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International Trade Value Analysis: Study of Economic Graph Analysis of Export and Import Volume of Oil and Gas & Non- Oil and Gas

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value of international trade, exports and imports, oil and gas and non- oil and gas

Abstract

This study was conducted to determine the scale of comparison of the value of exports and imports of oil and gas and non - oil and gas in Indonesia. The research time period is 10 years with a sample population of Indonesian export and import data. Data was obtained through the Central Bureau of Statistics (BPS) and processed through descriptive qualitative methods and using economic line graphs. This research results in 1) The volume of Oil and Gas exports is on a stable scale, while the volume of non - Oil and Gas exports is on a more fluctuating scale and has a larger volume. 2) The volume of Oil and Gas imports is on a stable scale, while the volume of non- Oil and Gas imports is on a more fluctuating line and has a larger volume. 3) The value of Oil and Gas exports is on a stable scale, while the value of non-Oil and Gas exports fluctuates and increases and has a larger value. 4) The value of Oil and gas imports are on a stable line scale, while the value of non- Oil and Gas imports fluctuates more and has a greater import value than Oil and Gas . Researchers concluded a suggestion that focuses on the government as the authority of international trade policy to further maximize policies related to the maximum value of exports rather than imports in order to maximize state revenue.

1. Introduction

Economic Development in a country cannot be separated from the condition of the global economy. The interconnection among economists from different countries is an important and influential factor in the economic development of each nation. As stated by Wijono (2005), the economy is one of the important indicators in the development of a country. Therefore, one of the key drivers of growth is international trade. Salvatore (2004) noted that trade can act as an engine for growth. If international trade activities include both exports and imports, either or both components can serve as a growth engine. This situation makes competitiveness a crucial factor in the competition between countries to gain benefits from the increasingly open world economy. The advantages of an open world economy can be observed from a country's balance of payments.

The presence of exports and imports as critical components in economic growth also determines economic welfare. One of the benefits of international trade is that it allows a country to specialize in producing goods and services at lower costs (Fitriani, 2019; Rinaldi, Abd, & Chenny, 2017). Other tangible benefits of international trade include increased national income, foreign exchange reserves, capital transactions, and expanded employment opportunities. International trade also provides an opportunity for domestic products not only to be marketed domestically but also to be exported abroad, leading to increased national income. Moreover, there are two key advantages of international trade: (i) it allows a country to expand its market or production output, and (ii) it enables the country to utilize technology developed abroad, which may be more advanced than domestic technology.

The theory of comparative advantage helps us understand that countries trade goods and services with each other due to differences in factors such as natural resources, human capital, financial capital, and technical capabilities. Some countries are more endowed with abundant resources than others; however, many countries, despite having ample resources, lack the ability to manage and distribute them effectively, which can hinder their growth, development, and the overall quality of life for their citizens (Adeleye, Adeteye, & Adewuyi, 2015).

Economic openness provides an opportunity for the export of goods produced using abundant resources and the import of goods that are scarce or expensive to produce domestically. According to modern economic growth theory, economic openness is believed to drive a country's economic growth. Economic growth can be measured through the volume of international trade, using the simple formula for national income: Y = C + I + G + (X - M), where international trade is represented by exports (X) and imports (M). For any country, especially those with open economic systems, exports and imports, or international trade, are essential components of national economic change and growth.

Table 1
Export Volume (Thousand Tons)

Year	Oil and Gas	Non-Oil and Gas	Amount
2012	48 446.0	551 690.6	600 136.6
2013	44 041.9	655 963.2	700 005.0
2014	41 743.1	507 722.4	549 465.5
2015	44 964.7	463 862.5	508 827.2
2016	43 328.8	468 399.3	511 728.1
2017	42 505.0	503 341.6	545 846.6
2018	37 055.5	571 852.0	608 907.5
2019	26 528.2	627 946.2	654 474.4
2020	27 497.9	552 180.3	579 678.2
2021	26 890.2	594 777.6	621 667.8
2022	24 242.5	622 431.4	646 673.8

Source : Central Statistics Agency (BPS)

Exports are a crucial component in the calculation of international trade activities and significantly influence a country's economic growth. As Amir (2000) explains, exports involve the trading or exchange of goods from a domestic market to international markets, crossing national borders. In addition to selling goods and services, exports aim to foster economic cooperation between countries and generate national income. This type of trade typically occurs when a producing country has a surplus of goods, meaning that domestic needs have already been met. In such cases, the country can export these goods abroad. Another key indicator of export activity is the revenue generated from the sale of a commodity or product overseas.

