Increasing intra-regional and inter-regional connectivity is also necessary, considering Indonesia's geographical conditions, consisting of islands. In addition, the population continues to increase, resulting in the volume of motorized vehicles and economic activities in Indonesia (Taufiqo, 2019).



	2018	2019	2020	2021	2022
Road Length According to Surface Type (Km)	542,310	544,474	548,366	546,116	548,097
Vehicle Volume (Thousand Units)	126,509	133,617	136,137	141,993	148,262
Growth in Road Length	0.55%	0.40%	0.72%	-0.41%	0.37%
Growth in Vehicle Volume	20.1%	5.62%	1.99%	4.63%	4.96%

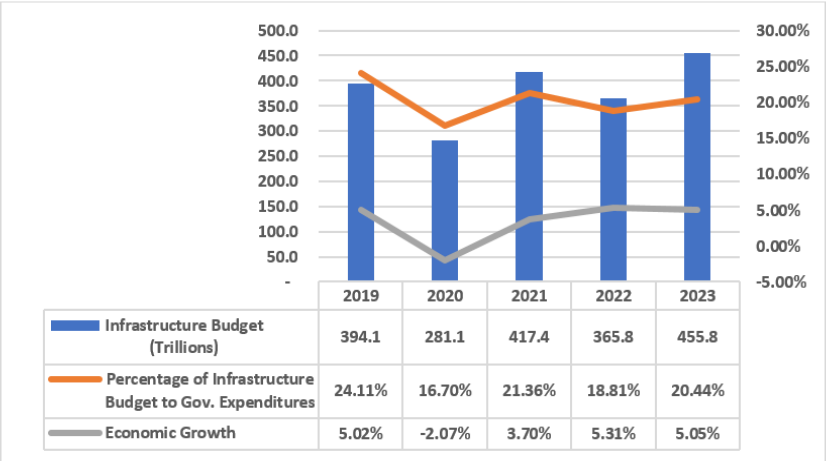
Figure 1: Road Length According to Surface Type (Km) and Vehicle Volume (Units), 2018-2022

Source: BPS (2024a) & BPS (2024b)

Based on Figure 1, it can be seen that every year, there is an increase in the number of vehicle volumes, which is different from the increase in the number of road infrastructure in Indonesia. Vehicle volume growth continues to increase every year from 2018 to 2022 (except

in 2020, which was caused by social restrictions/lockdowns due to the spread of the COVID-19 pandemic virus). Every year, the average growth in road length is only 0.32% compared to the average growth in vehicle volume, which reached 7.47% from 2018 to 2020. The asymmetric growth between road infrastructure and vehicle volume will continue to increase and is a concern that will impact increasing congestion and traffic flow (Chang et al., 2021; Roy et al., 2020). The solution to reducing growth inequality is the need to develop road infrastructure, including the construction of toll road infrastructure (Karpushko et al., 2021; Promy et al., 2022).

The government is trying to realize progress in the Indonesian economy by developing optimal facilities and infrastructure. The trend in infrastructure allocation provided by the government towards the APBN is increasing yearly, especially from 2019 to 2023, as shown in Figure 2. Although infrastructure allocation decreased in 2020 as a result of the Covid-19 pandemic to reach IDR 281.1 trillion or 16.70% from the previous IDR 394.1 trillion or 24.11% in 2019, the proportion of infrastructure allocation to the APBN continued to increase quite significantly in the following year. This trend is in line with economic growth in the 2019-2023 period.



	2019	2020	2021	2022	2023
Infrastructure Budget (Trillions)	394.1	281.1	417.4	365.8	455.8
Percentage of Infrastructure Budget to Gov. Expenditures	24.11%	16.70%	21.36%	18.81%	20.44%
Economic Growth	5.02%	-2.07%	3.70%	5.31%	5.05%

Figure 2: Trends in Infrastructure Allocations to the APBN and Growth in Economic Allocations, 2019-2023

Source: BPS (2020); BPS (2021); BPS (2022) & BPS (2023)

In recent years, toll road construction in Indonesia has been carried out mainly through Government and Business Entity Cooperation (KPBU) schemes as alternative financing to overcome limited funds (Gaol et al., 2023; Maulana, 2021). One of the toll roads in Indonesia that uses the PPP scheme in its construction is the Balikpapan-Samarinda Toll Road (Tahrir et al., 2023). The construction of the Balikpapan-Samarinda Toll Road is one of the government's policies to improve the standard of living of the community, increase labor absorption, better distribute income within the community, expand regional economic interaction by changing the pattern of economic activity from the primary sector activity pattern to the secondary sector and the tertiary.

