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### Towards Economic Linkages and Market Integration in Facing Asean Economic Community: Case Study West Sumatra Economy

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#### ABSTRACT

The focus of this study are economic relationship between West Sumatra within ASEAN countries and economic integration between West Sumatra within ASEAN. This study used econometric approach with cointegrated regression method to construct the model specification of West Sumatra economy linkages includes city, districts and other provinces in Sumatra economic corridor as well as the economies of ASEAN countries in the context of ASEAN Economic Community (AEC) 2015. The data are the time series data taken from central biro statistic, Bank of Indonesia and the Ministry of Trade and the Ministry of Economic Affairs in Jakarta as well as from the site [www.trademap.org](http://www.trademap.org)

The results showed that the linkage of West Sumatra economy within ASEAN countries is on the export of agricultural commodities, especially perennial crops (rubber, palm oil, and cocoa). This indicated by the value of RCA's agricultural exports in 2010 was 35.55 and industrial export wa 1.53 which is greater than 1. The value of its RCA shifted in 2012 where agricultural exports remained greater than one and the industry no longer has a comparative advantage replaced by exports of mining products. The second result showed that the economic linkages of West Sumatra economy with regional markets can be reflected from the trade balance among the provinces in Sumatra Economic corridor. West Sumatra economy associated with the ten provinces in Sumatra in imports, while for exports associated with European, American countries and ASEAN. The third result showed that West Sumatra economy is integrated with Sumatra Economic Corridor which indicated by the trace of statistics value greater than the critical value. The last result showed that West Sumatra economy less integrated with the ASEAN countries, except only for Malaysia and Singapore, which is indicated by the value of the trace statistics are greater than the critical value of 5%. The imported goods get into West Sumatra through neighbouring provinces as Riau, South Sumatra and Riau Islands.

**Keywords:** Economic linkages, economic integration, ASEAN Economic Community.

## 1. INTRODUCTION

Regional integration has become the main form of trading liberalization since early 1990s. Regional trade agreements in some countries has become a necessity to integrate the economy of a country to the regional and global economy. This believed that more integrated a country economy to the regional and global economy therefore the economy of a country will rapidly grow as it has been experienced by China, Singapore, Korea, Chile, and Taiwan (Calvo, Pardo, Hector. Freud, Caroline. Ornelas, 2009). Regional integration is a particular case of market construction in that it creates a new market or a new organization with new economic transaction rules (Orcalli, 2017), this research use analysis that define the market vertical integration in Sumatra and ASEAN area that could influence a provincial's economic growth. Our study aim to examine the role of regional market integration has a positive impact on economic growth in West Sumatra province.

Economic integration into the world trading system especially for ASEAN countries, basically depends on whether the policies and institutions that have been built in an area and trading partner countries conducive to the exchange of goods and services on the basis of mutual benefit to gain comparative benefit and speciality of products and services traded, (Aminian, 2008).

Existing economic integration is governed by a number of rules (rules of conduct) that regulate the multilateral trading system. (Varela, Aldaz-Carroll, & Iacovone, 2012) According to the WTO, this rule consists of trade in goods agreement (GATT), the trade agreement in services (GATS), which is dealing with the intellectual property rights system (TRIPS), and environmental health standards (SPS), as well as the supply of goods and government services.

Free trade ASEAN countries through the ASEAN Free Trade Agreement (AFTA) which was formed in 1993 whose members consist of Indonesia, Brunei, Malaysia, Philippines, Singapore, Thailand, which was later expanded to Vietnam, Laos, Myanmar and Cambodia, agreed to do the free trade and the reduction of external tariffs on goods imported from each State member of AFTA (Goto, 1997: 2). There are four options scheme tariff (CEPT scheme) agreed among ASEAN countries to free trade are:

1. Inclusion list (IL)
2. Temporary exclusion list (TEL)
3. Sensitive list (SL)
4. General exception list (GEL)

These four types of trade tariff scheme has been used as a key instrument and scope to perform 0-20% tariff reduction in free trade among ASEAN countries and free trade with countries outside ASEAN. The timing of tariff reduction of entry for goods export and import of ASEAN member countries started in 2003, and then postponed for several schemes until 2015. (see Secretariat ASEAN, 2008).

Indonesian involvement in free trade with ASEAN countries have been a necessity, including the province of West Sumatra. The data indicate that the intensity of West Sumatra trade with ASEAN countries is high enough, it can be seen from the value of exports of West Sumatra since 2010 until 2012 in the following table:

**Table 1**  
**Export value of West Sumatra (Thousand US Dollar)**

| Year | Agricultural (%)   | Industrial (%)        | Mining Product (%)  | Tujuan Ekspor       |                     |                     | Total                |                     |
|------|--------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
|      |                    |                       |                     | ASEAN (%)           | Uni Eropa           | NAFTA               |                      | Others              |
| 2010 | 72454<br>(3,27)    | 2073704<br>(93,63)    | 68615<br>(3,09)     | 468815.2<br>(21,17) | 103635.6<br>(4,68)  | 813407.1<br>(36,73) | 828916.5<br>(37,43)  | 2214774<br>(100)    |
| 2011 | 94420.94<br>(3,11) | 2766067.46<br>(91,23) | 171326.66<br>(5,65) | 563809.6<br>(18,60) | 120801<br>(3,98)    | 1267790<br>(41,82)  | 1079414<br>(35,60)   | 3031815<br>(100)    |
| 2012 | 52199.87<br>(2,21) | 2254501.67<br>(95,38) | 56881.62<br>(2,41)  | 480142.8<br>(20,31) | 114619.2<br>(48,49) | 852060.6<br>(36,05) | 916760.62<br>(38,79) | 2363583.15<br>(100) |

Source: Statistics Indonesia, 2013, Ansofino (2016a).

