Competitiveness of Indonesian Coffee on the World Market: Using Selected Indicators

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Abstract

This paper attempted to assess competitiveness in the coffee industry in the world market over the years 2001-2011. For comparison of Indonesia coffee as the one of major exporter, the Revealed Comparative Advantage (RCA), Comparative Export Performance (CEP), and Market share Index (MSI) were calculated. The data sources were the United Nations Yearbook 2010, International Trade Center (ITC) based on UN COMTRADE statistics until January 2012. According to the result, Colombia followed by Brazil and Vietnam have a comparative advantage for the whole duration of the study period, while Indonesia decreased its competitive advantage in 2010 and 2011. Indonesia faced a strong competition from Brazil and Colombia, in the major markets in particular, the United State of America, Germany, Italy, and Japan. The coffee from Indonesia was 90% Robusta with a low quality, which explained the low price received compared to other countries.

Keyword: Competitiveness, Coffee, Revealed Comparative Advantage (RCA), Comparative Export Performance (CEP), Market share Index (MSI)

I. Introduction

1.1 Background and Justification

The impact of globalization leads exporting countries to adjust their targeted market for agricultural products towards a more competitive market. This competitive environment depends on the situations of new market. Countries need to adapt their future strategies and production according to these new market conditions.

Coffee is one of the most widely traded agricultural products in the world. Small farmers producing in developing countries characterize the supply side of the coffee sector; it is true even for major exporting countries. Moreover, the world price of coffee depends on supply from the exporter; the price decreases when the exports increase.

Indonesia is a typical example of a coffee exporter developing country. The coffee plantations concentrate in major islands of Indonesia, such as Sumatra, Java, Bali, Flores, and Papua. From 1984 to 1996, Indonesia was the third largest coffee exporter following Brazil and Colombia. Almost 93% of the Indonesian coffee is Robusta while Arabica falls behind as next largest variety grown. However, since 1997 Vietnam has replaced Indonesia as the third largest coffee exporting country in the world (Figure 1).

In 2010, the area of coffee plantations in Indonesia of 1,268,480ha is larger than Vietnam's mere 514,400ha; however, Vietnam was able to produce 785,087tonnes more than Indonesia. It shows that Indonesian coffee productivity needs improvement. With its vast population and domestic demands, only around 63% of Indonesian coffee was for export. This leads independency to a world market conditions. Moreover, recently lots of countries established the International agreement about free trade area, quota system, or a single market and production based. These conditions make Indonesia have to be able to improve their export performance to compete with other exporter countries.

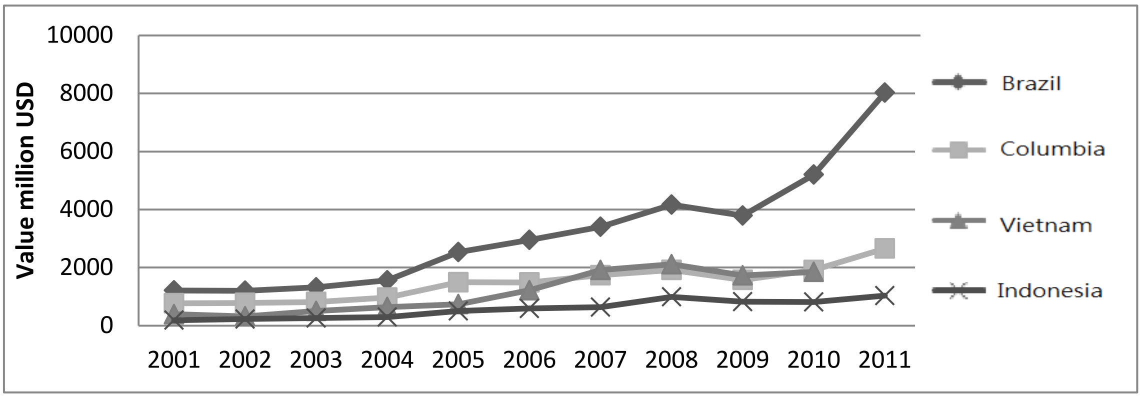

Figure 1. Total Coffee Exports of Major Countries

Source: International Trade Center (ITC, 2012)

1.2 Research Objectives

The purpose of this paper is to examine the international competitiveness of Indonesian coffee in the world market. The analysis uses several indices to measure trading situation and treated Brazil, Colombia, and Vietnam as the competitors to Indonesia. The analysis gives a preliminary interpretation to the position and specialization of Indonesia in coffee trade. The results contribute to the evaluation of the consequent competitive pressure on the coffee market and challenges faced by Indonesia.

