The Overview of Asean Rice Trade Toward Asean Integrated Food Security (AIFS)

Evi Nurifah Julitasari[a]

[a]*Widyagama University, Malang East Java, Indonesia, 65125*
email address: nurifah_uwg@yahoo.co.id

Abstract

ASEAN takes serious effort to address the challenge of Food Security, within the region of Southeast Asia. Especially for rice trade among ASEAN country was taken place a long ago. In 2015 we would be integragted market. The aims of study are (1) to analysys the potential of rice supply and demand (2) the effect of trade restriction (export and import restriction). The models were constructed by econometric simulation analysis with time series data from 1984-2007. The results shows: (1) the trend of ASEAN paddy production was increasing. The average increase of the ASEAN paddy production was 130,46 MT/year with the rate 2,84 percent/year (2) the effect of export restriction will be increase an export price more than 10 percent, and the effect of import restriction will be increase an import price in all importer countries.

Keywords : restriction; rice traded; global market

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1. Introduction

Food security was stand the agenda of ASEAN, which is nature dynamic and covering cross-sectoral issue, evolving through time. ASEAN has pledged to eliminate poverty hunger, diseases and illiteracy as its primary concerns (Darmawiredja, 2012)[1].

The importance of ASEAN strategy approach towards long term food security in the region in ASEAN Integrated Food Security Framework. The work has begun on carrying out the responsibilities of the Strategic Plan of Action on ASEAN Food Security. This program was response from the sharpness of international food price at 2007/2008. Almost all food prices increase, it's called "price commodity boom". Rice price increase 300% from 325 US $/MT up to 1,080 US $/MT (Business Monitor Online, 21/01/2009). Soybean prices increase 600 US$/MT, maize hit 200 US $/MT and prices of wheat up to 500 US $/MT. The rice price increase highest than another.

Reed (2012)[2]., some cause of the price boom i.e (1) Speculation, (2) drought or problem of supply , (3) demand increases in emerging countries, (4) trade restrictions, (5) energy policy in the US and (6)

increasing of value of the US dollar. The speculation make food price very volatile so traders buy and hold the commodity in short time to get profits. The higher volumes trading due increasing demand side. No evidence that a speculan cause price increases, but this is a short-term phenomenon.

The second is supply problems. Asia was the biggest rice producer in the world, contribute about 92,25 percent from total world supply. The biggest producer was China 30.12 percent, Japan (1.75 percent), India (23.24 percent), Bangladesh (6.92 percent), Pakistan (1.34 percent), Nepal (0.59 percent) and Srilangka (0.50 percent). The ASEAN countries such as Indonesia contribute 9.19, percent, Vietnam (5.78 percent), Thailand (2.61 percent), Myanmar (5.16 percent) and Philipina (5.05 percent) of total production (Julitasari, 2012)[3].

To compare the production of ASEAN country with Asia, World and Indonesia production, in figure 1. Trend of paddy production in ASEAN countries was increasing. The average increase of the ASEAN paddy production was 130,46 MT/year with the growth rate 2,84 percent/year. This is the largest compare to the growing the world paddy production (1,62 percent/year), Asia (1,51 percent/year), and Indonesia(1,82 percent/year).
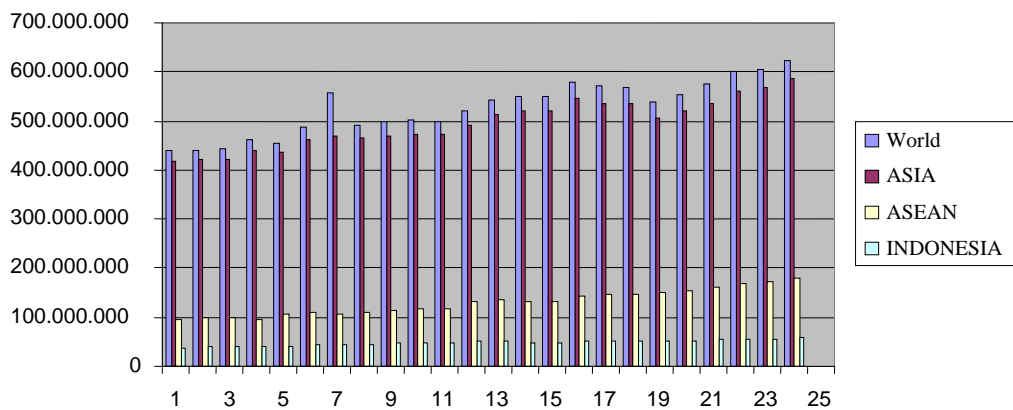

Figure 1. Comparasion of Total Rice Production World, ASEAN and Indonesia 1984-2007

Rice traded in the world market only few about 4 to 7 percent from total world production. Therefore, called thin market because some producers more oriented to domestic market demand. This phenomenon makes vulnerable to increase of price because the volume of rice trade in the world market was less. The exporter and importer rice country sometime apply trade restriction to increase or decrease the volume of rice trade. The trade restriction at rice exporter i.e export tax, export subsidy and another non-tariff restriction. The trade restriction at the importer countries i.e import tax (tariff), import subsidy and another non-tariff restriction.