Based on the preceding explanation, the author's research seeks to determine the Effect of Balikpapan-Samarinda Toll Road Construction with A PPP Scheme on The Formation of Economic Structure in East Kalimantan. This research uses an approach based on the 2016 East Kalimantan Province Input-Output (I-O) table. This study aims to answer the following research question:

1. What is the economic structure of East Kalimantan province?
2. What is the relationship between sectors in the economy of East Kalimantan province?
3. What is the analysis of the output multiplier, household income, and labor in the economic structure of East Kalimantan province?
4. How does the Balikpapan-Samarinda Toll Road infrastructure development impact the economy in East Kalimantan province?

This research is expected to contribute as a source of knowledge for readers interested in the economics of planning and development, regional economics, and other related matters. Hopefully, this research will provide an overview of the impact of infrastructure development policies in Indonesia, especially toll road infrastructure, on the economic structure. Furthermore, this research is also expected to contribute to policymakers, namely the government, in determining more effective and sustainable economic policies, making better decisions, and taking more effective actions to increase economic growth.

Literature Review

Economic Growth Theory

A country experiences economic growth if conditions change, namely an increase in production and national income in a certain period (Indayani & Hartono, 2020). According to Todaro and Smith (2020), there are 3 (three) important components of economic growth: capital accumulation, population growth, and technological progress. Increases in output and income are assessed from the GDP obtained in a certain period nationally, resulting from the economic growth process (Mankiw, 2016).

The definition of economic growth, according to the Central Statistics Agency of the Republic of Indonesia (BPS RI), is the growth of goods and services in a particular year in production compared to the previous year's value based on GDP/GRDP calculations at constant prices which aims to see economic growth in a region. Calculations using current/nominal prices are prepared to see the economic structure of a country or region.

Production Theory

Based on the neo-classical theory by Robert Solow and Trevor Swan, which has developed since the 1950s, it explains that output growth is determined by economic growth that comes from outside (exogenous). According to the Solow Swan theory, production depends on the increase in the supply of production factors (population, labor, capital accumulation) and technological progress. According to this theory, the extent to which the economy will develop depends on population growth, capital accumulation, and technological progress.

According to Robert Solow, economic growth is an activity that is driven by several variables, which are the driving engines in rich and poor countries, namely human resources (Human Capital), natural resources (Natural Capital), capital, and technological change and innovation/technology (Todaro & Smith, 2020). The following is a production theory developed by Robert Solow:

$$Y=f(K,L,R,T) \quad (1)$$

Based on this equation, Y is the amount of production produced in an economic activity, K is Capital or the amount of capital, L is Labor or the workforce participating in an economic activity, R is the number of natural resources, and T is the level of technology used. This mathematical equation describes that the amount of production of an item is influenced

by the amount of capital stock, the amount of labor, the number of natural resources, and the level of technology.

Infrastructure Development Theory

According to (Spencer, 2021), infrastructure is one of the physical capital. If a country has more equipment and infrastructure, then that country has greater production capacity. On the other hand, infrastructure is not only able to serve the needs of economic activity but is also able to stimulate new economic activity in a particular area. Infrastructure influences the geography of the economy in various (and sometimes unexpected) ways. Interregional infrastructure can influence interregional locations and impact intraregional (Ottaviano, 2008). Infrastructure development will contribute to increasing the competitiveness of domestic products and absorbing work energy. Furthermore, regional development and the availability of infrastructure will impact increasing labor absorption, GRDP and regional growth (Amalia). The availability of infrastructure is important in a country's development, because infrastructure plays a role as a driver of economic growth (Suswita et al., 2020).