II. Methodology

2.1 Data

The data of main coffee export countries for the world market is to examine possible shifts in comparatives advantage for these countries. Brazil, Colombia, Vietnam and Indonesia are selected as they are the biggest four exporters in the world for the years 2001 to 2011 (except that the data for Vietnam is only available through 2010). For importing countries, the top importers chosen are United States of America, Japan, Germany, and Italy. For the annual data, it includes, in millions of U.S. dollars, value for coffee and total trade. The data is from International Trade Center (ITC) is based on United Nations COMTRADE statistics.

2.2 Method

To explore the competitiveness of Indonesian coffee in the world market were used indices such as (1) revealed comparative advantage index, (2) comparative export performance index and (3) market share index assesses.

Several techniques are available in the literature to measure the weak and strong sectors of a country. If a country can produce a good at a lower relative cost than other countries, then with the trade that country should be able to obtain goods at a lower price in exchange for the good in which it has a comparative advantage. In other words, comparative advantage is the term used to describe the tendency for countries to export those commodities that they are relatively adept at producing.

One of the most widely used methods involves the concept of Revealed Comparative Advantage (RCA) developed by Balassa (1965). Numerous empirical studies have used the Balassa index to indentify a country's strong sectors (e.g., Serin et al, 2005). It is developed for measuring the degree of a country's specialization in individual industries through data on international traded goods. The Revealed Comparative Advantage (RCA) index is measured by:

$$\mathrm{RCA} = \ln\left(\frac{X_i^B / X^B}{X_i^A / X^A}\right)$$

Where:

X_i^B : country B's export of good i

X^B : country B's total exports

X_i^A : the rival country's exports of good i to the world market

X^A : the rival country's total exports to the world market

ln : natural log

When the county has RCA > 1, it has a comparative advantage and specialized in this commodity; when it has RCA<1, it has no competitive advantage. The higher RCA index, the more successful the trade performance of the country is.

As a second step, the study estimated Comparative Export Performance (CEP). It measures the extent of the export specialization of the country for particular product groups. A CEP index value above unity means that the particular sector has a larger share of the total exports of the individual country than it has in the world as a whole. Thus, the country in question possesses a relative advantage in the export of coffee. The CEP is:

$$\mathrm{CEP} = \ln\left(\frac{X_i^B / X^B}{X_i^W / X^w}\right)$$

Where:
X_i^W: total world exports of good i
X^W: total world exports

The third index used is Market Share Index (MSI), which is:

$$\mathrm{MSI} = \left(\frac{X_i^B}{X^W}\right)$$

The Market Share Index assesses the market share of a country in percentages relative to the imports of a group of countries for a specific sector. The value vary from 0 to 100, if the country has no exports for that product the value will be equal to 0, however the value will get 100 if the country is the only exporter. The higher MSI its mean has a larger the market share in the world market. To know about Indonesia's positions in the partial countries, we also used the MSI to measure the market share of each major exporter country (Indonesia, Brazil, Vietnam, and Colombia) in the major of importers countries (United States of America, Japan, Germany, and Italy).

III. Results and Discussion

The results of applying the RCA, CEP, and MSI indices to the coffee industry for main exporter countries (Indonesia, Brazil, Colombia, and Vietnam) to the world market are used to examine the possible shifts in comparative advantage for the top four exporters of coffee in the world.

The Revealed Comparative Advantage results (Figure 2) show that Indonesia has the lowest RCA among the top four countries. In 2001, Indonesian RCA is lower than one, it means that Indonesian share of the world export for coffee is smaller than its total other commodity exports. However, between 2002 and 2009 it increases constantly and falls down again in 2010 and 2011. Indonesian managed to stay at the forth positions in the world. However, Indonesian exports consist of around 90% of green-coffee with low quality. It gave a low value for Indonesian coffee export. Among other three countries, Brazil, Colombia, and Vietnam, the higher RCA was Colombia (see Figure 2). It means that Colombia's coffee export share is greater than export for other commodities.

The results of Comparative Export Performance (CEP) are consistent with the results of the RCA index. Indonesia has a clear comparative advantage between 2002 until 2010 (see Figure 3), even though it is still the lowest among the four countries. However, in 2011 it decreased. Brazil, Colombia, and Vietnam have their CEP above one. Colombia appears to have a higher comparative advantage than others in the world market do.

