Comparative Analysis on The Market Share of Indonesian Export Commodities: Opportunities and Challenges

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Abstract

Indonesia is one of the largest exporting countries, mainly of food products and chemicals. However, its import-export data show that the high export value on chemical commodities and food product is followed by relatively high import value on those commodities. This study examines the comparative advantage of Indonesian export commodities. The analysis is conducted by mapping and analyzing the condition and the potential of Indonesian export market in various trading partner countries. In addition, this study identifies the potential, opportunities, and challenges that Indonesia will face to improve the market of its export commodities. The testing of comparative advantage is carried out using chemical commodities. RCA is a method that is used to analyze the competitiveness of Indonesian export commodities. The results of this study indicate that chemicals have a comparative advantage with the value of greater that 1 during 2012-2016, but the import of chemical raw materials also tends to be higher. Featured commodities are inseparable from challenges and obstacles, such as dependence on main export destination countries, economic crises, and relatively high import value of raw materials. However, the opportunity of Indonesia to increase the contribution of the export to national income is still wide open. Maximizing the potential of market diversification strategy that is implemented by Indonesian government is expected to increase the export of Indonesian commodities.

1. Introduction

The positive impacts of government policies on increased exports are responded well by Indonesian exporters, especially those engaged in non-oil commodities. The policies aim to increase the foreign exchange of the country. In current era of globalization, fierce competition encourages exporters to work harder to make the commodities not exhausted. Exports positively contribute to long-term economic growth (Rahmadi & Ichihashi, 2011). However, the high export value is also followed by a high import value for chemical commodities and food products which are, respectively, USD 1044 thousand and USD 776 thousand in 2014 (World Integrated Trade Solution). The high import makes the economic growth of countries not optimal. Similar research by Jung & Marshall (1985) shows that the matter

that is responsible for this condition is the number of new products in the export sector that are highly dependent on the input of imports.

One strategy to maintain control over export market share is expansion of export commodities that provide the greatest profit and contribution to economic growth. The statistics from the Ministry of Industry show that Indonesia has ten main commodities. Two of them are food and chemical products, which have the most contribution to national income. USA is the dominant export destination country. Indonesia is the largest exporter of food and chemical products to the US at a value of, respectively, USD 965 thousand in 2014, increasing from 2013 (USD 721 thousand) and USD 492 thousand in 2013, increasing from 2012 (USD 378 thousand) (World Integrated Trade Solution, 2014). The inauguration of Donald Trump in 2017 was the beginning of a concern, as his policies tend to be protective. Trump enacted the Tariff Act of 1930 regarding the increase of import tariffs, which aims to protect their domestic products, mainly from China (Customs & International Trade, 2017). Indirectly, this policy of import restrictions also affects Indonesia, which is the exporting country of raw materials to China, so Indonesia's trading activity decreases. Therefore, Indonesia needs a strategy to maintain control over the market share of export commodities.

The condition above indicates the importance of optimization of exports on these commodities to maintain the competitiveness of the export commodities' market share, especially chemicals. Therefore, strategies to improve the competitiveness of such export commodities are required. Mapping and analyzing the potentials and conditions of Indonesian export markets with various trading partner countries are parts of the objectives of this study. In addition, this study also identifies the potential, opportunities, and challenges that Indonesia will have to face in increasing the market share of its export commodities.

According to the theory, there are two important conceptual of theory that can explain the comparative advantages, that is economic growth and international trade. First, economic growth is an indicator of the economic progress of a country. According to Kuznets, economic growth is an increase in capacity regarding the availability of a country's economic goods for its inhabitants in a long term (Todaro & Smith, 2003). Neoclassical free market believes that liberalization of national markets stimulates investment, both domestic and foreign investment, so the rate of capital accumulation increases by itself. When it is measured using the unit of Gross National Product (GNP) increase, it is similar to the addition of domestic savings, which in turn will increase the capital-labor ratios and the per capita income of developing countries, which are generally poor in capital. Traditional neoclassical growth model, in fact, directly departs from Harrod-Domar and Solow models.