The ASEAN summit, reaffirmed their commitment and pledged toward Food Security as a priority agenda at LongTerm Policy. The leaders ASEAN adopted the Integrated Food-Security (AIFS) as a framework and the strategic plan actions on Food Security (SPA-FS) as guidance and measures reach to food security.

So, from description above. How to anticipate the increasing of demand rice from ASEAN another countries ? Was eliminate the trade restriction policy in the exporter and importer rice countries become effectively? What is the impact of the trade restriction policy influence to price export and import ?

2. Literature Review

Trade restrictions essentially were intervention on the border price (Tweeten, 1992)[4]. The trade restrictions such as tariff/tax, subsidy and non-tariff barrier.   Sawit (2009)[5], the major rice exporting countries still use export subsidies, i.e India with discount price policy they selling cheaply in the world market in order to reduce the stock. Thailand, China and Vietnam also applied an export subsidies. Julitasari (2012), the identification some of trade restrictions in some countries in the table below:

Table 1. Identification of Trade Restriction Policy At The Import/ Export Rice Countries

Countries	Internal Policy	External Policy
India	Pricing policies ** minimum producer price **	export subsidies** ad valorem rates** export tax***
Thailand	Supply and Input Subsidy Policy * * Production Management Policy Seed Provision and Credit Offers * Fertilizer Procurement * Regions Production Centers * Program R & D Technology Transfer * Price Stabilization Policy: Pawn Rice *, Intervention Market, Stock Rice * Agricultural Bank credit scheme **	For milled rice export tax ** Promotion of Exports ** Storage and Credit Subsidies * Import Control
United State	Loans in the form of LDP **	tariff **
China	Subsidies, irrigation and improved seeds *minimum support price policy ** procurement price program **	tariff quota rate ** tarif maximum 10%**
Philipines	There in data	tarif 35 %*** quota***
Pakistan	There in data	*minimum export price***

Excerpted from :: *Simatupang (2002),**Ratjitsinh (2000), ***
http://oryza.com/World-Rice-Trade/Rice-Market-Prices/10746.html

Mulyana (1998), analyzing the intervention at rice exporter/importer countries. Thailand applied an export price higher than domestic prices because of export taxes. The goals are to protect domestic consumers but the domestic demand was an elastic it's means an increase in world prices respon with an increase in export volumes. Sudjilah (2009), Export restriction in China were significantly influence the volume and price export. In Vietnam, export restriction was also significantly increase in the volume of exports. Hariyati (2003), the effect of trade restriction was significantly on domestic prices but negative effect on import price.

The ASEAN integration and community-building as mandated by the Charter Petroleum Security Agreement aimed to minimise exposure to help the region in this effort.The ASEAN leaders has also been signed ASEAN's best strategy is to for an ASEAN Community (2009-2015). The ASEAN Leaders tasked ASEAN Ministers on Agriculture and Forestry (AMAF) to implement the SPA-FS.

The issue of food security was establish on 2009 at 14th ASEAN Summit, the Leaders reaffirmed Food Security as Permanent and Long-Term Policy Agenda and Adopted ASEAN Integrated Food Security (AIFS) Framework and Strategic Plan of Action on Food Security (SPA-FS). Before, in ASEAN Summit 1992 the agenda was (1) strengthening food security in the region, (2) facilitation and promotion of intra and extra ASEAN trade in agriculture and forestry, (3) Generation and transfer of technology to increase, productivity and develop agribusiness and silvo-business, (4) Agricultural rural community and human resource development, (5) Private sector involvement and investment (6) Management and conservation of natural resources for sustainable development, and Strengthening ASEAN Cooperation and Joint Approaches in addressing international and regional issues.

3. Research Methods

This study use time series data from 1984-2007, the data source at www.faostat.fao.org , www.appi.or.id , www.bps.co.id , www.bulog.go.id and www.database.deptan.go.id. Riil data deflated by Consumer Price Index(CPI) base year 2000 = 100, and the riil data export/import price deflated by the export/import price index US.

