PRAKARSA
Welfare Initiative for Better Societies

ILLICIT FINANCIAL FLOWS

IN THE FISHERIES AND COAL MINING SECTOR AND THEIR DERIVATIVE PRODUCTS IN INDONESIA

2022

Illicit Financial Flows in the Fisheries and Coal Mining Sector and Their Derivative Products in Indonesia

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List of Abbreviation

ADB	Asia Development Bank
AEOI	Automatic Exchange of Information
APBN	Anggaran Pendapatan dan Belanja Negara **(State Budget)**
API	Angka Pengenal Impor **(Import Identification Number)**
AS	Amerika Serikat **(United States of America)**
ASEAN	Association of Southeast Asian Nations
BBM	Bahan Bakar Minyak **(Fuel)**
BEPS	Base Erosion and Profit Shifting
BI	Bank Indonesia **(Bank of Indonesia (Indonesia Central Bank))**
BPS	Badan Pusat Statistik **(Central Bureau of Statistics)**
CIF	Cost, Insurance, and Freight
DOTS	Direction of Trade Statistics
ESDM	Energi Sumber Daya Mineral **(Mineral Resource Energy)**
FOB	Free on Board
GER	Gross Excluding Reversal
GFI	Global Financial Integrity
HLPF	High Level Political Forum
HMN	Hot Money Narrow
HPI	Harga Pembelian Ikan **(Fish Purchasing Price)**
HS	Harmonized System
IFF	Illicit Financial Flow
IMF	International Monetary Fund
IUU	Illegal, Unreported, and Unregulated
JTB	Jumlah Tangkapan yang Diperbolehkan **(Allowed Catch Number)**
KG	Kilogram

LKPP	Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah **(National Procurement Board)**
OECD	Organization for Economic Co-operation and Development
PBB	Perserikatan Bangsa-Bangsa **(United Nation)**
PCM	Partner-Country Method
PDB	Produk Domestik Bruto **(Gross Domestic Product)**
PFM	Price Filter Method
PNBP	Penerimaan Negara Bukan Pajak **(Non-tax revenue)**
PPH	Pajak Penghasilan **(Income Tax)**
PPN	Pajak Pertambahan Nilai **(Value-added tax)**
SDA	Sumber Daya Alam **(Natural Resources)**
SDGs	Sustainable Development Goals
SITC	Standard International Trade Classification
SWIFT	Society for Worldwide Interbank Financial Telemonunications
UN	United Nations
UNCAC	United Nations Convention Against Corruption
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNODC	United Nations Office on Drugs and Crime
UNSC	United Nations Security Council
USD	United States Dollar
WPPNRI	Wilayah Pengelolaan Perikanan Negara Republik Indonesia **(Indonesian State Fisheries Management)**
YoY	Year on Year

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Preface

The Covid-19 pandemic that has hit every society class in the world has had a significant impact on economic and social losses for all countries. This is worsened by economic uncertainty due to war and supply chain breakdowns in various parts of the world. Decreasing revenues and increasing state spending are concerns for most countries in the world, including Indonesia. Therefore, the Indonesian government is required to optimize the potential for state revenue from various sources. One of them is illicit financial flows that have been going on. Illicit financial flows harm the economy and development in a country because they are similar to money laundering, bribery, tax evasion or hiding the committed crime so that they are not identified. The international community has even agreed on the Sustainable Development Goals (SDGs) that all countries need to significantly reduce the amount of illicit financial flows together.

PRAKARSA has continuously calculated illicit financial flows into and out of Indonesia since 2015. In that year, our report entitled "Calculating Illicit Financial Flows to and from Indonesia: A Trade Data Analysis, 2001-2004" found the magnitude of financial flows illegal money and where the flow of the fund leads to, originate from and the factors that cause illicit financial flows. In 2019, PRAKARSA conducted a deeper study of illicit financial flows by analyzing more specifically on Indonesia's superior export commodities through a trade mis-invoicing approach from three sectors, namely extractives, plantations, and manufacturing. Our 2019 report entitled "Exposing Illicit Financial Flows of Indonesia's Leading Export Commodities: The Amount and Potential for Loss of State Revenue" reveals in detail illicit financial flows in Indonesia's six leading export commodities in 1989-2017, namely coal, copper, palm oil, rubber, coffee, and crustaceans (prawns).

Continuing our previous research, in 2022 we are conducting a more detailed study on the potential receipts from disaggregated illicit financial flows. We conducted this study for two of Indonesia's mainstay natural resource commodities, namely fisheries and coal. The findings in this study are aimed to contribute and be useful in terms of designing the strategies to tackle tax avoidance practices and tax leakage in Indonesia, especially in the fisheries and coal mining sectors. It is necessary to formulate comprehensive policies ranging from supervision to prevention so that it will be more effective because the loss of potential income due to illicit financial practices results in income that should be allocated for the benefit of society only enjoyed by some people.

Thank you to the PRAKARSA research team and the parties involved in the process of preparing this report. We hope that this report will enrich existing sources of knowledge and provide reinforcement so that every stakeholder is fully committed to build justified tax through concrete steps in overcoming the problem of illicit financial flows to and from Indonesia, and ensuring a more prosperous society with a fair tax system.

We realize that there are flaws in this research, but we try to provide this report at its best and methodologically that this report can be accounted for. Therefore, as an independent and open think tank institution, we open the discussions to all parties, including researchers, activists, business people, and policy makers within the framework of knowledge sharing and open policy discussions. Finally, we are proud to present this research report "Illicit Financial Flows in the Fisheries and Coal Mining Sector and Their Derivative Products in Indonesia". Happy reading!

Jakarta, November 2022

Ah Maftuchan
Executive Director The PRAKARSA

Executive Summary

This report provides the illicit financial flows within two primary export commodities of Natural Resources in Indonesia, which are fisheries and coals commodities. The analysis focuses on estimating the amount of illicit financial flows and the potential loss of state revenue due to the practice of illicit financial flows. Within these two commodities, we analyze the whole sub-sector, including to highlight the potential loss of the state income from tax and royalty.

There are various illicit financial flow activities (IFF), such as tax evasion, smuggling, illegal trade in goods or services. This report focuses on mis-invoicing on trade related to IFF in which there is a discrepancy between trade records between countries (trade mis-invoicing). Refer to trade mis-invoicing concept developed by Bhagwati (1967), this study focuses on the potential loss of state revenue from the trade mis-invoicing scenario in the form of under-invoicing exports and over-invoicing imports. Applying this method, this study limits to identify the illicit financial flow based on the invoice records, however the money movement is difficult to be precisely tracked.

This study examines the differences in the export and import commodities values executed by Indonesia and partner countries. In analyzing illicit financial flows, this study uses trade data obtained from the UN Comtrade Database using a 6-digit Harmonized System (HS) classification for the period 2011 to 2021. The commodities are fisheries (Code 03) and coal (Code 2701 – 2708).

Prior to this, PRAKARSA had conducted research on illicit financial flows. The first research is an analysis of illicit financial flows in trade between countries (2016) and the second is an analysis of the six leading export commodities (2019). This year's study as PRAKARSA's third study was conducted to continue research in 2019 by more specifically analyzing the two sectors that have the most potential for embezzlement, the fisheries and coal sectors.

This study calculates the estimated amount of illicit financial flows using a method developed by Global Financial Integrity (GFI), namely Gross Excluding Reversal (GER). Meanwhile, the

calculation of tax revenue potential loss is based on the estimated value in the equation referring to the study of Quraeshi and Mahmood (2016). The calculation of the potential loss of non-tax revenue refers to GFI's research (2018a; and 2018b) by estimating from the royalty revenue side.

Based on the results of this study, **the state has lost revenue for 10 years worth USD 5.58 billion or IDR 74 trillion**, equivalent to 3.7 percent of state revenue in 2021.

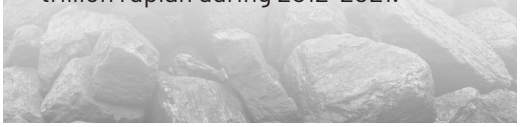
This loss is based on 4 tax sources, namely VAT, Royalties, Income Tax Article 22 (2.5%) and PPH (1.5%). Through the trade mis-invoicing method from two sides, exports and imports, we found that country and commodity sources that have undergone the greatest embezzlement.

In the fisheries sector

the largest embezzlement occurred in the United States and China. Commodities with the largest embezzlement are prawns (30617) and mackerel (30354) which values are relatively significant. In total, the fisheries sector and its derivatives have embezzled US$9.67 billion and potential state losses of US$200 million or IDR2.7 trillion during 2012-2021.

In the coal sector

the largest embezzlement occurred with trading partners India, South Korea, Netherlands, and Australia. The coal commodity with the largest illicit occurs in the *baruea bitominous* commodity (270112) and coal types other than anthracite and bitominous (270119). From the coal and its derivatives sector, the state experienced a total embezzlement of US$135.5 billion with a potential loss of state revenue of US$5.3 billion or 70.3 trillion rupiah during 2012-2021.

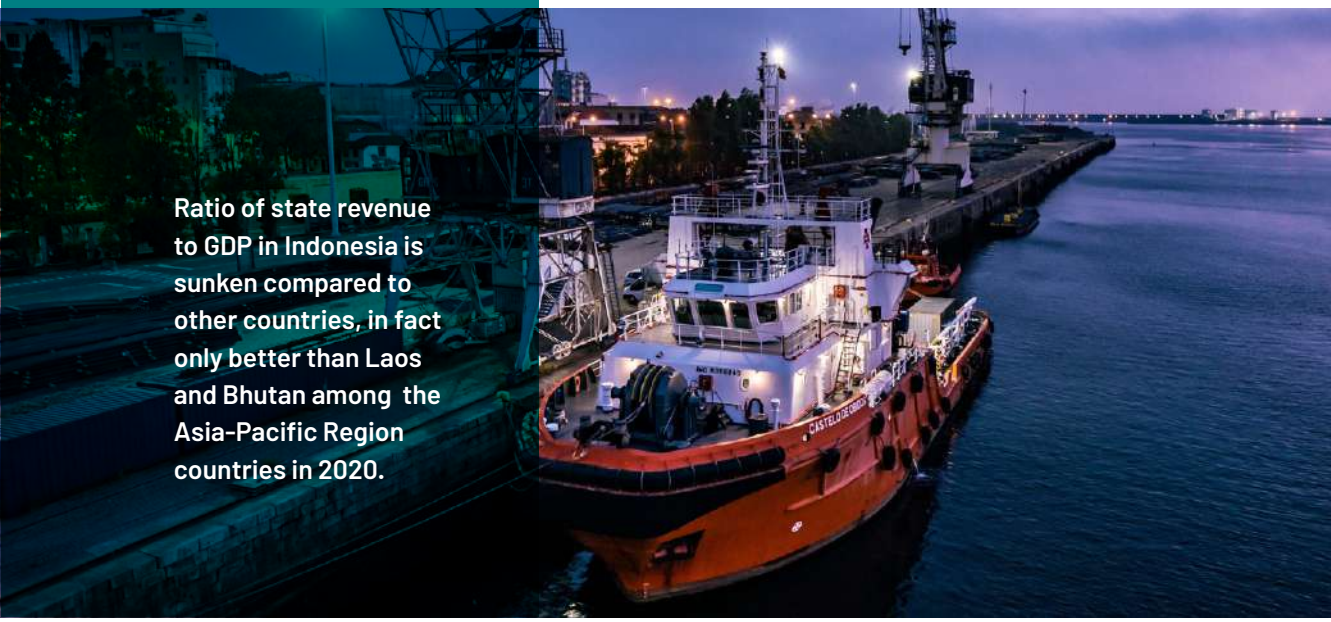


Based on the results of this study, it is recommended that the government should play an active role in the integration of information and exchange of export and import data through the Automatic Exchange of Information (AEOI) mechanism to minimize mis-invoicing and transfer pricing practices. Moreover, the government is required to improve formal and material compliance monitoring of tax obligations by means of self-assessment, especially in sectors that are vulnerable to IFF practices. The government is also expected to collaborate and cooperate between ministries/agencies both for harmonization of regulations, data exchange, database formation, and field practice to reduce the occurrence of IFF practices, especially in the mining and fisheries sector. At the end, digitizing business processes from upstream and downstream sectors that are vulnerable to IFF practices is compulsory to increase economic efficiency so that IFF practices can be minimized.

CHAPTER 1

INTRODUCTION

Optimization of State Revenue Challenges



Ratio of state revenue to GDP in Indonesia is sunken compared to other countries, in fact only better than Laos and Bhutan among the Asia-Pacific Region countries in 2020.

1.1 Background

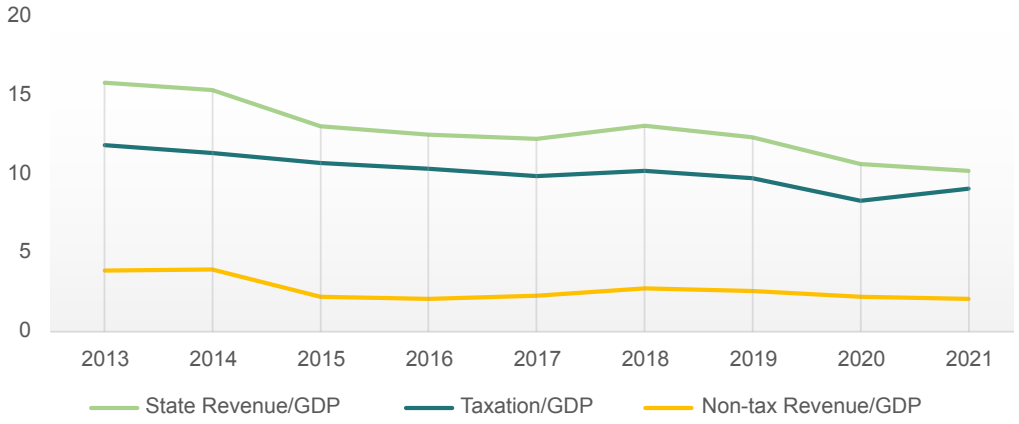
In 2021, the realization of Indonesia's state revenue exceeded the target of the 2021 State Budget Law. According to a release from the Ministry of Finance (2022), the realization of state revenue in 2021 was recorded at IDR 2,011.3 trillion or 15.35 percent higher than the target. From the aspect of tax revenue, Indonesia's achievements in 2021 have returned to the pre-pandemic level in 2019 with a realization of IDR 1,547.8 trillion, 7.15 percent higher than the 2021 State Budget target.

In a crisis impacted by a pandemic, revenue realization that exceeded the target for the first time in the last 12 years shall be addressed in a cautious way, considering that state spending was recorded to have exceeded the target and required other sources of financing. State spending realization reached IDR 2,784.4 trillion or 1.32 percent above the 2021 spending target. Based on this revenue and spending realization, the 2021 State Budget deficit of IDR 775.1 trillion is used to increase subsidies and capital spending on national strategic projects in order to encourage economic growth and people's welfare during the pandemic.

Although there was a large budget deficit in nominal terms, this recorded deficeit is still lower than the 2021 State Budget target. According to the LKPP report (2022), the budget deficit reached 4.57 percent of the Gross Domestic Product (GDP) in which the 2021 State Budget target was set at 5, 7 percent of GDP. Meanwhile, in 2023, the government through PERPU 1/2020 (regulations in lieu of law) has determined that the fiscal deficit will no longer exceed 3 percent.

In addition to the fiscal deficit commitment, the Indonesian government is overshadowed by challenges concerning the low ratio of tax revenues to GDP. As one of the state's tax performance, Indonesia's tax ratio in 2021 is 9.11 percent of GDP, a slight increase compared to the previous year Ministry of Finance (2022). However, in general, the ratio of state revenues has decreased compared to the previous year (see Graph 1.1).