Table 2
Import Volume (Thousand Tons)

Year	Oil and Gas	Non-Oil and Gas	Amount
2012	44 255.21	92 028.42	136 283.6
2013	49 054.04	92 055.55	141 109.6
2014	48 869.63	98 864.65	147 734.4
2015	48 309.26	98 784.09	147 093.3
2016	48 325.78	103 699.59	152 025.4
2017	50 370.11	110 379.18	160 749.3
2018	49 216.12	122 503.30	171 719.4
2019	40 926.45	121 702.28	162 628.7
2020	37 654.14	114 225.86	151 880.0
2021	42 126.33	136 161.07	177 759.3
2022	47 741.00	135 490.40	183 235.4

Source : Central Statistics Agency (BPS)

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Imports are, like exports, a crucial component or activity in a country's economy, especially in a country with an open economic system as a form of international economic cooperation. As stated by Astuti Purnamawati (2013:13), imports refer to the act of purchasing goods from abroad in accordance with government regulations, with payment made using foreign currency. Import activities occur when a country is unable to produce the goods or services needed to meet consumer or public demand. Therefore, through imports, countries gain access to goods and services that are not produced locally or domestically. Additionally, import activities offer benefits such as the provision of commodities that are not fulfilled through local production, economic diversification, and the reduction of production costs through the importation of raw materials.

Table 3
Export Value (Million US$)

Year	Oil and Gas	Non-Oil and Gas	Amount
2012	36 977.3	153 043.0	190 020.3
2013	32 633.2	149 918.6	182 551.8
2014	30 018.8	145 961.2	175 980.0
2015	18 574.4	131 791.9	150 366.3
2016	13 105.5	132 028.5	145 134.0
2017	15 744.4	153 083.8	168 828.2
2018	17 171.7	162 841.0	180 012.7
2019	11 789.3	155 893.7	167 683.0
2020	8 251.1	154 940.7	163 191.8
2021	12 247.4	219 362.1	231 609.5
2022	15 998.2	275 906.1	291 904.3

Source : Central Statistics Agency (BPS)

According to Martikasari (2022), exports are one of the economic activities conducted by selling or sending goods from one country to another. This activity occurs when a country's needs have been met, allowing it to send goods or services to other countries where those needs have not yet been fulfilled. There are two types of exports: oil and gas exports, and non-oil and gas exports. Maya Putra & Damanik (2017) stated that oil and gas exports involve the sale of oil and gas products abroad, with transactions and payments made in foreign currency. Oil and natural gas are extremely important, valuable, and strategic natural resources due to their critical role in meeting the world's energy needs.

As such, oil and gas-producing countries play a crucial role in determining the global energy supply. As one of the largest oil and gas producers in the world, Indonesia has significant potential to increase its oil and gas exports. To achieve this, Indonesia must effectively and efficiently utilize its natural resources and develop the infrastructure necessary to support oil and gas export activities. On the other hand, Maya Putra & Damanik (2017) also argue that non-oil and gas exports refer to the sale of goods other than oil and gas products to other countries, with payments made in foreign currency. Non-oil and gas exports involve exporting goods or services that do not fall under the category of oil and gas commodities. The importance of the non-oil and gas export sector is evident in its contribution to a country's economy.

These exports are capable of generating foreign exchange, creating employment, enhancing competitiveness, and fostering overall economic growth. Therefore, this sector is a primary focus in a country's economic policies. In Indonesia, non-oil and gas exports are a key sector in the national economy, encompassing various products such as agricultural, industrial, and service products. Increasing Indonesia's non-oil and gas exports is also one of the government's objectives in its efforts to improve societal welfare and promote sustainable economic growth.

