Factors Affecting The Increasing Competitiveness of The Automotive Industry Sector in Promoting Sustainable Indonesian Economic Growth

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Abstract. This research was conducted to determine the factors that influence the competitiveness of the automotive industry sector in Indonesia and the implications for economic growth that affect employment, the level of people's welfare and people's purchasing power. The research method used is quantitative data research method with secondary data sources namely the Central Bureau of Statistics, National Development Planning Agency, Investment Coordinating Board, Bank Indonesia, Ministry of Industry, Ministry of Trade, Ministry of Manpower, World Bank, Asian Productivity Organization, Labor Organization International, World Integrated Trade Solutions, AISI and GAIKINDO. The results of this study indicate that there is a significant influence relationship of the factors studied on the competitiveness of the automotive industry sector, and the implications for economic growth that affect employment, the level of people's welfare and people's purchasing power in Indonesia.

Keywords: Economic Growth, Automotive Industry, Competitiveness

1. Introduction

Based on data from the Ministry of Industry, the trend of the growth contribution of the automotive industry sector to GDP in the 2011-2020 period continued to decline, even though in 2013 it was above GDP growth of 14.95 percent, and since early 2014 it has continued to decline, even below national GDP growth. Where a period of slowing economic growth occurred, with GDP growth falling below 5.0 percent, and in 2020 the automotive industry sector decreased to -19.86 percent. There are several factors that have caused this, one of which is the decline in demand both globally and domestically, plus starting at the end of 2019 the emergence of the Corona Virus Disease-19 (COVID-19) pandemic, so that in 2020 it experienced a contraction in growth and a very sharp decline. significant. Seeing these conditions, it is necessary to carry out a series of anticipatory efforts so that the deindustrialization condition does not continue and have a negative impact on the Indonesian economy. (Shzaaberi, 2018), This makes the automotive industry sector a driving force for the national economy as seen from the large contribution of the automotive industry sector to Gross Domestic Product (GDP), this is seen in the following figure 1.

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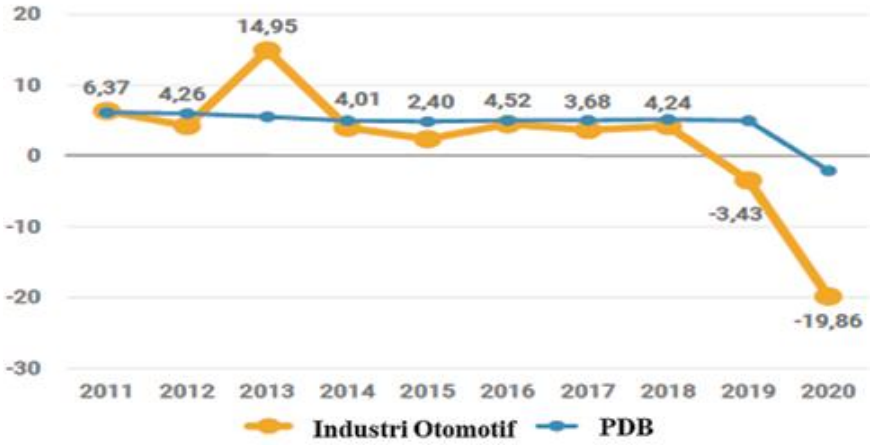

Figure 1. Growth of the Automotive Industry Sector (%PDB)

Based on Word Integrated Trade Solution (WITS) data for 2010-2020 Revealed Comparative Advantage (RCA) index in the manufacturing industry sector, with an average of 0.40, with the highest number of 0.43 in 2019 and the lowest number of 0.37 in 2011. For 10 years, namely in 2010-2020 it has been proven that the Indonesian manufacturing industry sector has an average Revealed Comparative Advantage (RCA) index that is still below 1 (RCA < 1) (Isventina et al., 2018). This shows that the Indonesian state is still stated to have comparative weaknesses which are revealed in products, one of which is in products in the automotive industry sector on a world scale (Wardani & Mulatsih, 2018). The results of these data can be seen in the achievement of the Revealed Comparative Advantage (RCA) index in the Indonesian manufacturing industry sector in 2010-2020 which is shown in the following figure 2.