The Relationship between Infrastructure Development and Economic Growth

The relationship between infrastructure and economic growth is discussed in several theories, one of which is the growth theory initiated by Romer (Todaro & Smith, 2020). New growth theory assumes that economic growth is endogenous and results from the economic system. This is based on the idea that economic growth is determined by the production system rather than coming from outside the system. Technological progress is endogenous; growth is part of the decision of economic actors to invest in knowledge. The role of capital is greater than just a part of income if the capital that grows is not only physical capital but also human capital (Mankiw, 2016). The new economic growth theory literature explains the importance of the influence of infrastructure in driving the economy. This theory includes infrastructure as an input in influencing aggregate output. Apart from that, there is technological progress as an externality of infrastructure development (Pelsa & Balina, 2022).

Previous Research

There has been much research on the impact of infrastructure investment. In Indonesia, similar research was carried out based on massive increases in infrastructure development in the last decade. The aim of connecting Indonesia between regions is the basis for massive infrastructure growth, especially toll road infrastructure. Previous research that underlies this research includes research conducted by Usman (2020) using the 2015 Input-Output Table for West Java Province to determine the influence of the construction of the Jakarta-Cikampek II Toll Road on the formation of the economic structure in West Java Province. The results of this research show that the construction sector has a strong influence and role in shaping the economic structure of West Java. Apart from that, it was also found that there was a clear link between infrastructure development and economic growth (infrastructure elasticity) in West Java. Similar research was conducted by Taufiqo (2019), who looked at the relationship between the construction of the SUMO toll road (Surabaya-Mojokerto) and the economy in the province of East Java.

Other research results were conducted abroad using the same research methods and objects. Research conducted by (Dinlersoz & Fu, 2022) attempts to describe the impact of infrastructure investment on the economy in China. Research in Croatia conducted by (Keček et al., 2022) also shows similar results where the calculation results using the Croatian Input-Output Table for 2010 and 2015 show the multiplier effect of investment in the transportation

sector. The results of this study also reflect the estimation of the transport sector multiplier in the Republic of Croatia for the first time based on macroeconomic analysis tools via Input-Output Tables.

Data and Research Methods

This study uses a quantitative approach. Secondary data was implemented using the 2016 East Kalimantan province Input-Output Table for ADHP, which classified 52 sectors and was re-aggregated into 17 sectors. The supporting secondary data was obtained from several related agencies, including the East Kalimantan Province Central Statistics Agency (BPS) for 2016 ADHP Input-Output Table data, the National Labor Force Survey (Sakernas) for data related to the number of workers in East Kalimantan province in 2022-2023, and the Toll Road Business Entity (BUJT) PT Jasa Marga Balikpapan-Samarinda regarding data on the total investment value for the construction of the Balikpapan-Samarinda toll road.

The type of information that can be used in preparing comprehensive planning that covers all sectors in the economy is the input-output table. Input-output tables are an analytical framework developed by Professor Wassily Leontief in the late 1930s. The Input-Output (I-O) table is a statistical information system arranged in matrix form that describes transactions of goods and services between economic sectors within a certain period of time. The input-output table wants to highlight that each sector has links/dependencies with other sectors. The dependence of a sector is determined by the amount of input used in the production process (Miller & Blair, 2009).

The formation of equations in the input-output model begins with the assumption that the economy can be categorized into n sectors. Next, the *total production output* in sector i is expressed by x_i, the total final demand for production in sector i is expressed by f_i, and the input coefficient is expressed by a_{ij}. So, the simple equation that explains the mechanism of sector i in distributing its products through sales to other sectors and for final demand can be written as follows:

$$\begin{aligned} a_{11}x_{11} + a_{12}x_{12} + a_{13}x_{13} + F_1 &= X_1 \\ a_{21}x_{21} + a_{22}x_{22} + a_{23}x_{23} + F_2 &= X_2 \\ a_{31}x_{31} + a_{32}x_{32} + a_{33}x_{33} + F_3 &= X_3 \end{aligned} \quad (2)$$