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Table 4
Import Value (Million US$)

Year	Miga s	Non-Miga s	Amount
2012	42 564.4	149 126.6	191 691.0
2013	45 266.4	141 362.3	186 628.7
2014	43 459.9	134 718.9	178 178.8
2015	24 613.1	118 081.4	142 694.5
2016	18 739.4	116 913.4	135 652.8
2017	24 316.2	132 669.3	156 985.5
2018	29 868.8	158 842.5	188 711.3
2019	21 885.3	143 390,	171 275.7
2020	14 256.8	127 312.0	141 568.8
2021	25 529.1	170 660.9	196 190.0
2022	40 416.4	197 026.6	237 443.0

Source : Central Statistics Agency (BPS)

By whole through the data that has been obtained researcher do data analysis via analysis description chart For know scale mark trading international through export and import oil and gas nor non-oil and gas in trading international in Indonesia. Study This describe mark trading international in the form of export and import oil and gas as well as non-oil and gas which is described as method research data analysis . Index export and import used For measure performance trade international through volume and value from oil and gas and non-oil and gas .

2. Literature Review

2.1 Trading International

Every country in the world interacts with other nations through various means. These connections are not limited to government relations but also extend to the business world and individuals. The relationship between companies, particularly in the form of trade, often involves parties from multiple countries and is referred to as international trade or international business (Andrian Sutedi, 2014). According to Mankiw (2007) in "Theory of Macroeconomics," international trade is the activity of buying and selling goods and services between two or more countries. Differences in comparative advantages between countries can lead to the occurrence of international trade. Simorangkir (1985) in the "Banking Dictionary" believes that international trade involves transactions between traders from different countries, which in turn influences the balance of payments of the countries involved. In essence, international trade is the exchange of goods and services across national borders.

2.2 Export

Exporting involves selling goods produced domestically to foreign markets, in accordance with government regulations, with the expectation of receiving payment in foreign currency and communicating in a foreign language (Amir, 2001:4). As explained by the Heckscher-Ohlin theory (Appleyard, Field, and Cobb, 2008), exports have a significant impact on a country's economic growth. In other words, a country exports products that are produced using abundant and inexpensive production factors. This activity is beneficial because it increases national income and accelerates the process of economic development and growth.

Exports occur when the demand for certain goods or services can be met domestically, or when the production of these goods or services can compete in terms of price and quality with similar products sold abroad. Through exports, a country generates foreign exchange, which is used to pay for imports and other development-related needs. Maya Putra & Damanik (2017) argue that there are two types of exports: oil and gas exports, and non-oil and gas exports. Oil and gas exports involve the sale of oil and natural gas products abroad, with transactions and payments made in foreign currency. In contrast, non-oil and gas exports refer to the sale of goods or services that are not

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related to oil and gas commodities to other countries, with payments also made in foreign currency.

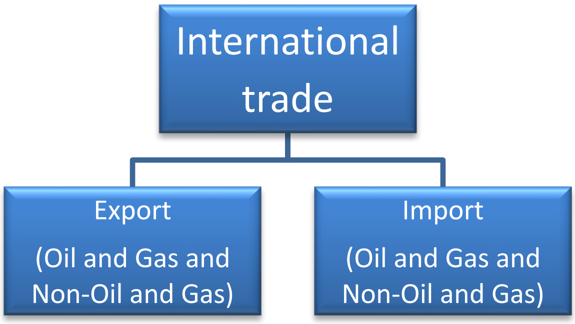
2.3 Import

Importing involves the purchase or bringing in of goods from abroad into the domestic economy (Sukirno, 2006:203). As explained by the Heckscher-Ohlin theory (Appleyard, Field, and Cobb, 2008), imports have a significant impact on a country's economic growth. This theory states that a country imports products or goods that utilize production factors not readily available domestically. Although this activity can be more beneficial for a country compared to producing the goods itself, it may not always be efficient. Importing involves bringing goods that are subject to customs duties. An importer is a company or individual who carries out the import activities.