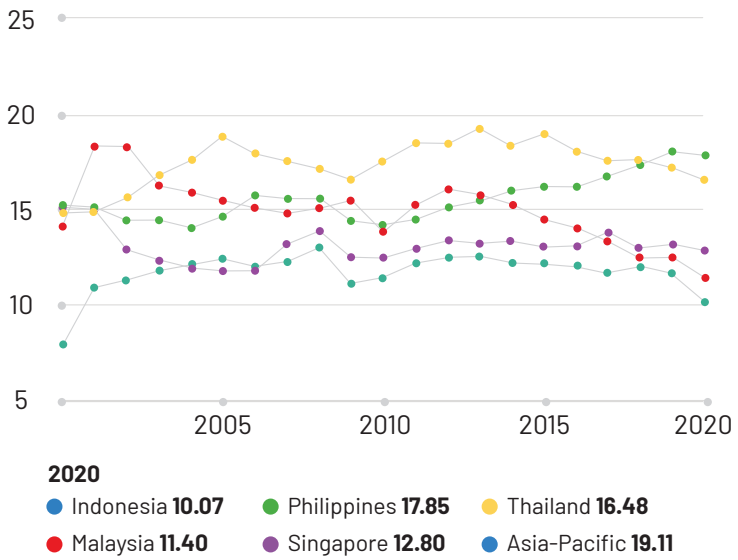
Graph 1. 1 Proportion of Government Revenue Realization on Gross Domestic Product (percentage)



Source: BPS, 2022 (Central Bureau of Statistics)

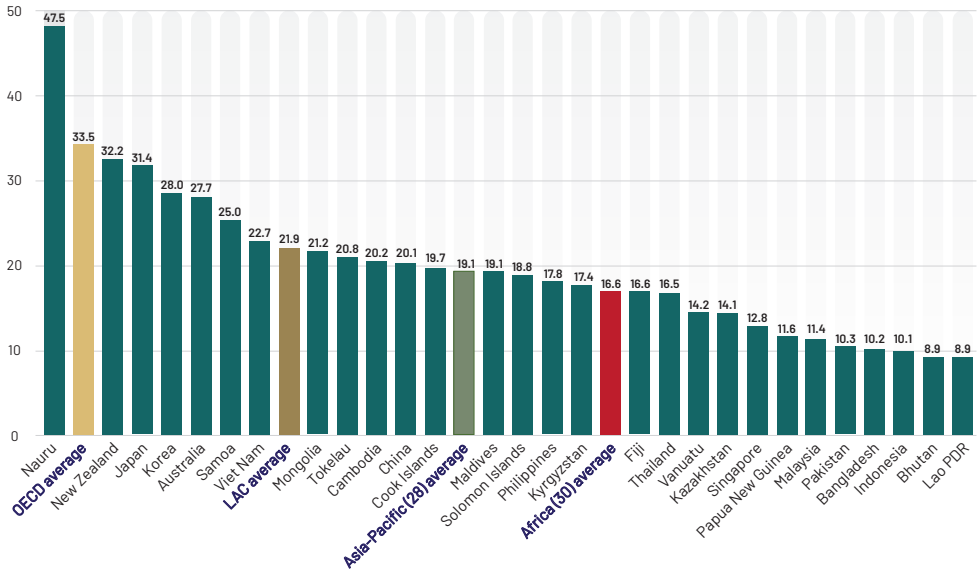
Graph 1.1 shows that the proportion of Indonesian government revenue realization to GDP is on a decreasing trend, even though revenue from taxation realization has increased. According to BPS data, the ratio of realized state revenues is 10.23 percent of Indonesia's GDP in 2021. This ratio is relatively low compared to other countries in the ASEAN and Asia-Pacific regions.

Graph 1. 2 Ratio of State Revenue to GDP in 5 ASEAN Countries, 2000-2020



Source: Bank Dunia, 2022

Graph 1. 3 Ratio of State Revenue to GDP in Asia-Pacific Region 2020



Source: OECD, 2022

Graphs 1.2 and 1.3 show that the ratio of state revenue to GDP in Indonesia is sunken compared to other countries, in fact only better than Laos and Bhutan among the Asia-Pacific Region countries in 2020. The ratio of revenues for Asia-Pacific countries averages

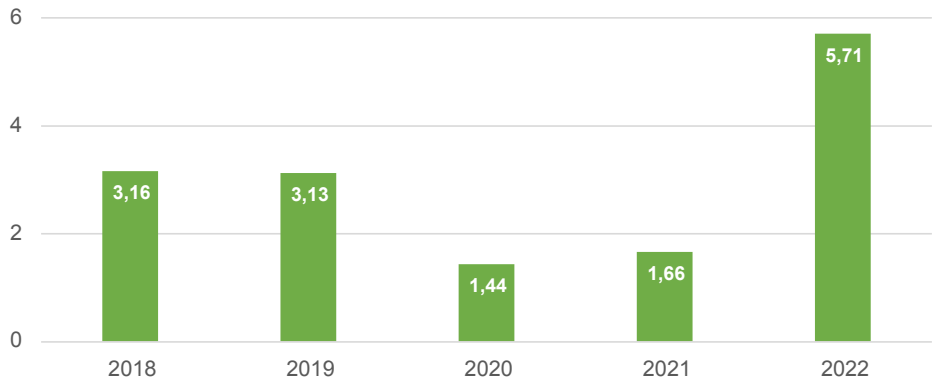
around 19.1 percent of GDP and developed countries members of the OECD reach 33.5 percent. The average ratio in the low-income country group has even reached 14.3 percent, higher than Indonesia which only reaches 10.1 percent (PRAKARSA, 2018)

The state revenues ratios which tend to be low is cause by macro and micro factors. These macro factors include tax rates, per capita income levels, and optimization extent of good governance. Meanwhile, micro factors include aspects of the level of formal compliance, material, and the perception of the taxpayer. In fact, the higher the ratio of revenues, through the proxy of government spending, which also increases, will increasingly provide higher economic growth for the country.

The country's simultaneous growth cannot be separated from the aspect of strong government spending and confidence. In a crisis, Indonesia's economic growth in the third quarter of 2022 was 5.3 percent (Ministry of Finance, 2022), relatively better than ADB's prediction of only 4.9 percent in 2022 (ADB, 2022). This revenue deficit condition and high economic growth explicitly reflects the state financing high dependence on debt which is classified as vulnerable.

In view of the current global recession, although it is considered not to have significant of a negative impact on the domestic economy, Indonesia is still at risk of experiencing a gejala soft landing tendency which is characterized by a relatively high increase in inflation (Kontan, 2022).

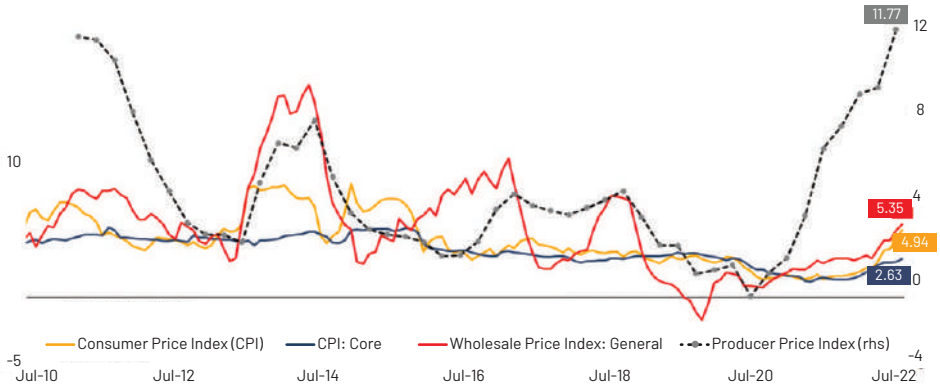
Graph 1.4 Indonesia's Inflation 2018-2022 (yoy Oktober) (2018=100)



Source: processed from BPS (2022) (Central Bureau of Statistics)

Based on graph 1.4 above, Indonesia's inflation in October 2022 a year on year (yoy) basis reached 5.71 percent and was the highest inflation in the last 5 years. This inflation occurred partly due to the increase in fuel prices, which caused an increase in inflation in the transportation group up to 8.88 percent (BPS (Central Bureau of Statistics), 2022), the largest among other sub-commodities. The increase in the transportation sector also triggered another increase in the food and non-food subsectors.

Graph 1.5 Indonesian Producer, Consumer and Wholesale Price Index (Quarterly), 2010-2022



Source: BPS dan IFGP

Based on graph 1.5 above, the producer price component experienced the highest price increase pressure (inflation). This implies that there are indications that manufacturers need several business strategies to minimize risks and increase business profits. Meanwhile, inflation at the consumer level relatively did not increase too drastically due to a few interventions and incentives from the government.

The global recession pressure and inflation have led to an increase in interest rates and reduced Indonesians ability on goods purchasing. At least by December 2022, Bank Indonesia has raised its interest rate to 5.5 percent (BI, 2022). Inflation and high interest rates will affect consumption patterns aggregate and government intervention through higher state spending.

Taking the condition of state revenues and future economic challenges into the account, the Indonesian government needs to optimize the potential for revenue, one of which is from illicit financial flows. According to the World Bank (WB, 2017) illicit financial flows are money that is obtained, transferred, or used illegally across national borders. This activity is considered to be harmful to the country economy and development as it is similar to money laundering, bribery, tax evasion or hiding the committed crime so that they are not detected (OECD, 2014).

Although there are less recent studies and macro data regarding illicit financial flows in Indonesia, in 2016, Global Financial Integrity (GFI) estimated that Indonesia lost revenue of USD 6.5 billion or IDR 87.3 trillion due to one practice of illicit financial flows (GFI, 2021). This value is relatively huge considering that it is equivalent to 6.8 percent of state revenue in that year. The report also mentioned that Indonesia is included in the 10 developing countries with the highest practice of illicit financial flows.

For countries rich in natural resources such as Indonesia, the loss of potential income due to illicit financial flow practices is the difference between countries utilizing their abundant

natural resources for the benefit of society or allow it to be exploited and owned by a few people (GFI, 2021). The practice of profit-shifting has also been a major contributor to the wealth outflow from developing to developed economy. Indonesia's extractive industry is also considered vulnerable to illicit financial flows because of its governance – which directly and indirectly accommodates rent-seeking and influences these illicit financial flows (Oley & Adi, 2018). Moreover, one of the shady current practices, such as transfer pricing by several companies, is still being frequently committed, consequently resulted to lower state tax revenues.

Thus far, Indonesia has at least lost many potential revenues, particularly from natural resource commodities. Our previous study (PRAKARSA, 2019) stated that from 1989 to 2017, illicit financial flows from six export commodities namely coal, copper, palm oil, rubber, coffee, and crustacean fisheries reached US$11.1 billion. Coal was the commodity with the highest loss of USD 5.32 billion. Meanwhile, the fisheries sector is still considered to have many leaks by the Ministry of Marine Affairs and Fisheries Republic of Indonesia (KKP) (Berita Satu, 2013) even since 2013. Ministry of Marine Affairs and Fisheries Republic of Indonesia (KKP) claims the fisheries sector has experienced losses worth 2,000 trillion rupiah (CNBC Indonesia, 2018).

Therefore, it is necessary to conduct a study regarding calculations and detailed information correspond to the illicit financial flows of natural resources, especially the fisheries and coal sectors in Indonesia. It is expected that this study will cover more than describing the revenue loss magnitude from the fishery and coal trade, but also provide alternative real solutions to the government and business people regarding illicit financial flows.

Research Gaps and Limitations

As of this day, PRAKARSA has not found a study on the potential revenue lost caused by the practice of illicit financial flows in the fishery and coal commodities trading in Indonesia. The previous study (PRAKARSA, 2019) only calculated illicit financial flows in Indonesia, limited to the aggregate level, not yet detailing on the potential disaggregated revenues.

Considering this condition, PRAKARSA took the initiative to use the Global Financial Integrity (GFI) approach in this study to focus on the problem of illicit financial flows caused by trade mis-invoicing in two sectors, namely fisheries and coal in Indonesia. The findings of this study are expected to contribute and be useful in terms of designing strategies to tackle tax avoidance practices and tax leakage in Indonesia, especially in the fisheries and coal mining sectors. It is important to formulate a comprehensive policy from monitoring to prevention to make it more effective.

The scope of this research is limited to the analysis of trade data (numerical) from various relevant sources. In this study, we did not specifically analyze policies or trade agreements between countries/regional trading blocs which might have influence on price regulation

and trade logistics between countries. In addition, this study does not analyze business processes in detail for each commodity.

1.2 Research Question

Based on the background and research gaps above, this study has the following questions:

1. How much is the loss potential for the state from illicit financial flows in the fisheries and coal sub-sectors?
2. What are the sub-sectors in fisheries and coal industry that contribute significantly to illicit financial flows in Indonesia?
3. What are the indications of transfer pricing in the fisheries and coal sub-sectors in Indonesia?

1.3 Research Objectives

The objectives of this study are:

1. To understand the potential loss to the state that is lost from the existence of illicit financial flows in the fisheries and coal sub-sectors
2. To find out the sub-sectors in fisheries and coal that contribute significantly to illicit financial flows in Indonesia
3. To be aware of the indications of transfer pricing in the Indonesian fisheries and coal sub-sectors.

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CHAPTER 2

LITERATURE REVIEW

Illicit Financial Flows and Its Practices in Several Countries

Although there is no standard definition regarding shadow economy, several previous studies tried to define it by classifying the types of activities included in it.

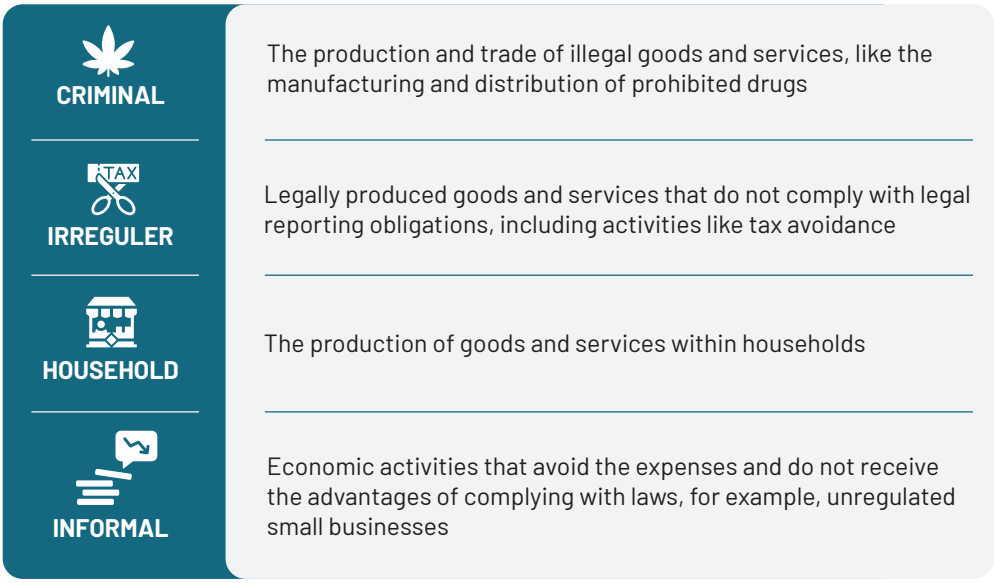
2.1 Discussion of Unobservable Economic Activity

Comprehending the country's economic level frequently refers to official statistics on output, trade, and investment. However, apart from the economic activities recorded in official statistics, there are other activities that become supports and have an economic impact, known as the shadow economy (Fleming, et al. 2000). Schneider and Enste (2000), synthesize the commonly used definition of shadow economy, namely all economic activities that are not registered but contribute to the officially calculated (or observed) gross national product.

Although there is no standard definition regarding shadow economy, several previous studies tried to define it by classifying the types of activities included in it. According to Fleming et al (2000), the shadow economy can be categorized into four components, namely the criminal, irregular, household and informal sectors (see figure x.x). Meanwhile, Schneider (2012), summarized the literature discussion on shadow economy definitionn into (i) illegal activities with monetary transactions (such as drug trafficking and stolen goods) and non-monetary transactions (illegal bartering of goods and services), and (ii)

legal activities with the aim of avoiding taxes in the form of tax evasion and tax avoidance with monetary transactions (through non-reporting of income, wealth, benefit provision and non-financial compensation for workers) and non-monetary transactions (barter of legal goods and services, and independent work or with the help of others).