Harrod-Domar's growth model describes the economic mechanisms that rely on increased investment to accelerate economic growth. This model suggests that every economy, basically, must always reserve a certain portion of its national income to supplement or replace capital goods (buildings, tools, and raw materials) that have been lost or damaged. However, to spur economic growth, new investments that are net addition to capital stock are needed. Assuming that there is a direct economic relationship between the total of capital stock (K), and the total GNP (Y), any net addition on capital stock in forms of new investments will cause an increase in the national output stream or GNP.

Solow's growth model, in its essence, is the development of Harrod-Domar's formulation with addition of the second factor, i.e. labor, and introduction of the third independent variable, i.e. technology, into the growth equation. Different from Harrod-Domar's model, which assumes constant returns to scale with the fixed coefficient, Solow's neo-classical growth model holds to the concept of diminishing returns from the input of labor and capital if they are analyzed separately. If they are analyzed simultaneously, Solow also

uses the assumption of constant returns to scale. Technological advancement is defined as a residual factor to explain long-term economic growth. Meanwhile, Solow and other experts assume that growth rate is exogenous in nature, or unaffected by other factors.

Second, the concept of International Trade. Every country has its limitations, either in natural resources, human resources, or technology. Thus, not all needs of the society can be provided by the resources available in the country. Therefore, every country in the world needs to interact with other countries to fulfill the needs of its people, one of which is through trade. Trade can occur between two individuals, two groups, and two or more countries, i.e. bilateral and multilateral trade. Trade between countries is generally referred to as international trade. This trade is driven by price differences between countries (Nopirin, 2013). In a narrow sense, international trade is a process that arises in relation to the exchange of commodities between countries. If international trade does not exist, each country will have to consume its own products (Salvatore, 2006). In general, factors that drive international trade are the desire to expand the market of export commodities, the need to increase foreign exchange earnings, the necessity to overcome differences between product supply and demand among countries, and the requirement to eliminate relative costs in producing certain commodities.

Adherents of mercantilism argue that the only way for a country to become rich and strong is exporting as much as possible and importing as little as possible. Thus, the government must use all its strength to boost exports and reduce and limit imports (especially luxury goods). However, since each country cannot simultaneously generate an export surplus, a country can only make profit at the expense of another. The theory of trade according to Adam Smith, a classical economic figure, states that the sole source of income is the product from labor and economic resources. According to Smith, a country exports certain goods because the country can produce the goods

at a cost that is absolutely cheaper than other countries, or, in other words, the country has an absolute advantage in the production of the goods. Absolute advantage, according to Adam Smith, is the ability of a country to produce units of goods and services by consuming fewer resources than other countries.

Comparative advantage theory is an extension of absolute advantage theory, so this theory is still included in classical trade theory. All assumptions in absolute advantage theory are also assumptions of comparative advantage theory. The comparative advantage theory was formulated by David Ricardo, and it is the solution for absolute advantage theory. According to David Ricardo, the foundation of trade is comparative advantage, not absolute advantage. David Ricardo (1772-1823) stated that exchange value appears if the item has a utility value. Accordingly, an item can be traded if it can be used. A person makes an item because it has a utility value for others. Furthermore, David Ricardo also made distinction on goods that can be made and/or reproduced according to the will of the people, goods that are limited in nature, and monopoly goods. Heckscher-Ohlin (H-O) theory explains some trading patterns well. Countries tend to intensively export goods whose availability of the production factors is relatively abundant. According to Heckscher-Ohlin, a country will trade with other countries because the country has a comparative advantage, i.e. advantages in technology and production factor.

