Boosting National Infrastructure Investment in West Java: An Analysis Using TERM CGE Model

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Desember, 2015
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It is well established that infrastructure investment plays significant role in the acceleration of development through its impact on growth, sector performance and socio-economic indicators. West Java Province is province with the largest population in Indonesia and main contributor to national GDP. In this study, the impact of increased national infrastructure investment in West Java Province is assessed using 2014 data. JaBarTERM5 CGE model is used to simulate two infrastructure investment scenarios, the moderate scenario or increase in government national infrastructure investment only, and the progressive scenario that combines government national infrastructure investment with private investment. The results indicate that under the moderate scenario, West Java GRDP increased by 1.91% (1.91 percentage point compared to baseline, while in the progressive scenario (national plus private infrastructure investment), GRDP increased by up to 3.58% (3.58 percentage point compared to baseline). However, there are differential responses at district level. Districts that experience the highest increase in GRDP are districts close to industrial areas in the vicinity of Jakarta and Bandung. When viewed from its impact on provincial employment, it increases by 2.27% (2.27 percentage point compared to the baseline case) under the progressive scenario. The employment impact is particularly more pronounced in districts that are industrial areas. Sectors that experience increase in their production are Cements, Papers, Textiles, Food Crops, and Transportation Services. Another result is an increase in the prices of Real Estate, and Business and Financial Services, while the price (cost) of trade and transport sector has decreased due to an increase in the access and quality of infrastructure.

Keywords: National Infrastructure Investment, TERM CGE model, West Java Province
JEL Classification: H54, H72

1 Paper presented at The 5th IRSA International Institute 3-5 August, 2015, Bali Indonesia. The authors acknowledged inputs and comments given by participants of the Conference. The usual disclaimer applies. Email correspondence to: victor.firmana@fe.unpad.ac.id
1. Introduction

In Indonesia as is the case for many developing countries, infrastructure growth has not kept paced with economic and demographic growth, and in some instances, infrastructure was not even maintained. Indonesia’s infrastructure competitiveness remains fairly weak in comparison to the average of other ASEAN countries. Indonesia’s infrastructure quality score below Singapore, Malaysia and the average for ASEAN countries. For example, in terms of physical infrastructures, the total length of toll road in Indonesia is quite short compared to other Asian countries. Moreover, the capacities of most national seaports and airports have been overloaded. Without good access to and quality of infrastructure, people are still able to do their activities, but require more time and costs. This has wide implication for the competitiveness of the economic sector, of the private sector in conducting their business and on the overall competitiveness of the economy.

Since the Second Administration of President SBY, there are three priority areas by the Government to address the infrastructure bottleneck, i.e. reformation on regulation and policies, government support for Public-Private Partnership (PPP), and upgrading the efficiency and effectiveness of government projects. The initial boost to infrastructure investment has come through the MP3EI (Master Plan for the Acceleration and Expansion of Indonesian Economic Development) undertaken during the period of 2011-2014. The Plan focuses on the development of 6 Economic Corridors with its own priority focus based on region’s potentials; boosting investment in connectivity (within and between provinces and inter-island), and human resources development to support the activities.

Since then, it is by no coincidence that Indonesia’s competitiveness has improved during recent year, as reported by the World Economic Forum in Global Competitiveness Report 2014-2015, Indonesia’s Global Competitiveness Index (CGI) increased to rank 34 out of 144 countries. This improvement in competitiveness helps to sustain the country’s economic momentum; its GDP grew by 5.8 percent annually since 2004. The results are supported by observation from other sources. The World Bank Logistics Performance Index (LPI) survey for in 2014 with a rank of 53 of the 160 surveyed countries. LPI scores of Indonesia by logistics indicator of 2012 and 2014 shows that infrastructure, border agencies and logistics competence have improved between 2012 and 2014. Although timeliness of delivery slightly worsened between 2012 and 2014.

The effort of boosting infrastructure investment has been intensified during the current administration of President Joko Widodo. Based on planned allocation of infrastructure funding

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2 In particular in the case of regional and local infrastructure, the cases are more pronounced since decentralization in 2001 and the after effects of economic crisis of 1998.
in the 2015-2019 RPJMN, infrastructure investment needs totaled Rp5,452 trillion of which only about 22 percent can be financed from national budget, and the rest has to come from regional and local budget, private sector, State Owned Enterprise, Public Private Partnership and mixed sources of funding.