3. Research Methods

The research in this article utilizes a qualitative descriptive method with an analytical perspective focused on economic indicators, specifically measuring international trade through the scale of oil and gas exports and imports, as well as non-oil and gas. Data collection for the study was conducted using secondary methods, primarily through data obtained from the relevant Central Statistics Agency (BPS). The study prioritizes qualitative methods to ensure high-quality data processing, thereby maximizing the analysis of economic indicators. Additionally, this article is supported by a literature review, incorporating references from relevant research that have been scientifically validated. This approach aims to further develop and serve as a continuous resource for ongoing research.

4. Results and Discussion



International trade is closely related to the export and import of commodities. In international trade activities, transactions involve either selling domestically produced goods and services to other countries or purchasing goods and services from other countries to meet domestic needs. Among various international trade activities, exports have a significant impact on national income because they can drive imports, potentially leading to a surplus on the trade balance (Razak & Jaya, 2014). Export activities can act as a growth engine for a country by increasing its foreign exchange reserves, contributing to a positive trade balance.

International trade encourages countries to specialize in producing goods where they have a comparative advantage. Indonesia, with its production of oil and gas and non-oil and gas commodities, remains a focal point due to its natural resource endowments and comparative advantage. Many other indicators can also be traded, especially through exports. Engaging in trade with other countries can be profitable, as it allows the purchase of goods at lower costs and the potential to sell them abroad at higher prices. International trade often arises due to price differences for goods in various countries. The following chart illustrates the export figures for oil and gas and non-oil and gas commodities in Indonesia.

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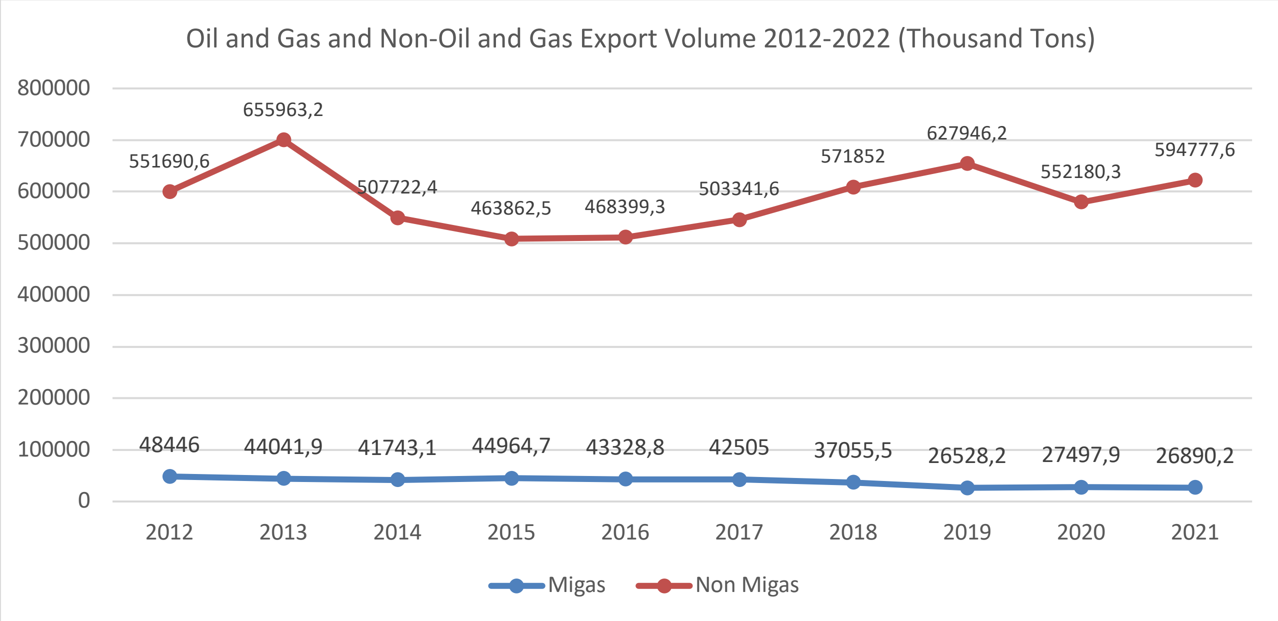
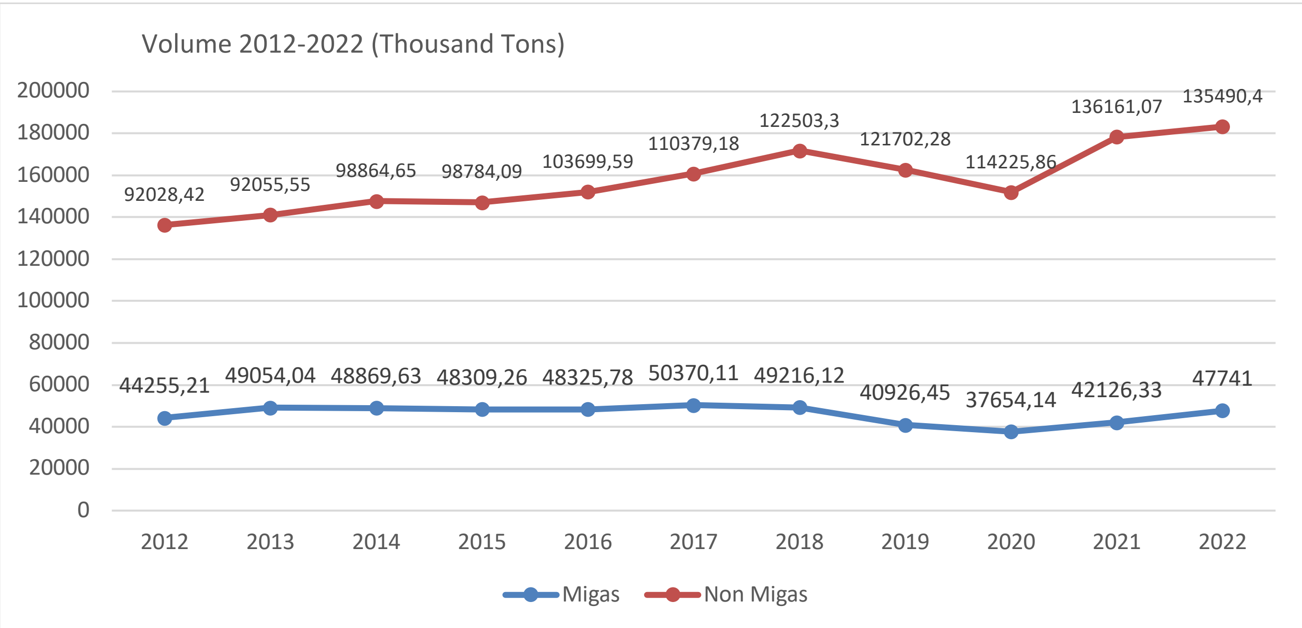
Graph 1
Export Volume Oil and Gas and Non-Oil and Gas