The above equation can be converted into matrix form as follows:

$$\begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} + \begin{bmatrix} F_1 \\ F_2 \\ F_3 \end{bmatrix} = \begin{bmatrix} X_1 \\ X_2 \\ X_3 \end{bmatrix} \quad (3)$$

In the equation above, the distribution of goods in each sector can be summarized in matrix notation as follows:

$$X=(1-A)^{-1}F \quad (4)$$

The main analysis that can be carried out using the input-output table is how a change in final demand can affect output in the economy. The components of final demand are household consumption, government consumption, investment, and exports and imports, often called multiplier analysis. The multiplier matrix, or Leontief Inverse Matrix, is a matrix composed of $(I-A)^{-1}$ or the B matrix. This matrix is used to see how output occurs if there is a change in final demand.

Finding and Discussion

Economic Structure of East Kalimantan Province

Table 1: East Kalimantan Province Demand Structure Based on Input-Output Table 2016 (Million Rupiah)

Sectors	Code	Intermediate Demand		Final Demand		Total Demand	
		Total	Percentage	Total	Percentage	Total	Percentage
Agriculture, Forestry, and Fisheries	A	31,620,312.86	10.3%	21,493,825.51	3.5%	53,114,138.38	5.8%
Mining and excavation	B	95,853,756.36	31.4%	239,581,574.25	39.3%	335,435,330.61	36.7%
Manufacturing Industry	C	95,169,317.99	31.1%	149,105,714.60	24.5%	244,275,032.59	26.7%
Procurement of Electricity and Gas	D	7,012,823.03	2.3%	1,602,286.60	0.3%	8,615,109.63	0.9%
Water Supply, Waste Management, Waste and Recycling	E	35,175.94	0.0%	631,312.25	0.1%	666,488.19	0.1%
Construction	F	13,817,476.73	4.5%	75,695,496.69	12.4%	89,512,973.42	9.8%
Wholesale and Retail Trade, Car and Motorcycle Repair Activities	G	16,146,374.32	5.3%	31,501,352.31	5.2%	47,647,726.63	5.2%
Transportation and Warehousing	H	19,383,300.97	6.3%	25,367,503.06	4.2%	44,750,804.04	4.9%
Provision of Accommodation and Food and Drink	I	3,228,987.33	1.1%	10,173,155.02	1.7%	13,402,142.35	1.5%
Information and Communication	J	7,095,761.22	2.3%	6,130,681.38	1.0%	13,226,442.59	1.4%
Financial Services and Insurance	K	5,332,373.73	1.7%	5,298,640.86	0.9%	10,631,014.59	1.2%
Real Estate	L	1,577,491.04	0.5%	8,826,594.40	1.4%	10,404,085.44	1.1%
Company Services	MN	6,456,223.12	2.1%	1,348,402.90	0.2%	7,804,626.02	0.9%
Government Administration, Defence, and Mandatory Social Security	O	721,519.96	0.2%	13,433,713.75	2.2%	14,155,233.71	1.5%
Educational Services	P	384,490.64	0.1%	9,586,121.04	1.6%	9,970,611.68	1.1%
Health Services and Social	Q	560,299.19	0.2%	4,536,550.01	0.7%	5,096,849.20	0.6%
Other services	RSTU	1,124,440.27	0.4%	4,568,839.62	0.8%	5,693,279.89	0.6%
Total		**305,520,124.71**	**100%**	**608,881,764.26**	**100%**	**914,401,888.97**	**100%**

By using the Input-Output Table of East Kalimantan domestic transactions on producer prices in 2016 with a classification of 52 sectors, then aggregating them into 17 sectors and analyzing them using the Input-output approach, it can be seen the role (contribution) of the construction sector to the formation of a good East Kalimantan economic structure. That is in terms of gross value added, intermediate input, primary input, intermediate input, intermediate demand, and final demand. Based on Table 1, it can be seen that the total demand amounted to IDR 914,401 billion. This amount was obtained from the total demand of IDR 305,520 billion and the final total demand of IDR 608,881 billion. By using the balance principle of the input-output model approach, which states that the total input is equal in

value to the total output, the value of the total supply is the same as the total value of demand, namely IDR 914,401 billion.