In this paper, we apply JabarTERM5, an Interregional CGE Static Model to West Java Province and other regions to perform a comparative static analysis of increasing national infrastructure investment allocated to West Java Province. We analyze how a boost in national infrastructure investment will contribute to West Java Province economic development in terms of GRDP growth, consumption, employment, sector impact and districts most affected.

2. Literature Review

Infrastructure is a key factor in boosting an economy's performance and productivity. The empirical literature on the links between infrastructure and economic growth is extensive and there are a few comprehensive literature reviews, including the impact of infrastructure on poverty alleviation, equality, growth and specific development outcomes, such as jobs creation, market access, health and education. Barro (1991) has proved the positive relationship between investments in public infrastructure and the productivity of private sectors of the economy. In investing in infrastructure, government plays important role in stimulating economic development. Expansion of public infrastructure investment will improve productivity and thus will generate economic growth. However, better economic growth in itself does not automatically translates into better infrastructure (McCulloch and Malesky, 2010).

Straub and Terada-Hagiwara (2011) analyze the link between infrastructure, growth, and productivity in developing Asian countries. The paper concludes that the infrastructure stocks in the area have been growing at a significant pace. However the findings show that their levels remain well below the corresponding world averages both in terms of quality and quantity. There seems to be a positive impact on the economic growth due to the accumulation of infrastructure stock (in electricity, telecommunications, transport, and water supply). Straub and Terada-Hagiwara (2011) also gives a cross country evidence which shows that for most infrastructure indicators, the growth rate of stocks has a positive and significant impact on per capita GDP average growth rate in the subgroups of East Asia-Pacific and South East countries.

Another study from Canning and Pedroni (2004) investigates the long run consequences of infrastructure provision on per capita in a panel data of countries from 1950 to 1992. The results show clear evidence that in majority of the cases the development of infrastructure induces long run growth effects. But there are variation shows in the results across individual countries. When the countries are taken as a whole, the results demonstrate that most infrastructure type such telephones, electricity generating capacity and paved roads are provided at close to the growth maximizing level on average. But they are under-supplied in some countries and over-supplied in
others. The result helps us to explain why cross section and time series studies have in the past found contradictory results regarding a causal link between infrastructure provision and long run growth.

Imran and Niazi (2011) in the paper present the determinant of Total Factor Productivity (TFP) and investigate how infrastructure impacts on growth in Pakistan. The study clearly demonstrates that infrastructure matters from the viewpoint of growth and TFP. Individual and combined results, from the growth regression, show that investments in power generation, telecommunications and in enhancing the availability of water for agriculture have significant effects on growth. Furthermore, Imran and Niazi (2011) found that infrastructure stock accumulation has a positive impact on economic growth, a massive buildup of infrastructure stock in electricity, telecommunication, transport, and water supply is needed for it to have a positive impact on economic growth.

Estache and Garsous (2011) argue that the extent to which infrastructure matters depends on: (1) the development stage of the countries included in the sample analyzed; (2) the time period over which the impact is assessed, and (3) the type of infrastructure. Based on a meta-analysis of studies, Garsous (2012) builds on this to argue that ‘the less developed the country, the more likely infrastructure to matter. The study conclude that he more developed a country is, the more other dimensions such as bottlenecks, diseconomies of scale, network effects, or technological lags tend to matter more than the aggregate infrastructure stock.

Susantono (2009) tried to compare the contribution of infrastructure development in Indonesia to the economy. Their study showed that by increasing 10 percent stock in each infrastructure will create different impact to the economy. Using econometric model, they found out that irrigation will contribute to GDP at the most, followed by road, electricity, telephone, port, and water transportation. However for Java-Bali, these results become different, since electricity and road transportation became significant contributor to GDP growth in the regions.

3. National Infrastructure and the West Java Economy

West Java Province has abundant resources, human and man-made resources. It is the largest province population wise, and located next to Jakarta, the Capital City. The Province has been the main destination of foreign direct and domestic investment. It is interesting to put West Java Province investment potential under the Master Plan for Acceleration and Expansion of Indonesia’s Economic Development (MP3EI). Under this plan which was implemented during the 2011-2014 period, the focus is on increasing value-added to support industrial production processes. In this program, regional development of Indonesia is divided based on the potentials inherent to each region. Six economic development corridors have been identified. Java corridors become the driver for national industry and services provision. In addition, the Java Economic Corridor is developing the industries that support water and environment conservation. Java has
better conditions in the economic and social aspects, so it has the potential to grow from manufacturing to service-based economy. The focus in Java Economic Development Corridor is in food and beverages, textiles, and transportation equipment. Most of the Indonesian textile production is concentrated in Java, where Jakarta, Bandung and Semarang are the main downstream production sites, in addition to upstream production of fiber in Purwakarta, Subang and Tangerang. Transport equipment industry is concentrated in Jakarta, Bogor, Bekasi, Karawang and Purwakarta.