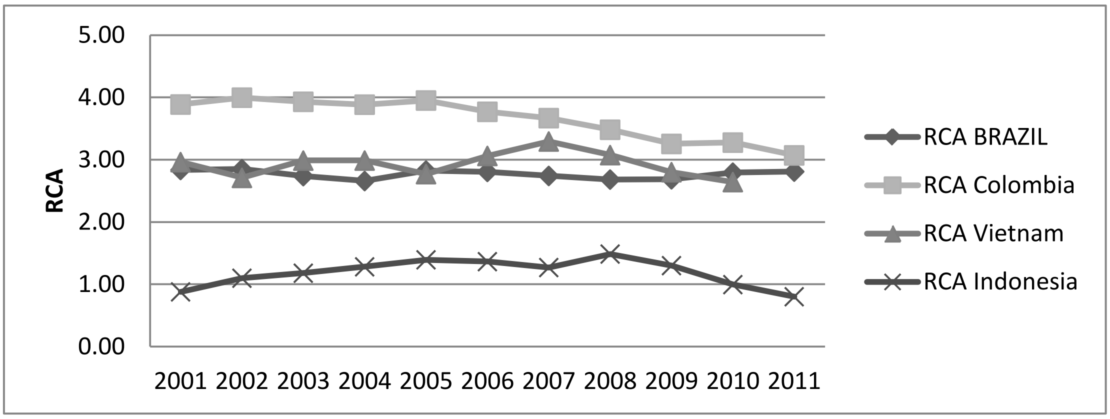

Figure 2. Revealed Comparative Advantage

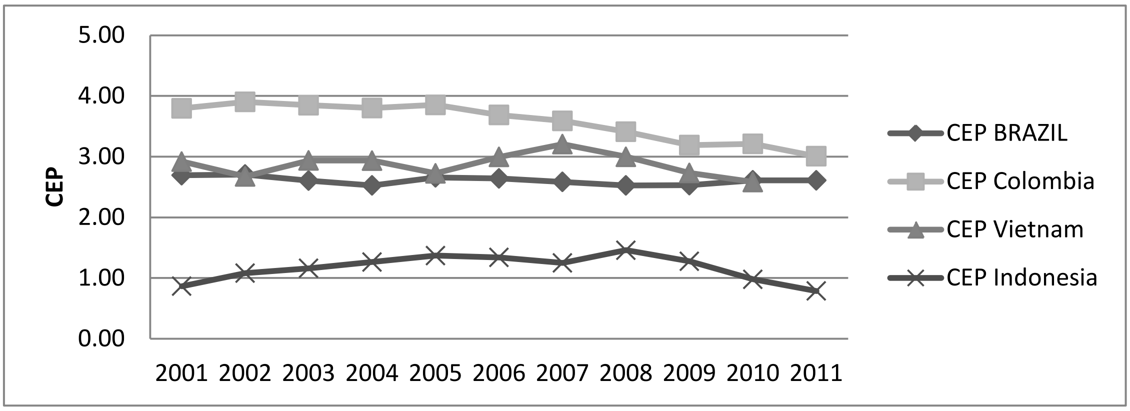

Figure 3. Comparative Export Performance

Brazil has the highest export market share (see Figure 4) which increases steadily from 2001 to 2011. Brazil has more than 22% of market share in the whole world. In the second position is Colombia; but after 2006, Vietnam achieved in the same place as Colombia.

Market Share Index of Indonesia is still the lowest. It shows that Indonesia has no comparative advantage over the rival world exporter countries with respect to price and quantity. Even though the planting area of coffee in Indonesia is higher than Vietnam, but the yield is much lower. Moreover, Indonesia exports mainly Robusta coffee which is cheaper than coffee from Brazil, Vietnam, and Colombia. So far, Brazil and Vietnam are successful to increase their market shares around 6.2% and 2.6% in ten years, while Colombia decreased 2.8% from 2001 to 2011.

The next step involves examining the performance in particular targeted importer countries market conditions using Market Share Index (MSI). The importer countries market conditions under investigation were the United States of America (U.S.), Japan, Germany, and Italy (see Figure 5). In the U.S. market, it shows that the market shares of Indonesia and Vietnam are almost the same level while coffee from Brazil still is number one and it competes closely with Colombia that has the second biggest market share. In this condition, we can conclude that Indonesia's main competitor in the U.S. is Vietnam.