Table 1 shows that the export destinations of West Sumatra province was diversified to the countries in the ASEAN region, NAFTA, EU, and others. In 2010, the export destination of West Sumatra province to ASEAN countries reached 21.17%, its share continued to decline in 2011 and 2012 respectively reached 18.60% and 20.31%. Increasing trend seen to European Union countries, and others. On the other hand, the composition of exports of West Sumatra province is dominated by industrial products, in 2010 reached 93.63% of total exports, followed by agricultural products reached 3.27% and mining products amounted to 3.09%. The dominance of the export of this industry continues to be maintained until 2012 which reached 95.38%, reaching 2.41% mining and agricultural output reached 2.21%. These data explain that export province of West Sumatra has been dominated by the results of the industry. See (Ansofino, 2016a)

West Sumatra provincial trade balance continued to show an increasing trend, with the export value greater than imports. The trade balance, not just import-export activities with abroad, but also trade with neighboring provinces in the island of Sumatra. Export Value by foreign countries was always higher, when compared with the value of exports in the region between provinces. However, the value of imports showed the opposite, where the trend value of imports between provinces is always higher than the value of the foreign imports. That is, the inter-provincial trade dominated by imports to the neighboring provinces of West Sumatra and national general. While export activities are always dominated by trade with foreign countries.

The high of imports value from the West Sumatra region and national trade shows that the province of West Sumatra is very dependent on the neighboring provinces and other national territory for the supply of West Sumatra province. While export activities between provinces and national regions are still low. So that the balance of trade with the West Sumatra province and the neighboring provinces of the national territory other showed a negative trend, especially the decline was sharper in the event of economic shocks due to the earthquake disaster in 2009 and then, and only recovered until 2012, so the balance of West Sumatra trading with regional and national started to show a positive trend.

Figure 1 shows that the imports value of inter provincial is higher than the value of the foreign imports. While inter-provincial export value is always higher than the value of exports abroad. So that the trade balance regional, national and global West Sumatra is always negative, as imports greater than exports. That is, the province of West Sumatra will be a destination for regional, national, and global export activities. So it can be said that the province of West Sumatra will be entered by the goods and services trade, if enacted free trade with ASEAN countries.

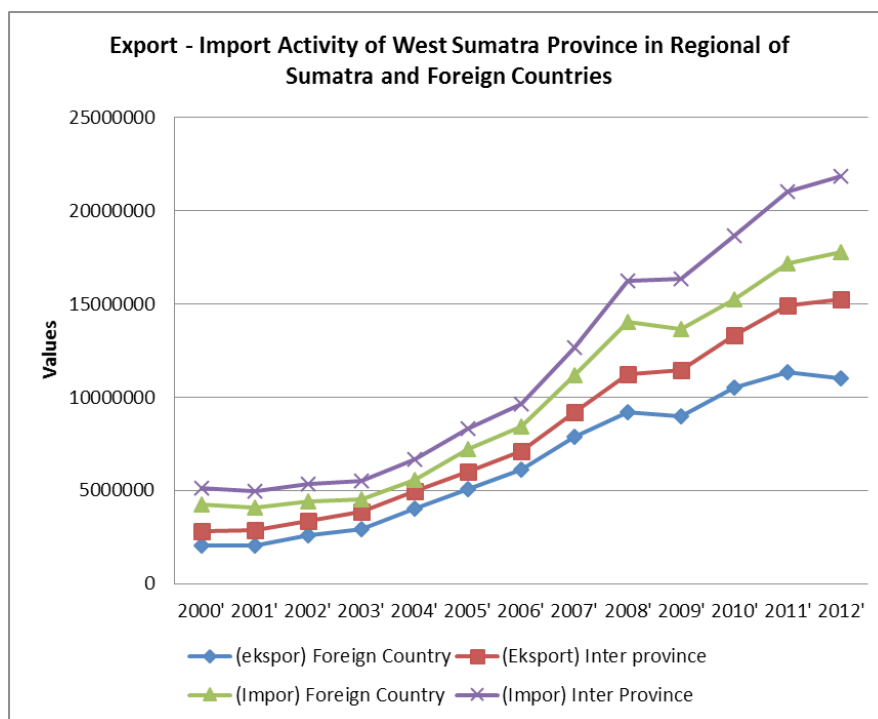
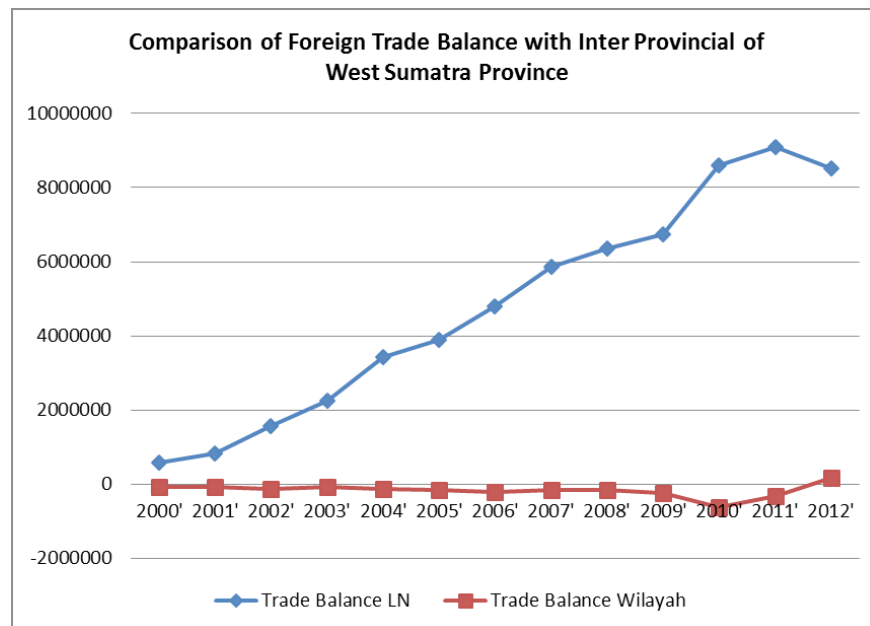