West Java province is part of Java Corridor in MP3EI. Main economic sector in this province is food and beverage industry, manufacturing of machinery and transport equipment, and textile industry. Center for textile industry is located in Bandung and its surrounding areas, while food and beverage industry is located in Jakarta and surrounding areas. Accelerating the economic development in West Java requires more and better infrastructure in transportation, telecommunication, public utilities, and public works. One of the important infrastructures supporting the economic activities in West Java is the availability of road transportation.

### Table 1. Infrastructure Condition – West Java and Other Provinces in Java (2014)

<table>
<thead>
<tr>
<th>Components</th>
<th>Banten</th>
<th>DKI Jakarta</th>
<th>West Java</th>
<th>Central Java</th>
<th>D.I. Yogyakarta</th>
<th>East Java</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads Condition (Good quality)</td>
<td>93.86</td>
<td>97.34</td>
<td>97.15</td>
<td>93.3</td>
<td>99.06</td>
<td>91.7</td>
</tr>
<tr>
<td>Electrification Ratio (%)</td>
<td>86.27</td>
<td>99.99</td>
<td>80.15</td>
<td>86.13</td>
<td>80.57</td>
<td>79.3</td>
</tr>
<tr>
<td>Sea Transportation</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Air Transportation</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Drinking Water Access</td>
<td>64.09</td>
<td>94.13</td>
<td>64.67</td>
<td>69.17</td>
<td>73.1</td>
<td>74.8</td>
</tr>
<tr>
<td>Good Sanitation Access</td>
<td>66.59</td>
<td>87.1</td>
<td>56</td>
<td>64.05</td>
<td>80.01</td>
<td>58.7</td>
</tr>
<tr>
<td>Village with BTS (Telecommunication)</td>
<td>54</td>
<td>80</td>
<td>55</td>
<td>29</td>
<td>61</td>
<td>46</td>
</tr>
</tbody>
</table>

Source: National Government Work Plan 2014 (Buku III RKP Tahun 2014)

West Java Province economic growth has always been slightly higher than the national rate (BPS, various years). Manufacturing industry contributes the most to West Java GRDP, followed by Trade, Hotel and Restaurants, and Transportation and Communication Services. If we look at number of infrastructure projects and investment from 2007-2011, districts with highest realization of investment are Bekasi, Karawang and Bogor. The location investments turns out to be near the Capital City, Jakarta. Districts that still have low investment in infrastructure are Kuningan, Cirebon, Tasikmalaya and Banjar. Thus during these period, investments are still concentrated mainly these districts that are closest to Jakarta. The infrastructures in Bekasi, Karawang, and Bogor are in good condition and this maybe one of the
reasons these districts are able to absorb large investment which in turn boost economic development in West Java Province.

The central and provincial governments have strategic plan on infrastructure development in West Java. There are around 31 infrastructure project that the government plan to build, where 9 projects already completed such as port in Pelabuhan Ratu, main artery road for south line, Nusawiru local airport (optimized), Husein Sastranegara domestic airport (optimized), port in Cirebon, electricity transmission Java-Bali, and Cikapali Toll Road. There are 12 infrastructure projects that are in construction process, such as highway Ciawi-Sukabumi, Kertajati international airport, Cisumdawu highway, Jatigede and Sadawarna dam construction, Soroja Toll Road. Also there are 10 projects that are in preparation, such as Citarate local airport, port in Cilamaya, Bandung Inter Urban highway, Cakrabhuana airport, reactivation of Bandung-Jatinangor and Bandung-Soreang train line. These infrastructure development aims to increase accessibility to North and Central transportation line and to construct South transportation line that connected to the Central. During the period of 2008-2012, around 107.5 billion Rupiah have been allocated from government budget. However, since West Java Province still has low fiscal capacity, the province only contributed small part of the infrastructure funding for implementing the strategic plans. West Java Province infrastructure competitiveness is still low compared to DKI, Bali, Central Java, East Java, and even to North Sulawesi.