Figure 2. RCA Index Indonesian Manufacturing Sector

There are several factors that have caused this, one of which is the decline in demand both globally and domestically, plus starting at the end of 2019 the emergence of the Corona Virus Disease-19 (COVID-19) pandemic, so that in 2020 it experienced significant a contraction in growth and a very sharp decline. In 2020 until 2023 Indonesia must recover economic growth due to the last 2 years that have experienced a decline. The automotive industry sector is included in the 5 priority industrial sectors in accelerating the implementation of the Making Indonesia 4.0 roadmap, for development and acceleration of economic growth (Kementerian Perindustrian, 2018). Where, these 5 (five) industrial sectors are able to contribute 60 percent to GDP, so as to encourage national economic growth. It is important to carry out strategic planning in order to maintain Indonesia's economic growth which always grows positively throughout the year so that over time, the automotive industry sector will increase its competitiveness. By having high competitiveness, it can spur a country to improve its economy in a sustainable manner. States that a country's seriousness is considered as a wellspring of a country's strength in confronting difficulties in building a country's development (Raimanu, 2016). Since progress must be worked through unrivaled financial, political and social power. So that the country can strengthen itself in the international market, increase the value of exports so that it can have a positive impact on GDP which in turn can improve people's welfare (Kalaitzi & Cleeve, 2018). Competitiveness is one of the criteria that determines the success of a country in international trade . In the current era of free trade, the competitiveness of a product is an absolute requirement that must be met so that the product can survive in the international market (Zhao & Zhang, 2007). With high seriousness, the nation can keep up with its monetary development and start to construct an efficient state life and around then the improvement of human advancement starts. Civilization development cannot be done without economic power. And economic power cannot be upheld without competitiveness. Thus, competitiveness becomes very important for the sustainability of a nation's economy and civilization.

Based on the background of this research, economic development aims to realize high and sustainable economic growth and is accompanied by the creation of high employment opportunities and an even distribution of income to improve welfare which has an impact on increasing people's purchasing power. So this research needs to analyze the factors that influence the growth of the automotive industry sector such as automotive exports, automotive imports, logistics performance index, exchange rate, tax ratio, total factor productivity, inflation, infrastructure, and automotive foreign direct investment, on the competitiveness of the automotive industry sector and its implications for economic growth, which affect employment, the level of people's welfare and people's purchasing power, so that it can be used for consideration in planning a reindustrialization strategy as an effort to increase the competitiveness of the automotive industry sector and have an impact on Indonesia's sustainable economic growth.

2. Research Methods

The research data method used is quantitative, data needed in this study is secondary which is collected in the form of time series data for 10 years, namely from 2010 to 2020, data with a ratio scale with this research data taken from several sources, namely data sources used are secondary data with a ratio scale with several sources, namely the Central Statistics Agency (BPS), National Development Planning Agency (Bappenas), Investment Coordinating Board (BKPM), Bank Indonesia, Ministry of Industry, Ministry of Trade, Ministry of Manpower, World Bank (Word Bank), Asian Productivity Organization (APO), International Labor

Organization (ILO), World Integrated Trade Solution, AISI and GAIKINDO. The research design used in this study is based on the level of explanation to explain the presence or absence of influences between variables. In this case, the research design is a descriptive study that aims to explain the relationship between variables and test hypotheses regarding the relationship between these variables. The operational variables of this study consist of Independent Variables (X) namely automotive export (X1), automotive import (X2), logistics performance index (X3), exchange rate (X4), tax ratio (X5), total factor productivity (X6), inflation (X7), infrastructure automotive industry (X8), foreign direct investment (X9). Intervening Variable (Y) namely automotive industry C competitiveness (Y1), economic growth (Y2). Bound Variable / Dependent (Z) namely employment (Z1), public welfare (Z2), public purchasing power (Z3), which is shown in the following figure 3.