2. Research Method

This study is a literature study using a quantitative descriptive approach on the theory of trade in sectors that have high competitiveness for the improvement of Indonesian exports. The data of this study are secondary, obtained from the International Trade Center, World Integrated Trade Solutions (WITS), the World Bank, and the Central Bureau of Statistics in the period of 2012-2016. To identify relative comparison, this study uses ten sample countries, representing the largest export markets for Indonesia.
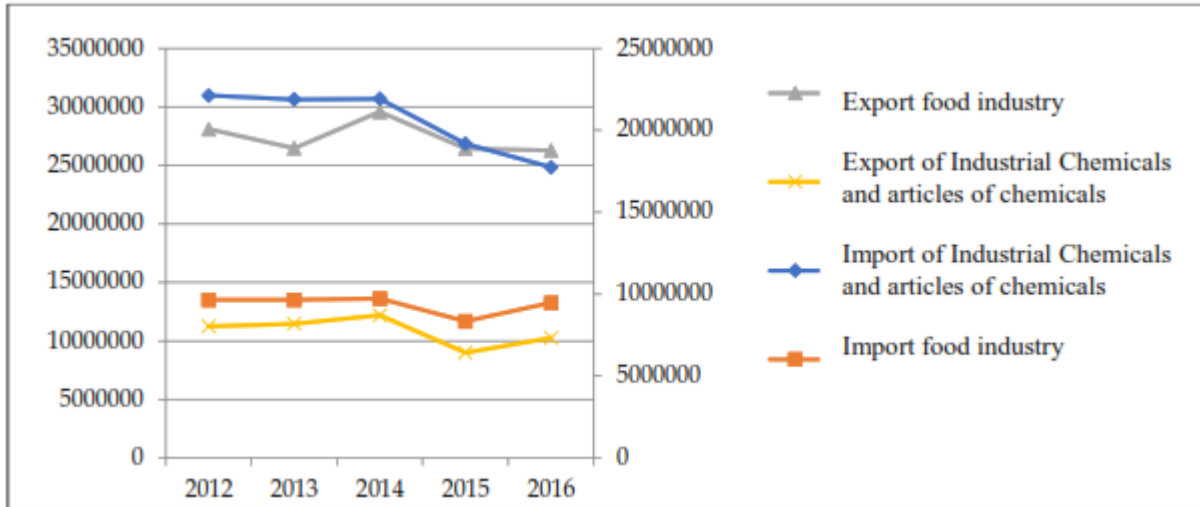
Source: Indonesian Ministry of Industry, 2017

Figure 1. Export and Import of Highest Featured Commodity of Indonesia (in million USD)

This research uses competitiveness analysis method. This method identifies the position, performance, and capability of the countries in terms of their export market (Reis and Falore, 2012). Competitiveness can be calculated using Revealed Comparative Advantage (RCA) and its derivations. It is used to analyze the comparative advantage of a commodity within a country. This concept was first introduced in 1965 by Balassa, who considered that the comparative advantage of a country is reflected or revealed in its exports. The form of RCA can be formulated as follows (Jayadi and Azis, 2016).

$$RCA = \frac{X_{ij}/X_{it}}{W_j/W_t}$$

X_{ij} is the export value of commodity j from country i to world. X_{it} is the total export of country i to the world in year t. W_j is the export value of commodity j to the world, and W_t is the world's total exports in year t. If the value of RCA is greater than zero (RCA> 0), the country will have a comparative advantage in exporting its product (Widodo, 2008).

Revealed Comparative Disadvantage (RCDA) method is used to measure the comparative advantage of Indonesia against other countries, viewed from the import side of the same commodity. Similar to exports, imports can also be used to measure the comparative advantage of a country. Thus, we can measure the same index for the import of a country (Ishogai, 2002). RCDA can be formulated as follows.

$$RCDA = \frac{M_{ij}/M_{it}}{M_j/M_t}$$

M_{ij} is the import value of commodity j from country i to the world. M_{it} represents the total import of country i to world in year t. M_j is the import value of commodity j from the world, and W_t is the world's total imports in year t. If the value of RCDA is greater than zero (RCDA> 0), the country will have no comparative advantage on its commodity, which means that the imports of a product, especially in Indonesia, outweigh its exports.

RCTA (Revealed Comparative Trade Advantage) is used to see the comparative advantage from export and import side for the same commodity. In other words, it is used to see the relative export performance over its import. RCTA can be formulated as follows.

RCTA= RCA-RCDA

If the value of RCTA> 0, a commodity will have a comparative advantage on both sides, i.e. export and import.

3. Result and Discussion
3.1 Results

This study examines more deeply one of the largest featured commodities of Indonesia. Based on the statistics from the Ministry of Industry, 90.93% of Indonesia's exports are from non-oil sector, 83.57% of which are from the sub sector of industry.

Figure 1 shows the export and import of two featured commodities of Indonesia. The sample selection is based on the conditions of both sides, i.e. export and import values. This research focuses on chemicals industry because the import of this commodity is higher than its exports. Food industry is not selected because the value of its exports tends to be greater than the value of its imports. Therefore, if the import of chemical industry can be kept low, its chances to contribute to national income will be higher, so its competitiveness will increase. The assessment on

the sample is conducted by comparing the relative advantages of the conditions of partner countries toward Indonesian commodities.

