

Potentials Of Manufacturing Businesses In East Java As An Economic Strengtheners In The Global Value Chain

Khamdan Rifa'i, Moch. Chotib, Babun Suharto, Lucik, Nur Hidayat

Abstract— Indonesia's current challenge is in the trade sector. These results affect economic growth mainly due to Indonesia's trading system which is still glued to the export of raw goods. Therefore, Indonesia is still weak in the participation of Global Value chain (GVC). As one of the efforts undertaken to participate in the GVC is looking for potentials owned in the region. This study aims to see the potential of manufacturing enterprises in East Java. The variables to be considered are the gross regional domestic product, labour productivity, the export value of manufacture and investment. The use of analytical tools in this study using panel data analysis Vector Error Correction Model (VECM). The data used are panel data of 38 regencies and cities in East Java with the period. The results indicate that there is cointegration between variables which indicates that the increase in productivity of the manufacturing business can provide a positive outlook for the national economy. The government needs to improve services and increase investment especially in the real sector in East Java

Keywords— manufacturing business, trade, Global Value chain, VECM.

1 INTRODUCTION

The development of the global economy encourages countries to continue to increase productivity because, in each period, competitiveness in the international market will increase. Along with the development of innovation, especially in terms of information technology, each country has improved the system, especially in the trade sector, which is an activity that relates to or interacts with other countries. In the current era of globalization, it is known as the Global Value Chain (GVC) which is a production system that relies on developments in information technology (Bappenas, 2015; Del Prete et al., 2017; Hernández and Pedersen, 2017). The beginning of the emergence of GVC is the concept that covers a variety of economic activities from the product innovation process to the distribution to the end consumers well (Gangnes et al., 2014; Murphree and Anderson, 2017). The concept of GVC is a series that is bound in the trade sector between countries which is arranged in a chain, not only commodity manufacturing but logistics, transportation of customs agents and so on (Bappenas, 2015; Gangnes et al., 2014). The fragmentation needed in the GVC allows each country to take advantage of the comparative advantage possessed by developing the existing base sector (Bappenas, 2015; Pomfret and Sourdin, 2016).

Countries that have played a role in GVC will have a structured system of trade allocation from upstream to downstream, starting from the supply of goods not only from within the country but also from foreign imports and processed to obtain better quality (Bappenas, 2015; Dahlan et al., 2015; ärbänel, 2015). Developed countries have played an active role in GVC because of the technological developments that have helped them to add trade networks to facilitate business development and achieve economic growth (Del Prete and Rungi, 2017; Greaney and Karacaovali, 2017; Liou et al., 2016; Yu and Luo, 2017). The concept of GVC is the ability of a country to compete internationally supported by a level of capacity, quality and a favourable trading environment by utilizing the resources it has. Besides, the institutional role that drives the GVC system is more structured and provides positive externalities for economic activity (Harnesk et al., 2017; Nielsen, 2017; Pomfret and Sourdin, 2016). This indicates a renewal or reallocation of unproductive resources to more renewable ones to increase market competitiveness. In line with the development of GVC, countries that have the potential to play a role in GVC are countries that have abundant natural resources so that they can be utilized for the development of production, such as the country of Indonesia. Indonesia is expected to be able to exploit the comparative advantages it has so that it can take advantage of large opportunities such as in the manufacturing and agricultural sectors. One obstacle for Indonesia to play a role in GVC is the presence of poor market integration and limitations and also high transportation costs so that market networks, especially at the level of demand, become ineffective (Bappenas, 2015). Therefore Indonesia has not played a major role in GVC mainly due to under development in aspects of technological development. Countries that have played a role in GVC will have a structured system of trade allocation from upstream to downstream, starting from the supply of goods not only from within the country but also from foreign imports and processed to obtain better quality (Bappenas, 2015; Dahlan et al., 2015; ärbänel, 2015). Developed countries have played