Based on Table 1, it is also known that the contribution value of toll road infrastructure included in the construction sector is 9.8%, or with a total demand amount of IDR 89,512 billion. This contribution comes from an intermediate request of 4.5% or IDR 13,817 billion and a final request of 12.4% or IDR 75,695 billion. The construction sector is ranked third after mining and excavation, and manufacturing industries. The amount of intermediate demand reflects the sector output used as input to the production process in the economy. In contrast, the final demand reflects the amount of output produced by sectors in the economy used by final demand components such as households, government, private investment, and for use by consumers who come from abroad or export.

Linkage Analysis

The matrix framework, which consists of four quadrants, is used in the Input-Output (IO) table. Each quadrant has the following meaning: 1) Quadrant I means generally independent; 2) Quadrant II means dependent interindustry demand; 3) Quadrant III means dependent on interindustry supply; and 4) Quadrant IV means generally dependent. In this research, linkage analysis is divided into direct forward linkages and direct backward Linkages are used. Direct forward linkages show the impact of one sector on other sectors using output from directly related sectors. Meanwhile, direct backward linkages compare a sector to sectors that provide intermediate inputs for directly related sectors.

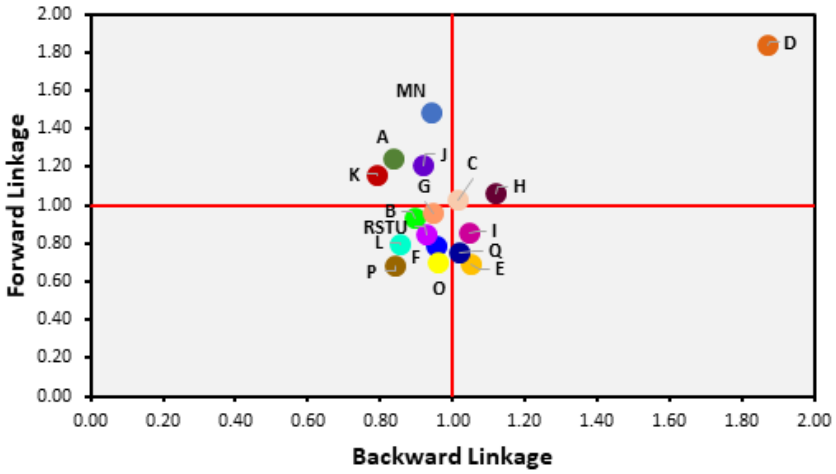


Figure 3: Backward Linkages & Forward Linkages in East Kalimantan Province Classification of 17 Sectors

Based on Figure 3, it is known that the Mining and excavation (B), Construction (F), Wholesale and Retail Trade, Car and Motorcycle Repair Activities (G), Real Estate (L), Government Administration, Defence, and Mandatory Social Security (O) sectors, Educational Services (P), and Other services (RSTU) are included in quadrant one, Sectors included in quadrant two are Agriculture, Forestry, and Fisheries (A), Information and Communication (J), Financial Services and Insurance (K), and Company Services (MN). The Water Supply, Waste Management, Waste and Recycling (E), Provision of Accommodation and Food and Drink (I), Health Services, and Social (Q) sectors fall into quadrant three. The Manufacturing Industry (C), Procurement of Electricity and Gas (D) sectors, and Transportation and Warehousing (H) are included in quadrant four, which means they are generally dependent.

Multiplier Analysis

This research seeks to see the impact of the construction of the Balikpapan-Samarinda toll road using the PPP scheme on the economic structure in East Kalimantan province. Toll road investment is an addition to gross fixed capital (PMTB) in the construction sector, as shown in the Input-Output (I-O) Table. In this research, the impact of toll road construction is seen from changes in output, changes in income, and changes in labor obtained through matrix multiplication, which then results in the calculation of the multiplier numbers as in Table 2 below.