The Comparison Results of Relative RCA

The comparative advantage theory states that a country tends to focus on exporting certain goods if the country has the largest product comparative advantage and tends to focus on importing goods if the country has comparative disadvantage on the product. The results of comparative advantage analysis on chemicals industry products are presented in the Table 1.

The results of the RCA analysis show that no value is smaller than zero, so chemicals have a comparative advantage. The assessment on comparative advantage in the Table 1 is adjusted to ten largest importers of Indonesian commodity. In all sample countries, chemical commodities from Indonesia have a comparative advantage. In addition, the competitiveness of chemical products from Indonesia is higher than the world.

Table 1. Comparison of Relative RCA for Export Commodities of Chemical Industries by Country of Main Destination

Country	2012	2013	2014	2015	2016
China	4.69	4.57	4.70	3.52	3.90
United States	1.53	1.49	1.70	1.18	1.43
Japan	1.68	1.80	1.96	1.39	1.68
India	2.69	2.52	2.86	1.78	2.06
Singapore	2.11	2.24	2.36	1.40	1.57
Malaysia	1.61	1.53	1.71	1.19	1.31
Korea	4.24	4.10	4.57	3.27	3.89
Thailand	7.09	7.23	6.95	5.43	6.27
Netherlands	1.73	1.73	1.85	1.40	1.63
Philippines	5.28	4.11	9.41	6.74	8.19
World	2.61	2.61	2.82	1.98	2.29

Source: International Trade Center, processed, 2017

Table 2. Analysis Results of Chemical Commodities of Indonesia

	2012	2013	2014	2015	2016
RCA	2.61	2.61	2.82	1.98	2.29
RCDA	124.71	134.28	140.95	141.10	136.96
RCTA	-122.11	-131.67	-138.13	-139.12	-134.66

Source: International Trade Center, processed, 2017
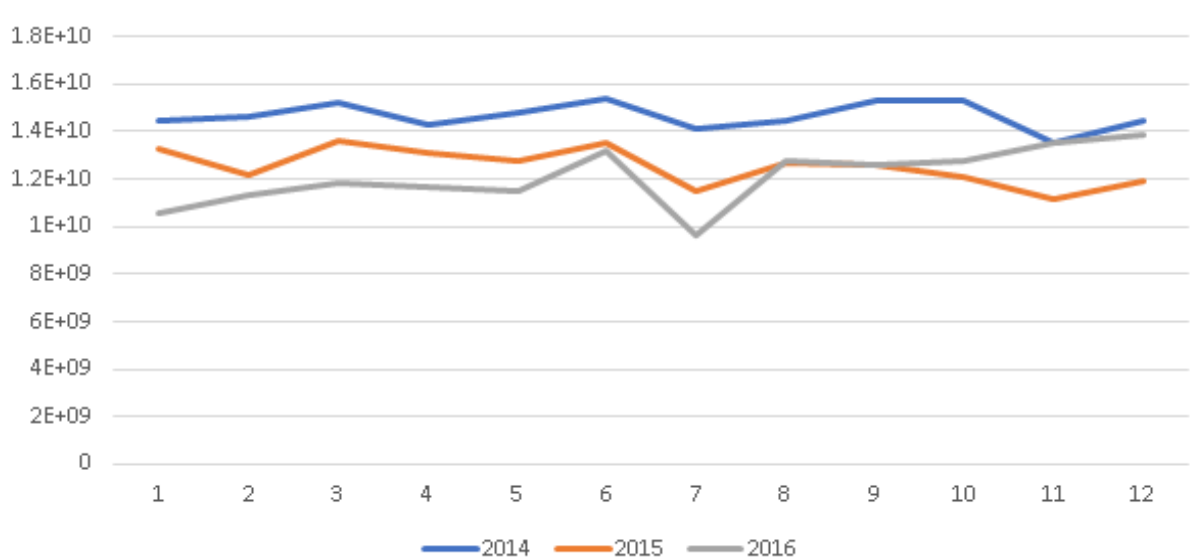
Source: Central Bureau of Statistics, 2017
Figure 2 .Growth of Indonesia Exports (in US Dollar)

Overall, most activities of chemicals are import. The Table 2 below presents processed data using RCDA and RCTA. RCDA is used to see the comparative advantage of Indonesia over other countries from the import side of the same commodity, while RCTA is used to see the comparative advantage of both export and import for the same commodity, or to see the relative export performance over its imports. The results of the calculations can be seen in the Table 2.