Graph 2.1 Shadow Economy Sector Categories

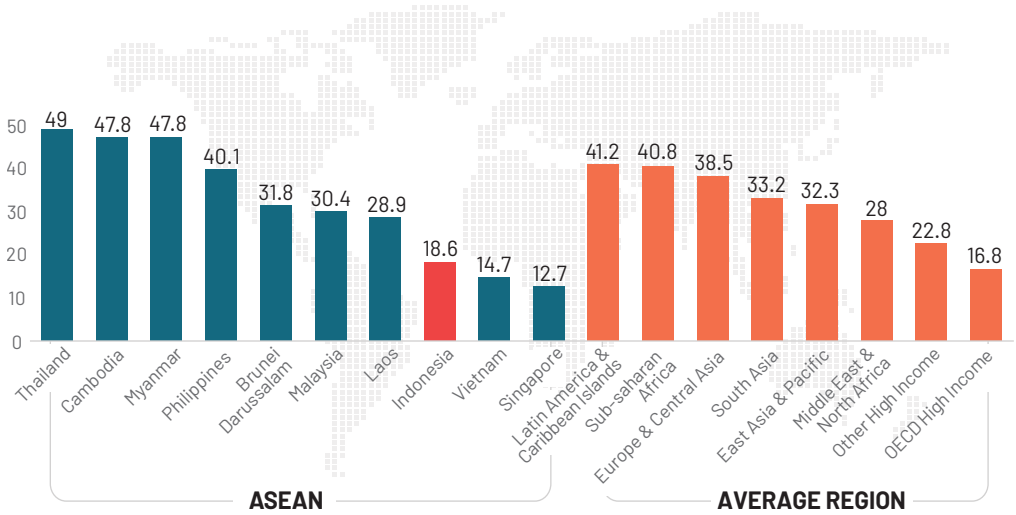


Source: Fleming et al., 2000

As previously explained, economic activities in the shadow economy are not recorded in official statistics, so they do not reflect the actual state of the economy. This condition is potentially to result on inadvisable monetary and fiscal policy responses. In addition, the existence and growth of the shadow economy can be a sign that economic policies still have loopholes, such as tax policies and burdening or oppressive regulation. In regards to social welfare aspects, inaccurate national statistics lead to inefficiencies in program implementation, particularly regards to social security for informal sector jobs. Furthermore, a shadow economy that avoids tax imposition reduces the state revenue potential which in turn is necessary for the source of funding to provide public goods. In addition, economic activities that are not officially recorded, especially legalized sectors, can continue to provide livelihoods for the people, with dominant conditions in developing countries. Consequently, efforts are needed to complete statistical calculations of the national economy by estimating activities from the shadow economy so that economic policy making can be more precise (Fleming, et al., 2020). Shadow economy measurements can conducted using a variety of different methods, but frequently results in different estimation (for countries that are the objects of many studies) (Fleming, et al., 2020). Shadow economy measurements in Indonesia has been carried out in the Schneider (2012)

which observes the magnitude across countries, so that the speculation can be compared. Within the scope of the ASEAN region, the value of the shadow economy in Indonesia is relatively lower and only higher compared to Vietnam and Singapore. When compared with the average group of countries by region, the magnitude of Indonesia's shadow economy is only higher than the average high-income country in the OECD. However, when compared with a simple calculation of the total value of Indonesia's GDP, the absolute value of Indonesia's shadow economy has the potential to be massive.

Graph 2.2 Shadow Economy Number to Total GDP in 2005



Source: Recomposition from Schneider et al., 2010

As this study focuses on calculating the potential state revenue loss due to illicit financial flows that are part of shadow economy activities, therefore the size of the shadow economy sector in Indonesia will show the estimated potential lost income amount due to avoiding the tax imposition or other regulations.

2.2 Handling IFF as a Global Commitment in Sustainable Development Goals (SDGs)

As a manifestation of the government's political commitment to implement the Sustainable Development Goals (SDGs) agenda, President Joko Widodo has signed SDGs Presidential Regulation (Perpres) Number 59 of 2017 concerning Implementation of Achieving Sustainable Development Goals. Globally, the Indonesian Governmenr has shown its commitment to contribute for achieving SDGs, by submitting a Voluntary National report (VNR) every 2 years at the High-Level Political Forum (HLPF).

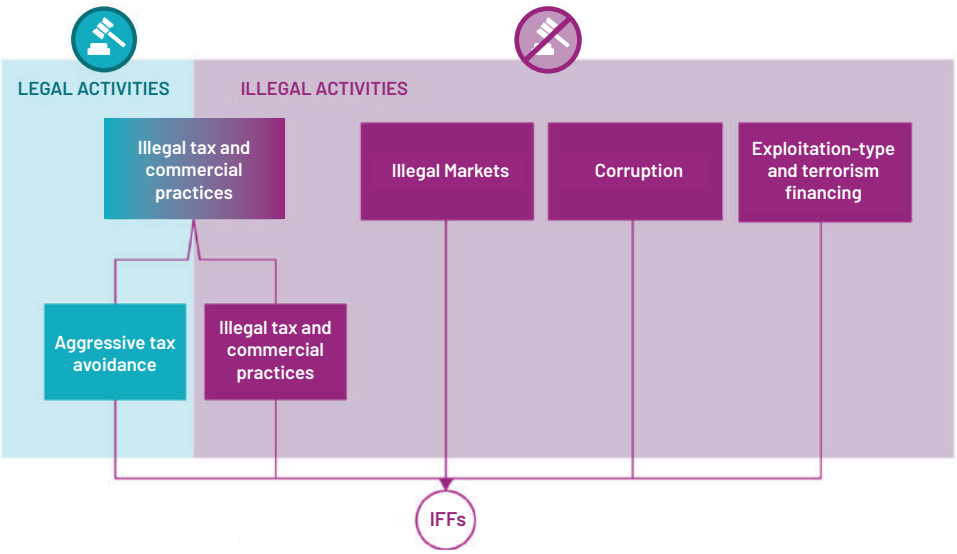
One of the goals in the SDGs, namely Goal 16, contains peace, justice, and strong institutions. This goal seeks to strengthen inclusive and peaceful societies for sustainable

development, provide access to justice for all, and build effective, accountable, and inclusive institutions on all levels (Bappenas, n.d). Target 16.4 explicitly states that by 2030 to significantly reduce the flow of illicit funds and weapons, strengthen the recovery and return of stolen assets and counter all forms of organized crime. The measured indicator of 16.4.1 is the total value of illicit funds flowing into and out of the country (in USD)(Bappenas, n.d). However, in BPS **(Central Bureau of Statistics)** document (2021) regarding indicators for Indonesia's 2021 sustainable development goals, there are no reports or measurements showing Indonesia's progress in achieving indicator 16.4.1.

In general, the phenomenon of illicit financial flows is defined as an amount of money that is obtained, transferred or used illegally (Baker, 2005). The definition conveyed by Baker (2005) was subsequently adopted by various world organizations such as the United Nations (UN), the World Bank and the Organization for Economic Co-operation and Development (OECD).

UNSTATS (2022), in the metadata document specifically describes the definitions, indicators and classification of illicit financial flows (IFF). Indicator 16.4.1 measures the total value of inward and outward illicit financial flows (IFF) in United States dollars (USD). IFF is defined as "financial flows originating, transferring, or using illegally, which represent an exchange of value and cross-national borders".

Graph 2.3 Activities of IFF based on SDGs 16.4.1



Source: UNSTATS, 2022

Based on the picture above (UNSTATS, 2022).

There are four types of activities that can be an indication of the occurrence of IFF:

Tax evasion in the private sector: This case includes the practice of legal tax avoidance committed by legal entities and individual levels who manipulate profits and income to reduce the tax burden to be borne.

IFF of corruption practices: The United Nations Convention against Corruption (UNCAC) identifies various acts that are considered corrupt practices, namely bribery, embezzlement, abuse of functions, trading in influence, attempt to enrich oneself illegally, and other acts of corruption. IFF related to corruption occurs when the economic returns from these actions, directly or indirectly, generate cross-border flows and when financial assets are transferred across borders to commit these crimes.

Exploitation activities, crimes and terrorism financing: Exploitation activities are non-productive activities requiring forced, involuntary and illegal transfer of economic resources between the two involved actors. The terrorism and crimes financing are voluntary transfers of funds between two actors who conducted illegal activities. Examples of exploitation acts are sexual exploitation, theft, blackmailing, and kidnapping, in which the related financial flows across national boundaries, IFF occurs.

IFF of illegal markets: This includes illegal trade in goods and services that occur when the associated financial flows cross borders. The focus is criminal acts in which revenue is generated through the illegal exchange (trade) of goods or services. Such processes frequently involve criminal organization extent that aims to make profits. This includes all types of goods trade, such as drugs and firearms, and services, as well as immigrant trafficking. The IFF arises from transnational trade in illegal goods and services, as well as from cross-border illegal profits and activities.

2.3 Export-Import Trade Transaction Systematization

Trade between countries is generally known as export and import activities. Based on Republic of Indonesia Constitution Number 7 of 2014, concerning Trade, export activities are defined as activities of removing goods/services from customs areas, while imports are activities of bringing goods into customs areas. These export and import activities are generally executed through conventional logistics routes such as waterways, land and air.

On international trade transactions there are registration records in both exports and imports. These records exist in two countries that carry out trade transactions of goods and services. This transaction data can be accessed on publicly available official websites such as the UN Comtrade page, a page that is officially managed by the UN. On this page, bilateral trade in almost all countries has been recorded in series for the last decades. As an illustration, if country A exports goods X to country B, the transaction is recorded with details of the time period, area, nominal value, net weight, and commodity code of the traded goods. In country B, it is also recorded that goods X are imported from country A, the same detailed data is recorded on this page.

In current trade transactions, there are several terms of international agreement regarding trade administration and payments so that transactions can be structured and well standardized. Two common terms and standards that are important to know are the Harmonized System (HS) and the Standard International Trade Classification (SITC). HS, which is sometimes also referred to as the Harmonized Commodity Description and Coding System, is a list of goods classification made systematically to facilitate withdrawals, transactions, transportation, and statistics that have been improved from the previous classification (Ministry of Trade, n.d).

HS was set in 1986 by a study group from the Customs Cooperation Council (now known as the World Customs Organization) and legitimized at the HS convention signed by seventy countries, mostly European countries, nowadays almost all countries have approved it, including Indonesia which validated it through Presidential Decree no. 35 of 1993 (Ministry of Trade, n.d). Currently, HS is a product classification method that is accepted internationally in all countries, including Indonesia. In Indonesia's balance of payments report, the main non-oil and gas commodity exports are classified according to HS.

HS objectives includes providing uniformity in the systematic classification of lists of goods, facilitating data collection and statistical analysis of world trade and providing official international system for coding, explaining, and classifying goods for trade purposes (Ministry of Trade, nd). HS has a six-digit number for classification, each country that has signed the HS convention or contracting party can develop the six-digit number classification to be more specific to be aligned with their respective government policies yet keep it corresponds to the six-digit HS provisions. Arrangement of the HS Code can use the sub-headings (6-digits), AHTN sub-headings (8-digits) and tariff headings (10-digits) to

know the cost of goods that will enter Indonesia. In Indonesia, the HS classification system uses the 10-digit numbering system in the Indonesian Import Duty Tariff Book (Buku Tarif Bea Masuk Indonesia, BTBMI) (Ministry of Trade, n.d).

Meanwhile, the Standard International Trade Classification (SITC) is a product classification system developed by the United Nations (UN) in 1962 (Standard International Trade Classification Revision 4, UN Secretariat, 2016). SITC was made to aim classifying traded products not only based on the material and physical properties of the product but also to point the processing stage and the product economic function in order to facilitate economic analysis.

The main difference between SITC and HS is that SITC focuses more on the product economic function at various processing stage while, HS is more focused on the precise and systematic breakdown of each product category. According to SITC revision 4, product classification according to SITC reflects production materials, product processing stages, product use in the market, products essentials in world trade, and technological changes.

In Indonesia's balance of payments report, non-oil and gas exports by group of goods and imports of non-oil and gas commodities are classified according to SITC. In this study, the 6-digit HS code will be used as the main reference in calculating illicit financial flows from the export-import trade in Indonesia.

2.4 Trade Leaks and Illicit Financial Flows

In simple terms, statistical or data differences between export-import trade records, which have been adjusted for logistics and insurance costs, is leakage or mis-invoicing in trade (Tandon and Rao, 2017). The imposition and difference in logistics rates are significant factors causing this phenomenon. However, along with its development, an understanding trade leakage concept cannot be separated from the problem of capital flight and illicit financial flows due to changes in economic and political phenomena, as well as anticipation of responses from businesmen.

An illustration of this trade leakage can be seen, for example, if Indonesia sent goods A in period 1 to Japan with a total of 100 pieces with a value of 100 thousand and Japan received 80 items with a value of 80 thousand. The record of this higher export value is a phenomenon of over-invoicing where Indonesia recorded 100 thousand incoming money instead of 80 thousand only. On the other hand, Indonesia can also experience the opposite, even with the same goods and period but with different business counterparty. For example, if Indonesia sent goods A in period 2 to Japan in a total of 80 pieces with a value of 80 thousand and when it arrived in Japan there were 100 pieces with a value of 100 thousand. This is what happened was under-invoicing where Indonesia should have received 100 thousand but only received 80 thousand. In this second illustration, simple calculations do not include assumptions on logistics costs, shipping insurance, and others.

In general, the literature review reveals three main categories of reasons why a firm engages in trade leakage. The three main aspects are economic motives, avoiding currency control and authority, both taxes and customs, and minimizing administrative burdens (United Nations Conference on Trade and Development/UNCTAD, 2016). Economic motives are encouraged to maximize profits by avoiding tariffs and/or taking advantage of subsidies on exports. The second motive is to avoid having control over the currency. In this regard, the existence of distortions over the exchange rate and foreign exchange controls causes black markets to be exploited for corporate profits. Furthermore, the third motive which can reflect import and export smuggling is driven by the motive to avoid bureaucratic obstacles. Table 2.1 shows some of the company's motives for making business decisions that can lead to trade leakage.

Table 2.1 Motive for Trade Leaks

Trading Transactions	*Over-invoicing*	*Under-Invoicing*
Export	Obtaining Export Incentives	Capital flight, get tax incentives on exports
Import	Capital Flight, lowered domestic profits	Tax avoidance on imports

Source: Dornbuch dan Kuenzler, 1993 dan World Custom Organization, 2018

Based on the table above it can be seen that every transaction motive for trade leakage that exists leads to economic motives. Assuming the action was committed intentionally, the company or trading and the transaction actors involved will get a surplus of income or profit from the traded transactions. Although the cases that occur are caused by accident due to technical and/or administrative problems, there shall be parties who benefit and lose more.

Trade leaks result in a flow of money in and out of a country. Inflows of money occur when there is an over-invoicing condition in which a country records additional incoming money due to excess billing value. On the other hand, cash outflows occur under conditions of under-invoicing where a country loses because bills are below the actual value of the goods received.

To estimate the amount of illicit financial flows, this study uses the trade mis-invoicing method or the discrepancy or error in trade invoices recordings. This study uses two approaches, export and import mis-invoicing.

Table 2.2 Trade Mis-invoicing Logic

Export Mis-invoicing	
Under-Invoicing Ekspor	Export < Import realization in the related countries
Over-invoicing Ekspor	Export > Import realization in the related countries
Import Mis-invoicing	
Import Under-Invoicing	Import < Export realization in the related countries
Import Over-Invoicing Impor	Import > Export realization in the related countries

Source: research findings

Export mis-invoicing occurs in two scenarios, namely under-invoicing and over-invoicing. Export under-inv oicing occurs when recorded exports are less than actual imports of goods in the related country. Export over-invoicing occurs when recorded exports are greater than actual imports of goods in the related country. Meanwhile, import mis-invoicing also occurs in two scenarios, namely under-invoicing and over-invoicing. Import under-invoicing occurs when recorded imports are less than actual exports of goods from the related country. Import over-invoicing occurs when recorded imports are greater than actual exports of goods from the related country. This research will discuss two matters of mis-invoicing in export and import activities.

Besides the general definition of trade and the potential for trade leakage occurance, we also need to understand that every distribution of goods/services, especially in international trade (export-import), there are trade logistics costs required to be borne by both the seller (exporter) and/or the buyer (importer). Logistics costs for shipping goods in international trade are commonly known as Cost, Insurance, and Freight (CIF) that are shipping insurance, and cargo costs.

If applying the CIF method, the exporter or seller of goods must bear shipping costs and insurance premiums until the goods arrive at the port closest to the importer or buyer. In Indonesia's balance of payments report, shipping costs using the CIF method are non-oil and gas imports by a group of goods and main country of origin as well as imports of main non-oil and gas commodities. An illustrative example is as follows:

One company in country A sells nickel to a company in country B for 1100 USD/bu (multiplied by the total bushels purchased). It means company B buys the entire price of the goods and shipping costs until the goods arrive at the nearest port from company B.

Another term for charging is Free on Board or Freight on Board (FOB) where the exporter shall only the cost of shipping the goods to the nearest port or port from the warehouse. This means the costs are borne by the importer when the goods are already on board. In Indonesia's balance of payments report, the method of charging shipping costs using FOB is for oil imports and gas exports. An illustrative example is as follows:

A company in country A sells nickel to a company in country B for 950 USD/bu. This means that company B only buys nickel ore for USD 950 and it is cheaper than the previous example, but the shipping costs over the sea are the responsibility of company B.