Figure 1: Export - Import Activity of West Sumatra Province in Regional of Sumatra and Foreign Countries

The trade balance of West Sumatra province can be divided into two, the balance of trade inter provincial and abroad. The inter provincial provinces trade balance has always been negative, which inter provincial imports always greater than inter-provincial exports. On the other hand, the balance of foreign trade of West Sumatra always positive with export always greater than imports. That is, the province of West Sumatra open for trade with the external area as well as outside the province and abroad (Michalopoulos, 1999).

The size dependence of West Sumatra province with regional area indicated by the high imports value for inter provincial compare with the value of foreign imports. Similarly, the ratio between inter-provincial export to overseas export value. So it can be said that the dependence of West Sumatra province with neighboring regions is very high. Therefore, in the face of the ASEAN free market, which gives an opportunity to compete among export products of ASEAN countries, it is to win the competition; perfect capital mobility into Indonesia, takes the regional integration through regional economic integration to gain advantage in free trade in ASEAN.

The picture above shows that West Sumatra province's economy is quite open, because the foreign trade balance is always positive and has an increasing trend. At the other hand the trade balance with other provinces tend to be negative, meaning that import dependence to other provinces is quite high. Therefore, in order to face the great free market of ASEAN, it is necessary for economic integration of West Sumatra province with the national economy. On the other hand, to be able to take advantage of free trade with ASEAN, required a high accessibility between West Sumatra province with another province, so that the mobility of goods and services can be quickly traded. It can provide cost efficiency for the production system and trade of export and import West Sumatra commodities.



**Figure 2: Comparison of Foreign Trade Balance with Inter Provincial of West Sumatra Province**

An urgent issue is to what extent to the readiness of Indonesian exporters in particular in West Sumatra province to be able to play a major role in achieving the advantages of free trade with ASEAN? How can community readiness specially export commodity producers to be able to compete and be able to meet external demand of ASEAN free market. On the consumer side, what is the impact on low-income people in entering the era ASEAN free market? who will take advantage of this ASEAN free trade system? how What should be done to make ASEAN free market as an so opportunity for the people of West Sumatra.

Basen on the research backgrounds as mention above therefor the research questions listed as :

1. Is there any linkage between West Sumatra economy with ASEAN economy?
2. Is there any integration of West Sumatra economy with ASEAN economy?

The research purposes are :

1. To analyze the linkage between West Sumatra economy with ASEAN economy
2. To analyze integration of West Sumatra economy with ASEAN economy

This research is useful for the West Sumatra provincial government to formulate a number of policy proposals to integrate of West Sumatra economy with ASEAN economies in line with the implementation of the ASEAN Economic Community in 2015.

## 2. METHODS

This research area includes 19 districts and cities that have a main export commodity exports in West Sumatra during. It is also includes 10 provinces in Sumatra region that became a partner in inter-regional trade with West Sumatra province. Analytical framework used market integration proposed by Krugman (lihat (Arvis, 2013)).

Types of data used are secondary data such as time series data collected since 1990, as the beginning of AFTA until 2012. The data source are the central bank of Indonesia trade through [www.bi.go.id](http://www.bi.go.id), central statistic biro RI and West Sumatra. Data collection techniques using literature study on available data, in addition also the interviews with entrepreneurs and decision makers in relevant institutions in the office of industry and commerce in the district and in the city of West Sumatra. Data were analyzed using econometric analysis using the model of co-integration analysis.

### 3. RESULTS

#### Economic Linkages of West Sumatra Regional, National and International Economic System

West Sumatra economic linkages with regional economic system in general can be analyzed using several methods such testing is a method of revealed comparative advantages (RCA), intra-industry index (IIT). RCA method shows the level of export competitiveness of a region to another region (Varela et. al., 2012), dan (Deichmann, Shilpi, & Vakis, 2008). The data used is the value of exports of each province in three areas namely agriculture, industry and mining. The results of the analysis can be seen in the following table:

**Table 3.1**  
**Comparison of RCA export value on 2010 and 2012**

| S.No | Province      | RCA 2010     |          |        | RCA 2012     |          |        |
|------|---------------|--------------|----------|--------|--------------|----------|--------|
|      |               | Agricultural | Industry | Mining | Agricultural | Industry | Mining |
| 1    | Aceh          | 1.17         | 0.02     | 10.58  | 0.01         | 1.02     | 0.86   |
| 2    | North Sumatra | 318.03       | 1.15     | 0.00   | 20.15        | 0.76     | 0.09   |
| 3    | West Sumatra  | 35.55        | 1.53     | 0.33   | 1.69         | 0.98     | 2.57   |
| 4    | Riau          | 0.52         | 1.09     | 0.13   | 38.22        | 0.51     | 0.66   |
| 5    | Jambi         | 732.53       | 0.50     | 0.22   | 34.11        | 0.57     | 0.00   |
| 6    | South Sumatra | 757.50       | 0.49     | 0.00   | 3.28         | 0.01     | 2.29   |
| 7    | Bengkulu      | 32.16        | 0.28     | 8.60   | 1.14         | 0.12     | 92.76  |
| 8    | Lampung       | 404.61       | 1.01     | 0.07   | 0.01         | 0.00     | 0.01   |
| 9    | Babel         | 277.85       | 1.17     | 0.08   | 11.49        | 0.03     | 87.59  |
| 10   | Kepri         | 0.00         | 0.02     | 0.00   | 3.79         | 0.96     | 1.64   |

Table 3.1 shows that the value of agricultural exports in 2010 RCA turns that all provinces have a comparative advantage except the Riau and Riau Islands with RCA value smaller than one. Provinces that have a high RCA value are Jambi, South Sumatra and Lampung. West Sumatra province has RCA value for agricultural was 35.55 which means it has a significant comparative advantage. Value of agricultural RCA changed composition in 2012, where there are two provinces that have RCA values less than one were Aceh and Lampung reached 0.01. A shift in comparative advantage in agriculture sector during 2010 and 2012, such as Aceh province has a comparative advantage in agricultural exports in 2010 and then in 2012 became less competitive because the RCA value less than one.

RCA value of industrial exports are greater than one are North Sumatra, West Sumatra, Riau, Lampung and Bangka Belitung. While other provinces have less comparative advantage. But in 2012, RCA value bigger than one only owned by Aceh. RCA value fluctuation is caused by the rise and fall of the industrial

export in relevant provinces. West Sumatra itself has a comparative advantage in industria; value in 2010, but experienced a shift in 2012 which became less competitive, but was replaced by the mining sector are quite competitive.

The most competitive mining export in 2010 was Aceh and Bengkulu province and it shifted in 2012 with the emergence of new competitors as West Sumatra, South Sumatra, Bangka Belitung and the province of Riau Islands. So that those areas that have a comparative advantage can lead to the creation of a strong degree of market integration to the ASEAN regional market. See (Ansofino, 2016a)

**Table 3.2**  
**2012 Market Co-integration on Sumatra Region based on Export and Import Data from 1990 - 2012**

| <i>Trace Statistic Value</i> | <i>Aceb</i> | <i>North Sumatra</i> | <i>Riau</i> | <i>West Sumatra</i> | <i>South Sumatra</i> | <i>Jambi</i> | <i>Bengkulu</i> | <i>Lampung</i> | <i>Kepri</i> | <i>Babel</i> |
|------------------------------|-------------|----------------------|-------------|---------------------|----------------------|--------------|-----------------|----------------|--------------|--------------|
| Aceh                         | 0           | 19.9471              | 12.9457     | 22.4937             | 7.3333               | 5.2635       | Na              | 14.8694        | 17.314       | Na           |
| Sumut                        | 8,7872      | 0                    | 26.8042     | 30.7397             | 38.9879              | 29.0625      | Na              | 41.5068        | 27.2819      | Na           |
| Riau                         | 22.1176     | 16.7415              | 0           | 542.1584            | 29.4701              | 25.7726      | Na              | 30.4161        | 18.1627      | Na           |
| Sumbar                       | 30.0608     | 14.8979              | 18.4809     | 0                   | 55.5415              | 20.5569      | Na              | 23,3924        | 8.7679       | Na           |
| Sumsel                       | 51.1253     | 41.7571              | 38.7977     | 32.8382             | 0                    | 20.5227      | Na              | 34.7424        | 33.7304      | Na           |
| Jambi                        | 48.6817     | 36.0711              | 23.1553     | 30.3516             | 30.896               | 0            | Na              | 31.5093        | 24.6675      | Na           |
| Bengkulu                     | na          | na                   | na          | na                  | na                   | na           | 0               | na             | Na           | Na           |
| Lampung                      | 19.1008     | 19.203               | 35.9184     | 23.7483             | 31.5461              | 22.8444      | Na              | 0              | 8,0803       | Na           |
| Kepri                        | 16.9466     | 15.2578              | 19.8448     | 28.1179             | 18.0276              | 33.6857      | Na              | 23.7444        | 0            | Na           |
| Babel                        | 7,6867      | 12,6098              | 9,1073      | 20,0260             | 24,5012              | 7,5592       | Na              | 16,0793        | 8,6104       | 0            |

Source: Analysis result, 2014

Note: Red: Statistic Trace value > Critical value 5% of co-integration

Critical Value 5% = 18,17

Critical Value 1% = 23,46

In Table 3.2 suggests that interconnection of exports and imports among the ten provinces in Sumatra as part of Sumatra economic corridor. Export of West Sumatra province is cointegrated with import of Aceh, Riau, South Sumatra, Jambi and Lampung province. While the other provinces such as North Sumatra and Riau islands are less cointegrated with trace statistics value are greater than the critical value of 5%. Co-integration of export and import of West Sumatra province with the other provinces showed that economic integration between the two regions. On the other hand, imports of West Sumatra province is cointegrated with all export except with Lampung province, as indicated by trace statistics value are greater than the critical value of 5%. It is shows that the West Sumatra province is very dependent on imported goods from these neighboring provinces.