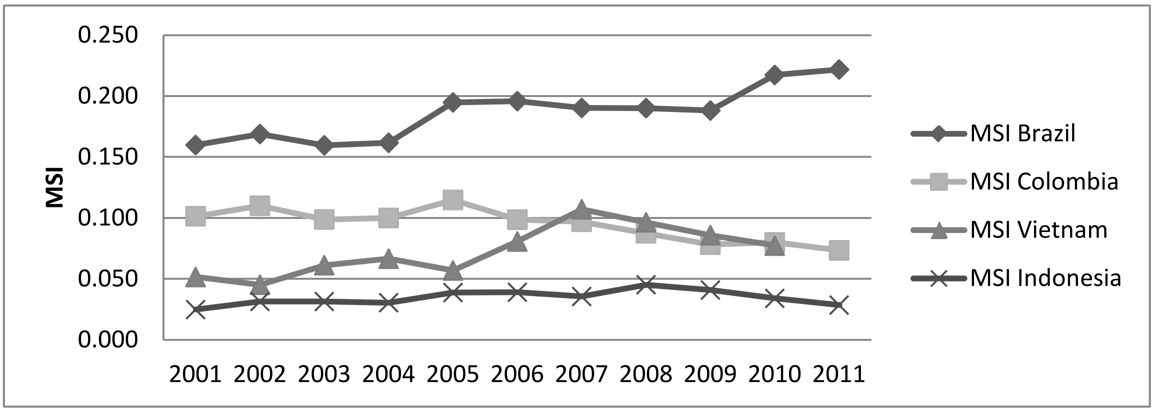

Figure 4. Market Share Index in World Market

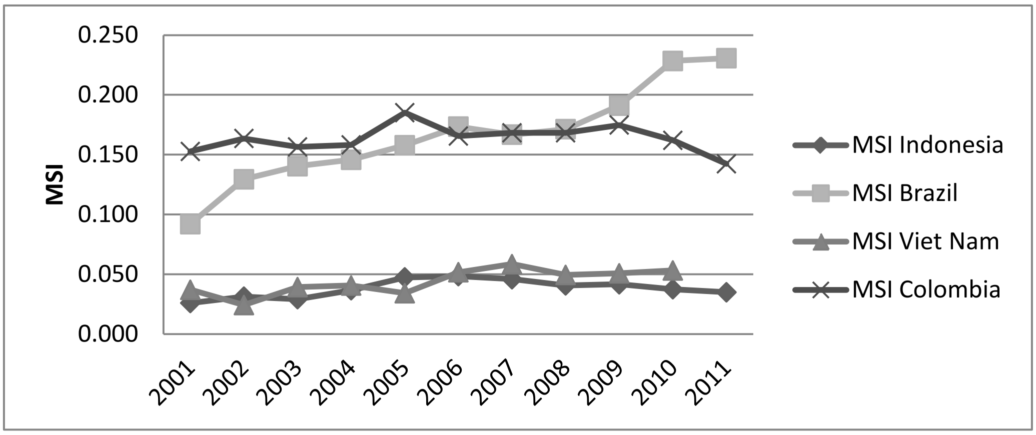

Figure 5. Market Share Index in the United States of America

Japanese market had a few different conditions as that of the U.S. Figure 6 shows that the biggest exporter in Japan is Brazil and followed by Colombia, Indonesia, and Vietnam. From 2001 to 2011, Indonesia become the third largest exporter, however, the value was decreasing year by year. Therefore, Indonesia needs to improve their capability to produce a qualified coffee for Japan market.

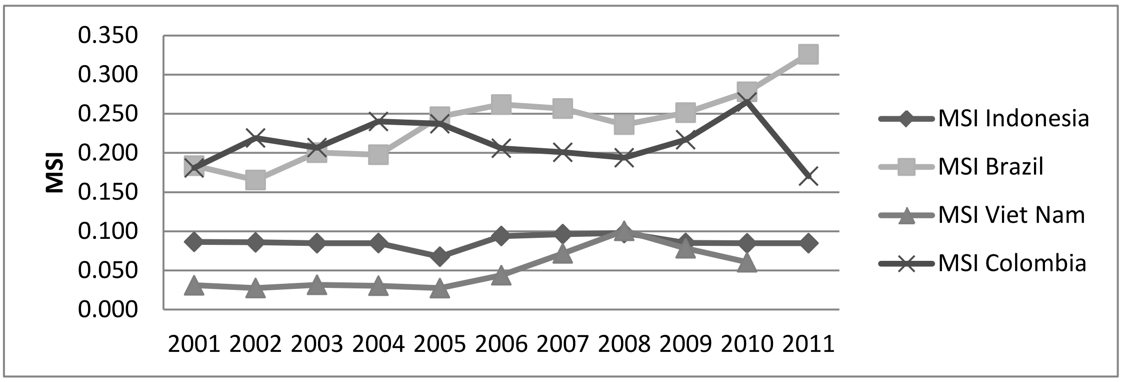

Figure 6. Market Share Index in Japan

As an importer country, Germany imports more coffee from Brazil. The market in Germany shows that Brazil increases continuously from 2007 to 2011, while other countries (Indonesia, Vietnam, and Colombia) decrease (Figure 7).