In illustrative value, the price paid by company B on the FOB method looks cheaper than the CIF example, but the money spent could be the same or even more expensive than the CIF method. This is because the cost of insurance premiums under the FOB method has not been borne by companies in country A. Both methods consider shipping costs from one location to another. Generally, these logistics costs will vary where the farther the country is, the more expensive it gets. In addition to the distance, the weight of each item is also taken into account

2.5 State Revenue Potential Loss from Tax and Non-Tax

State revenue is the right of the central government recognized as an addition to net worth. State revenue consists of three derivatives, which are tax revenue, Non-Tax State Revenue (PNBP), and receipt of grants. Based on the table below we can see the components included in state revenue.

Table 2. 3 State Financial Revenue Source

I. Income
I.I. Tax Revenue
Domestic Tax
• Income Tax
• Value Added Tax and Sales Tax on Luxury Goods
• Property Tax
• Land and Building Rights Acquisition Fees

• Tax
• Other Taxes
International Trade Tax
• Import Duty
• Export Tax
I.II. Non-Tax Revenue
Revenue from Natural Resources (SDA)
Income from Separated National Wealth
Other Non-Tax Revenue
Revenue of the Public Service Agency
II. Grant

Source: Kemenkeu (Ministry of Finance), 2022

Refers to the above table, the potential loss of income or receipts as a result of trade leakage practices due to illicit financial flows can be analyzed through proxies for import duties and import taxes included in the international trade tax component. Moreover, if we intend to calculate the potential income from extractive natural resource commodities, the application of natural resource revenue tariffs can be a potential addition for state revenue. Using the GFI method, we are able estimate the loss to the state for the loss of potential revenue for coal and fishery commodities from existing statistical records.

Terminologically, if the origin country conducts exporting and value of imported goods entering the destination country is greater than that recorded in the export records, this is called under-invoicing. The difference should be the revenue of the country of origin of the goods (exporter). For example, Indonesia exported goods to Japan with a value of US$80 thousand, but when they entered Japan, the realized value was recorded at US$100 thousand. Using the CIF assumption of 10 percent of the export value, the ideal value of imported goods is USD 88 thousand. We can observe that there is an item value of 12 thousand USD that was not recorded as being sent to Japan. This means that Indonesia as an exporter suffers two losses, namely from potential export taxes and natural resource revenues if the goods are extractive natural resources commodities.

The opposite example, if Indonesia exports goods to Japan with a value of USD 100 thousand, then assuming a CIF of 10 percent, the carrying value entering Japan would ideally be USD 110 thousand. In reality, from the record value of incoming goods, was recorded at only USD 80 thousand. Then there is a difference of 30 thousand US dollars which is called over-invoicing where the value is considered to have come from an unclear source. Japan

suffered losses due to practices such as this example. However, Indonesia may be said to have suffered a loss if the value of the incoming goods does not originate from pure trade but it is disguised as illegal business practices and/or other forms of unlawful practices.

2.6 IFF Impact on the Country's Economy

All literature discussing the issue of Illicit Financial Flow (IFF) states that this practice harms the country's economy in general. The World Bank (2017) states that IFF reduces domestic resources and state revenues required to fund poverty alleviation programs and infrastructure in developing countries. IFF is also a signal of other problems such as the the interests preference of a few parties and the lack of state transparency and accountability.

Studies in West Africa state that IFF has significant negative impact on state revenues, as well as other indicators such as per capita income, corruption, and governance (Thiao, 2021). This is aligned with a study (Dickinson, 2014) which mentions IFF funds as financial crimes such as money laundering, corruption, and tax evasion that damage all countries' economies, especially developing countries.

In terms of development and economic growth, IFF is also considered to reduce and obstruct country development. Studies (Dickinson, 2014) state that IFF reduces domestic consumption and investment, both public and private. The direct implication is that the state will have less infrastructure such as hospitals, schools, public officials (ASN), roads, and bridges because it does not have sufficient funds.

In the aspect of exports themselves, trade leakages also have the potential to cause a loss of government revenue from export tax credits issued at an increased value when there is export growth (UNCTAD, 2016). Furthermore, a vital dimension of the indirect consequence of trade leakage is the unfair and equitable distribution of international trade profits. These indirect costs can be in the form of additional costs that have an impact on these activities. These social costs can be reflected in the deviation of the most productive resources allocation and result to social inefficiencies in the allocation and distribution of resources (GFI, 2018).

Even for developed countries, the problem of trade leakage is also likely to occur if productive capacity is limited. The social costs of trade leakage can undermine sustainable growth in developed countries and worsen inequalities in the distribution of income and wealth. In addition, these social costs can also hinder progress in developed countries for other important social aspects such as poverty alleviation.

Generally, the revenue potential loss caused by trade leakage results in damage to the overall economic structure, especially in developing countries. This loss can be seen from the income and wealth transfer from domestic income abroad, usually to high-income countries. If these funds remain in a country, they can be maximized for investment, consumption, or savings. If these funds are eventually transferred abroad, most of these

productive funds will be lost. For low-income countries, the impact on lost financial flows should be able to move the domestic economy significantly.

2.7 IFF Practices in Several Countries

2.7.1 IFF Practice in Developed Countries

One of the countries where the practice of IFF was found is the United States. The United States is the country with the largest GDP in the world with a GDP value of up to USD 23 trillion in 2021 (World Bank, 2021). United States exports reached USD 1.75 trillion in goods (UN Comtrade, 2021). American imports reached USD 2.93 trillion in goods (UN Comtrade, 2021). By that amount, the trade deficit for goods reached more than USD 1 trillion for the same period.

With such a large trade value, the United States cannot be freed from illicit financial flows. In their research on US trade data during 2016, Hong and Pak (2018) concluded that the total over-invoicing of US imports from the top 10 import partner countries was 11.8 percent of total imports based on the price filter method (PFM) and 20.4 percent based on Partner-Country Method (PCM) estimates. The six largest US partner countries in terms of import over-invoicing based on both PFM and PCM are Ireland, Germany, Japan, China, Italy, and Mexico. Meanwhile, the US's four largest partner countries are related to under-invoicing imports based on PFM and PCM, namely China, Japan, Mexico, and Canada.

In their research, Hong and Pak (2018) also provide more detailed information regarding the mis-invoicing of US imports with partner countries. The total over-invoicing of US imports from China was USD 14 billion or 4.1 percent based on the PFM estimate and USD 101 billion or 23.1 percent based on the PCM estimation. Furthermore, it is also known that the United States imported over-invoicing commodities with HS code 880240 (Aeroplanes and other aircraft except unmanned; of an unladen weight exceeding 15,000 million (based on PCM estimation). Meanwhile, the United States imported over-invoicing from France for commodity code HS 220860 (Vodka) of USD 86 million (based on the PFM method) and USD 421 million (based on the PCM method). United States import under-invoicing for commodity code HS 6 from Mexico amounting to USD 8.1 billion or 40.4 percent based on PFM and USD 15.5 billion or 83.8 percent based on PCM.

It is not limited to import mis-invoicing, Hong and Pak (2018) also presented the results of their research on US export mis-invoicing with partner countries. Total under-invoicing of United States exports worldwide for commodity code HS 854231 (Electronics integrated circuits; processors and controllers, whether combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits) amounted to USD16.6 billion or 83.5 percent of total exports based on PFM estimates and USD 4.1 billion or 20.6 percent based on PCM estimates. Meanwhile, the total over-invoicing of US exports for commodity code HS 330490 (Cosmetic and Toilets) to England was USD 911 million (PFM estimate) and

USD 905 million (PCM estimate). Meanwhile, export over-invoicing of commodity code HS 710239 (non-industrial diamonds) to the UK amounted to USD 283 million (PFM estimate) and USD 360 million (PCM estimate).

2.7.2 IFF practice in developing countries

a. Mining Cases in Indonesia

Indonesia cannot be separated from IFF practices. Indonesia is a country with abundant natural resources. It is said that Indonesia's natural resource abundance can value up to 200 thousand trillion rupiahs (Ministry of Finance, 2014). Oley and Adi (2018) argue that basically, the main cause of Illicit Financial Flows (IFF) is rent-seeking behavior and dynamic commodity prices. The first cause is the practice of rent-seeking in the extractive industry in Indonesia generally occurs in the tender bidding process and profit sharing. There are two different tender bidding mechanisms for the refined oil and gas sector and the mining sector.

Oil and gas licenses grantsto contractors is carried out through a competitive process held twice a year. License grant is carried out by SKK Migas, but the tender bidding process is conducted by the Directorate General of Oil and Gas, Ministry of Energy and Resources. The government publishes information after negotiations, including the tender results, such as the bids received and the winners. However, the final contract including geological and geographic information was not submitted. The company incurs its costs to carry out geological and geophysical surveys. Furthermore, the data will be submitted to the Ministry of Energy and Mineral Resources, but this information remains confidential until the company releases production work areas that have stopped operating. Meanwhile, existing regulations require an open bidding process for the mining sector, so licenses are granted on a "first-come, first-served basis" (Oley & Adi, 2018).

Regarding the mining license grant, Oley and Adi (2018) explains that there is an inconsistency between Law no. 23 of 2004 concerning Regional Government and mining laws that are still valid, namely Law Number 4 of 2009 concerning Mineral and Coal Mining as last amended by Law Number 3 of 2020 concerning Amendments to Law Number 4 of 2009 concerning Mining Minerals and Coal. Based on Law no. 23 of 2004, the provincial government has the right to issue licenses for mining under 12,500 Ha. Meanwhile, based on applicable mining law the District Government also has the right to license issuance. Based on data from the Directorate General of Mineral and Coal, 2,198 licenses are "not clean or clear" or do not follow the proper licensing mechanism, resulting in overlapping licenses (Ditjen Migas (2017) Oley & Adi, 2018). Similar to the tender bidding process for the oil and gas sector, the Central and Regional Governments only convey the tender winners without geographic and geological information which triggers competitions among contractors (Oley & Adi, 2018).

The non-transparent processes in both the tender bidding process in these two sectors is a loophole for the emergence of rent-seekers whose perpetrators include actors in the government, politicians, and business actors. Generally, they play in the safe zone using the rules to their advantage. This is where the relationship between rent-seekers and IFF is imminent, not only defined as corruption but also shared avoidance (Oley & Adi, 2018).

The second cause is dynamic commodity prices. The extractive industry is dependent on world commodity prices, so that the distribution to the government depends on this as well. When the price is high, the share is high, the opposite happens when the price is low. IFF can be bigger at the highest price to maximize profits from the extractive industry by mispricing and mis-invoicing (Adi, 2017).

Cases of trade mis-invoicing dominated IFF in the mining sector, with one of the motivations being tax avoidance through eroding the tax base and transfer of profits (BEPS). BEPS is a tax avoidance strategy to exploit loopholes and mismatches in tax regulations to transfer profits artificially to locations with low or no tax rates (Oley & Adi, 2018).

Moreover, Oley and Adi (2018) suggest that there are 3 main sources of regulatory vulnerability that directly or indirectly affect IFF behavior, that are differences in receivable data, measurement of transaction fairness, and cost recovery schemes. First, there are differences in revenue data as a database for calculating state revenues, both tax revenues and government profit sharing from the extractive industry sector, which creates the tendency for the risk of manipulation that mis-invoicing is prone to occur as one of IFF's practices. For example, according to BPS in 2017 non-tax state revenue (PNBP) from all-natural resources (SDA) amounted to 111,132 billion rupiahs (BPS, 2018). Meanwhile, according to the Director General of Oil and Gas, it was 88,556 billion rupiahs (Directorate General of Oil and Gas, 2018), and according to the Director General of Mineral and Coal Mining, it was 40.62 trillion rupiahs (Directorate General of Mineral and Coal, 2018) with a different from BPS. In addition, in the same ye, ar LKPP data showed 81 trillion rupiahs for oil and gas revenues, and 24 trillion rupiahs for mineral revenues (Central Government, 2018).

Second, the importance of measuring fairness (arms' length) in conducting transfer pricing between onshore and offshore companies which is closely related to transactions and profits taxation. The main problem in implementing this fairness measurement is the government's capability in determining the actual transaction value as a result of a tax system that adheres to self-assessment. In normal market interactions, the agreed fair price is the result of negotiations between two independent parties who have meet their interests. However, when a transaction occurs between two related parties, a fair price must be determined since the price does not occur through a market mechanism (Hoogstraten, 2015). Problems arise when the calculation of the export price occurs in intragroup contractors in the extractive industry sector which have many subsidiaries and other related companies. This happens due to the government inability to obtain available comparative prices. Meanwhile, multinational companies have better information than the

government through the tax authority. The fairness measurement is created because there is no framework and foundation for regulating the transparency and fairness of intragroup transactions or transactions between companies that have special relationships. Indonesia still is unable to research the collection and analysis of important information such as price references. Therefore, the context of vulnerability, in this case, is that there is a gap between government access to information and contractors who are exploited in monitoring, regulation, and law enforcement which are lax and imperfect (Oley & Adi, 2018).

Third, the unique oil and gas recovery cost scheme stipulated in Government Regulation no. 79 of 2010 concerning Recoverable Operating Costs and Income Tax Treatment in the Upstream Oil and Gas Business Sector. The recovery cost scheme in a production cooperation contract is a replacement for the contractor's operational costs in executing exploration, exploitation, and permitted costs (EITI, 2015). Recovery costs are paid in the form of oil and gas production valued using the weighted average price which is the average sales value based on the lifting value during one period divided by the value of the lifting units during the same period.

Oley and Adi (2018) argue that in practice, there are several cases of recovery costs that do not benefit the government. Based on BPK's findings, 4 oil and gas blocks did not comply with regulations until 2018. Even though this has been regulated in PP No. 79 of 2010, implementing recovery costs has its difficulties in practice. The government must determine all costs incurred between contractors, which can be affected by the technology used, the implementation of engineering mechanisms, and other variations in costing. To validate the spending, there can be a contradiction on the government side between the importance of cost recovery in attracting investment and maximizing revenue. Therefore, contractors often find mark-up costs by including a negative list of recovery costs (Tullock (2005) Olay & Adi, 2018).

Meanwhile, the existence of a decentralization policy made regional authorities change their economic strategy, especially in increasing revenue, formulating regional budgets, and making regional spatial plans. Through this policy, the participation of local players becomes stronger. In addition, the authority of the central government in managing natural resources is increasingly being challenged, especially by local players. It also causes trust issues between different levels of government. The emergence of decentralization policies has created many opportunities for both revenue generation and rent-seeking by local players. The implementation of decentralization will make the undetected IFF even wider due to the division of domains between the central and regional governments (Olay & Adi, 2018).

b. Petroleum Theft in West Africa

Petroleum is Nigeria's main income as the 13th largest oil producer in the world (World Bank, 2014). In 2012, petroleum contributed more than 50% of the GDP, about 85% of the national

income, and 90% of Nigerian exports (Gboyega et al., 2011). However, the country's inability to control the integrity of the petroleum trade has made Nigeria the African country with the highest cumulative IFF.

The total loss of oil through illegal activitiesis estimated to rose sharply from a thousand barrels per day to 250 thousand barrels per day with a value of around 3-8 billion US dollars per year (Katsorius and Sayne, 2013). Meanwhile, the International Energy Agency estimates that 150,000 barrels per day of oil stolen from Nigeria is equivalent to a loss of 5 billion US dollars per year. This value is equivalent to the electricity consumption needs of Nigerians until 2030 (IEA, 2014).

The 2013 Illegal Trade Test in Nigeria published by Chatham House details the methods used to divert oil. Illegal petty trading consists of small-scale theft for household needs, and is mostly industrial-scale for bunkering (transferring oil from tank trucks to ships) of oil through international waters and selling it to other countries (Katsorius and Sayne, 2013).

