

15 Year Aceh Economic Leverage Analysis Post-Mou Helsinki

Sri Handayani¹, Ivon Jalil², Aswin Nasution³

^{1,3}Faculty of Agriculture, Universitas Teuku Umar, Indonesia

²Faculty of Economics, Universitas Teuku Umar, Indonesia

Email: srihandayani@utu.ac.id

Abstract:

Conflict and regional economic development are two things that are interconnected, including the post-conflict conditions that have occurred. The Aceh conflict which was reconciled through the Helsinki MOU on August 15, 2005, in its course of text and social influence, affected the economic development of Aceh. Research on the analysis of leverage factors for the Acehnese economy 15 years after the peace period shows that the Acehnese economy is still in an unsustainable status with the main lever factor being human development index followed by regional expenditure, per capita expenditure, working population based on main employment, GRDP on the basis of price. Applicable, and agricultural production. Aceh's economic development, apart from requiring supporting infrastructure, really needs to pay attention to the development of its human index.

Keywords:

conflict; economic levers; regional economy

I. Introduction

Conflict is a natural condition that cannot be avoided from human life as long as humans still have different goals, interests and ideals in life or no mutual agreement is reached (Adegbonmire, 2015). Conflict can also arise because of the perceived threat to interests, needs and concerns (Raquel, 2011).

In the event or technically, there are three spaces that have the opportunity as a place for conflict to occur, namely the space for state power, the space for civil society or social collectivities and the private space. As stakeholders, these three spaces are involved with each other, either to support each other or contradict each other in conflict, and conflict occurs in every space of power or structure between rooms (Dharmawan, 2006). Cause-and-effect conflict will have an impact on disruption or loss of a sense of security which is a basic human need. Furthermore, insecurity will disrupt peace in life with the emergence of a sense of restlessness and anxiety (Amin and Khan, 2016), impaired social interaction in the community (Hasanvand and Hasanvand, 2011), disruption of the economy and the development process (Buchanan et al, 2011).

As the westernmost region of Indonesia, Aceh once reached its peak of glory at the beginning of the 17th century when the Sultanate of Aceh was under the reign of Sultan Iskandar Muda. As part of the territory and government of the Republic of Indonesia, Aceh has also experienced vertical conflicts with the Government of the Republic of Indonesia, including the DI-III rebellion (1953-1962) and the Free Aceh Movement (1979-2005). The Free Aceh Movement (GAM) conflict ended with the signing of the MOU in Helsinki on August 15, 2005 between GAM and the Republic of Indonesia. This agreement is a statement

of the commitment of both parties to resolve the Aceh conflict in a peaceful, comprehensive, sustainable and dignified manner for all parties.

Conflicts caused by injustice and imbalance in the management and distribution of natural resources have resulted in Aceh not being able to carry out sustainable and ideal development (Martono, 2009) which interferes with Aceh's economic development. This is in connection with armed conflicts or wars that occur in an area which will give birth to a typology of 4 to 5 generations of war generation that affects development in former conflict area (Buzan et al, 1998) which ultimately has an impact on the development process and the economy.

The regional economy is basically a dynamic condition that occurs due to changes in the economic, political, social system in an area (Hoover and Giarratani, 2020). Regional economic growth is the output of the resource management process between local governments, communities and the business world so as to stimulate the development of economic activities in the region, where the increase in income occurs due to increased production of goods and services (Jolianis, 2012). Economic growth is also correlated with population growth, so that economic growth requires additional income from an increase in aggregate output (goods and services) or Gross Regional Domestic Product (GRDP). (Amalia, 2014), and make it a measuring tool for the progress of a region (Russ and Jones, 2008; Jolianis, 2012). In addition, economic growth can be used as the basis for development plans, acceptance and assistance from certain parties by the government, while for the community and business actors, economic growth can be the basis for developing businesses and their products. (Carree et al, 2007).

The process of development and economic growth will factually shape the economic structure of an area, where changes in aggregate demand will occur due to changes in income which result in changes in needs and demands due to changes in consumption patterns. However, from the aggregate supply side, the economic structure is influenced by technological advances, improving the quality of human resources, supply of materials and the discovery of new materials for production. (Froyen, 2002; Mankiw, 2003; Blanchard, 2009).