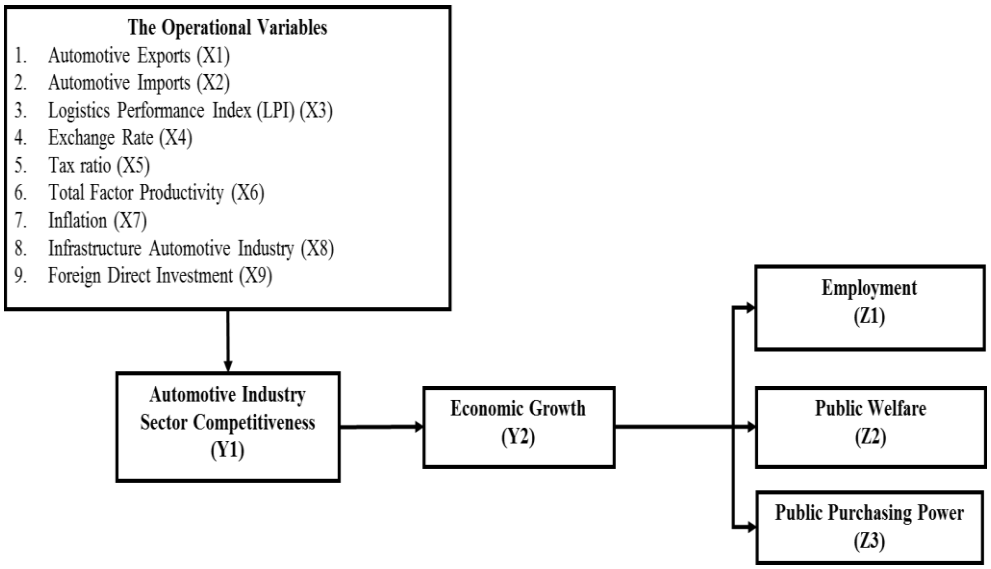

Figure 3. Automotive Industry Sector Competitiveness Research Framework

The technique used to perform multiple linear regression analysis in this study used the Ordinary Least Square (OLS) technique. The results of the multiple linear regression equation in this study are as follows:

Model 1

$Y1 = b0+b1X1+b2X2+b3X3+b4X4+b5X5+b6X6+b7X7+b8X8+b9X9+ \varepsilon t$

Model 2

$Y2 = b0 + b1Ln\_\hat{Y}1 + \varepsilon t$

Model 3

$Z1 = b0 + bLn\_\hat{Y}2 + \varepsilon t$

Model 4

$Z2 = b0 + bLn\_\hat{Y}2 + \varepsilon t$

Model 5

$Z3 = b0 + bLn\_\hat{Y}2 + \varepsilon t$

3. Result and Discussion

Testing this speculation utilizes numerous direct relapse which will show a causal connection between the free and subordinate factors. In testing the speculation in model 1, specifically the elements that impact the development of the seriousness of the car business area, which is displayed in the accompanying table 1.

Table 1. Multiple Linear Regression Model 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.259114	0.033642	7.702174	0.0000
X2	-0.007271	0.001608	-4.523135	0.0001
X3	2.806906	0.444863	6.309597	0.0000
X4	0.156519	0.034350	4.556617	0.0001
X5	-1.154226	0.084230	-13.70324	0.0000
X6	1.051992	0.177346	5.931845	0.0000
X7	-1.641419	0.248426	-6.607281	0.0000
X8	0.162508	0.020728	7.839892	0.0000
X9	-0.080800	0.007548	-10.70449	0.0000
C	-0.007222	0.000938	-7.702488	0.0000
R-squared	**0.946317**	Mean dependent var		0.000856
Sum squared resid	0.000274	Durbin-Watson stat		1.394584

Source: Data processed by eviews10

The consequences of the computations utilize different straight relapse which should be visible in table 1, with the outcome being an importance worth of $0.0000 \leq 0.05$ which implies that it makes a huge difference. With an interpretation in the language of economics, this significant meaning means that the hypothesis of automotive exports (X1), automotive imports (X2), logistic performance indexs (X3), exchange rate (X4), tax ratio (X5), total factor productivity (X6), inflation (X7), infrastructure (X8), and automotive foreign direct investment (X9) in a convincing and significant way, and can be proven to influence the competitiveness of the automotive industry sector (Y1) in Indonesia. Partial testing in this study used the t test which was carried out by looking at the level of significance or α, where in this study the α used was 5% or 0.05. Thus based on the results of calculations using multiple linear regression, all variables automotive exports (X1), automotive imports (X2), Logistic Performance Indexs (LPI) (X3), exchange rate (X4), tax ratio (X5), total factor productivity (X6), inflation (X7), infrastructure (X8), and automotive foreign direct investment (X9) has an average value of $\alpha \leq 0.05$), so it can be concluded that all variables have a significant effect on the competitiveness of the automotive industry sector in Indonesia.