The involvement of local players in Nigerian oil theft is extensive and involves an organized criminal industry and protection networks (OECD, 2018). These players include:

Table 2. 4 Local Player's Oil Theft in Nigeria

Role	Act	Alleged General Identity
High-Level Oppor-tunist	Gathering profits from thieves through its status and ability to limit and control the trading access of others	Mostly government offi-cials/ employees and special forces personnel; traditional rulers and local mafia
Facilitators	Source of essential equipment and cash for operations; act as payee for opera-tions in the field; money launderer	Accountants, lawyers, real estate brokers, money changers, corrupt bank man-agers, or other staff
Operations	Installing illegal faucets; faucet staff and supervising loading; gathering intelli-gence on oil; ships and the movement of state security services	local youth; former oil com-mission employee and con-tractor (allegedly); a small consortium of elites; military group
Security	Guard at faucet point; secure transporta-tion routes; escort ships in inland and coastal waters; gather intelligence; se-cure the "turf" area owned by the net-work	Local armed groups or "mili-tants"; private security con-tractors; state security soldier (alleged)

Local Transport	Provide small vessels, trucks, and associ-ated human resources needed to store stolen crude oil and/ or transport it to in-land or inshore shipping vessels	Local armed groups or "mili-tants"; local and foreign shipments; former and cur-rent politicians
Foreign Transport	Provide commercial tankers and other vessels to transport stolen oil to destina-tions outside Nigeria	Foreign shipping and agents; private commodity trader?
Sales	Acting as an intermediary for the sale of stolen goods to foreign buyers; arranging payment and delivery; sending profit money to other parties outside the net-work	Well-connected local inter-mediaries; private commodi-ty traders?
Low-level Oppor-tunist	Operate various types of security activi-ties around thieves' rings to gain profit through unlawful exploitation of oil thieves and/or provide political cover	Community "host" and "pas-sage"; local elites; local armed groups and various types of youth gangs; state security forces

Source: Katsorius dan Sayne, 2013

Oil diversion through illegal routes approved by the military government to boost revenues and break OPEC restrictions. There is ample evidence of ongoing senior-level engagement in the government and military actions to facilitate the illicit oil trade (Gilliers, 2009). In addition, the role of neighboring countries is also relevant. Other countries enjoy benefits from oil spills (Mayah (2014) OECD, 2018) while neighboring countries, such as Benin, are in the confiscation and investigating of oil theft (Gillies, 2009).

Oil theft at a broader level requires the participation of organized and transnational criminal groups who can ensure its transportation and sale when the oil leaves Nigeria's territorial waters (Gboyeg et al., 2011). The majority of international markets for Nigerian stolen oil are China, Korea, Israel, and South Africa (UNODC, 2013).

Almost all of Nigeria's oil theft is cash based, and cash smuggling is a common thing. However, the volume of illegal revenues from oil theft is assumed to be too high to be physically moved as the major tool of money laundering. Thus, the money laundering process is believed to be facilitated by bankers, lawyers, and accountants, or by using banks in other countries in collaboration with less robust money laundering regimes (Katsouris and Sayne, 2013).

The practice of oil theft also has an impact on neighboring countries. For example, in Benin, a UN assessment mission found that 80 percent of oil sold was smuggled fuel. This resulted in the closure of official fuel stations in the neighboring country (UNSC, 2012). Furthermore, the failure to bring order and transparency to the oil industry in Nigeria may decrease the enthusiasm for further oil exploration. This is a significant disincentive for investment unless the control over regional markets for petroleum products can be enhanced (UNODC, 2013).

c. Extractive industries in West Africa

Extractive minerals contribute 25 percent or more to the GDP of West African countries such as Nigeria, Sierra Leone, Niger, and Ghana. However, such wealth is very rarely contributed to cut poverty or inequality (Africa Progress Panel, 2013). The negative relationship between extractive industries and illicit trade, crime, governance, conflict and development in West Africa is most clearly illustrated by areas known for their commodities, namely gold, diamonds, uranium in Nigeria or iron ore in Guinea (OECD, 2018).

Through a published study report, the OECD (2018), argues that there are many ways to divert extractive resources and incomes. Practices differ depending on the type of industry and country, making it difficult to predict the challenges and magnitude of trade. Some single statistical data provide a basis for evaluating the scale of the outflows as follows:

1. The estimated value of gold miners in Mali is between 100,000 and 200,000, producing around 4 tons of gold a year which contributes to 8 percent of national output, valued at 240 million USD (Africa Progress Panel, 2013). In Ghana, small-scale miners are estimated to earn 1 million a day (Punam, Dabalen and land, 2017).
2. At the end of 2013, the illicit trade in Ivory Coast diamonds was estimated at 12-23 million USD a year (UNSC, 2014).
3. In 2011, exports of mining products from Guinea reached 1.4 billion USD which represents 12 percent of GDP, but the government revenue from mining was only 48 million USD or 0.4 percent of GDP (Africa Progress Panel, 2013).
4. Between 50 percent and 90 percent of the diamond trade in Sierra Leone is lost through smuggling (Fanthrope and Gabelle, 2013). At the same time, only 1 out of five mining companies in Sierra Leone paid corporate taxes in 2011 (Africa Progress Panel, 2013).

There are three characteristics of illegal mining areas that commonly occur, such as the condition of state borders and poor transportation, and generally isolated mining areas. Southeast Guinea and Northwest Ivory Coast are active diamond mining areas with the area around the city of Ivory Coast known for its smuggling (UNSC, 2014). Mine sites, which are often in isolated areas, have densely forested borders with poor transportation to the nation's capital city, allowing smugglers to cross national borders easily. The same goes for

gold. Many areas of active diamond mining are also active in gold production and smuggling (OECD, 2018).

Extractive industry supply chain and financial flows (both legal and illegal) are involving a complex network and a number of actors. A number of criminal entrepreneurs have been identified by various UN surveillance reports, having their role in smuggling gold and diamonds out of the region. In addition, West Africa is a transit point for diamonds from other African countries such as Zimbabwe and the Central African Republic which are sold by intermediaries in Monrovia (UNSC, 2013).

Some of the main actors in the illegal economy also have other legal businesses that are used to launder their illicit profits. For example, the trading investors of the Ivory Coast diamond trade from Seguela is the largest importer of motorcycles in the northern part of the Ivory Coast who also has an agricultural products business. In addition, most of the illegal imports into Burkina Faso are carried out by brokers who also own the construction businesses used to launder the revenues from the smuggling (UNSC, 2014).

d. Flora and Fauna of West Africa

Illegal, Unreported, and Unregulated (IUU) Fishing can literally be defined as fishing activities that are illegal, not reported to authorized fisheries management institutions, and fishing activities that have not been regulated by existing rules and regulations. IUU Fishing can occur in all capture fisheries activities that are not dependent on location, targeted species, use of fishing gear and exploitation intensity, both small and industrial scale, carried out in national and international jurisdiction zones (PT Sucofindo (Persero), 2011).

IUU Fishing and timber are relevant crimes in the West African context. West African waters are the most abundant fisheries area in the world. The fisheries sector employs around 1.5 million people and constitutes 15-17 percent of GDP and 25-30 percent of the export earnings of West African maritime nations (UNDP (2012) in OECD, 2018). Estimated losses due to IUU fishing range from 1.3 - 23.5 billion USD per year (Africa Progress Panel, 2014). UNODC (2011) has identified two major shipping hubs in West Africa related to IUU fishing. The first hub is located in the central East Atlantic Ocean around Guinea and Guinea-Bissau, including Cabo Verde, Senegal, and Gambia. The second hub is on the Cape of Guinea covering Ghana, Togo, Benin, and Nigeria. Illegal trade in flora and fauna in West Africa is facilitated by three types of actors, namely international companies; national government and state officials, and local fishermen and poachers.

International trawlers and fishermen who exploit weak regulations in the waters of West Africa are the parties most responsible for illegal fishing (INTERPOL, 2014). Commercial fishermen who practice IUU fishing operate under the flag of the country of location rather than the flag of convenience or dual identity to avoid detection. Moreover, transport/

delivery between trawlers is a common thing (Bondaroff, 2015). In addition, there is also evidence of collusion between illegal local fishermen and international actors (INTERPOL, 2014). The majority of large vessels involved in large-scale illegal fishing in West Africa come from China, Korea and other Asian countries (Lewerenz and Vorrath, 2015).

The lack of transparency and the existence of corruption in several countries on the coast of West Africa allows for significant IUU fishing. Information related to the number of licenses granted by the government and sold to foreign parties or fishing vessels with a national flag is confidential. However, there have been cases of counterfeit licenses and involvement of senior officials in permitting IUU (INTERPOL, 2014; Lewerenz and Vorrath, 2015).

In 2008, Sierra Leone imposed a rubber export ban in response to the indiscriminate exploitation of its forests by Chinese and other national companies. At the same time, a strict ban on rubber exports in neighboring Guinea kept smugglers across the country's borders into Sierra Leone (Kavanagh, 2013). Allegations were made of Chinese rubber traders, expelled from Guinea, and entered Sierra Leone for setting up companies by paying local people with chainsaws rather than cash (Energy for Opportunity, 2012). In 2011, the results of an investigation by Al Jazeera in Sierra Leone revealed that tribal chiefs were found cutting trees and selling them carelessly. Police and customs officials at the Harbor in Freetown look the other way as a container loaded with illegal logs enters the cargo scanner. Moreover, the investigation also found that the Vice President of Ghana had pushed the registration process of a rubber exporting company with a promise of US$100,000 as a bribe (Samura, 2011).

IUU Fishing has a threefold impact in West Africa. First, IUU fishing results in direct financial losses to the economy. Second, IUU fishing has an indirect but more damaging impact on communities that depend on fishing as their source of living. Third, IUU fishing has a supporting role in other crimes, that is fishing boats are a method commonly used in drug trafficking, and smuggling people and weapons, as well as being used as a tool in terrorism (UNDOC, 2008; Platov, 2014).

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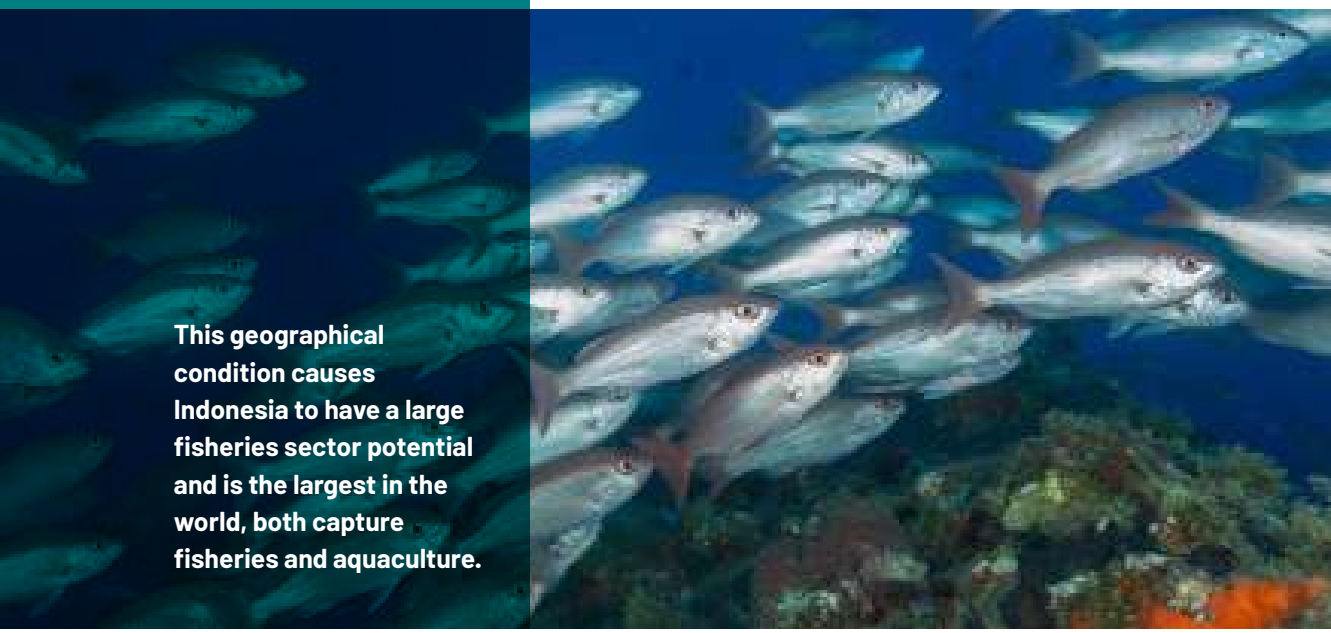
CHAPTER 3 RESEARCH DESIGN AND METHODS FOR CALCULATING ILLEGAL FINANCIAL FLOWS



This geographical condition causes Indonesia to have a large fisheries sector potential and is the largest in the world, both capture fisheries and aquaculture.

Export and import international trade have a code for each item of goods, this code makes it easier to code goods. This code is known as the Harmonized System Code (HS Code). In this study, we use two main goods which are the main commodities that contribute quite a bit to Indonesian trade. These commodities are fisheries (Code 03) and coal (Code 2701-2708). It should be noted that although actions such as tax evasion, smuggling and others are included in the IFF category, our report is limited and focuses on trade misinviocing related to the IFF.

3.1 Data and Research Methods

3.1.1 Fisheries Sector

Indonesia has a large fisheries resource potential. Indonesia has a coastline of 95,181 km and is the longest in the world that has sea waters reaching 5.8 million square kilometers. This geographical condition causes Indonesia to have a large fisheries sector potential and is the largest in the world, both capture fisheries and aquaculture.

The Minister of Maritime Affairs and Fisheries Regulation No. 19/2022 regarding the Estimation of Fish Resource Potential, Permissible Amount of Fish Catch (JTB), and Level of Utilisation of Fish Resources in the Fisheries Management Area of the Republic of Indonesia (WPPNRI) stated that the total estimated potential of fish resources in 11 WPPNRI reached

12.01 million tons per year with JTB 8.6 million tons per year. The estimated potential is divided into nine fisheries resource groups, that is demersal fish, reef fish, small pelagic, squid, penaeid shrimp, lobster, crab, crab and large pelagic (Ministry of Maritime Affairs and Fisheries, 2022). This potential consists of marine capture fisheries of 9.3 million tons/year and inland capture fisheries (lakes, rivers, reservoirs and swamps) of approximately 0.9 million tons/year, or a total capture fisheries of 10.2 million tons/year. The remaining 56.8 million tons/year is potential for aquaculture, both for marine cultivation (mariculture), brackish water cultivation (ponds), and fresh water cultivation (land) (KKP, 2022).

Based on the production figures for capture fisheries and aquaculture in 2018, Indonesia's capture fisheries production reached 7.36 million tons, or 72.17 percent of the potential for capture fisheries, while aquaculture production reached 15.77 million tons or 27.76 percent of the potential for aquaculture in Indonesian sea and land (Romfiz, 2021). The value of fisheries production in 2020 reached IDR 224.8 trillion, but the PNBP value was only IDR 600.4 billion (0.26%) (Minister of Maritime Affairs and Fisheries of the Republic of Indonesia, 2021).

Specifically, Indonesia also has sources of special fisheries commodities with high selling values. Several fisheries commodities that have high sales value include lobster, grouper, bluefin tuna, napoleon fish, arowana, etc. Fish smuggling also occurs with large intensity and even damages Indonesia's marine ecosystem. In September 2022, in a press release, the KKP (2022) stated that they had succeeded in stopping an attempt to smuggle 34,472 clear lobster seeds (BBL) worth 3.9 billion rupiah which were to be sent to Singapore via Soekarno-Hatta Airport. Smuggling is included in one of the mechanisms for the flow of black money but is not recorded in the UN Comtrade.