Table 2: Multiplier Output, Multiplier Income, and Multiplier Labor in East Kalimantan Province Classification of 17 Sectors

Sectors	Code	Multiplier		
		Output	Income	Labor
Agriculture, Forestry, and Fisheries	A	1.3294	0.3666	0.0077
Mining and excavation	B	1.4183	0.1917	0.0012
Manufacturing Industry	C	1.6059	0.1540	0.0018
Procurement of Electricity and Gas	D	2.9624	0.2218	0.0032
Water Supply, Waste Management, Waste and Recycling	E	1.6664	0.2336	0.0113
Construction	F	1.5157	0.2479	0.0025
Wholesale and Retail Trade, Car and Motorcycle Repair Activities	G	1.4994	0.3380	0.0086
Transportation and Warehousing	H	1.7755	0.2348	0.0037
Provision of Accommodation and Food and Drink	I	1.6604	0.2955	0.0132
Information and Communication	J	1.4543	0.1530	0.0017
Financial Services and Insurance	K	1.2552	0.3802	0.0031
Real Estate	L	1.3593	0.1578	0.0019
Company Services	MN	1.4887	0.3367	0.0108
Government Administration, Defence, and Mandatory Social Security	O	1.5224	0.4224	0.0098
Educational Services	P	1.3339	0.5717	0.0112
Health Services and Social	Q	1.6195	0.3706	0.0104
Other services	RSTU	1.4736	0.2760	0.0160

It is known in Table 2 that the largest output multiplier value is the Procurement of Electricity and Gas sector, namely 2.9624. On the other hand, the output multiplier value for the construction sector (construction of the Balikpapan-Samarinda toll road) is 1.5157. Therefore, if there is an investment in final demand, namely in the construction sector, for example, amounting to one million rupiah, it will have an effect on increasing the output of the production sector in all sectors in the East Kalimantan economy amounting to IDR 1,5157 million.

The income multiplier figure indicates the magnitude of the increase in household income that occurs in all sectors of the East Kalimantan economy as a result of the influence of an increase or change (investment) in the final demand variable, where the amount of the increase is equal to the multiplier figure. Table 2 shows that the highest ranking in the multiplier income analysis is the Educational Services sector, namely 0.5717, which is noted in sector fifteen, while the income multiplier value for the construction sector/sector six

(construction of the Balikpapan-Samarinda toll road) is 0.2479. This multiplier figure shows that if there is a change or investment in the final demand of IDR 1 million, it will have an impact on increasing household income in all production sectors in the economy by IDR 247.9 thousand.

The labor multiplier analysis uses supporting data processed from data on the number of working populations according to business fields, East Kalimantan, BPS 2022-2023 (million people) classification of 17 sectors to obtain the labor coefficient. Based on Table 2, it can be seen that the highest multiplier value for labor is in the other services sector (sector twelve), namely 0.0160, while the multiplier value for labor in the construction sector/sector six (construction of the Balikpapan-Samarinda toll road) itself is 0.0025. This value explains that if there is an investment in final demand (construction of the Balikpapan-Samarinda toll road) of IDR. 1 million in the construction sector, this will impact increasing labor absorption in all production sectors in the economy by 2,517 workers.

The Impact of Balikpapan-Samarinda Toll Road Investment with the PPP Scheme on the Economic Structure of East Kalimantan Province

Table 3: Impact of Balikpapan-Samarinda Toll Road Investment on the Economic Structure of East Kalimantan Province