The import of chemicals commodity input is still high. The observation results of 2012 to 2016 data show that RCDA is higher than RCA. This is corroborated by import activity that tends to be higher during the five observation years, which is reflected by consistent RCDA results. Overall, the import activity of chemicals commodity tends to be higher, so the RCTA is negative during 2012-2016. This condition can threaten domestically-made similar commodities.

Based on the data from the Ministry of Industry, raw materials that are frequently imported for chemicals commodities are petrochemicals, processed rubber, raw materials for pharmaceutical products, pigments, essential oils, and perfumery materials. Raw materials for pharmaceutical products are mostly imported from China (60% or IDR 6.84 trillion), India (30% or IDR 3.42 trillion), and Europe (10% or IDR 1.4 trillion).

3.2 Discussion
The Opportunity of Indonesian Export

The possibilities to increase competitiveness are still wide open, and the chances of Indonesia to increase its exports are also great due to abundant natural resources and high number of labor. In order to increase exports, the Ministry of Trade makes target of trade destination countries. This means that the support from the

government is able to stimulate the increase of export commodities to achieve the target. In 2019, exports are expected to have tripled from 2016 (realization year), or reaching USD 458.8 billion. Countries that have always been export destinations are the US, China, Japan, and India. They remain the main target for exports until three years to come with a market share of 12.9%, 12.2%, 11.5%, and 8.5% respectively. If we can increase the export and at the same time decreasing the imports dependency it will be effect on positively result of RCTA.

From the point of view of production technicality, according to Ragimun (2015), the feasible strategy is increasing human resource value, entrepreneurship, and efficiency. Resources are the most important factor in production. Indonesia is superior in terms of production input, i.e. labor. Workforces in Indonesia are abundant and cheap, but their value must be improved. This increase in value will improve the quality of products, so the products are eligible for export.

The strategy that is used will answer the question regarding competitiveness improvement on export commodities. The global crisis experienced by developed countries makes Indonesian government launch market diversification strategy to improve its export performance. The strategy explores the market potential of developing countries such as ASEAN, Latin America, Middle East, North Africa, and Eastern Europe. Thus, Indonesia will not be dependent on developed countries. The chances of non-oil products in European market is still high. In addition, demand from Middle Eastern countries is also high. If we relate to the theory, this condition is very closely with Heckscher-Ohlin (H-O) theory which stated that a country will trade with other countries because the country has a comparative advantage.

Developed countries are profitable export markets. Right after he took the office, Donald Trump decided to leave TPP (Trans Pacific Partnership) to build bilateral cooperation since, for him, multilateral relations are inefficient and the US needs to improve its manufacturing industry. It is a great opportunity For Indonesia because it has superior products for the US. Thus, Indonesia has the opportunity to establish bilateral cooperation with the US. The data of December 2016 showed that Indonesia's exports to the US were USD 15.68 billion, 11.94 percent of the total national exports.

The Challenge of Indonesian Export

Obstacles faced by Indonesia in exporting its commodities are technical problems, rejection from destination countries, non-tariff barriers, and several other problems. Developed countries that have become the main export destination for Indonesia are Japan, the US, and countries in Asia, especially China. The largest export, i.e. chemicals, still depends on the demand of these countries. In times of crisis in developed countries, exporters should be prepared with the decline in export value. In addition, domestic exporters must be ready to face competitors who are able to export same products.

Because Indonesia embraces open economy, economic exploitation is very high. The entry of foreign companies to Indonesia may threaten domestic products. Challenges in business operations are articulated as the level of risk and trade in exports and imports. Problems that often arise, such as fluctuations in exchange rates and prices, cannot be avoided in international trade. Business risks may include shipping cost, business negotiations, payment transactions, quality of goods, and others. The condition is parallel with the concept absolute advantage from Adam Smith which stated that a country exports certain goods because the country can produce the goods at a cost that is absolutely cheaper than other countries, or, in other words, the country has an absolute advantage in the production of the goods.