Size of West Java Province budget amounted to more than 23 trillion Rupiah in 2015. From the budget, around 67% comes from local provincial revenues, thus financial dependence to central government is relatively small. When faced with the need of investment funding, that can reached to 20.15 trillion Rupiah, the fiscal capacity of West Java is very limited. So it is necessary for the provincial government to seek alternative sources of funding. The provincial government is seeking alternative sources of funding through the issuance of provincial bonds as an alternative source of infrastructure funding. Although bonds can be alternative financing and have prospects, issuing bond remains exposed to various risks. West Java Province will issue municipal bonds with a rating of AA –by 3 trillion Rupiah and it is expected in the near future to be realized. The issuance of West Java Province bonds is still in process, such as the audit needs to be carried out by certified public accountants, while so far only done by BPK. Issuance of provincial bonds is not intended to add to provincial regional budget, but is intended to finance infrastructure projects such as transportation.

4. JabarTERM5 CGE Modeling and Simulation

The model that is used in this study is an Interregional CGE model called JabarTERM5, a TERM model for West Java Province and other regions in Indonesia. This model is based on IndoTERM model that was developed by CEDS UNPAD-Bappenas-CoPS in 2011. A TERM is a framework for CGE (Computable General Equilibrium) modelling of multiple regions within a single
country, developed by Mark Horridge (Horridge, 2011). The study uses TERM model because it can examine the regional impacts of shocks that may be region-specific. Thus we can look how infrastructure funded through external funding (in this case national infrastructure from national budget) affect the region’s economic growth.

A CGE model offers an analytical framework where the economy is represented as a complete system of interdependent components. All economic agents such as households, firms, government, and the external sectors are all related by transaction on the markets and the price system. The model will capture the impact of an economic shock to the entire economy, which is not the case in a partial equilibrium framework. In the IndoTERM model, it captures the direct effect and indirect effects of various policy simulations. For this study purpose, if the government put alternative instruments to fund public infrastructure, the model can take into account the direct effect of external investment on the economy, such as the increase in GRDP of the sectors involved, and also the fact that this stimulation will create multiplier effect to the whole economy through the productivity increase in factors of production.

The advantage of IndoTERM model compared with other national CGE model is the richer presentation of regions and production sectors. The database for a CGE model consists of matrices of flow values dimensioned by commodity, industry, and regions. The model contains quantity and price variables for each of these flows, so the number of variables and equation tends to track database size. To reduce computing problems, in this study we aggregated 33 regions (provinces) into 2 regions, West Java Province and rest of Indonesia. The TERM data structure consists of core matrices (those stored on the Input-Output database) and other matrices that can be calculated from the core matrices. A balancing requirement of the TERM database is that the demand and supply shall be equal for domestically-produced goods. The model that we use here has the advantage of being fully coherent. All accounts must be balanced and it allows us to identify the winners and losers of different scenarios to be analyzed, simulate various policies to fund the investment, and provide a comparative analysis of winners and losers. With disaggregated production sectors into 53 sectors, the model gives comprehensive results that can be analyzed into development context. In the results, we are able to highlight the impact to final demands as well. We are able to provide a comparative analysis of the province and illustrate the importance of the structural differences among the provinces.

The equations of the model are similar to those of other top-down CGE models. Producers choose to minimize cost by combining intermediate and primary factor input, subject to production function which is structured by a series of CES nesting assumption, illustrated in Figure 1. For industry output, primary factor and intermediate inputs are demanded in proportion using Leontief assumption. The primary factor aggregate is CES composite of capital, land and labor. The aggregate intermediate input is a CES composite of different composite commodities. Industry outputs are transformed into commodity outputs using a CET mechanism.
The model also contains assumptions reflecting small open economies. In this context, world prices of imports and exports are exogenous. Using Armington hypothesis, domestic consumers can substitute domestically produced goods with import by relying on a sector-specific elasticity of substitution. A high elasticity in one sector implies that a change in relative price between the locally produced good and the imported food will have a strong substitution effects.

We prepared the model to consider investment shock and improving productivity on infrastructure sectors such as utilities, communication, rail transportation, road transportation, and transportation services. We simulated two infrastructure investment scenarios, the moderate scenario or increase in government national infrastructure investment only, and the progressive scenario that combines government national infrastructure investment with private investment. We did a 6 and 12 percent simulation increase in public national infrastructure investment in West Java Province. This increase benefits productivity improvement in infrastructure sectors. We assume that this productivity improvement will increase output in infrastructure sectors by 5 to 10 percent, respectively. Given our assumption, the model simulation results has to be
analyzed in long run perspective. In long run, the economies will have time to benefit from the new infrastructure and equilibrium will be achieved in the different markets.