In UN Comtrade, the fisheries sector uses Code 03 as prefix. The fisheries sector code is divided into several sub-categories as shown in table 3.3 below :

Table 3.1 Division of Fisheries Based on UN Comtrade

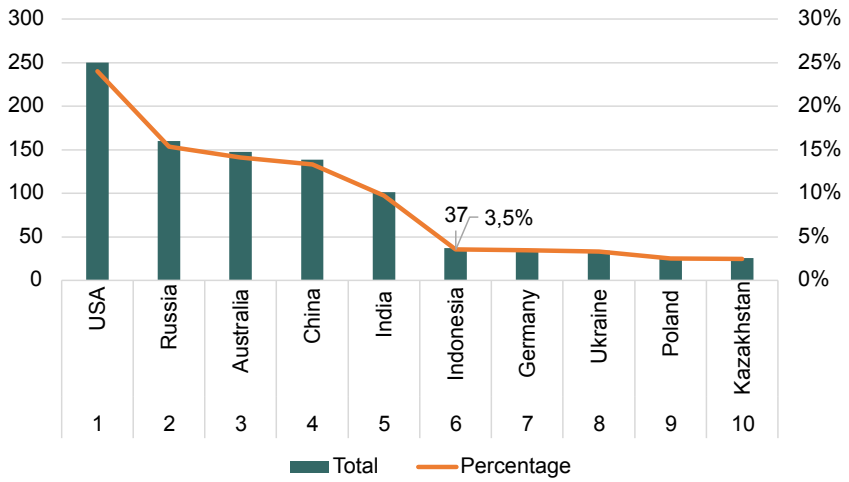
Code	Definition
301	Live Fish
302	Cold Fish
303	Frozen Fish excluding Fish Fillets
304	Fish Fillets and Other Fish
305	Salted Dried Fish
306	Shrimp
307	Mollusca
308	Aquatic Invertebrates other than Shrimp
309	Fish Meal and Pellets

Source: UN Comtrade, 2022

3.1.2 Coal Mining Sector

Indonesia has large coal reserves of 37 billion tons (Mining Technology, 2020). Indonesia's average coal production is 600 million tons per year (ESDM, 2021). With this assumption, Indonesia still has enough reserves for the next 65 years. In terms of coal reserves, Indonesia is not the biggest producer. Indonesia is on the 6th position in the world with a value of 37 billion tons and has a proportion of 3.5% of coal reserves in the world. With the limited reserves, it can be said that Indonesia does not maintain its coal reserves well, since they continue to explore it for export needs. Indonesia is a country with the largest coal export in the world (Statista, 2022). In the long run, this mineral resource will quickly run out if the resource extraction is not properly maintained.

Graph 3.1 Ten Countries with the Largest Coal Reserves in the World in 2019



Source: Statista, 2022 processed data

In UN Comtrade, coal uses Code 27 in the first two digits. In this code, coal is divided into several sub-categories. These categories include the following:

Table 3.2 Sub-Division of Coal

Code	Definition
2701	Coal Briquette
2702	Lignite
2703	Peat
2704	Coke and Semi Coke
2705	Gases; coal, water, producer and similar gases (excluding petro-leum and other gaseous hydrocarbons)

2706	Tar; distilled from coal, lignite or peat, and other mineral tars, whether or not dehydrated or partially distilled, including re-constituted tars
2707	Oils and the other product of the distillation of high tempera-ture coal tar, similar product in which the weight of the aro-matic constituents exceeds that of the non-aromatic constitu-ents
2708	Petroleum oils and oils obtained from bituminous mineral

Source: UN Comtrade, 2022

3.2 Calculation method

In order to estimate the numbers of illicit financial flows and the potential for lost state revenue, this research is based on a panel data compiled from the UN Comtrade Database which is accessible and available for public. The data can be accessed via the following link https://comtrade.un.org/data/. Data from the UN Comtrade Database provides more comprehensive information on bilateral trade and offers greater flexibility for designing statistical frameworks than data from the Directions of Trade Statistics (DOTS) provided by the International Monetary Fund (IMF) (IMF, 2022). Data compiled from the UN Comtrade Database is in the form of export values, export quantities and export prices are aggregated by country and year with the standard 6-digit HS classification.

The method of estimating the amount of illicit financial flows in this study uses the trade mis-invoicing method or trade invoice errors. This concept was first implemented by Bhagwati (1967) which has two possible scenarios. First, when imports recorded by importers are less than exports (including shipping and insurance costs) recorded by exporters, it is interpreted as under-invoicing of importss or over-invoicing of exportss or both. Second, imports that are greater than exports which included the cost of shipping and insurance, is indicated as under-invoicing of exportss or over-invoicing of importss or even both.

The choice of estimating illicit financial flows using the trade mis-invoicing method is integrated from the findings (Spanjers and Salomon, 2017) which stated that the largest source of illicit financial flows comes from trade mis-invoicing. They estimate illicit financial flows originating from trade mis-invoicing at 66 percent for inflows and 97 percent for outflows in 2014 in developing countries. On the other hand, the Hot Money Narrow (HMN) method is not possible because Kar and Spanjers (2015) stated that this method is limited to measuring through net errors and omissions in the balance of payments. Therefore, HMN cannot estimate illicit financial flows down to the specific level of goods. However, the trade mis-invoicing method in this study has limitations in that it only knows illicit financial flows on a billing basis, which made real money transfers become difficult to know with certainty.

More specifically, the measurement of trade mis-invoicing in this study uses the Gross Excluding Reversals (GER) approach implemented by GFI. Primarily, this approach calculates the difference between a country's exports records and imports recorded by other countries which in turn generates the in and out of illicit financial flows. But this method does not have the concept of 'net illicit financial flows' which made the inflows and outflows of illicit financial flows cannot subtract each other (GFI, 2015). In addition, the GER approach tends to focus its analysis on aspects of illicit financial outflows. However, this research analyzes illicit financial flows from both the incoming and outgoing sides.

This study assumes that the value of trade mis-invoicing that appears in export trading activities in selected commodities is defined as illicit financial flows. Trade mis-invoicing for each commodity is obtained by taking the difference in the value of exports recorded in Indonesia and the value of imports from Indonesia which are claimed by other countries. We understand that export and import calculations have different formats which made them cannot be immediately compared. Logically, when exporting to other countries, there must be costs in shipping, regardless of whether you use a Free on Board (FOB), or Cost, Insurance, and Freight (CIF) method. For this reason, an adjustment is needed so that the value of Indonesian exports and imports from Indonesia can be compared. In the formula below, we use the adjustment factor (β) which shows the costs during delivery. This research's point of view only looks at the export side that makes shipments. Thus, the formula for calculating the amount of illicit financial flows for each commodity in this study is as follows:

3.2.1 Calculation of Export Mis-invoicing

The formula used for calculating export mis-invoicing is:

$$EM_t = (EX_{ij,t} + \beta) - IM_{ji,t}$$

Where:

i : Indonesia

j : country j

t : year t

EM_t : Value of Indonesia's mis-invoicing exports in year $_t$ (US$)

$IM_{ji,t}$: Value of imports from Indonesia claimed by country $_j$ in year $_t$ (US$)

$EX_{ij,t}$: Value of Indonesia's exports to country $_j$ in year $_t$ (US$)

β : Adjustment factor

From the formula above, it can be explained that: if *EM* is positive then there is export over-invoicing which causes illicit financial inflows. On the other hand, if *EM* is negative, there is under-invoicing of exports which causes illicit financial outflows. The sum of the in and out of illicit financial flows yields the gross illicit financial flows.

3.2.2 Calculation of Import Mis-invoicing

The formula used for the calculation :

$$IM_t = IM_{ij,t} - (XM_{ji,t} + \beta)$$

Where :

i : Indonesia

j : Country j

t : year t

IM_t : Value of Indonesia's mis-invoicing exports in year $_t$ (US$)

$IM_{ij.t}$: Value of imports from Indonesia from country $_j$ in year $_t$ (US$)

$XM_{ji,t}$: Value of export from country $_j$ in year $_t$ (US$)

β : Adjustment factor

From the formula above, it can be explained that: if *IM* is positive then import over-invoicing occurs which causes illicit financial outflows. On the other hand, if *IM* is negative then what happens is import under-invoicing which causes illicit financial inflows. The sum of the in and out of illicit financial flows yields the gross illicit financial flows.

3.3 Calculating the Potential Loss of Government Revenue from Illicit Financial Flows

PRAKARSA research (2019) calculated taxes from royalty figures roughly by using data sources from Index Mundi to do the calculations. Currently, we are doing a more detailed calculation using the laws that apply in Indonesia according to each year. This calculation incorporates government regulations to determine state revenue from tax and non-tax (PNBP). It is done to obtain a more detailed amount regarding potential state losses from illicit financial flows.

3.3.1 Fish Acceptance Potential

Non-Tax State Revenue (PNBP) for fisheries commodities is implemented through the basic price of fish. To determine the price of fish, the government determines PNBP by setting a remark for the Purchase Price of Fish (HPI). This HPI has references to the latest law, that is HPI follows the Minister of Maritime Affairs and Fisheries Regulation No. 86 of 2021 concerning the Benchmark Price of Fish for Calculation of Levies on Fisheries Products. This regulation is an update of the Regulation of the Minister of Trade of the Republic of Indonesia Number: 13/M-DAG/PER/5/2011. The HPI was created to stipulate Government Regulations No. 85 of 2021 concerning Types and Tariffs for Types of Non-Tax State Revenues that apply to the Ministry of Maritime Affairs and Fisheries.

3.3.1.1 Export of Fish

In accordance with the Regulation of the Minister of Finance of the Republic of Indonesia No. 39/PMK No. 010/2022 about Stipulation of Export Goods Subject to Export Duty and Export Duty Tariff, the fisheries sector is not accountable to export fees. Goods subject to export costs are leather, wood, cocoa beans, palm oil, metal mineral processing products, and metal mineral products with certain criteria.

3.3.1.2 Fish Import

Tariffs imposed on fisheries imports sector include:

1. VAT (10%)

This VAT is in accordance with the Law No. 8 of 1983 concerning Value Added Tax on Goods and Services and Sales Tax on Luxury Goods as amended several times, most recently by Law No. 7 of 2021 concerning Harmonization of Tax Regulations.

2. PPH (Income Tax) 22 (2,5%)

Income tax can be divided into two. For those who have an import identification number (API) is 2.5% and for those who do not have an API is 7.5 percent. Its legal framework is Law No. 7 of 1983 as amended several times, most recently by Law No. 7 of 2021 concerning Harmoniza-tion of Tax Regulations.

3.3.2 Potential for Coal Receipt

3.3.2.1 Coal Export

1. PPH (Income Tax) (1,5%)

The legal framework is Article 2 paragraph 1 letter a number 2 PMK. No. 34/PMK.010/2017 concerning Collection of Income Tax Article 22 in Relation to Payment for Delivery of Goods and Activities in the Field of Import or Activities.

2. Royalties (5%)

In 2022, to be precise, starting in August 2022, there is a new regulation regarding coal royalties. This rule follows Government Regulation (PP) No. 26 of 2022 concerning Types and Tariffs for Types of Non-Tax State Revenues that Apply to the Ministry of Energy and Mineral Resources.

Table 3.3 Distribution of Royalties based on Government Regulation No. 26 of 2022

	under $70	$70 - $90	over $90
Less than 4200kkal/kg	5%	6%	8%
4.200 - 5.200 kkal/kg	7%	8,50%	10,5%
More than 5200 kkal/kg	9,50%	11,50%	13,50%

Before 2022 Indonesia used PP 81/2019, and same as 2022, the distribution of royalties uses a kilo-calorie basis.

a. Calorie Level 4,700 Kcal/kg and below: 3 percent of the selling price

b. Calorie Level 4,700-5,700 Kcal/kg: 5 percent of the selling price

c. Calorie Level 5,700 and above: 7 percent of the selling price

Prior to PP 81/2019, the percentage value was the same as the 2019 basis. This resulted no change in royalties. The data from UN Comtrade is currently only divided by commodity, not by calories in general. Seeing this, we divide it based on the average of 5 percent royalty.

3.3.2.2 Import of Coal

1. VAT (10%)

The 10 percent VAT rate is in accordance with the legal framework of Law No. 8 of 1983 concerning Value Added Tax on Goods and Services and Sales Tax on Luxury Goods as amended several times, most recently by Law No. 7 of 2021 concerning Harmonization of Tax Regulations (HPP).

2. PPH (Income Tax) 22 (2,5%)

According to the legal framework, Law No. 7 of 1983 which has been amended several times, most recently by Law No. 7 of 2021 concerning Harmonization of Tax Regulations, income tax is divided into two types, for those with an import identification number (API) of 2.5 percent, while those without API are 7.5 percent.

CHAPTER 4

IFF CALCULATION RESULTS IN THE FISHERIES SECTOR AND ITS DERIVATIVES AND THE COAL SECTOR AND ITS DERIVATIVES IN INDONESIA

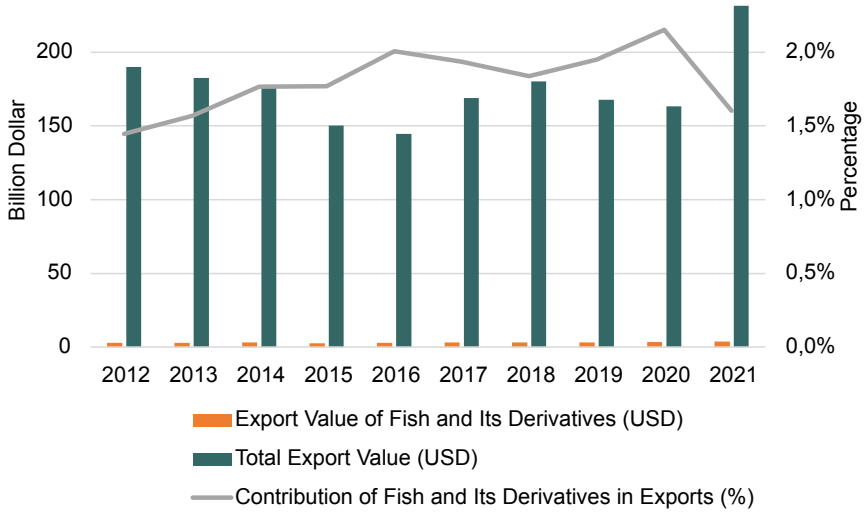
With export over-invoicing, money is coming to Indonesia from unclear sources. This could be a form of money laundering mode or other things outside of miscalculation records.

4.1 Fisheries Sector and Its Derivatives in Indonesia

4.1.1 Exports Mis-invoicing in Fisheries Sector and Its Derivatives

4.1.1.1 Conditions of Indonesia's Fisheries Sector and Its Derivatives Export Records

Graph 4.1 Export Development of the Fisheries Sector and Its Derivatives 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

During the 2012 to 2021 period, many fisheries commodities and its derivatives were exported to countries such as the United States, Japan, China, Vietnam and Thailand.

Indonesia's fisheries exports and its derivatives in 2021 are the **highest** fisheries export values for the last 10 years with a value of **USD 3.71 billion**.

In 2021, the rise in total exports of fisheries and its derivatives increased by 34.91 percent compared to 2012, from USD 2.75 billion to USD 3.71 billion. Fisheries and its derivatives have an average 1.80 percent of contribution to total exports in Indonesia over the last 10 years, with the highest contribution value of exports occurring in 2020 of 2.15 percent. The economic recovery after the Covid-19 pandemic is considered to be one of the triggers for a significant increase in the growth of fisheries exports and its derivatives in Indonesia.

From the fisheries sector and its derivatives (code 03 UN Comtrade) there are more than 200 sub-commodities with a 6-digit Harmonized System (HS) code that record exports abroad. The total net weight and total value of export trade from this sub-sector over the past 10 years has reached 7.44 million tons with an export value of nearly USD 33.5 billion. Of these exports, there are 10 commodities with the highest total trade value (table in appendix 6).

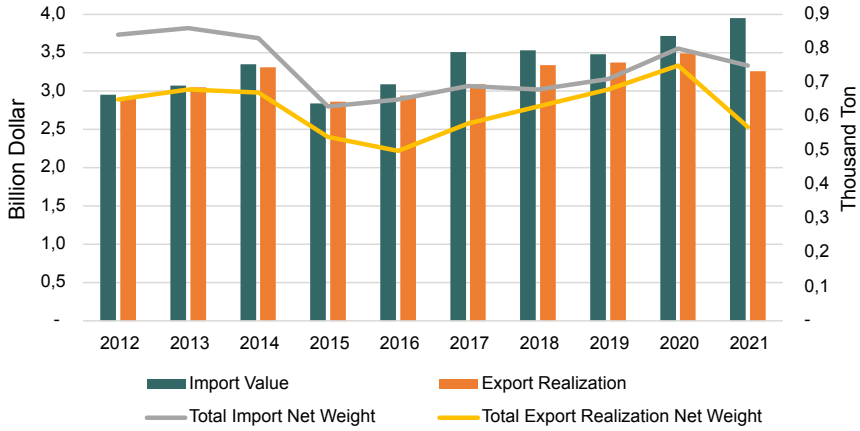
From the table in appendix 6, it can be seen that the crustacean subsector (code 30617) has become the largest contributor to exports of the fisheries sector and its derivatives both in terms of total net weight (kg) and total trade value (USD) in the last 10 years. Other fisheries derivatives product such as Mollusca (30743) or frozen fish (30389) have a significant difference from the first rank, namely crustaceans (30617). The export value of shrimp was almost 6.4 times the export value of molluscs (30743) and reached 6.6 times the export value of frozen fish (30389).