Lower integration of export West Sumatra to North Sumatra impor get attention because this region is central corridor of economic Sumatra. Another implication are commodity export of North Sumtra include secunder and tertier commodity not yet produce by West Sumatra, because it really commodity export of West Sumatra are primary commodity especially perennial crop attain 92% to export total. Because of interdependent of export linkages between area of impor with need raw material in form of perennial crop.

**Table 3.3**  
**Co-integration Export Market of Sumatra Economy Corridor with Import of ASEAN**

| <i>Statistic Trace Value</i> | <i>Malaysia</i> | <i>Singapore</i> | <i>Thailand</i> | <i>Vietnam</i> | <i>Philippine</i> | <i>BDS</i> |
|------------------------------|-----------------|------------------|-----------------|----------------|-------------------|------------|
| Aceh                         | 18.0170         | 15,4772          | 20,6389         | 20,7865        | 22,9214           | 10,2688    |
| North Sumatra                | 30.1147         | 27.957           | 30.9448         | 37.5555        | 33.343            | 27.1141    |
| Riau                         | 22.3242         | 13.4087          | 17.5051         | 18.1407        | 15.8134           | 15.3935    |
| West Sumatra                 | 24.0438         | 30.7543          | 15.9909         | 20.806         | 22.9844           | 19.797     |
| South Sumatra                | 70.2043         | 45.7061          | 29.9661         | 32.6523        | 50.5332           | 40.2216    |
| Jambi                        | 26.0648         | 34.528           | 17.7858         | 26.6755        | 35.0343           | 22.8964    |
| Bengkulu                     | na              | na               | na              | na             | na                | Na         |
| Lampung                      | 29.1927         | 28.236           | 32.6214         | 29.3966        | 42.8036           | 35.8234    |
| Kepri                        | 20.5869         | 12.2914          | 12.104          | 14.9614        | 15.728            | 11.6324    |
| Babel                        | 83,0889         | 47,6589          | 30,6768         | 55,3082        | 53,2830           | 29,9005    |

Note: Critical Value 5% = 18,17  
 Critical Value 1% = 23,46

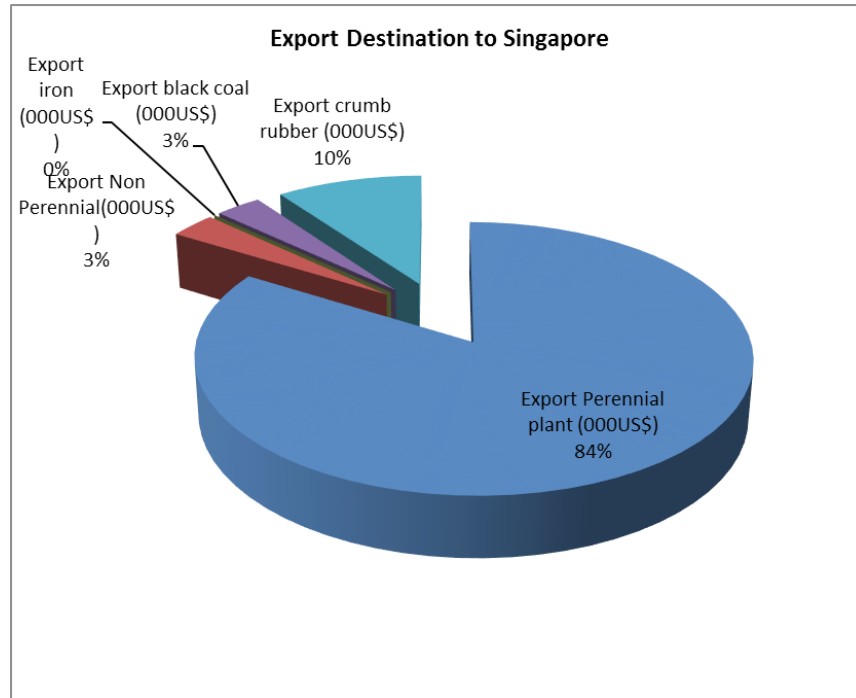
Table 3.3 gives information about how the linkage between provincial exports in economic corridor with import of ASEAN countries. There are four ASEAN countries have strong links with the export market of Sumatra economic corridor: Malaysia, Singapore, Vietnam and Philippine. When viewed in the composition of exports by country of destination, the most widely that Malaysia is a most high destination for commodity exports of coal by 67% and 24% of perennial crops, the rest are non-perennial commodities and iron ore. There are three provinces that have less exports destination to Singapore namely Aceh, Riau, and Riau Islands. Singapore has become the largest export destination for perennial crops (84%) and 10% natural rubber and others. So that the province has become a perennial crop export commodities strongly related to trading activities with the Singapore. It means that export destination countries are closely linked to the export of Sumatra economic corridor as long as composition of trade with ASEAN countries still dominated by perennial plant trade, non-perennial and minerals such as coal mines and iron ore. Lihat (Dobronogov & Farole, 2012).

Other ASEAN countries are also strongly associated with export destination are Vietnam and Philippine since these countries have trade composition of perennial plants and coal.