In testing the next hypothesis in this study, namely to determine the effect of the competitiveness of the automotive industry sector (Y1) and its implications for economic growth (Y2) using the test on model 2, which is shown in the following table 2.

Table 2. Multiple Linear Regression Model 2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y1	4.461068	0.756319	5.898393	0.0000
RESIDY1	-7.463336	2.610047	-2.859465	0.0068
C	-0.000363	0.006275	-0.057871	0.9541
R-squared	**0.476827**	Mean dependent var		0.003101
Sum squared resid	0.063937	Durbin-Watson stat		1.883350

Source: Data processed by eviews10

The influence of the competitiveness of the automotive industry sector (Y1) on economic growth (Y2), statistically shows significant results on the probability value of the competitiveness of the automotive industry sector, namely ≤ of the value α (0.0000 ≤ 0.05), it can be written that the automotive sector competitiveness variable (Y1) has a significant and positive effect on economic growth (Y2). The positive meaning means that the increase in the competitiveness of the automotive industry sector (Y1) is also followed by an increase in economic growth (Y2) in Indonesia.

In testing the next hypothesis in this study using model 3, namely to determine the effect of economic growth (Y2) which has an influence on employment (Z1), which is shown in the following table 3.

Table 3. Multiple Linear Regression Model 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y2	0.228283	0.102419	2.228910	0.0317
RESIDY2	0.001171	0.120914	0.009683	0.9923
C	-0.000220	0.004916	-0.044836	0.9645
R-squared	**0.140082**	Mean dependent var		0.000485
Sum squared resid	0.039254	Durbin-Watson stat		2.058872

Source: Data processed by eviews10

The effect of economic growth (Y2) on employment (Z1), statistically showing significant results on the probability value of the effect of economic growth, namely ≤ of the value α (0.0317 ≤ 0.05), it can be concluded that the variable economic growth (Y2) has a significant and positive effect on employment (Z1). The positive meaning means that the increase in the competitiveness of the automotive industry sector (Y1) is also followed by an increase in employment (Z1).

In testing the next hypothesis in this study using model 4, namely to determine the effect of economic growth (Y2) which has an impact on public welfare (IPM) (Z2), which is shown in the following table 4.

Table 4. Multiple Linear Regression Model 4

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y2	0.004860	0.000724	6.710100	0.0000
RESIDY2	-1.49E-05	0.000855	-0.017453	0.9862
C	-3.87E-05	3.48E-05	-1.114587	0.2718
R-squared	**0.594632**	Mean dependent var		-2.37E-05
Sum squared resid	1.96E-06	Durbin-Watson stat		2.158713

Source: Data processed by eviews10

The effect of economic growth (Y2) on public welfare (IPM) (Z2), statistically shows significant results on the probability value of the influence of economic growth (Y2), namely ≤ of the value α (0.0000 ≤ 0.05), it can be concluded that the economic growth (Y2) variable has a significant and positive effect on public welfare (IPM) (Z2).

In testing the next hypothesis in this study using model equation 4, namely to determine the effect of economic growth (Y2), which has an influence on people's purchasing power (Z3), which is shown in the following table 5.

Table 5. Multiple Linear Regression Model 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y2	0.148340	0.026194	5.663155	0.0000
RESIDY2	0.000306	0.030924	0.009897	0.9922
C	-0.000812	0.001257	-0.645757	0.5222
R-squared	**0.511975**	Mean dependent var		-0.000353
Sum squared resid	0.002568	Durbin-Watson stat		2.028741

Source: Data processed by eviews10

The effect of economic growth (Y2) on people's purchasing power (Z3), statistically showing significant results on the probability value of the influence of economic growth (Y2), namely ≤ of the value α (0.0000 ≤ 0.05), it can be concluded that the variable economic growth (Y2) has a significant and positive effect on people's purchasing power (Z3).