Category commodity Indonesia's exports are export oil and gas and non -oil and gas . Second sector This own quantity which is very different . Can seen deep Graph 1, that quantity of export volume commodity export oil and gas No more from 50 000 (Thousand Tons) where his movements the more decrease from 2015 until 2021. is very different with commodity export non-oil and gas with fluctuating movement with export volume more from 450 000.0 which is where 2016 is year with export volume non-oil and gas Lowest that is reach 468 399.3 . If counted through total or amount from export oil and gas and non-oil and gas , in 2013 held the export volume highest that is reach 700 005.0 thousand tons followed by 2019 with achievements 654 474.4 thousand tons and 2020.

Graph 2
Import Volume Oil and Gas and Non-Oil and Gas



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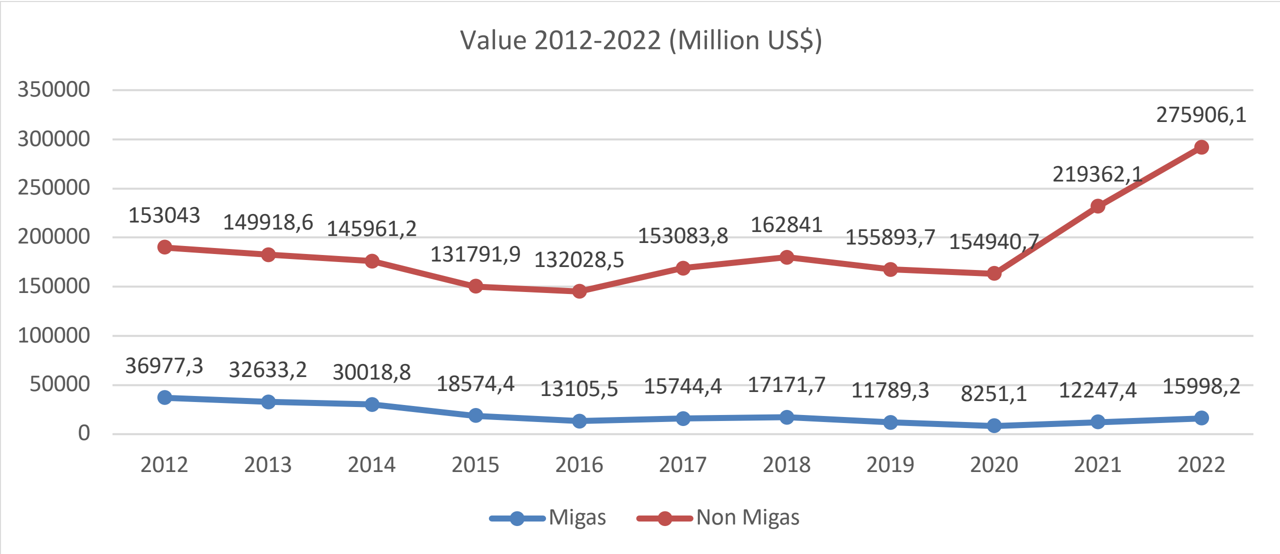
After examining the volume of oil and gas, and non-oil and gas exports, the analysis can turn to imports as illustrated in Graphic 2. The line graph shows that oil and gas imports exhibit significant fluctuations. The volume of oil and gas imports has not exceeded 51,000.00 thousand tons. The highest import volume occurred in 2017, reaching 50,370.11 thousand tons, while the lowest was in 2020, at 37,654.14 thousand tons. This decline in 2020 coincides with the global economic downturn caused by the pandemic.

The volume of oil and gas imports generally falls within a range of four digits, with noticeable annual fluctuations. In contrast, non-oil and gas imports show a different trend. The import volume for non-oil and gas commodities fluctuates but remains consistently above 90,000.00 thousand tons from 2012 to 2022. This category tends to experience growth, with only occasional declines. The highest import volume for non-oil and gas was in 2021, reaching 136,161.07 thousand tons, followed by a slight decline in 2022, with a volume of 135,490.40 thousand tons.

Graph 3
Export Value Oil and Gas and Non-Oil and Gas in (Million US$)



In Graph 3, which shows the export values of oil and gas, and non-oil and gas commodities, we can observe the trends after analyzing export volumes. The export value of oil and gas commodities did not exceed $50,000 million, and it has been declining from 2012 to 2020. The lowest point for oil and gas exports occurred in 2020, a year marked by the COVID-19 pandemic, which led to disruptions in international trade and negatively impacted both the Indonesian and global economies. However, exports of oil and gas began to recover in 2021, with a value of $12,247.4 million, and continued to rise, reaching $15,998.2 million in 2022. In contrast, non-oil and gas exports show a different pattern. The export value of non-oil and gas commodities fluctuates but remains consistently above $100,000 million from 2012 to 2022. Despite being more significant in contribution compared to oil and gas exports, the growth of non-oil and gas exports is quite variable. Notably, 2020 marked the highest export value for non-oil and gas commodities, reaching $275,906.1 million, with the total amount in that year peaking at $291,904.3 million.