5. **Results and Analysis**

In this study, the impact of increased national infrastructure investment in West Java Province from Rp 34.79 Trillion in 2010 to Rp 84.15 Trillion in 2014 is assessed. Two infrastructure investment scenarios are employed, the moderate scenario or increase in government national infrastructure investment only, and the progressive scenario that combines government national infrastructure investment with private investment.

We will concentrate on the macroeconomic variables to simplify the presentation but will highlight the main sector effects. We will proceed by doing a detailed comparative analysis of moderate scenario and progressive scenario. Under the moderate scenario, GRDP in West Java Province increased by 1.91% compared to baseline. This increase is the overall impact of boosting national infrastructure investment in West Java Province. Since this province is a large part of the national economy, the boost in national infrastructure located in West Java Province will cause national GDP to increase by 0.37 percent compared to baseline. Since other regions have high connectivity in terms of processing products, their GRDP also experienced an increase of 0.03 percent. But under the progressive scenario, the GRDP growth is higher than under the moderate scenario for West Java, Rest of West Java, and National. GRDP under progressive scenario increased by 3.58 percent compared to baseline.

Under progressive scenario, employment in West Java Province experiences an increase of 2.77 percent. However, if we look at the sector level, the top 5 sectors that have the highest increase for employment are Cements, Textiles, Basic Metals, Papers, and Wood Products industries. For moderate scenario, the result remains the same. Now if we look at the output level, top 5 sectors that show the highest increase are Cements, Papers, Food Crops, Wood Products, and Textiles.

Based on these results, scaling up national investment in infrastructure in West Java Province will generate economic growth to West Java and rest of the country. Manufacturing industries in West Java experienced an increase in their employment and output. There is no industry that experiences a decline in their output due this investment increase. Contribution to the increase in national GDP can be explained by the contribution of provincial output to national output. Textile, machinery and other manufacturing industries from West Java Province have the highest national impact. Thus by increasing the availability of infrastructure in West Java, these sectors will contribute to the national output as well. The beneficial effect of infrastructure investment to the economy especially coming from road and rail transportation.
Household consumption increase in the province and the CPI also showing a decrease due to the improvement in infrastructure. The results also show that most commodities presented in the database showing a decline in their household price on domestic composite. This is because of the decline in transportation cost especially road transportation which will decrease goods and commodity price faced by household. Most of commodities’ prices in West Java experienced a decline due to infrastructure improvement. However, real estate and finance sectors show a price increase. The total real wage by regions also experienced an increase. If we look at the price of
composite road margin on overall goods from West Java to other region or the other way round, the impact of scaling up infrastructure investment will result in a decline in transportation margin within and between provinces. Within West Java Province, road margin declined the most, around 19.75 percent compared to baseline. From Rest of Indonesia to West Java, road margin declined around 12.51 percent, lower than from West Java Province to Rest of Indonesia which declined 6.75 percent. This result shows that scaling up investment in infrastructure will generate lower margin in transportation, and for West Java Province case road margin experienced the most advantage. Also the implication of the above costs decrease indicates that economy activity will also increase from other regions to West Java.

If we look closer at district level performance, the impact of infrastructure investment scaling up will be different in each district. The top 5 districts that experienced the highest increase in their GRDP are Kab. Bogor, Cimahi City, Kab. Bandung, Bekasi City, and Kab. Bekasi. Whereas, the top 5 districts that experienced the lowest increase in their GRDP are Kab. Ciamis, Kab. Kuningan, Kab. Cirebon, Bogor City, and Kab. Indramayu. Kab. Bogor experienced the highest increase in GRDP while Kab. Indramayu experience the lowest. None of the big cities such as Bandung are in the top 5. It indicates that national infrastructure investment benefits manufacturing industries located near big cities, such as Kab. Bogor near to Bogor City, Cimahi City and Kab. Bandung near Bandung City, and Bekasi City and Kab. Bekasi near to Jakarta Capital City. Improving infrastructure in the province, will certainly increase district GDP which located near the capital city. This is contradictory to government intention to create a more wide spread economic development within the province.