Competitiveness automotive industry sector to increasing Indonesia's economic growth. To face the challenges of this free trade era, Indonesia must improve its competitiveness. Without increased competitiveness, Indonesia will only become a market for producers from other countries. Therefore, Indonesia must have a good strategy to win the increasingly fierce global competition (Ministry of Trade, 2015). By having high competitiveness, it can spur a country to improve its economy in a sustainable manner. So that the country can strengthen itself in the international market, increase the value of exports so that it can have a positive impact on GDP which in turn can improve people's welfare. With high intensity, the nation can keep up with its financial development and start to fabricate a deliberate state life and around then the advancement of progress starts. Civilization development cannot be done without economic power. And economic power cannot be upheld without competitiveness. Thus, competitiveness becomes very important for the sustainability of a nation's economy and civilization. The commodity competitiveness of a country can be measured by calculating comparative advantage. The comparative advantage calculation method commonly used in previous studies is Revealed Comparative Advantage (RCA) (Tampubolon, 2019). The Ministry of Industry has determined 5 priority industrial sectors in accelerating the implementation of the Making Indonesia 4.0 roadmap, for the development and acceleration of economic growth including the food and beverage, textile and clothing, automotive, electronics and chemical industries. The very basic reason is because so far, these 5 industrial sectors have been able to contribute 60 percent to GDP, then contribute 65 percent to total exports, and 60 percent of the workforce in the industrial sector, thus being able to drive national economic growth. The automotive industry sector is one of the 5 industrial sectors that is part of the strategic plan for Indonesia's industrial development in the medium term of the next 5 years (2015-2020) to increase the competitiveness and productivity of national industrial development. (Philip & Silbert Jose, 2020) This makes the automotive industry sector a driving force for the national economy as seen from the large contribution of the automotive industry sector to Gross Domestic Product (GDP).

Based on the Making Indonesia 4.0 roadmap, with the theme "Indonesia is preparing to face the era of the industrial revolution 4.0 in an effort to increase the competitiveness and productivity of the national manufacturing industry sector" (Mubyarto & Sohibien, 2020). The automotive industry sector is included in the 5 priority industrial sectors in accelerating the

implementation of the Making Indonesia 4.0 roadmap, for development and acceleration of economic growth. Where, these 5 (five) industrial sectors are able to contribute 60 percent to GDP, so as to encourage national economic growth. Implementation of the “Making Indonesia 4.0” roadmap will significantly increase GDP, manufacture contribution & create jobs. With Making Indonesia 4.0, it is hoped that it will be able to revive the industrial sector, regain a net (net) export position, increase the strength of state finances, increase state spending, increase investment, build a strong economy and promote an even better labor market . The automotive industry sector is targeted to become a global player. In fact, Indonesia will become an export hub (export center) of motorized vehicles, both for oil-based vehicles or internal combustion engines (ICE) and electric vehicles or electrical vehicles (EV), starting with understanding the manufacturing capabilities of electric motorcycles, then manufacturing capabilities batteries and electric cars that are in line with global trends. By having high competitiveness, it can spur a country to improve its economy in a sustainable manner. (Raimanu, 2016), States that a country's seriousness is considered as a wellspring of a country's versatility in confronting difficulties in building a country's human progress. Since civilization must be worked through unrivaled monetary, political and social power. So the nation can reinforce itself in the worldwide market, increment the worth of commodities so it can emphatically affect Gross domestic product which thusly can work on individuals' government assistance (Elistia & Syahzuni, 2018). With high intensity, the nation can keep up with its financial development and start to fabricate a systematic state life and around then the advancement of human progress starts. Civilization development cannot be done without economic power. And economic power cannot be upheld without competitiveness. Thus, competitiveness becomes very important for the sustainability of a nation's economy and civilization (ILO, 2021).

4. Conclusion

The results showed that all variables of export of the automotive industry sector, import of the automotive industry sector, logistics performance index, exchange rate, tax ratio, total factor productivity, inflation, infrastructure automotive industry, foreign direct investment. Intervening variable namely qutomotive industry sector competitiveness, economic growth. Bound variable (dependent) namely employment, public welfare, public purchasing power. With high intensity, the nation can keep up with its financial development and start to construct a methodical state life and around then the advancement of progress starts. Civilization development cannot be done without economic power. And economic power cannot be upheld without competitiveness. Thus, competitiveness becomes very important for the sustainability of a nation's economy and civilization.

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