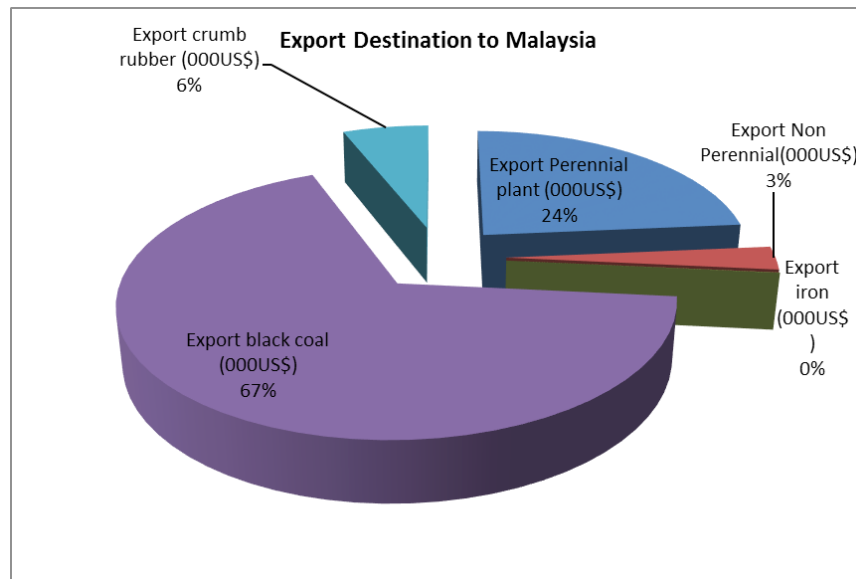
Figure 3.1 shows that the export linkages between West Sumatra and Singapore is very strong because of the composition of exports on perennial crops reached 37.60% of the total trade of perennial plants in ASEAN. However, the value of perennial crops of ASEAN trade is far greater than the value of trade with Japan, China and the USA. This means trading market perennial plants Sumatra economic corridor will have a high market share in addition to ASEAN. (Madani, 2012).

In addition, the export composition to Singapore also dominated by rubber which reached 10% of overall exports to Singapore. While coal, non-perennial crops is relatively small composition. It means that Singapore is imported most of their perennial crops, rubber and coal from Indonesia. The figure below illustrates the comparison of export composition to Malaysia, where it turns out coal reached 67% followed by perennial crop which reached 24% and 6% of natural rubber.





**Figure 3.1: Export composition of West Sumatra to Singapore**



**Gambar 3.2: Export Commodities to Malaysia**

When compared with Singapore that Malaysia turned out to be the dominant imported coal from Indonesia, while Singapore imports more perennial plants from Indonesia. So according to the export composition destination for perennial crops that Vietnam, Singapore and Malaysia are the main destinations. Malaysia is a major ASEAN countries receive the most exported of perennial crops from economic corridors of Sumatra followed by Singapore and Vietnam. The main export destination for rubber are Malaysia, the Philippines, Singapore and Thailand. While the region of Sumatra economic corridor with has high rubber export composition is North Sumatra and South Sumatra.

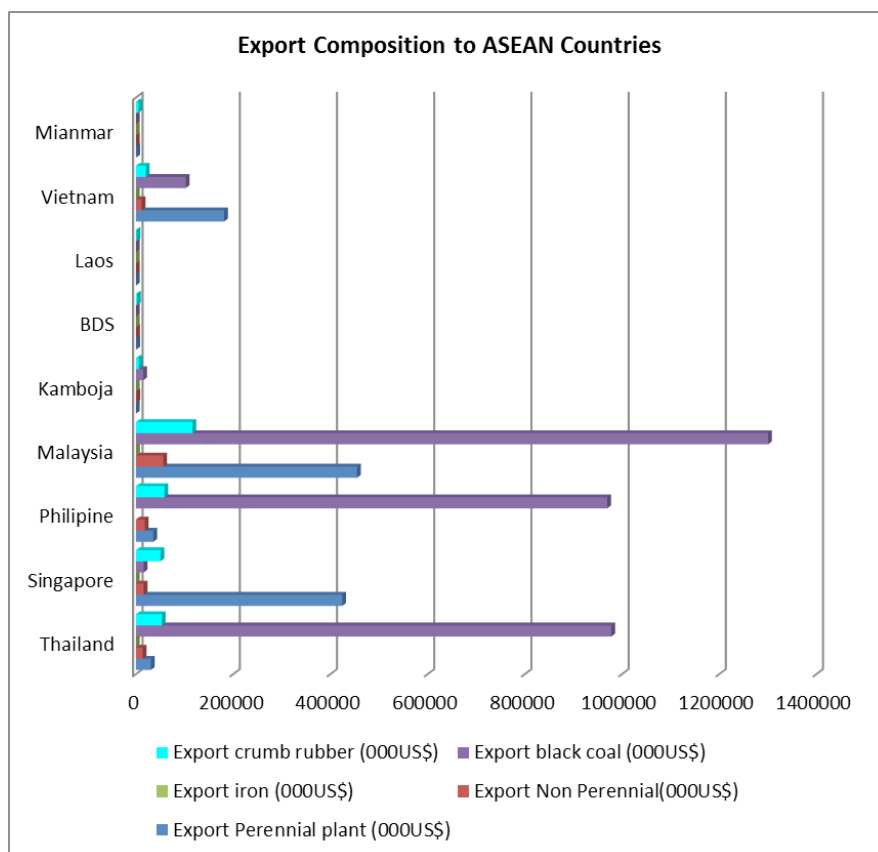


Figure 3.3: Export Composition of West Sumatra to ASEAN Countries

The major coal export destination are Malaysia, the Philippines, Thailand and Vietnam. Coal are exported from Lampung, South Sumatra, Bengkulu and Jambi. For perennial crops export commodities destination are Malaysia, Singapore and Vietnam. While natural rubber commodity destination more scattered among the ASEAN countries. see (Fukase, Emiko. Martin, 1999).