![Figure 4. Impact of Increase in West Java National Public Infrastructure Investment to District GRDP, Employment and Household Consumption (in percentage points)](image-url)

Figure 4. Impact of Increase in West Java National Public Infrastructure Investment to District GRDP, Employment and Household Consumption (in percentage points)
The government plan to develop national infrastructure in West Java Province is very timely and targeted. For example, development project for Kertajati International Airport and Cisumdawu Toll Road will certainly help surrounding districts to gain multiplier effects because the airport will create economic activities in the districts such as Indramayu, Kuningan and Majalengka. This national infrastructure program will help these districts that had experienced the lowest increase in their GRDP in the previous period. This finding helps us to know that boosting infrastructure investment certainly will generate economic activities to surrounding regions. The Kertajati airport project is a good example of how government considers the distribution of national infrastructure development to have multiplier effects to surrounding regions which are less developed previously.

From the employment implication side, districts that experienced the highest increase in their employment is Kab. Bekasi, Kab. Bogor, Kab. Bandung, Kab. Purwakarta, Cimahi City and Kab. Karawang. While districts that experienced the lowest increase is Kab. Indramayu, Kab. Kuningan, Bogor city, Kab. Ciamis, and Kab. Cirebon. These results will affect household consumption in the district. However, if we look closer to the distribution of the impact at the district level, the response to infrastructure in these top 5 districts are more than twice compared to other districts in the province. It can be explained by the fact that these districts are the centre for manufacturing sectors in West Java. Thus boosting national infrastructure investment in West Java will certainly improve districts that have manufacturing industries. However, there are districts that experience a decline in employment, i.e. Kab. Tasikmalaya, Sukabumi City, and Cirebon City. In these districts they benefit less from national infrastructure investment. The government needs to stimulate economic activities in the districts that experience a decline in their employment due to the higher demand in other districts that experienced expanding economic activities.

6. Conclusion

The TERM model exercise has allowed us to analyze the impact of scaling up national infrastructure investment in West Java province with different implication and impact as follows:

1. Our results show that we do have the so called clear-cut districts that can be classified as winner and losers. The top 5 districts that experience the highest increase in their GRDP are Kab. Bogor, Cimahi City, Kab. Bandung, Bekasi City, and Kab. Bekasi. However, the top 5 districts that experience the lowest increase in their GDP are Kab. Ciamis, Kab. Kuningan, Kab. Cirebon, Bogor City, and Kab. Indramayu. It indicates that national infrastructure investment will benefit manufacturing sector that are concentrated near big cities. This is contradictory to the government intention to have more wide spread economic development in the province.
2. Another important conclusion is that if the GDP growth needs to be targeted, progressive infrastructure investment through alternative financing schemes produce the strongest sector effects. This is because the sector effects are strongly influenced by infrastructure productivity improvement as well as the size of the funds invested in infrastructure. Implementation of progressive investment will create higher productivity to infrastructure sectors such as public utilities, public works, and transportation sectors. These will create multiplier effects to the entire sectors in the province which can be shown from the increase in their production and export values.

3. Household consumption in most of the district experiences an increase, compare to baseline (without investment policy). Districts that experience the highest increase in household consumption are: Kab. Bekasi, Kab. Bogor, Kab. Bandung, Kab. Purwakarta, and Kawarang. Only Sukabumi city and Cirebon city experience a decline in their consumption level.

4. If we look at the price of the commodities in West Java Province, most of them decrease. For agriculture sectors, the most responsive due to the improvement in infrastructure are: Vegetables and Fruits, Food Crops, and Tea. For manufacturing sector, the most responsive are Cements, Wood Products, and Papers. There are two sectors that experience an increase in their price i.e. Real Estate, and Business and Financial Services. The increase in their price affect the demand for these products, the impact of which found out to be the lowest among the service sectors. The price (or cost) of trade and transport sector has decreased due to an increase in the access and quality of infrastructure.

5. If we look at the price of composite road margin on overall goods from or to West Java Province, the impact of scaling up infrastructure investment will create a decline in transportation margin within and between West Java Province and other province. The road margin from RoI to West Java Province declines lower than from West Java to RoI. This indicates that improvement infrastructure will benefit not only the province, but also other regions. This indicates that the economic activity will also increase from other regions to West Java Province.

To conclude, the government needs to impose intervention so that the economic activity not only concentrated in big cities, but to other districts that experience the lowest response of scaling up infrastructure investment.
References