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2 Literature

This study wants to analyze the concept of the global value chain (GVC) for manufacturing companies in East Java. In the beginning, a value chain concept emerged which was pioneered by Michael E. Porter in 1985 in the book 'Competitive Advantage, Creating and Sustaining Superior Performance. Porter explains that there are aspects of profit added to interdependent economic actors that generate value, which is also in the form of demand and flow of funds that are made or managed (Gangnes et al., 2014; Tsekeris, 2017). The model of the value chain is used to analyze and define company competencies that feature comparative advantages (Flentø and Ponte, 2017; Hernández and Pedersen, 2017). The concept of the value chain is divided into two categories of primary activities (product physical creation, sales and distribution) and supporting activities (supporting primary activities in providing input of production factors in the form of human resources, technology and purchasing inputs). Hitt, Ireland, Hoskisson (2001) develops the potential for value creation of economic activity, namely: primary activities consisting of inward logistics, operations, outward logistics, marketing and sales, and service. While supporting activities consist of purchasing and procurement, technology development, human resource management, corporate infrastructure. The concept of value chains develops globally, which is known as the global value chain (GVC). GVC includes participation from cointegrated countries because in general, the definition of GVC based on the World Bank is fragmentation of international production, which can create jobs and

economic growth. Therefore the World Bank is trying to attract developing countries to participate in the GVC, as a way to develop the country's economy. Country participation in the GVC must be supported by the application of appropriate trade and investment policies. GVC provides positive externalities for countries to carry out international trade activities. Integration on the GVC concept provides knowledge to companies throughout the production process. A positive form of externality from GVC is the presence of standardized products that have been produced. In this concept, the role of government and society needs to be matched. The GVC that is currently developing is a development of Porter's thinking concept, where criticism of Porter is about information technology which is currently still undergoing a development process. Therefore Porter incorporates a technological element to the theory that was created. Following empirical review consists of previous research summarized in one table below, as follows:

Table 2.1 Previous Research

Authors	Discussion	Recommendations
(Şerbănel, 2015)	Global Value chain has contributed to increasing Romanian economic growth. In terms of exports in the manufacturing sector has contributed to increasing economic growth	Policy encourages international trade
Yu and Luo (2017)	The international trade sector is driving China's economic growth to develop. Factors that influence Chinese international trade from improving technology and institutions	Increasing Chinese productivity in terms of exports, providing training for workers to have skills and increasing labour efficiency
Dahlan et al (2015)	Global Value chain affect changes in the manufacturing industry then it influences economic growth in Malaysia.	The policy encourages manufacturing growth

3 Methods

Type of data used in this study is panel data with time series in 2010 and 2015 and cross-section 38 Districts / Cities in East Java. The variables used are proxied regional economic growth with Gross Regional Domestic Product (GRDP), labour (TK), manufacturing exports (EKS) and investment (INV) in manufacturing. Data sources as supporting this research were obtained from the East Java Central Bureau of Statistics. The research model in looking at the role of state international relations in manufacturing in the role of the Global Value chain in East Java modifies the research conducted (Del Prete et al., 2017; Hernández and Pedersen, 2017)

$$PDRB = f(TK, Eks, INV) \quad (1)$$

transformation of equation (1) into the econometric model form as follows

$$PDRB_{it} = \alpha_0 + \alpha_1 TK_{it} + \alpha_2 Eks_{it} + \alpha_3 INV_{it} + \varepsilon_{it} \quad (2)$$

Analysis tool used in this study uses the Vector Error Correction Model (VECM) which has the characteristic of being able to see the impulse response function between variable relationships. Equation (2) is entered into the Vector Error Correction Model (VECM) model as follows

$$PDRB_{it} = \Gamma_{10} + \Gamma_{11}PDRB_{t-1} + \Gamma_{12}TK_{t-1} + \Gamma_{13}Eks_{t-1} + \Gamma_{14}INV_{t-1} + \alpha_1(PDRB_{t-1} + TK_{t-1} + Eks_{t-1} + INV_{t-1}) + \epsilon_{1t} \tag{3}$$

$$TK_{it} = \Gamma_{20} + \Gamma_{21}PDRB_{t-1} + \Gamma_{22}TK_{t-1} + \Gamma_{23}Eks_{t-1} + \Gamma_{24}INV_{t-1} + \alpha_2(PDRB_{t-1} + TK_{t-1} + Eks_{t-1} + INV_{t-1}) + \epsilon_{2t} \tag{4}$$

$$Eks_{it} = \Gamma_{30} + \Gamma_{31}PDRB_{t-1} + \Gamma_{32}TK_{t-1} + \Gamma_{33}Eks_{t-1} + \Gamma_{34}INV_{t-1} + \alpha_3(PDRB_{t-1} + TK_{t-1} + Eks_{t-1} + INV_{t-1}) + \epsilon_{3t} \tag{5}$$

$$INV_{it} = \Gamma_{40} + \Gamma_{41}PDRB_{t-1} + \Gamma_{42}TK_{t-1} + \Gamma_{43}Eks_{t-1} + \Gamma_{44}INV_{t-1} + \alpha_4(PDRB_{t-1} + TK_{t-1} + Eks_{t-1} + INV_{t-1}) + \epsilon_{4t} \tag{6}$$

The reason underlying this study using the VECM estimation method is to consider the existence of a time trend, so that there is a correction of the imbalance of the dependent variable. In the VECM estimation there is an impulse response function test that serves to produce an endogenous forecast for the future. The IRF test used in this study is the cholesky decomposition shock that uses the recursive format of the contemporary relationship of endogenous variables. Furthermore, the variance decomposition test serves to find out the variance of certain variables towards total variance.