Sectors	Code	Output (Million IDR)		Income (Million IDR)		Labor (People)	
		Value	Percentage	Value	Percentage	Value	Percentage
Agriculture, Forestry, and Fisheries	A	612,717.73	4.05%	192,508.06	7.79%	4,093.71	16.31%
Mining and excavation	B	1,134,188.88	7.51%	150,118.89	6.07%	521.14	2.08%
Manufacturing Industry	C	2,328,119.36	15.41%	137,079.74	5.55%	1,185.17	4.72%
Procurement of Electricity and Gas	D	72,852.18	0.48%	2,473.40	0.10%	57.42	0.23%
Water Supply, Waste Management, Waste and Recycling	E	252.58	0.00%	41.39	0.00%	2.57	0.01%
Construction	F	10,028,551.98	66.37%	1,764,170.18	71.39%	13,293.80	52.97%
Wholesale and Retail Trade, Car and Motorcycle Repair Activities	G	594,657.68	3.94%	163,316.30	6.61%	4,551.38	18.14%
Transportation and Warehousing	H	160,769.41	1.06%	24,382.12	0.99%	404.31	1.61%
Provision of Accommodation and Food and Drink	I	31,017.75	0.21%	5,725.29	0.23%	342.91	1.37%
Information and Communication	J	56,916.17	0.38%	5,542.21	0.22%	44.95	0.18%
Financial Services and Insurance	K	31,060.73	0.21%	10,484.75	0.42%	70.94	0.28%
Real Estate	L	8,046.26	0.05%	787.66	0.03%	10.03	0.04%
Company Services	MN	27,883.60	0.18%	7,245.78	0.29%	256.30	1.02%
Government Administration, Defence, and Mandatory Social Security	O	5,269.21	0.03%	1,821.71	0.07%	42.08	0.17%
Educational Services	P	3,773.39	0.02%	1,961.68	0.08%	37.52	0.15%
Health Services and Social	Q	5,821.86	0.04%	1,657.44	0.07%	50.85	0.20%
Other services	RSTU	9,293.24	0.06%	1,825.02	0.07%	130.91	0.52%
Total		**15,111,191.99**	**100%**	**2,471,141.62**	**100%**	**25,095.99**	**100%**

Investment usually comes from within the country, abroad, and the APBN. In table analysis I-O, the amount of investment is grouped in the final demand variable and is categorized as an exogenous variable, which is none other than a component of GDP calculations from the expenditure side. Therefore, in this simulation analysis, the investment value for the Balikpapan-Samarinda toll road infrastructure development is injected (shock) into gross fixed capital formation in the construction sector. This is done to determine all economic impacts as a result of increased investment in the construction sector; these impacts include the growth of other production sectors, which are components of GDP calculations from the production side. Apart from that, by using input-output table analysis, the magnitude of the increase in the value of household income and the number of workers as a result of this investment can also be predicted. According to the Toll Road Business Entity (BUJT), the injection (shock) value of the investment value for constructing the Balikpapan Samarinda toll road infrastructure is IDR 9.97 trillion.

It is known in Table 3 that the construction sector contributes an output component of IDR 10.028 billion or 66.37% of the total IDR 15.111 billion. Meanwhile, the construction sector of household income component increased by IDR. 1.764 billion or 71.39% of the total increase in household income of IDR 2.471 billion. The increase in the labor component of the construction sector contributed to 13,293 workers, or 52.97% of the total increase in labor in all sectors, namely 25,095 workers.

Conclusion

The construction of the Balikpapan-Samarinda toll road, which was carried out using the Government and Business Entity Cooperation (KPBU) financing scheme with the PT Jasa Marga Balikpapan-Samarinda Toll Road Business Entity (BUJT), had a significant impact on the economic structure. An investment of IDR 9.97 trillion can contribute to the income component in all sectors of IDR. 15.111 billion. Meanwhile, in the formation of the household income component, there was an increase in household income of up to IDR 2.471 billion. By increasing the labor component, this investment is able to contribute to the entire sector, namely 25,095 workers. This calculation is based on the Input-Output Table of East Kalimantan domestic transactions on producer prices in 2016, which was classified into 52 sectors and aggregated into 17 sectors.

This research aims to see the impact of investment in constructing the Balikpapan-Samarinda toll road on the economic structure of East Kalimantan Province. The research results show a positive impact of toll road construction on expenditure, household income, and labor absorption. The limitation of this research is that the economic structure needs to be explicitly represented for each city with delineations around the Balikpapan-Samarinda toll road. Apart from that, this research was only carried out on one type of toll road, so it cannot be compared to the multiplier impact obtained from investment using the PPP scheme. Therefore, it is hoped that similar research can be carried out on other toll roads that use similar financing schemes, so that the effectiveness of financing using the PPP scheme on the economic structure can be compared.

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