Systematically the factors that affect aggregate demand and supply will influence each other so that they become a lever (leverage) of the existing economic conditions. But on the other hand the conditions that occur to these levers are closely related to government policies, economic systems, politics, social conditions of society (Froyen, 2002; Mankiw, 2003), and conflicts that have occurred (Hasanvand and Hasanvand, 2011; Buchanan et al, 2011; Hoover and Giarratani, 2020).

Based on this description, it is hypothetical to assume that the Aceh conflict that has occurred has a correlation with economic levers, where each factor has different strengths. The purpose of this study is to photograph the current economic levers of Aceh after the 15 years of the Helsinki MOU which is a turning point in Aceh's conducive conditions. Knowing the power of economic levers in Aceh after 15 years of the Helsinki MOU is important as a reference for regional development planning and business strategy planning for the business world in Aceh.

II. Research Methods

This study uses a quantitative descriptive research model which is carried out in 4 stages: (1) data collection; (2) data analysis using the selected analytical model in accordance with the research objectives, namely the Multi Dimension Scale (MDS) test and Monte Carlo analysis; (3) field validation of the results of data analysis obtained; (4) drawing conclusions. While the research design was carried out following the diagram in Figure 1.

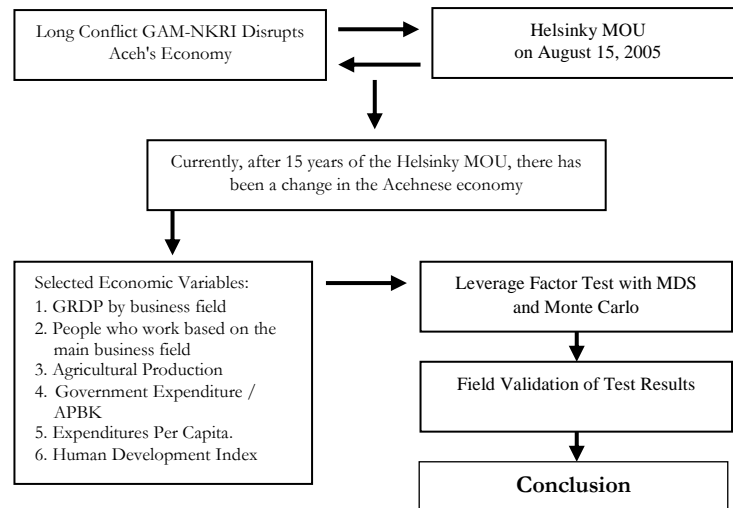


Figure 1. Research Design Diagram

III. Discussion

3.1 Leverage Factors for Aceh's Economic Leverage

The MDS analysis technique with Rap-Insus and Montecarlo ordinance is carried out in addition to identifying sensitive leverage variables from the object being tested, it can also assess or explain the index and sustainability status of the object. The results of the analysis conducted on Aceh's economic conditions are as shown in Table 1.

Table 1. Index and Status of Aceh's Economic Sustainability and Factors the Lever

Variabel	Indeks	Sustainability Status	Montecarlo Value	Difference in Index Value With Montecarlo	S-Stress	R ²
Aceh's Economy	58,606	Not enough	58,287	0,224	0,254	0,856
Districts/Cities GRDP	42,630	Not enough	42,531	0,099	0,227	0,910
Community Working Districts/Cities	61,858	Enough	60,852	0,806	0,191	0,898
Districts/Cities Regional Expenditure Budget	46,801	Not enough	46,844	0,043	0,189	0,891
Districts/Cities Agricultural Production	45,100	Not enough	44,989	0,110	0,197	0,909

It can be seen that the Acehese economy has an unsustainable status along with the levers of district/city GRDP, regional expenditures and agricultural production. However, the working population has a fairly sustainable status. The difference in the value of the sustainability index with the Montecarlo value of all tested variables is still low or < 1 which indicates high confidence or small errors that occur from the system being tested (Thamrin et al., 2007; Ramadan et al., 2015). S-Stress value is still < 0.25 and R² close to 1 or 100% indicates the model tested is good and the indicators used

represent the object being compared (Malhotra, 2006; Nababan et al., 2008), accurate and reliable model (Kavanagh and Pitcher, 2004; Fauzi and Anna, 2005).