4 Analysis Results

The results of the analysis using VECM can be seen in Figure 4.1. which shows that GVC has the potential for economic growth in East Java. The shock caused by labour was responded to by economic growth at the beginning of the period up to more than the 30th period. This gives an understanding that when there is a change in the workforce it will have an influence on economic growth in East Java both in the short and long term. In line with the results shown in labour relations and economic growth. The shock caused by investment also influences economic growth in East Java. This can be seen from the initial response period until more than the 30th period on economic growth caused by shocks from investment. However, the different results shown in the shock originating from exports have a weak response. The response of economic growth to shock from exports arose in the 4th period and returned to normal in the 16th period.

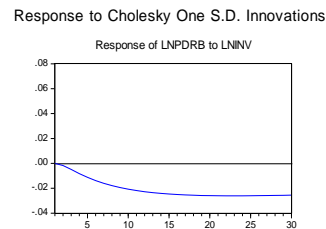


Figure 4.1 Result of Impulse Respon

The size of the contribution of labour, exports and investment to economic growth can be seen through the variance decomposition in Table 4.1. Variance Decomposition aims to be able to see the contribution of labour, export and investment variables in encouraging economic growth in East Java. Thus it can be a new strategy for the government in increasing the potential of manufacturing businesses in East Java as a reinforcement in the Global Value Chain (GVC).

Table 4.1 Variance Decomposition

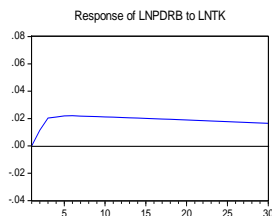
Period	Economic growth	Labour	Eksport	Investment
1	100.00	0.0000	0.0000	0.0000
2	96.985	2.9345	0.0098	0.0698
3	93.703	5.9712	0.0368	0.2881
8	88.833	8.2507	0.1138	2.8021
9	88.180	8.3260	0.1174	3.3760
10	87.578	8.3662	0.1196	3.9360
11	87.018	8.3852	0.1209	4.4754
12	86.499	8.3885	0.1215	4.9902
13	86.019	8.3806	0.1216	5.4783
14	85.575	8.3644	0.1213	5.9389
15	85.165	8.3422	0.1207	6.3718
20	83.549	8.1814	0.1149	8.1541
25	82.484	7.9880	0.1071	9.4198
26	82.320	7.9481	0.1054	9.6255
27	82.169	7.9081	0.1037	9.8180
28	82.031	7.8681	0.1021	9.9984
29	81.904	7.8280	0.1004	10.167
30	81.787	7.7879	0.0987	10.326

The results of the analysis on the variance decomposition show the same results as the impulse response. In table 4.1 shows that investment has a considerable influence in increasing economic growth in East Java as seen in period 30 has the largest contribution to the value of contributions is 10.32615. Besides that labour has a high contribution after investment, where the biggest contribution in the 12th period is 8.388592. While exports have a weak contribution to economic growth with the largest value up to the 13th period of 0.121644. Thus the government needs to increase the potential of manufacturing exports in East Java to contribute to economic growth.

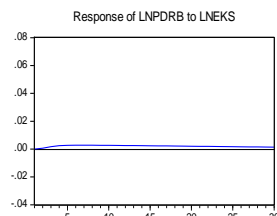
5 Discussions and Recommendations

Discussions continue on the issue of Indonesia's participation in the GVC which is supported by the