4.1.1.2 Export Data and Revenue Realization in Destination Countries

In the period from 2012 to 2021, trade in the fisheries commodity sector and its derivatives (code 03 UN Comtrade) between Indonesia and other countries was recorded to experience fluctuations both in terms of trade value (USD) and net weight of goods (kg). When using the approach by calculating mis-invoicing exports, we need to look at two sides: Indonesia as an exporter, compared to the realization of imports of these goods in the destination

country. The condition of trade records being referred to here is an attempt to compare the data (total value and total net weight) of shipments of goods (exports) with the receipt of goods from Indonesia to all partner countries (import realization).

Graph 4.2 Differences in Exports and Realization of Imports in the Fisheries Sector 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

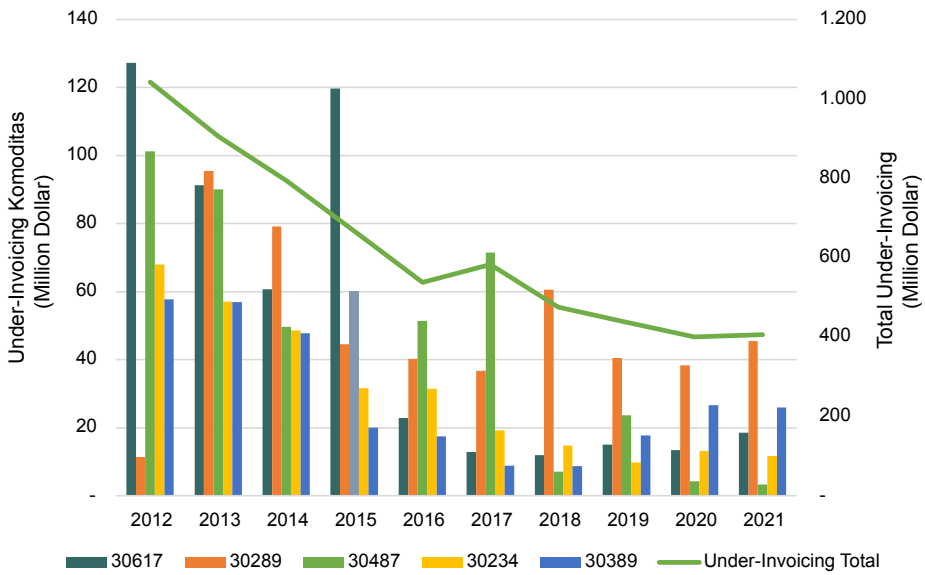
If we look at the data in graph 4.2, it can be seen that there is a weight difference between exports and actual imports. It is clear by seeing from the weight chart regarding the time of export and import realization which occurred in partner countries. During the last 10 years, the graph has never been the same between exports and actual imports in partner countries. The biggest difference in weight occurred in 2012 with a difference of 190 thousand tons. This shows an early indication of trade mis-invoicing where the weight that comes out (exports) does not match the actual incoming goods in that country. If seen from the weight of exports and actual exports, generally, exports are always higher than actual imports in the destination country. In terms of trade mis-invoicing, there are two things that happen, under and over-invoicing. If you look at the difference occurred from the side of over or under-invoicing, there is a difference with the amount reaching USD 2.33 billion. This difference reached 7 percent of total fisheries exports from 2012-2021. The biggest difference occurred in 2021, where the difference reached USD 690 million.

From this data it can be seen that the difference in weight and the difference in money does not run linearly. The biggest weight occurred in 2012 reaching 190 thousand tons, but the biggest difference in money occurred in 2021 with a difference of USD 690 million. Logically, the greater the weight difference, the greater the difference between the value of exports and actual imports. This indicates that there are allegations of illicit practices in this sector. This could happen due to the possibility that the amount exported differs each year, or there is indeed an indication of intentional trade mis-invoicing using data on fish and its derivatives.

4.1.1.3 Under-Invoicing of Exports of the Fisheries Sector and Its Derivativesa

Under-invoicing occurs when the export value is lower than the import realizable value. From the results of our research, by looking at more than 200 sub-categories in the fisheries sector and its derivatives, we get 5 sectors with the largest under-invoicing in total. These five sectors include HS codes 30617 , 30289 , 30487 , 30234 , dan 303897.

Graph 4.3 Under-Invoicing in the Fisheries Sector 2012-2021

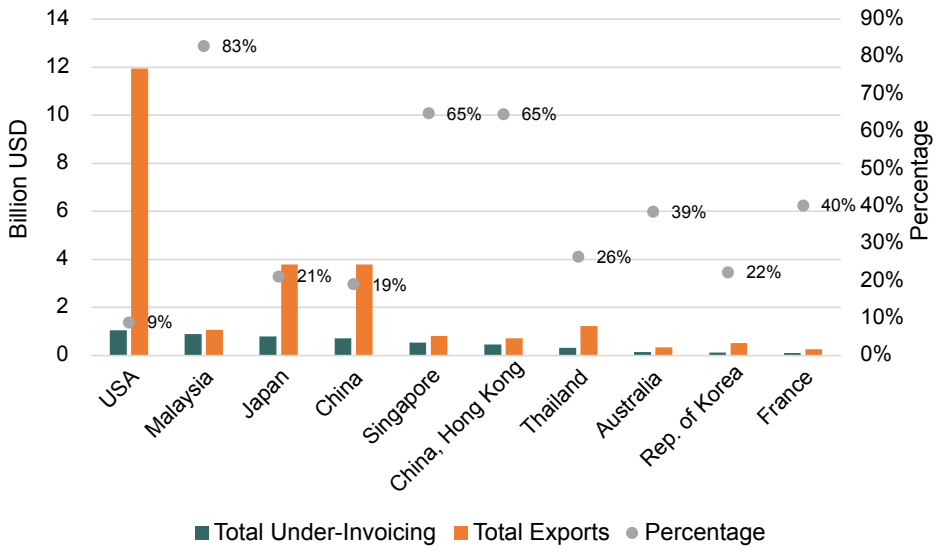


Source: research findings (processed from UN Comtrade, 2022)

Code 30617 is the commodity with the largest under-invoicing, reaching more than USD 493 million in the last 10 years, followed by code 30289 (USD 486.23 million) and 30478 (USD 462.57 million). Looking at graph 4.3, it can be seen that under-invoicing is decreasing every year. The commodity that experienced a significant decline was commodity 30487, which caused a significant decrease in the overall mis-invoicing of fisheries exports. This code refers to fisheries, especially tuna.

The interesting thing is, that this commodity has increased exports from USD 93.7 million to USD 202.4 million (2018), USD 217.4 million (2019), USD 248 million (2020) and USD 323 million (2021). Exports were increasing, but mis-invoicing exports were decreasing. This shows that even though the value of exports is getting bigger, it doesn't mean the mis-invoicing of exports is getting bigger. Tuna trade documentation is getting better and reducing export mis-invoicing overall. This shows that the value of under-invoicing is decreasing, which has implications for the outflow of illicit finance, which is decreasing, due to better record. A large trade value does not mean a greater mis-invoicing value, specifically for tuna this is not a problem, thereby the overall export mis-invoicing is reduced.

Graph 4.4 Ten Countries with the Largest Exports Under-Invoicing of Fisheries and Its Derivatives, 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

If we look by country, we can see that the United States, Malaysia and Japan are the countries with the highest under-invoicing. Over the past 10 years, the United States has under-invoiced more than USD 1 billion, followed by Malaysia (USD 883 million) and Japan (USD 796 million). During this period, based on the percentage, Malaysia is the country with the largest under-invoicing, reaching more than 80 percent, followed by Singapore (65 percent) and Hong Kong (65 percent).

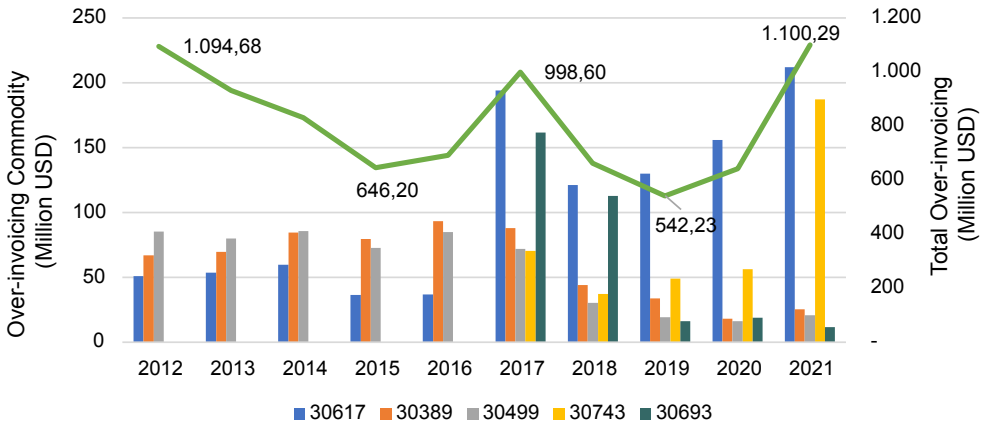
In conclusion, country with the largest under-invoicing is Indonesia with its trading partner the United States through the practice of exporting fisheries and its derivatives.

On the other hand, the record between the two countries, Indonesia and Malaysia, are very out of sync with one another. The value of the cash flow is not clear, the amount is very large compared to Malaysia's exports. When this value is compared, the value of export under-invoicing reaches 80 percent of the value of Indonesia's exports to Malaysia over the last 10 years.

4.1.1.4 Export Over-Invoicing of the Fisheries Sector and Its Derivatives

Over-invoicing occurs when the value of exports is higher than the realization value of imports. From the results of our research, by looking at more than 200 sub-categories in the fisheries sector and its derivatives, in this over-invoicing analysis we get 5 sectors with the largest over-invoicing in total. These five sectors are found in codes 30617, 30389, 30499, 30743 and 30693 (appendix 2).

Graph 4.5 Over-Invoicing in the Fisheries Sector 2012-2021



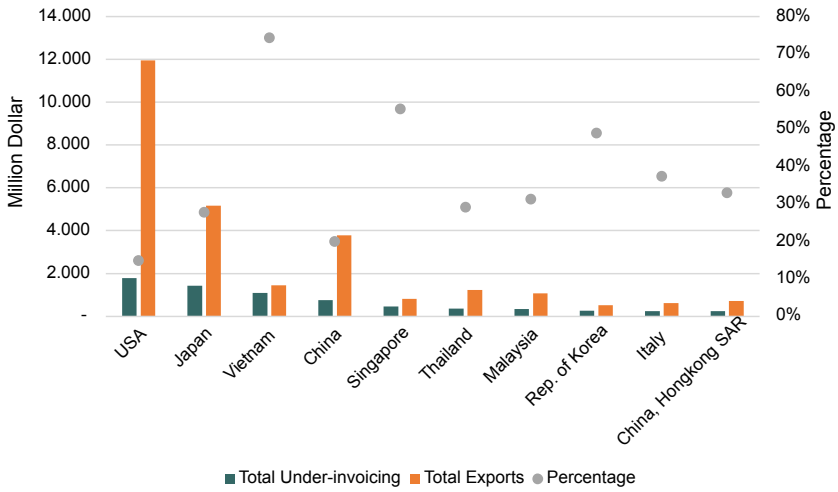
Source: research findings (processed from UN Comtrade, 2022)

In the last 10 years, code 30617 was the commodity with the largest over-invoicing value reaching more than USD 1 billion. This commodity was followed by 30389 (USD 604 million) and 30499 (USD 567.9 million). Looking at graph 4.5, it can be seen that over-invoicing fluctuates every year and in 2021 it increases very sharply up to 71.47 percent from 2020. The most contributing thing is code 30743 (Mollusca including squid). If we look at the data, it can be seen that the growth in this commodity has increased significantly for its exports reaching 24.5 percent.

On the other hand, import realization of this commodity is smaller than the exports. There are indications of increasing illicit financial flows coming into Indonesia when viewed from the commodity chart, which has significantly increased over-invoicing, namely 30,743 (Mollusca), which has increased by 200 percent in a year from 2019-2021. The biggest increase occurred in codes 30617 and 30743. Code 30617 is Crustacean, which has experienced an increase in export over-invoicing up to 63 percent in this year's span. Commodity 30743 (Mollusca) also experienced a significant increase up to 281.4 percent from 49 million dollars to USD 187.1 million. Specifically for mollusks, there has been an increase in percentage between the value of illicit and exports, where in 2019 the ratio was 13 percent, 14 percent (2020), reaching the highest at 48 percent (USD 187 million). The

value of export transactions has also increased, reaching 20 percent from 2019-2021. This shows that the increase in illicit is higher than the increase in export transactions.

Graph 4.6 Total Over-Invoicing by Country from the Fisheries Sector and Its Derivatives' Sub-Sectors 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

If we look at the countries, we can see that the United States, Japan and Vietnam are the countries with the highest over-invoicing rates. During the last 10 years, the United States experienced over-invoicing of more than USD 1.5 billion followed by Japan (USD 1.4 billion) and Vietnam (USD 1 billion). Based on the percentage, Vietnam is the country with the largest percentage of over-invoicing and has reached more than 70 percent in the last 10 years, followed by Singapore (65 percent) and South Korea (49 percent). The conclusion is, the country with the largest over-invoicing is the United States. This over-invoicing causes an inflow of money that occurs because the value billed is less than the actual value of the goods received. On the other hand, the record between the two countries, Indonesia and Vietnam, are very out of sync with one another because the flow of money is not clear, the amount is very large and has reached 74 percent of the value of Indonesia's exports to Vietnam in the last 10 years.

4.1.2 Imports Mis-invoicing of Fisheries Sector and Its Derivatives

4.1.2.1 Condition of Indonesian Fisheries Sector and Its Derivatives Import Records

During the period 2012 to 2021, many fisheries commodities and its derivatives were imported from countries such as China, Norway, Canada, the United States and Japan. Imports of fisheries and its derivatives from Indonesia in 2017 are the highest value of fisheries imports in the last 10 years. In 2021, the increase in total imports of fisheries

and its derivatives will increase by 105.02 percent compared to 2012, from USD 0.18 billion to USD 0.38 billion in 2021. Fisheries and its derivatives have an average contribution to total fisheries and its derivatives imports by 0.16 percent. The highest fisheries imports occurred in 2017 with a contribution of 0.25 percent to total imports. Post-Covid-19 economic recovery is considered to be one of the triggers for a significant increase in imports of fisheries and its derivatives in Indonesia.

From the fisheries sector and its derivatives (code 03 UN Comtrade) there are more than 200 sub-commodities with a 6-digit Harmonized System (HS) code that record imports from abroad. The total net weight and total trade value of imports from this sub-sector over the past 10 years has reached 1.6 million tons and the import value has reached nearly USD 2.7 billion. Of the total imports, there are 10 commodities with the highest total traded value.

Table 4.1 Import Commodities of the Fisheries Sector and Its derivatives Based on Traded Value 2012-2021

Code	Description	Total Net Weight (ton)	Total Traded Value (Million USD)
30354	Fish; frozen, mackerel ...	889,566.14	846.58
30614	Crustaceans; frozen, crabs, ...	52,914.62	525.18
30353	Fish; frozen, sardines ...	395,976.90	247.39
30214	Fish; fresh or chilled, Atlantic salmon...	13,674.35	123.38
30617	Crustaceans; frozen, shrimps and prawns, ...	15,387.30	117.05
30211	Fish; fresh or chilled, trout...	9,806.50	84.53
30363	Fish; frozen, cod ..	21,515.54	83.3
30342	Fish; frozen, yellowfin tunas...	37,989.99	74.58
30359	Fish; frozen, n.e.c. in item ...	47,939.35	49.07
30389	Fish; frozen, n.e.c. in heading 0303, excluding fillets...	44,404.81	48.28

Source: research findings (processed from UN Comtrade, 2022)

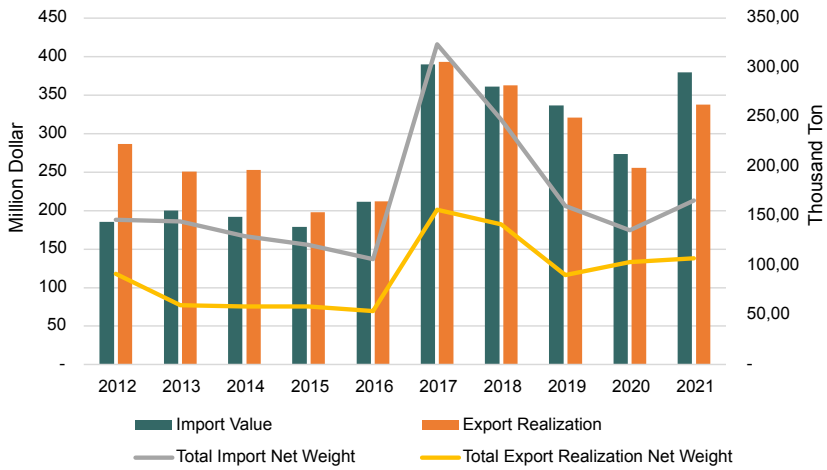
From table 4.3, it can be seen that the frozen fisheries sub-sector, mackerel (code 30354) is the largest contributor to the fisheries sector and its derivatives imports both in terms of total net weight (kg) and total trade value (USD) in the last 10 years. Derivatives of other fisheries products such as crustaceans (30614); or frozen fish, sardines (30353) have a very large difference from the first place, that is frozen fish, mackerel (code 30354). The export

value of crustaceans is almost 1.6 times the import value of crustaceans (30614) and 3.4 times the import value of frozen fish, mackerel (code 30354).