The results of this study which show the unsustainability of the Acehese economy are in accordance with the Bank Indonesia report which states that the overall economy of Aceh grew slower in 2020. The weakening of the economy was due to weakening household and government consumption, declining performance of agriculture, trade and transportation with inflation rates of 3.59% in the fourth quarter of 2020, the highest on the island of Sumatra (Bank Indonesia, 2021). Furthermore, the sensitivity of Aceh's economic leverage factors from the tested variables is as shown in Figure 2.

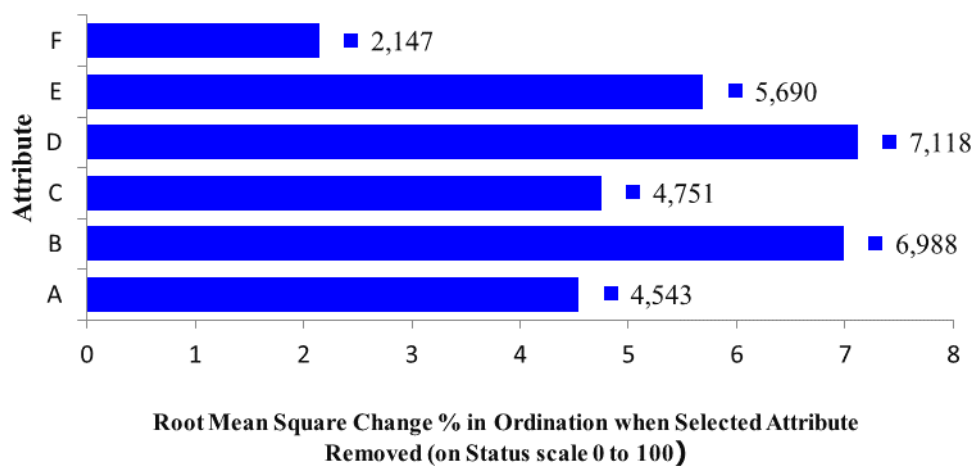


Figure 2. Sensitivity of the (Leverage) of the Aceh Economy

Information:

A= Upper GRDP Basic Price Applicable; B = Regional Shopping; C = Population Work Based Employment Main; D = Development Index Human; E = Per Expenditure Capita; F = Agricultural Production

Based on Figure 2, the most sensitive lever variables to the Acehese economy sequentially are: (D) Human Development Index is 7.118; (B) Regional Expenditures is 6.988; (E) Per capita Expenditure is 5.690; (C) Working Population Based on Main Employment is 4.751; (A) GRDP at Current Prices is 4.543, and (F) the smallest is Agricultural Production is 2.147. If viewed in order, variables with high leverage scores tend to affect variables with lower scores. Human resources with a high index will be able to properly manage regional expenditures issued by the government, through community services and the preparation of supporting instructors. The availability of good infrastructure and service systems makes it easier for the community to carry out various business activities to generate income as measured by GRDP, including agriculture. Although the variable with a high leverage score will affect the lower one, cyclically this influence can also occur directly or indirectly from the variable with a lower score to a higher one.

The Human Development Index (HDI) is the most sensitive variable with a score of 7,118 as a lever for Aceh's economy. The Human Development Index which is an indicator of the physical and non-physical quality of the population (Lumbantoruan and Hidayat, 2017) can be measured by the level of education, health and purchasing power or economy (Mishra and Nathan, 2008 in (Wulandari et al, 2019), and human resources are components of capital affecting economic growth (Todaro and Stephen, 2004).

A high human development index will affect human ability to absorb and manage economic growth factors, either technology or institutions as a means to achieve economic growth. Theoretically, humans with their development index do not directly change or affect the economy, but will become operators or implementers of other variables such as natural resources, science and technology, culture and capital resources (Lumbantoruan and Hidayat, 2017) which multiplayer effects influence other economic growth variables, including 5 other variables in this study: GRDP at Current Prices, Regional Expenditures, Working Population Based on Main Employment, Expenditure Per Capita and Agricultural Production.

The Human Development Index being the most sensitive lever variable for the Acehese economy is in line with the research conducted Lumbantoruan and Hidayat (2017) which concludes that there is a long-term balance relationship between the human development index and economic growth in the provinces in Indonesia. In addition, the Aceh Human Development Index is 71.99 is ranked 3 under the Provinces of the Riau Islands, Riau and West Sumatra out of 10 provinces on the island of Sumatra (BPS Aceh, 2021).