Response to Cholesky One S.D. Innovations



Response to Cholesky One S.D. Innovations



economic productivity of East Java. Based on information from the Central Statistics Agency (2017) there are at least 10 manufacturing industry sectors experiencing performance that contracted up to 5% in the third quarter of 2016, especially in the micro and small scale industrial sectors. One of the conditions is caused by high production factor costs. The condition of economic activity that occurred in East Java indicated that there were still obstacles which caused Indonesia to still have a relatively small role in the GVC. The GVC scheme requires each company to manage the supply of production factors both those obtained from domestic purchases and imports. This is intended as a defence when economic conditions are in a period of crisis so that the inventory can be a manifestation to make repairs, suspend import purchases and encourage company productivity which has an impact on increasing regional and national economic income. With the development of the international market, the central government acts as a supervisor and coordinates the regional government to reactivate and strengthen the existing institutions in the regions. Collaboration between economic actors, from upstream to downstream can provide a synergy of reinforcement to increase productivity. Strengthening the East Java manufacturing sector can be done and generate positive externalities, one of which can implement Presidential Regulation No. 28 of 2008 concerning national industrial policies. Based on the regulation there is a policy framework that the provincial government develops a guide map of superior industrial development in the province and which is formulated from various development guidelines in the city district. For better sustainability, the government designs industrial development by providing services and facilities needed by industry, especially for industries that can absorb more labour, industries that transfer technology, maintain sustainability, industries that use domestic productive factors. In connection with the growing international economic flow that can be characterized by digital economic development, government work programs need to be specified. Policy specifications that lead to the manufacturing industry because it is the main driver of the economy in East Java, where the potential is quite large in overcoming labour problems that can reduce unemployment, domestic supply, and high links between industries and other sectors (Dahlan et al., 2015; Nielsen, 2017). Policy mapping also leads to the industrial sector with the amount of production that has the potential of looking forward. The manufacturing sector can achieve sustainable growth if the provisions in the industrialization process and requirements for competitiveness are achieved. East Java's manufacturing industry has not been fully supported by improvements in the efficiency and productivity of workers who have progressed simultaneously. Therefore, sectoral policies are recommended to be more directed at increasing labour productivity, making minimum wage regulations that must work together, and the existence of national standardization of industrial products in addition to mitigating possible risks such as continuing to uphold the principles of good corporate governance management that is structured and systematic and with the existence of a

business climate that raises the competence to produce high quality products. The problems mentioned earlier are related to the development of manufacturing industry technology, which tends to be insignificant. This is characterized by the quality of human resources which have limited capacity in technology operation. As a result of less sustainable development, East Java is poor in technology resources. Therefore in the need for institutional strengthening and cooperation between various regions to realize the medium-term regional development plan. If a predetermined plan can be realized then East Java can contribute a role in Indonesia's participation in the GVC. Indonesia's participation in the GVC requires the development of sustainable communication technology. Availability of logistics and economic openness related to trade and investment rules. However, currently, Indonesia is constrained by the inefficient production process due to the level of wages, capital, interest rates that have an impact on spillover on manufacturing performance. Regardless of the obstacles faced by Indonesia, there is a strategic opportunity that is owned in the form of comparative advantage in the form of products that fall into the category of parts and components that are part of the GVC. The Global Value Chain (GVC) phenomenon provides information, technology, logistics and economic openness. The presence of the Global Value Chain (GVC) paradigm has an influence on a country's economic activity reflected in economic growth. Indonesia which is a developing country participates in the Global Value Chain (GVC) but still has a significant impact on the phenomenon. Constraints experienced are the delay in technological growth from developing and developed countries. This affects low productivity and little investment, which in this condition is strengthened by unproductive institutions. Even though like that, Indonesia still has the opportunity in the Global Value Chain (GVC) that is by ownership of natural resource wealth as a comparative advantage. The strategy developed by the government in increasing economic growth through the Global Value Chain (GVC) paradigm by building technology-based industrial clusters, improving research and development facilities in environmentally friendly manufacturing and production industries and paying attention to the balance of environmental carrying capacity. However, the implications of the strategy still have gaps, namely unproductive institutional structures, intensive policies that have not been effective and legal instruments are still not perfect. Thus, it is necessary to focus on the implementation of policies related to international trade and more comprehensive investment and more productive institutions

6. Conclusion

Vector Error Correction Model (VECM) used in research shows that labour and investment in manufacturing influence economic growth in East Java. In contrast to changes in exports influence economic growth but are weak. Thus a strategy is needed to improve economic growth through the manufacturing industry as an economic booster

in the Global Value chain by developing technology-based industrial clusters, improving facilities for research and technology development in environmentally friendly manufacturing and production industries and paying attention to the balance of environmental carrying capacity. However, this condition still has a gap in its implications, so it needs to focus more on the implementation of policies related to international trade and more comprehensive investment and more productive institutions. The limitations of this study are the longer research period so that it is known that fluctuations in variable imbalances. Besides, it uses renewable analytical methods to determine the level of influence and expectations of GVC towards Indonesia. Furthermore, it is necessary to add variable variables which emphasize macroeconomic variables which would support Indonesia's involvement in GVC.

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