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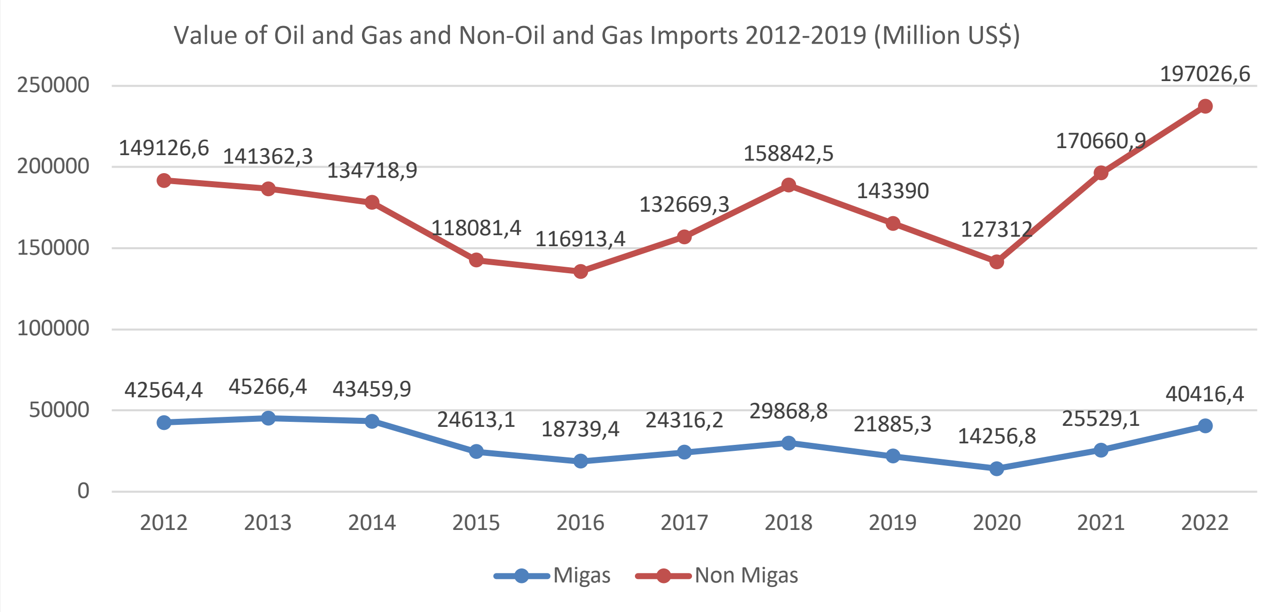
Graph 4
Import Value Oil and Gas and Non-Oil and Gas in (Million US$)



In graph 4, it will analyzed mark import oil and gas and non-oil and gas after know mark export it in graph 3. can seen that import oil and gas experience tends to fluctuate light with the increase is not more of 50,000 million US$. And where its movement inclined decrease in 2020 only reached 14 256.8 million US$. Very different with commodity non- oil and gas imports with fluctuating movement with mark import more of 100,000 million US$ from 2012 to 2022. With year highest which is almost 2020 reached 200,000 million US$ with achievement of 197 026.6 million US$.

5. Closing

5.1 Conclusion

Based on the data obtained and analyzed through economic charts, the following conclusions can be drawn:

1. Export Volumes: Over the past 10 years, the export volume of oil and gas has remained relatively stable, with exports showing little surplus. In contrast, non-oil and gas exports have experienced fluctuations, though these variations are not overly dramatic, as indicated by the stable trend lines. Non-oil and gas exports consistently show higher values compared to oil and gas exports.
2. Import Volumes: The import volume of oil and gas has also been stable over the past decade, with imports showing little surplus. Conversely, non-oil and gas imports have exhibited higher values and experienced significant annual fluctuations, as evidenced by the trend lines moving up and down.
3. Export Values: The export value of oil and gas has remained stable over the past 10 years, correlating well with the export volume. On the other hand, the value of non-oil and gas exports is higher and more variable, reflecting the fluctuations in non-oil and gas export volumes.
4. Import Values: The import value of oil and gas has been stable and aligns with the import volume over the past decade. In contrast, the value of non-oil and gas imports shows greater fluctuations, consistent with the variations in non-oil and gas import volumes.

5.2 Suggestions

The research on export and import variables aims to assess the performance of international trade for Indonesia. It is crucial for the government to regularly evaluate international trade activities. Maintaining and maximizing both the value and volume of exports—whether oil and gas or non-oil and gas—is essential for sustaining national income through exports. On the other hand, it is equally

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important to manage the value and volume of imports carefully. Ensuring that imports align with international cooperation and maintaining domestic reserves of oil, gas, and non-oil and gas commodities is vital. Ideally, the value of imports should remain lower than exports to avoid a significant imbalance and ensure that income exceeds expenditure.

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