Agricultural production is the variable with the lowest score of economic leverage compared to other variables even though statistically the agricultural sector contributes the most or 30.98% to the GRDP of districts/cities in Aceh (BPS Aceh, 2021). This large contribution does not become a strong lever on the Aceh economy and other economic variables. This relates to the nature of the agricultural sector that will develop if it gets support from other variables such as human and natural resources, facilitation of development from regional spending, technology development, and public spending in buying agricultural products Dewi et al., 2017; Liliane and Charles, 2020). As well as the human development index does not directly affect the development of the economy. Agricultural products also influence and leverage the economy through other variables, for example through selling prices, providing employment, industrial raw materials. However, the difference is that the human development index absolutely must exist in economic activity as an operator, while agricultural products can be replaced with other variables such as industry, trade, services and others. So it is not strong as a factor of economic leverage, including in Aceh.

3.2 Districts/Cities Regional Expenditure (APBK)

After the Human Development Index, the Regional Expenditure or APBK variable with a score of 6.988 became the second most sensitive variable. Basically, regional expenditures are all regional expenditures in a budget period originating from regional treasury accounts, not being repaid by the regions and used to finance regional government activities (Harliza and Anitasari, 2017) with the aim of achieving the welfare of society as a whole (Gobel and Akib, 2019). The results of the research on the levers of Regional Expenditures or Districts/Cities APBK that affect the Acehese economy are as shown in Figure 3.

Figure 3 shows that the factors that leverage regional expenditures for the districts/ cities of Aceh, starting with the highest scores, are: (F) Revenue Sharing Expenditures to the Province/ Districts/Cities/Village is 3.365; (G) Expenditure of Aid to Province/ Districts/Cities/Village is 3.364; (B) Interest Shopping is 3.068; (E) Social Assistance Expenditure is 2.981; (H) Unexpected Shopping is 2.870; (C) Subsidy Expenditure is 2.752; (D) Grant Expenditure is 2.695; (I) Employee Direct Expenditure is

2.685; (J) Goods and Services Shopping is 2.393; (K) Capital Expenditures is 2.111; (A) Employee Indirect Expenditure is 0.930.

Revenue-sharing expenditures to provinces/districts/municipalities and village governments are the levers for regional expenditures with the highest score. This factor together with personnel expenditure, interest expenditure, subsidy expenditure and grant expenditure constitute an indirect expenditure group in the budgeted regional budget which is not directly related to programs and activities. This expenditure is taken from the balance fund of the central and regional governments, where the balancing fund is the largest fund obtained by the regional government (Harliza and Anitasari, 2017), especially for the province of Aceh which specifically has a fairly large Special Autonomy Fund.

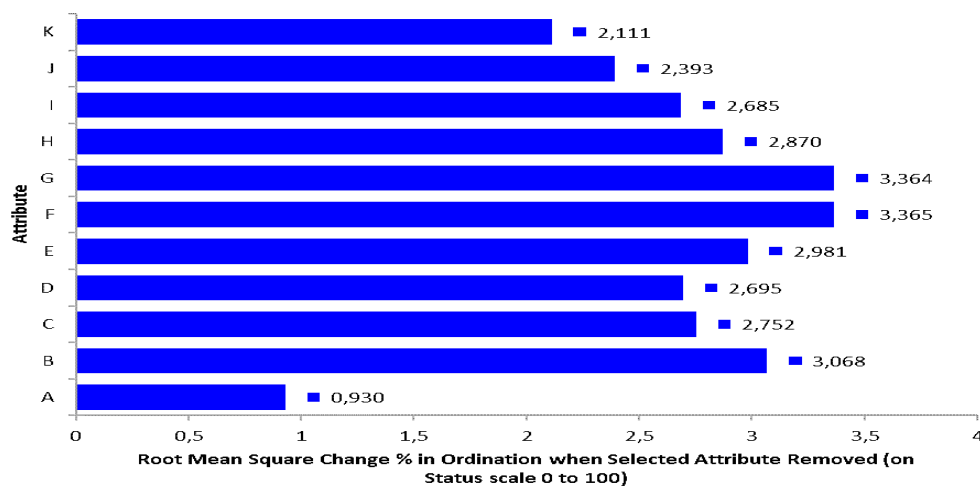


Figure 3. Sensitivity of Regional Expenditure (Leverage) District/City in Aceh

Information:

A = Employee Indirect Expenditure; B = Interest Expenditure; C = Subsidy Expenditure; D = Grant Expenditure; E = Social Assistance Expenditure; F = Expenditure for Profit Sharing To Province/Districts /Cities/Village; G = Shopping Aid To Province/Districts /Cities /Village; H = Unexpected Shopping; I = Employee Direct Expenditure; J = Goods and Services Expenditure; K = Capital Expenditure

Revenue-sharing expenditure is a high lever for this regional expenditure according to the research conducted Masdjojo and Sukartono (2009) that the revenue-sharing fund had a significant positive effect on Regional Expenditures in districts/cities in Central Java in 2006-2008. Likewise the research conducted Yusriadi (2017) shows profit-sharing funds have an effect on regional spending in Districts /Cities governments in Aceh in 2013-2015.

3.3 Districts /Cities Residents Who Work By Main Employment

Residents in an area are basically actors or resources for factors of production, although on the other hand they are targets or consumers for the products produced. According to Adam Smith's classical theory that the effective allocation of human resources is the beginning of economic growth and is an important condition (*necessary conditions*) for economic growth (Adipuryanti and I Ketut Sudibia, 2015) so that human capital Human beings are very important in increasing productivity and economic growth (Wen-Hsin Huang et al., 2019). The condition of the working population according to

the main occupation with fairly sustainable status is the 4th lever factor for the Aceh economy with lever indicators that can be visualized as shown in Figure 4.

The sensitivity of the working population leveraging factors according to the main occupations in the districts/cities in Aceh Province in sequence are: (H) Transportation and Warehousing is 3.041; (J) Information and Communication is 2.879; (MN) Company Services is 2.584; (L) Real Estate is 2.495; (K) Financial Services and Insurance is 2.494; (E) Water Supply, Waste Management, Waste and Recycling is 2.246; (F) Construction; (I) Provision of Accommodation and Food and Drink is 2.137; (D) Electricity and Gas Procurement is 1.938 ; (Q) Health Services and Social Activities is 1.875; (G) Wholesale, Retail, Repair of Cars and Motorcycles is 1.839; (O) Government Administration, Defense and Social security is 1.654; (B) Mining and Quarrying is 1.594; (C) Processing Industry is 1.470; (P) Education services is 1.411; (A) Forestry Agriculture and Fisheries is 0.937.

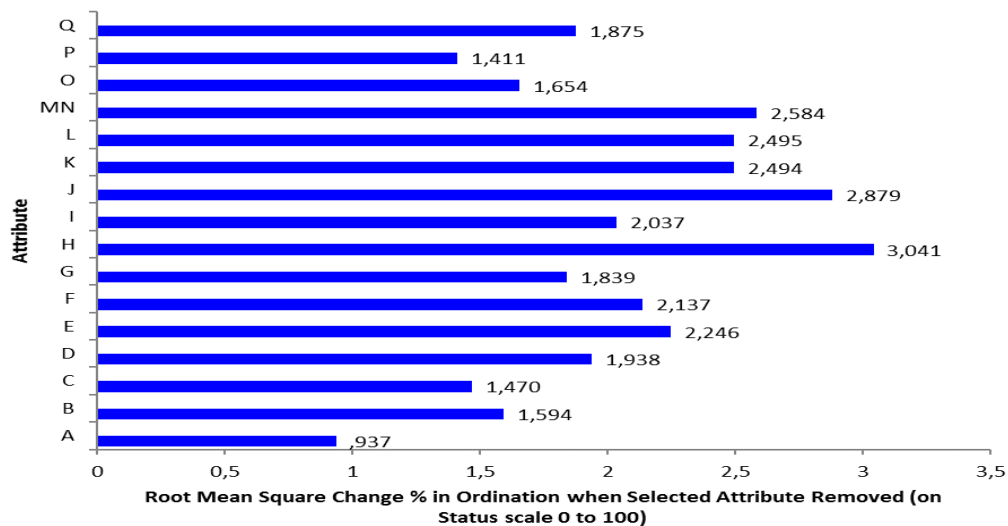


Figure 4. Sensitivity of (Leverage) Factors Working By Main Job

Information:

A = Agriculture Forestry and Fisheries; B = Mining and Quarrying; C = Industry Processing; D = Electricity and Gas Procurement; E = Water Supply, Waste Management, Waste and Recycling; F = Construction; G = Wholesale, Retail, Repair of Cars and Motorcycles; H = Transportation and Warehousing; I = Provision of Accommodation and Food and Drink; J = Information and Communication; K = Financial Services and Insurance; L = Real Estate; MN = Company Services; O = Government Administration, Defense and Social Security ; P = Service education; Q = Health Services and Social Activities.

The development of the economic system with the trend of nationalization and globalization places the importance of logistics management including transportation and warehousing which manages product delivery from the factory to the final consumer. Yung-yu TSENG and Wen Long YUE, 2005), where this sector is dominated by informal workers, especially men compared to women (Rahman et al., 2020). The dominance of male informal workers in Aceh Province (BPS Aceh, 2021) make transportation and warehousing the biggest levers for the Aceh economy in terms of the working population according to the main occupation.

3.4 Districts /Cities GDRB on the asis of Current Prices

GDRB or what is known as Gross Regional Domestic Product is all goods and services produced through economic activities in a domestic area during a certain period, without distinguishing whether the production factors originate from or are owned by residents of the area (Abel and Bernake, 2001). GDRB is one of the important indicators to determine the economic condition of a region in a certain period (Oktaviana and Amalia, 2018). The value generated from each business sector supporting GDRB becomes the determining factor and driving force for the regional economy. The sensitivity of the GDRB indicator on the basis of current prices is visualized as shown in Figure 5.

The sensitivity of the leveraging factors of GDRB at current prices according to business fields in districts/cities in Aceh Province that affect Aceh's economy sequentially are: (E) Water Supply, Waste Management, Waste and Recycling is 1.156; (C) Processing Industry is 1.048; (F) Construction is 0.946; (G) Wholesale, Retail, Repair of Cars and Motorcycles is 0.868; (B) Mining and Quarrying is 0.864; (H) Transportation and Warehousing is 0.862; (A) Agriculture Forestry and Fisheries is 0.805; (I) Provision of Accommodation and Food and Drink is 0.767 ; (K) Financial Services and Insurance is 0.730; (MN) Company Services is 0.729 ; (J) Information and Communication is 0.701 (O) Government Administration, Defense and Social security is 0.688; (D) Electricity and Gas Procurement is 0.658; (P) Education services is 0.655 ; (L) Real Estate is 0.616 (Q) Health Services and Social Activities is 0.564; (R) Other services is 0.441. The results of this analysis show that the water supply, waste management, waste and recycling sectors are the levers with the highest score on GRDP at current prices based on business field, even though these sectors make a small contribution to Aceh's GRDP (BPS Aceh, 2021).