Figure 3.4 shows a comparison of the export composition to the ASEAN countries from economic corridor region of Sumatra. It was dominated by coal, perennial crops and rubber materials. Meanwhile, these three commodities by the province of North Sumatra, South Sumatra, Lampung and West Sumatra. So the trading linkages between Sumatra economic corridor with ASEAN Countries should be well maintain for future development.

West Sumatra’s export commodities is cointegrated with Singapore and Malaysia through perennial crop, coal and rubber materials. Specially for perennial crops export commodity that West Sumatra is strongly associated with Malaysia, Singapore and Vietnam. As for Coal that West Sumatra export strongly associated with Malaysia, the Philippines and Singapore. While for rubber material the export of West Sumatra is strongly associated with the Malaysia, the Philippines and Thailand. See (Ansofino, 2016b)

Table 3.4 the above shows South Sumatra province is an import gateway for the region Sumatra Economic corridor, followed by the province of West Sumatra which has a co-integration imports with exports from ASEAN countries such as Malaysia, Singapore, Thailand and Vietnam. While the Philippines and Brunei have not cointegrated with West Sumatra market export. In the meanwhile that co-integration

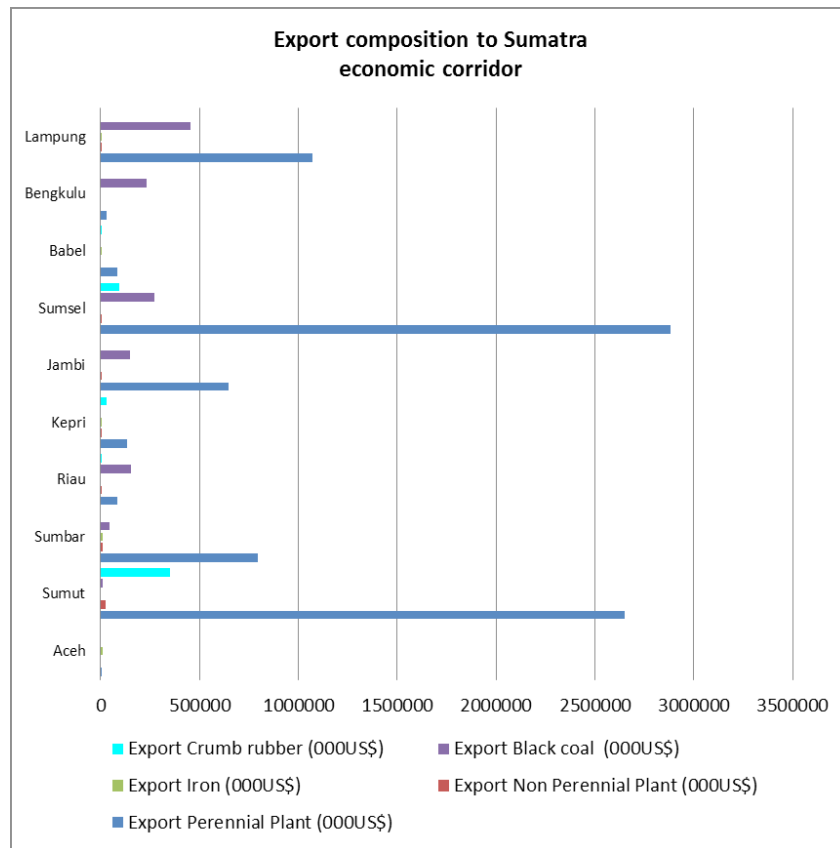


Figure 3.4: Export Composition of Sumatra Economic Corridor to ASEAN

Table 3.4  
Import Market Co-integration for Sumatra Economic Corridor with ASEAN countries

| Trace Statistic Value | Malaysia           | Singapore           | Thailand            | Vietnam             | Philippine          | BDS                 |
|-----------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Aceh                  | 32,3678            | 20,8999             | 15,2739             | 20,7865             | 18,5739             | 28,9101             |
| North Sumatra         | 11,0686<br>(18,17) | 13,3232<br>(25,32)  | 7,8633<br>(18,17)   | 17,9012<br>(18,17)  | 12,6764<br>(15,41)  | 8,5358<br>(18,17)   |
| Riau                  | 23,1703<br>(19,96) | 15,8091<br>(25,32)  | 19,5478<br>(18,17)  | 21,2399<br>(25,32)  | 16,0536<br>(25,32)  | 13,2224<br>(18,17)  |
| West Sumatra          | 20,6226<br>(15,41) | 30,5008<br>(15,41)  | 18,4543<br>(15,41)  | 42,1963<br>(25,32)  | 16,3168<br>(15,41)  | 17,7462<br>(25,32)  |
| South Sumatra         | 24,2345<br>(15,41) | 28,0492<br>(18,17)  | 34,8021<br>(18,17)  | 44,3406<br>(18,17)  | 4,5555<br>(18,17)   | 34,2561<br>(18,17)  |
| Jambi                 | 10,7361<br>(18,17) | 10,2966<br>(18,17)  | 15,7728<br>(12,53)  | 11,0889<br>(15,41)  | 13,8765<br>(18,17)  | 19,8368<br>(25,32)  |
| Bengkulu              | na                 | na                  | na                  | na                  | na                  | Na                  |
| Lampung               | 2,0802<br>(3,8414) | 5,1645<br>(12,5179) | 5,4455<br>(12,5179) | 8,6531<br>(12,5179) | 4,8783<br>(12,5179) | 4,1162<br>(12,5179) |
| Kepri                 | 2,9144             | 3,1709              | 2,9468              | 2,7582              | 0,0023              | 1,2452              |
| Babel                 | na                 | na                  | na                  | na                  | na                  | Na                  |

Note: Critical Value 5%: 18.17.

test results were surprising come as the import of North Sumatra province was not related at all to the ASEAN countries. It based the trace statistics value which is smaller than the critical value. This means that imports of North Sumatra has not been too intense as export of ASEAN countries.