The data of Central Bureau of Statistics in Figure 2 illustrates Indonesian export growth. At the end of 2016, the contribution of exports tended to decline from the previous year. The decline

occurred in two main countries, i.e. China and the US. The export growth in both countries was 6.5% and 1.6%. The weakening global economic condition, in addition to the declining purchasing power of developed countries due to global crises, not to mention the declining purchasing power of developed countries due to global crises, poses a challenge to Indonesia's exports, so the contribution of exports is declining. In addition, distance also causes transportation costs to be higher. Exporters should also consider the presence or the absence of cooperation agreements between countries. The distance and high transportation cost affect the selling price of the product. Inter-state agreements will encourage increased trade and investment.

Another challenge Indonesia has to face in its foreign trade is the implementation of trade remedies, applied by member states of the WTO. This trade policy allows the government to take corrective action against imports to protect domestic industries from unfair trade practices that can cause losses. This policy consists of anti-dumping, anti-subsidies, and safeguard measures. Indonesia received 290 accusations of trade remedies, from which 133 cases were suspended, 122 cases were imposed, and 35 cases are in the settlement process (Kemendag, 2016). The countries that frequently accused Indonesia of trade remedy are India and the EU. Other countries that are actively accused Indonesia are the US (23 cases), Australia (20 cases), Turkey (17 cases), South Africa (12 cases), and the Philippines (10 cases). Indonesia's often-inhibited export commodities are forestry products, agricultural products, chemical products, fishery products, iron and steel products, and miscellaneous industry (i.e. textiles, footwear, and food).

The inauguration of Donald Trump as the president of the US on January 20, 2017 has had a significant impact, especially on international trade. In his speech, Trump said that he would apply trade protection measures through two rules, namely product purchases and hiring domestic workers. His policies emphasize that any decision-making in various sectors such as trade, taxation, immigration, and foreign affairs is conducted under the "America First" principle. If, in general, the program is realized, Indonesia will be able to see opportunities and challenges. From the import side, the contribution of Indonesia on American trade balance is small. Nevertheless, Indonesia remains exposed to their trade protective policies. Such protection has a significant impact on other countries, such as China, Mexico, and other countries that cause deficits on their trade balance. As a result, Indonesia is flooded with goods that cannot enter US market. The data of Ministry of Trade in 2016 mention that Indonesia's imports, in sum, increases up to 13%. Goods from China, such as special imports of food product, increases up to 40%. If this situation persists, Indonesia's domestic product will be threatened.

According to Ridhwan et al. (2015), competitiveness analysis indicates a challenge on Indonesia's export performance and competitiveness. Their study discusses national competitiveness and industrial strategy in the era of AEC (ASEAN Economic Community). It also mentions that the main challenge for Indonesia's trade performance is from the aspects of intensive margin and quality margin. Intensive margin indicates that the Indonesia's current trade openness tends to decrease, compared to that in early 2000. In terms of quality margin, there is a shift in Indonesian export products from low and high-tech to med-tech and resource-based products. From the perspective of competitiveness, the challenge of Indonesia's exports is caused by low market access, incentive framework, factors conditions, and trade promotion facilitation.

4. Conclusion and Suggestion

This study observes the condition and potential of Indonesia's export market with various trading partner countries through competitiveness analysis on Indonesia's export commodities. In addition, this study identifies the potential, opportunities, and challenges that

Indonesia will face in increasing the market share of its export commodities. The value of RCA during 2012-2016 which, in average, is greater than 1 indicates that Indonesia's chemicals commodity is the country's featured export product and is able to compete in the world's market. The market share of Indonesian exports is dominated by developed countries such as the US, Japan, Europe, and Asia, so chemical products are competitive products in the global market. The challenge that should be faced by Indonesia arises because Indonesia is still dependent on developed countries as its main export target. In addition, the import of raw materials for chemical industry is still high. Indonesia seeks to erode risks by diversifying its market to developing countries. This strategy is expected to explore potential economies in order to increase export demand. In addition, bilateral and multilateral agreements can reduce costs and boost exports. Competitiveness can be improved by improving production process, so the quality of the product becomes higher.

This research is limited in terms of its competitiveness analysis method, which is not maximal. Whereas, there are many methods for competitiveness analysis. Therefore, subsequent researches should develop new methods, so the researches become more specific, and their observability becomes wider.

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