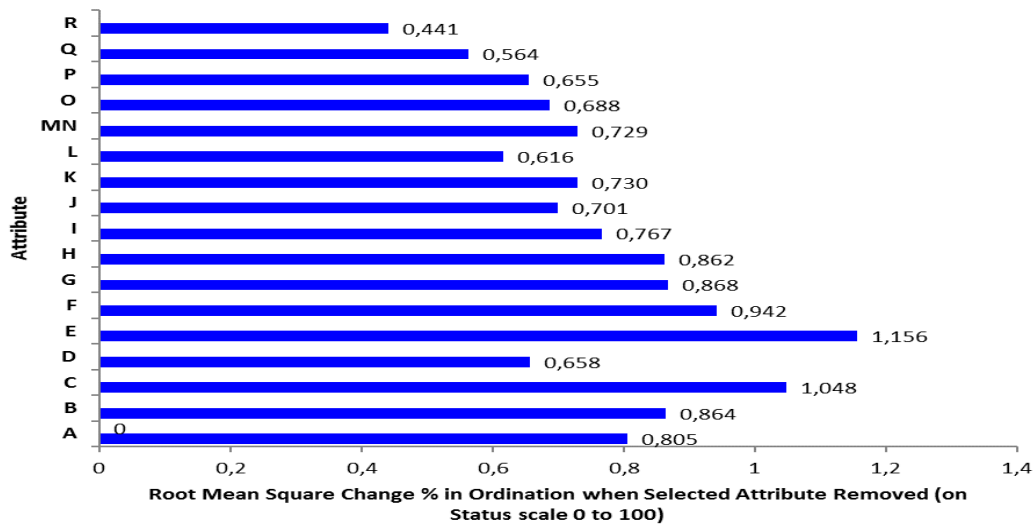


Figure 5. Sensitivity of GDRB Leverage

Information

A = Agriculture Forestry and Fisheries; B = Mining and Quarrying; C = Processing Industry; D = Electricity and Gas Procurement; E = Water Supply, Waste Management, Waste and Recycling; F = Construction; G = Wholesale, Retail, Repair of Cars and Motorcycles; H = Transportation and Warehousing; I = Provision of Accommodation and Food and Drink; J = Information and Communication; K = Financial Services and Insurance; L = Real Estate; MN = Company Services; O = Government

Administration, Defense and Social Security ; P = Service education; Q = Health Services and Social Activities = R = Other services

In the grouping of GDRB in the water supply sector, waste management, waste and recycling, it is included in the secondary sector group (Manufacturing = M) along with the processing industry, electricity and gas procurement and construction sectors (Prasetyani and Sumardi, 2020), where this sector is an infrastructure facility that is the government's obligation to provide it. The availability of infrastructure is a vital aspect needed in achieving economic growth because it is the driving wheel of various sectors supporting regional economic growth (Suswita et al., 2020). As a factor that drives the wheels of the economy, it is understood that the water supply, waste management, waste and recycling sectors are the factors that leverage the GDRB with the highest score.

3.5 Agricultural Production

Agriculture is a field of business carried out to produce food, feed, fiber and various other products carried out by cultivating certain plants and raising animals or livestock (Harris and Fuller, 2014). As an economic enterprise, the agricultural sector contributes 30.98% to the GRDP of districts/cities in Aceh (BPS Aceh, 2021), but based on the analysis of this research, agricultural products are not the main lever of the Acehese economy. The sensitivity of agricultural production which is the lever of Aceh's agricultural sector is visualized as shown in Figure 6.

Based on Figure 6. It shows that the sensitivity of the agricultural sector's leveraging factors in terms of commodities sequentially are: (G) Corn is 2.456; (H) Soybean is 2.057; (J) Buffalo is 1.916; (D) Coffee is 1.860; (I) Cow is 1.807; (E) Cocoa is 1.701; (C) Rubber is 1.562 ; (F) Rice is 1.434; (K) Goat is 1.346; (L) = Village Chicken + Layer + Broiler is 1.261; (M) Capture Fisheries (Marine + Non-Sea) is 0.974; (B) Coconuts is 0.860; (A) Oil palm is 0.823. Corn plants have the highest score of leveraging factors in the agricultural sector compared to other commodities, this shows that corn is able to drive other economic sectors, especially in agriculture.

Corn crops in Aceh are developed mainly in South Aceh, Gayo Lues, East Aceh, Aceh Tamiang, and North Aceh with the main production center of Southeast Aceh, where government support is a major strength factor with marketing support factors being its weakness (Yusmaizal, 2017). Corn is a sensitive commodity for agricultural levers in Aceh, such as data in Southeast Aceh District. This district has an area of 30,000 ha of corn with a productivity of 7.2 tons/ha, an average harvest of 75 ha occurs with a production of 540 tons and the price of Corn Rp. 3, 200,-/Kg will generate Rp. 1.7 billion per day, so that corn becomes the main driver of the economy in the region (Kementan RI, 2017) occurred in 5 other districts in Aceh.