The models construct by simultaneously equations and analysis by SAS/ETS (Statistical Anaysis Simulation/Econometric Time Series). We assume that market equilibrium so total supply equal with total demand.

$$TEXD_t = TIMD_t$$

Total supply was the sum of export volume from exporter countries i.e. Thailand, India, Vietnam, Pakistan, United State, China and other countries, in equation:

$$TEXD_t = \sum EX_{it}$$

$$TEXD_t = EXTHA_t + EXINDI_t + EXVIE_t + EXPAK_t + EXAS_t + EXCHI_t + EXLN_t ....(1)$$

Total demand was sum of import volume from importer countries i.e. China, Indonesia, Philippines, Iran, Malaysia and other countries expressed in equation (2)

$$TIMD_t = \sum IM_{it}$$

$$TIMD_t = IMCHI + IMINA + IMPHI_t + IMRAN_t + IMMAL_t + IMLN_t …………….................………......(2)$$

The export and import price derivated from price value of export/import function. Nyhodo, Punt C and N Vink (2009)[6], the domestic value production was sum of export value plus domestic market value, expressed in bellow:

$$PEX_{it}*EX_{it} = PPX_{it}* QSX_{it} – PDX_{it}* QDX_{it}……………………………….................…...........(3)$$

The domestic price equal with nominal exchange rate and export price. It was include the export tax in equation:

$$PDX_{it} = NER_{it}*PEX_{it}(1-Tx_{it}) .. ……………………………………………………...........………...…(4)$$

So, it was derived from the export price in this equation:.

$$PEX_{it}*EX_{it} = PPX_{it}* QSX_{it} – PDX_{it}* QDX_{it}…………….......…………….............….…..(5)$$

$$PEX_{it}*EX_{it} = PPX_{it}* QSX_{it} - [NER*(PEX_{it} - PEX_{it}* tax)* QDX_{it}……………….....…...........(6)$$

$$PEX_{it}*EX_{it} = PPX_{it}* QSX_{it} - NER*PEX_{it}* QDX_{it} + PEX_{it}* tax* QDX_{it}……..………...........…...(7)$$

Assuming $(PEX_{it} - PEX_{it} * tax)$ was trade restriction, so it can be expressed here:

$$PEX_{it} = f(EX_{it}, PPX_{it}, QSX_{it,}, PWEX_{it}, QDX_{it})…………………………….................…...…….(8)$$

The analog, we can derivet import price in this equation :

$$PIM_{it}=f (IM_{it}, PPIM_{it}, QIM_{it}, PWIM_{it}, QDIM_{it}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(9)$$

Where :

$TEXD_t$	= Total world export volume at year-t (tonnes)
$EXTHA_t$	= Thailand export volume at year-t (tonnes)
$EXINDI_t$	= India export volume at year-t (tonnes)
$EXVIE_t$	= Vietnam export volume at year-t(tonnes)
$EXPAK_t$	= Pakistan export volume at year-t(tonnes)
$EXAS_t$	= United State export volume at year-t(tonnes)
$EXCHI_t$	= China export volume at year-t(tonnes)
$EXLN_t$	= Another country export volume at year-t(tonnes)
PDX_{it}	= Price producer in year-t (US\$/tonnes)
NER_{it}	= Exchange rate in year-t *(US\$)*
PEX_{it}	= Price export at year-t (US\$/tonnes)
Tx_{it}	= Export tax at year-t (US\$/ton)