#### **4. CONCLUSIONS**

The Linkage of West Sumatra economy with ASEAN countries is on the export of agricultural commodities, especially perennial crops (rubber, palm oil, and cocoa), industrial commodities such as cement and mining mainly coal and iron ore. It is indicated by the value of agricultural exports RCA of 2010 at 35.55 and industrial export by 1.53. The value of the RCA shifted in 2012 where agricultural exports remained greater than one and the industrial no longer has a comparative advantage replaced by exports of mining products.

The linkage of West Sumatra economy with the regional market showed the trade balance among provinces in Sumatra Economic corridor. West Sumatra economy associated with the ten provinces in Sumatra in imports activity, while exports associated with European, American countries and ASEAN. It means that the economic linkages of West Sumatra province with Sumatra Economic Corridor is in the form of imports, while for export is not so much in connection.

The economy of West Sumatra is adequate integrated with Sumatra Economy Corridor with indication of the trace statistics value are greater than the critical value, except with North Sumatra and Riau Islands. This is because of West Sumatra dominant export to Europe and India as well as Malaysia and Singapore not through North Sumatra gateway.

The economy of West Sumatra less integrated with the ASEAN countries, except only with Malaysia and Singapore, which is indicated by the value of the trace statistics are greater than the critical value of 5%. Less integration with ASEAN countries is mainly on direct imports, because goods imported into the neighboring provinces of West Sumatra through as Riau, South Sumatra and Riau Islands.

#### **3. SUGGESTION**

Need to improve the linkage of West Sumatra economy with other provinces in Sumatra economic corridor. To strengthen the inter-regional trade in order to win the competition in ASEAN regional level. Determination of commodity options need to be developed towards the processing industry so that the agricultural sector is integrated with intra and extra frontier region of Sumatra economic corridor.

The effort economic integration through ASEAN free trade area are need to made export processing zone on west Sumatra province, it used to entrepreneur and exporter improved competitiveness in ASEAN trade area with all consequence to increased goods quality assurance and also tariff and non tariff.

Need an effort for market integration with ASEAN with establishment of export processing zones in West Sumatra province. It will lead to an improvement of the competitiveness in ASEAN free market.

#### ***References***

Aminian, N. (2008). Integration of Markets vs. Integration by Agreements. *Policy Research Working Paper 4546 World Bank*, (March).

- Ansofino, A. (2016a). Integrasi perekonomian kabupaten dan kota di Sumatera Barat menuju integrasi pasar untuk menghadapi masyarakat ekonomi ASEAN 2015. *IPTEKS Terapan*, 9(2), 137–154. <http://doi.org/http://dx.doi.org/10.22216/jit.2015.v9i2.30>
- Ansofino, A. (2016b). Pembangunan koridor ekonomi Sumatera Barat sebagai strategis memperkuat konektivitas dengan perekonomian negara ASEAN. *Economica STKIP PGRI Sumatera Barat*, 4(2). <http://doi.org/http://dx.doi.org/10.22202/economica.2016.v4.i2.355>
- Arvis, J. (2013). Integrating Gravity The Role of Scale Invariance in Gravity Models of Spatial Interactions and Trade. *WPS6347*, (January).
- Calvo, Pardo, Hector. Freud, Caroline. Ornelas, E. (2009). The ASEAN Free Trade Agreement Impact on Trade Flows and External Trade Barriers. *WPS4960*, (June).
- Deichmann, U., Shilpi, F., & Vakis, R. (2008). Spatial Specialization and Farm-Nonfarm Linkages. *World*, (April).
- Dobronogov, A., & Farole, T. (2012). An economic integration zone for the East African Community : exploiting regional potential and addressing commitment challenges. *Policy Research Working Paper, WPS 5967*(February).
- Fukase, Emiko. Martin, W. (1999). A Quantitative evaluation of Vietnam's Accession to the ASEAN Free Trade Area. *Policy Research Working Paper, 11(2)*, 213–232. <http://doi.org/10.1080/09512749808719254>
- Goto, J. (1997). Regional economic integration and agricultural trade. *Policy Research Working Paper, WPS 1805*(August 1997).
- Madani, D. (2012). A Review of the role and impact of export processing zones. *WPS2238, 2238*(November), 1–34.
- Michalopoulos, C. (1999). The Integration of Transition Economies into the World Trading System. *WPS2182*, (September).
- Orcalli, G. (2017). Market Building through Regional Integration Agreements : The EU and the ASEAN Way. *Journal of Economic Integration*, 32(1), 160–192. <http://doi.org/http://dx.doi.org/10.11130/jei.2017.32.1.160>
- Secretariat ASEAN. (2008). Asean Economic Community Blueprint. *Singapore Year Book of International Law*, 12, 297.
- Varela, G., Aldaz-Carroll, E., & Iacovone, L. (2012). Determinants of market integration and price transmission in Indonesia. *Policy Research Working Paper Series*, (June). <http://doi.org/10.1355/ae30-1b>
- White, J.T. (2005). Rural-Urban Marketing Linkages: An Infrastructure Identification and Survey Guide, FAO, Rome, ISBN: 92-5-105367-1. ISSN:1010-1-1365.