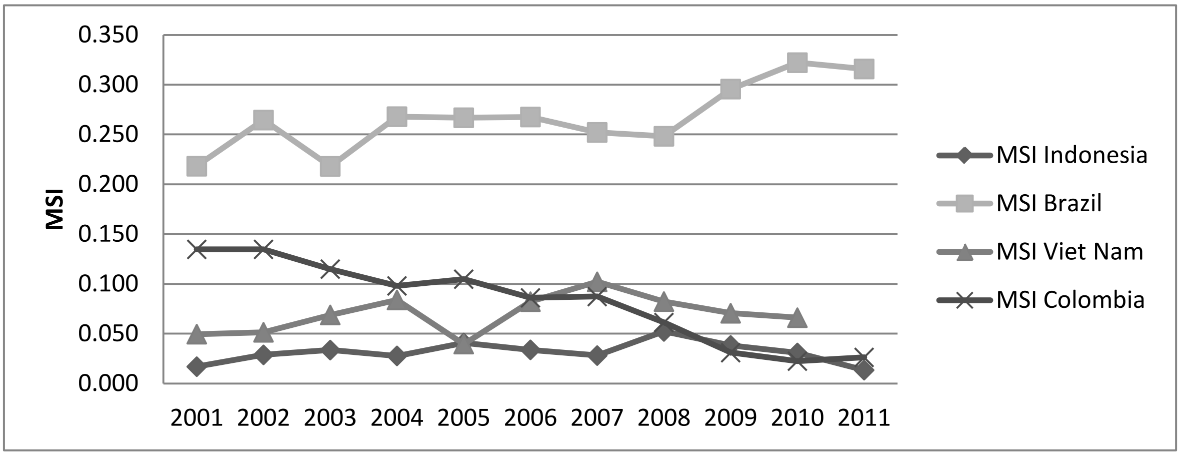

Figure 7. Market Share Index in Germany

In the Italian market, Brazil is still the number one exporter. However, since 2007 the second exporter is Vietnam. They export more to Italy while exports share from Indonesia and Colombia fall down (Figure 8).

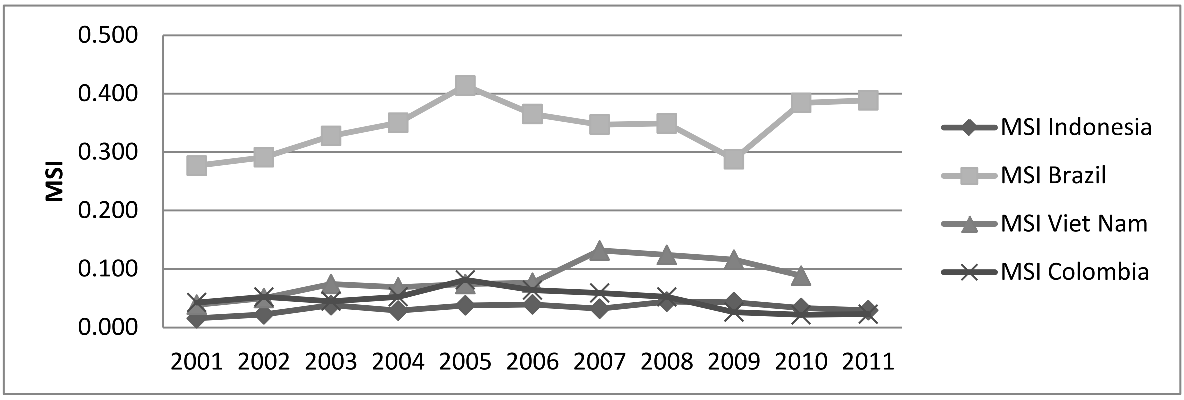

Figure 8. Market Share Index in Italy

IV. Conclusions

The Indonesia coffee industry plays an important role in the world market, but the result shows that Indonesia seems to be losing its advantage. According the export data in 2001 to 2011, although its increase between 2001 to 2010, its decrease in 2011. Indonesia faces strong competition from Brazil, Colombia, and Vietnam. In fact, the explanation for losing advantage is more complex than one may think. Natural constraint like old plantations, land fragmentations, high proportion of small producers, low quality of product, high production cost and the incapacity to invest in new technologies and marketing systems are the main factors contributing to the disadvantaged situation.

Achieving sustained production and quality is the key for Indonesia to increasing Indonesia’s market share in the world market. Even though Indonesia is one of the major exporting countries, it mainly exports low quality green-coffee without any processing which contributes to the low price that Indonesian coffee gets in the world market.

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