4. Results Discussion and Analysis

Global Rice Supply And Demand

The center production of paddy was located on Asia contribute 92,25 percent, America (3,6 percent) and Africa (2,1 percent). The producers in East Asia were dominate by China (30.12 percent) and Japan (1.75 percent). The producers in South Asia were dominate by India (23.24 percent) Bangladesh (6.92 percent), Pakistan (1.34 percent), Nepal (0.59 percent) and Srilangka   (0.50 percent). Southeast Asia was the smallest paddy production in Asia region, i.e. Indonesia (9.19 percent), Vietnam 5.78 percent Thailand 2.61 percent, Myanmar 5.16 percent and   Philipina 5.05 percent from total world paddy production. Indonesia was the third largest rice producing countries in Asia after China and India. In this figure we shows the region of paddy production.
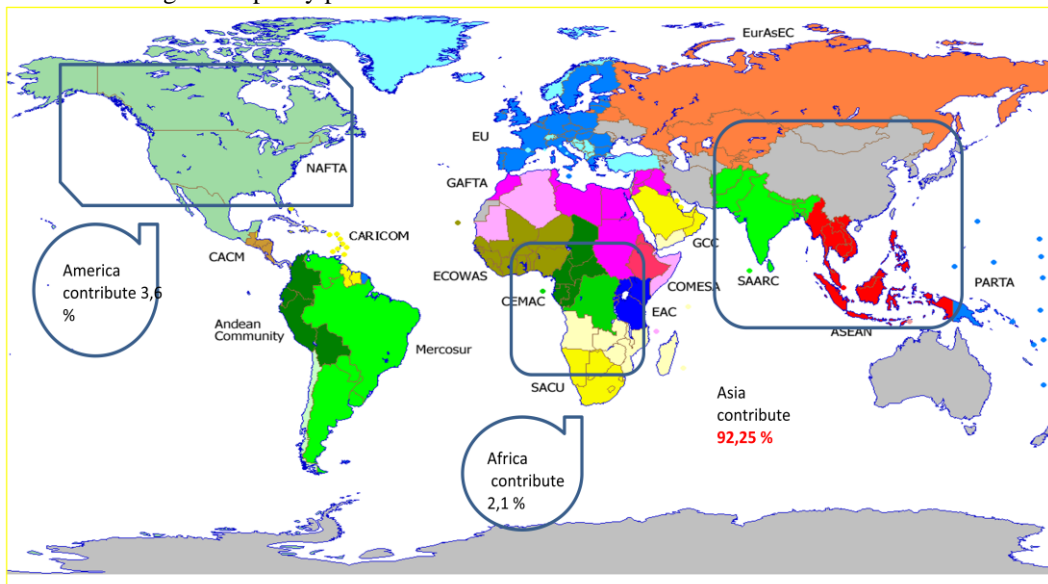

Figure 2. The Center of Paddy Production in Global Area

The demand side was dominate by Africa (31.71 percent), Asia (24.38 percent), Eropa (22,52 percent) and America (21,40 percent). Iran was first rice importer 80.52 percent, Indonesia (29.83 percent), Philipina (26.86 percent), China (22.23percent) and Malaysia (14.60 percent) from total rice demand. In the world market, Asia was the large rice exporter i.e Thailand contribute 31.04 percent, India (13 percent), Vietnam (15.32 percent) and Pakistan (9.53 percent) from total rice world. An Average export volume of Thailand was 5.245 million tonnes/year (Julitasari,2012).

Impact of Export And Import Price Restriction

Export restriction was significantly influence the export price ($R2 = 0.67$ to 0.91) in Thailand, India, Pakistan, United States and China. The sign was positive except United States. The export price was increase volume export significantly its means, each one dollars export price was respon positive of the export volume. Lag endogenouse export price was significantly growing export price so the trend of export prices increasing. The export restriction significantly influence the export price such as Thailand (4.31 percent), India (1.00 percent), Vietnam (3:26 percent), Pakistan (3.62 percent), China and US (-0.77 percent).

On the other side, the effect of import restriction was significantly increase import price for all countries and positive sign. It is means each one dollars import price was respon negative of the import volume such as China, Philippines and Malaysia. But an evidence Indonesia and Iran wasnot negative effect to the volume import so irrasionally. Haryati (2003)[12], Malaysia price import was negative effect on volume import. Import prices of Malaysia was affected by world rice prices and import prices in the previous two and positively.

The simulation shows that if export price restriction applied will increase the world supply to 9.92 percent and export volume 10.00 percent in Thailand, India, Vietnam, Pakistan, U.S. and China. Export price restriction will increase the export price in Thailand (0.03 percent), India (9.26 percent), Vietnam (7.70 percent), Pakistan (3.55 percent) and China (10.98 percent).If there is no effect of restriction it will be not increase the world total supply and the export volume at the exporter countries. It was proved that the increase of the world supply was due to export restriction.

The second simulation, if the import restriction appied will be increase the price import positively in China (10.11 percent), Indonesia (3.84 percent), Iran (2.60 percent), Malaysia (0.07 percent) and Philiphina (-0.30 percent). But if there is no applied import restriction will be decreasing the domestic production (-0.02 percent), productivity (-0.03 percent) and fertilizers (-0.02 percent). In world market, import restriction will be increase in the import price positively because the tariffication. On the other hand, if there is no absence of import restriction will be negative response such as Philippine (-0.24 percent) and Iran (-0.20 percent).

5. Conclusion and Advice

1. The impact of export restriction will be increase the total world supply and export volume in all the major countries. It is proved that increase in world supply just influence intervention of export countries. In the opposite, if there is no-intervention that it will be decrease in the world supply and the export prices at export countries.

2. The impact of import restriction intervention in major importing countries have no effect on domestic block production, but if no-intervention import restrictions applied country importers will affect production blocks respond with a decrease of domestic grain production, productivity and the realization of urea distribution.

3. The impact of increasing the import volume will respon increase the total world supply and the impact of increase in the quantity of import.

4. The impact of no restricton will be decreasing the domestic production, productivity and utilities fertilizers.

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