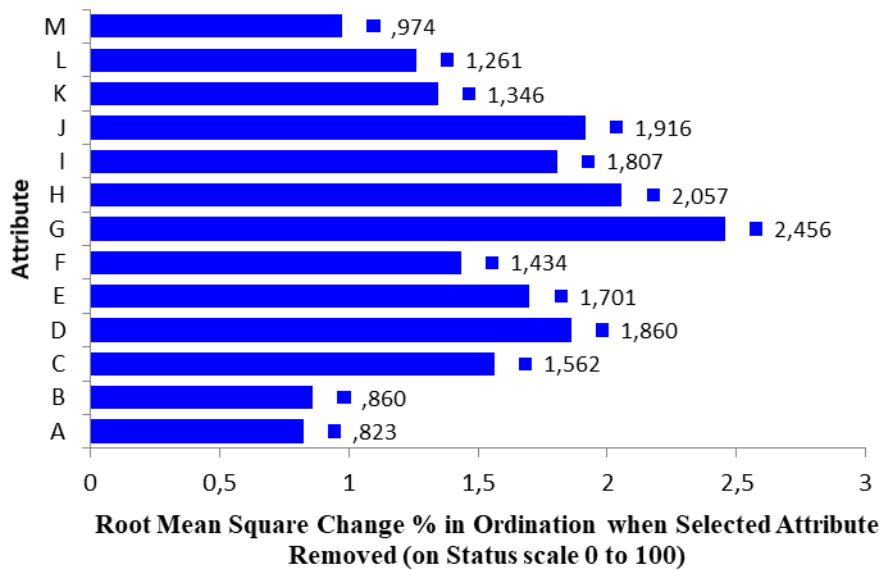


Figure 6. Sensitivity of Agricultural Production (Leverage)

Information:

A = Palm Oil; B = Coconut; C = Rubber; D = Coffee; E = Cocoa; F = Rice; G = Corn; H = Soybean; I = Cow; J = Buffalo; K = Goat+ Sheep; L = Village Chicken + Egg + Broiler; M = Capture Fisheries (Marine + Non Marine).

After 15 years of peace in Aceh with the Helsinki MOU on August 15, 2005, development of Aceh with the support of special autonomy funds which are sufficient in the amount of or Rp. 88.43, - Trillion during 2008-2021 (Ministry of Finance, 2021) has not shown sustainable economic growth conditions. Although for the last 15 years the Aceh government has focused on economic development, it has not shown significant economic growth. Therefore, research is needed that can reveal important factors that can solve socio-economic problems in Aceh (Syahbandir, et al., 2021), this is because the research results will provide initial data and information for appropriate and fast policy making to formulate and determine the development program to be implemented (Oe and Yamaoka, 2021).

As the results of this study indicate that the variables of regional expenditure and the human development index are strong factors as levers of the Acehnese economy. This information indicates that the pattern of Aceh's development with the support of special autonomy funds should be directed at expenditures for rocks and revenue sharing for districts/cities with a larger portion, because districts/cities have a better understanding of the problems in each region, which are more diverse. Revenue-sharing funds have shown to have significantly affected district/municipal expenditures in Central Java in 2006-2008 (Masdjoyo and Sukartono, 2009), and in Aceh in 2013-2015 (Yusriadi, 2017), with strong regional spending, development will be more efficient right on target.

Another factor that is also strong as a lever for the Acehnese economy as a result of this research is the human development index. This factor needs serious attention because it is an operator or implementer (Lumbantoruan and Hidayat, 2017), and become a capital component of the development process (Todaro and Stephen, 2004). Aceh's human development index is still low with a score of 71.99 in order below the Riau Islands, Riau and

West Sumatra from 10 provinces on the island of Sumatra (BPS Aceh, 2021). Information on the human development index, which is very important as a lever for the economy, along with its still low position, needs to be a concern for policy makers to establish it as one of the flagship programs of Aceh's development towards prosperity and improvement of the community's economy.

IV. Conclusions

The variables in this study include the DPRB at current prices, the number of working population by main occupation, regional spending, human development index, per capita expenditure, and agricultural production. Aceh's economy is still in an unsustainable position where the human development index is the main lever of Aceh's economy, followed by regional expenditure per capita expenditure, working population based on main employment, GRDP at current prices, and agricultural production. The profit-sharing expenditure factor for the province/district/city/village government is the main lever for regional spending. The transportation and warehousing factors are the main levers for the working population according to the main occupation. The factors of water supply, waste management, waste and recycling are the main levers of Districts/Cities GRDP at current prices and corn is the main lever of agriculture. To accelerate Aceh's economic development, increasing the human development index as the main lever of Aceh's economy needs attention and makes it a priority program. As a follow-up study, a wider range of variables can be used in various sectors in order to re-describe the acceleration of Aceh's economic development. Participating in planning strategies in risk reduction became an important study after the 2005 Helsinki MoU related to economic growth and development.

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