4.1.2.2 Import Data and Export Realization in Destination Countries

From 2012 to 2021, trade in the fisheries commodity sector and its derivatives (code 03 UN Comtrade) between Indonesia and other countries was recorded to experience fluctuations both in terms of traded value (USD) and in terms of net weight of goods (kg). When using the approach of calculating imports mis-invoicing, we need to look at the two sides of Indonesia as an importer and the realization when these goods exports arrive in Indonesia. The condition of trade records referred to here is an effort to compare data (total value and total net weight) of shipments and receipts of imported goods to Indonesia and exports from all partner countries to Indonesia.

Graph 4.7 Differences in Import and Export Realization from the Fisheries Sector and Its Derivatives 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

If we look at the data in graph 4.7, it is clear that there is a weight difference between imports and actual exports. This is obvious without having to calculate using the value in USD. The biggest difference in weight occurred in 2017 with a difference of 166.8 thousand tons. This indicates the occurrence symptoms of mis-invoicing on weight. In general, imports are always greater than actual exports from the destination country.

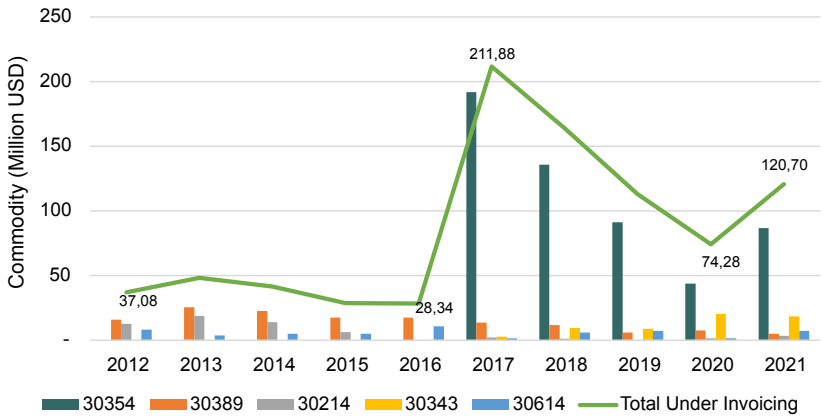
From 2012-2021 there is a difference value of either under or over-invoicing of USD 313.46 million. The difference reaches 11.57 percent of total fisheries imports from 2012-2021. The biggest difference occurred in 2012, this year there was a difference that reached USD 101.13 million.

From this data, it can be seen that the difference in weight and the difference in money does not run linearly. The biggest weight occurred in 2017 which reached 166.87 thousand tons but the biggest difference in money occurred in 2012 with a difference of USD 101.1 million. This could happen due to the fact that the exported values differ in quantity each year or in reality there are indications of intentional trade mis-invoicing using fisheries data and its derivatives.

4.1.2.3 Imports Under-Invoicing of Fisheries Sector and Its Derivatives

Under-invoicing occurs when the export value is lower than the import realizable value. From the results of our research, by looking at more than 200 sub-categories in the fisheries sector and its derivatives, we get 5 sectors with the largest under-invoicing in total. These five sectors include codes 30354, 30389, 30214, 30343 and 30614.

Graph 4.8 Under-Invoicing in the Fisheries Sector and Its Derivatives 2012-2021

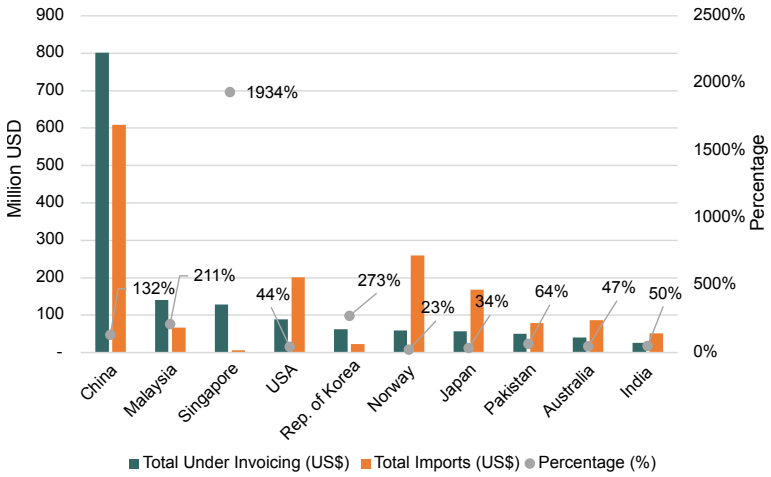


Source: research findings (processed from UN Comtrade, 2022)

Code 30354 is the commodity with the largest under-invoicing, reaching more than USD 549.33 million in the last 10 years, followed by codes 30389 (USD 142.98 million) and 30214 (USD 59.83 million). Looking at chart 4.4, it can be seen that under-invoicing fluctuates every year and increases in 2021. The value of under-invoicing has a tendency to increase again, this indicates the possibility of worse record or more cash outflows. The under-invoicing value increased from USD 142.64 million (2020) to USD 201.43 million (2021).

In 2017, there was a very significant increase in total under-invoicing. A very significant cause is because of the code 30354 (mackerel). When this commodity enters, the value became very large but over time it decreased from 2017 to 2021. The value of this illicit decreases every year, until in 2021 this value decreases to 50 percent. There was an improvement in record in particular for mackerel fish commodities.

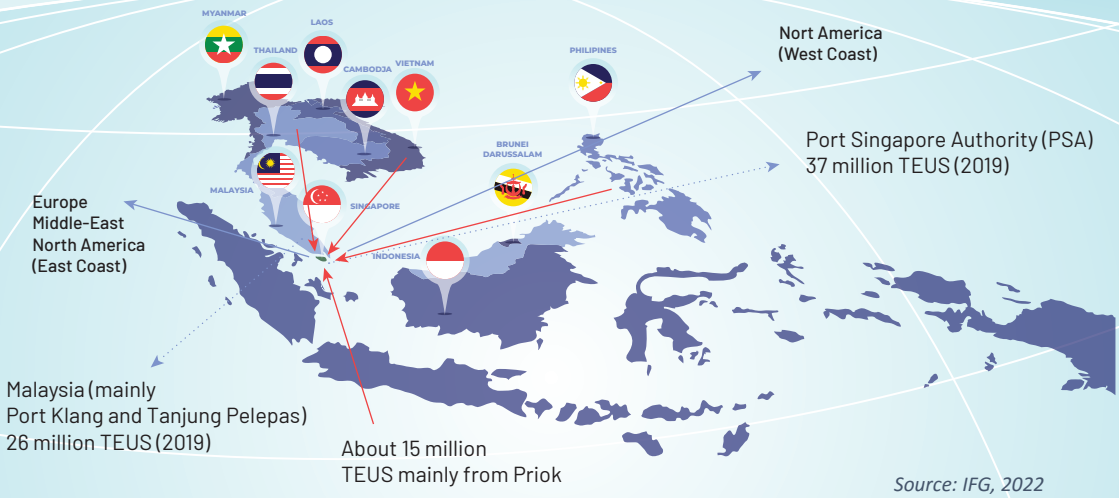
Graph 4.9 Total Under-Invoicing by Country in the Fisheries Sector and Its Derivatives, 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

If we look at the countries, we can see that China, Malaysia and Singapore are the countries with the highest under-invoicing. Over the past 10 years, China has experienced under-invoicing of more than USD 800 million, followed by Malaysia (USD 140.51 million) and Singapore (USD 128.3 million). When looking at the percentage, Singapore is the country with the largest percentage of under-invoicing and has reached more than 1,934 percent in the last 10 years, followed by South Korea (273 percent) and Malaysia (211 percent).

Figure 4.10 Trade Flows to and from ASEAN Countries



Source: IFG, 2022

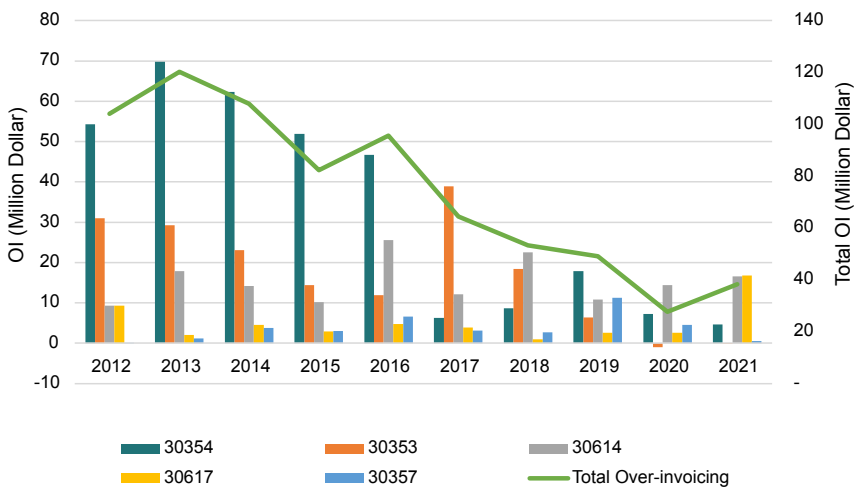
It can be said that many of Indonesia's imports are fictitious from these countries, especially Singapore. Logically, it can also be said that Singapore, which has the largest under-invoicing of imports value, does not have fisheries resources in the country that can be exported to Indonesia, as well as to Korea or Malaysia. China with the largest under-invoicing became the country with the largest under-invoicing of imports.

In terms of under-invoicing of imports, the state will experience losses due to import taxes that cannot be realized. On the other hand, the record between the two countries, Indonesia and Singapore, are very out of sync with one another. The value of under-invoicing reached 1934 percent compared to the actual exports. This is very possible because Singapore does not have fisheries production. On the one hand, many imported fisheries commodities that are not recorded enter from Singapore and cause illegal money to enter through mis-invoicing import.

4.2.2.4 Over-invoicing of Imports of Fisheries Sector and Its Derivatives

Over-invoicing occurs when the value of exports is higher than the realized value of imports. From the results of our research, by looking at more than 200 sub-categories in the fisheries sector and its derivatives, we get 5 sectors with the largest total over-invoicing. These five sectors are coded 30354, 30353, 30614, 30617 and 30357.

Graph 4.11 Total Import Over-Invoicing for the Fisheries Sector and Its Derivatives 2012-2021

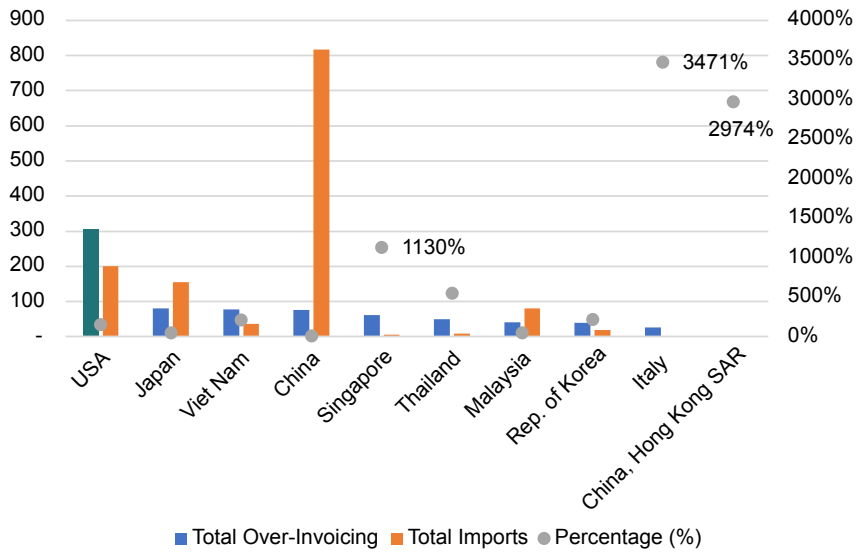


Source: research findings (processed from UN Comtrade, 2022)

Code 30354 is the commodity with the largest over-invoicing, reaching more than USD 330 million. In the last 10 years, this commodity was followed by 30353 (USD 172.25 million)

and 30614 (USD 153.67 million). Looking at graph 4.10, it can be seen that over-invoicing fluctuates every year but has a downward trend.

Graph 4.12 Total Over-Invoicing on Import Country for the Fisheries Sector and Its Derivatives 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

If we look by country, we can see that the United States, Japan, Vietnam, and China have the highest over-invoicing rates. During the last 10 years, the United States experienced over-invoicing of more than USD 304.4 million, followed by Japan (USD 80.44 million) and Vietnam (USD 77.22 million). When looking at percentages, Italy is the country with the largest percentage of over-invoicing and has reached more than 3,471 percent in the last 10 years, followed by Hong Kong (2974%) and Singapore (1,130%).

The conclusion is, that many countries suffer from over-invoicing and money going to the United States through fishing practices. On the other hand, the record between the two countries, Indonesia and Italy, are very out of sync with each other because the flow of money is not clear, the amount is very large, and reaches 34.71 times the value of Italian exports to Indonesia in the last 10 years.

4.2. Coal Mining Sector and Its Derivatives in Indonesia

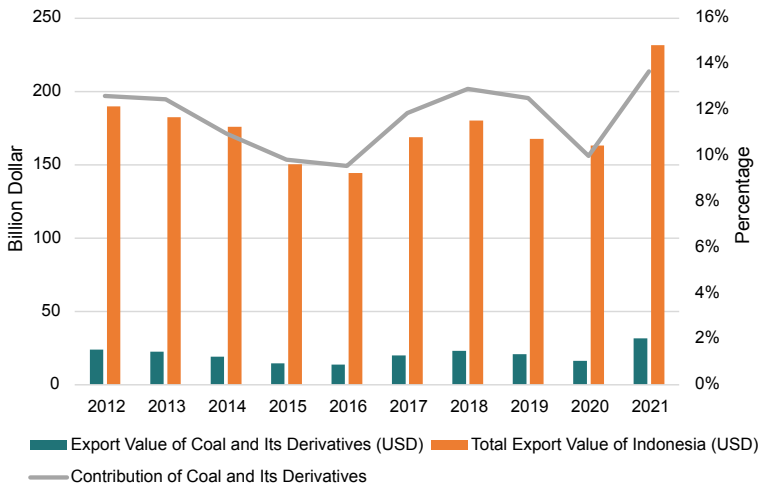
4.2.1 Mis-invoicing Exports of Coal Mining Sector and Its Derivatives

4.2.1.1 Condition of Export Records in Indonesian Coal Mining Sector and Its Derivatives

During the period from 2012 to 2021, many coal commodities and its derivatives were exported to countries such as China, India, Japan, South Korea, and Malaysia. Indonesia's

export of coal and its derivatives in 2021 is the highest export value of coal and its derivatives in the last 10 years with a value of USD 231.52 billion. In 2021, the increase in total exports of coal and its derivatives increased by 32.05 percent compared to 2012, from USD 190.03 billion to USD 231.52 billion in 2021. Coal and its derivatives have an average contribution to Indonesia's total exports reaching 11.64 percent over the past 10 years with the highest contribution value occurring in 2021 with a contribution of 13.67 percent to exports. The post-Covid-19 economic recovery is considered to be one of the triggers for a significant increase in exports of coal and its derivatives in Indonesia.

Graph 4.13 Export Development of the Coal Sector and Its Derivatives 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

From the coal sector and its derivatives, there are more than 14 sub-commodities with a 6-digit Harmonized System (HS) code that record abroad exports. The total net weight and total value of export trade from this sub-sector over the last 10 years reached 3.86 billion tons and the export value reached nearly USD 206.88 billion. Of the total exports, there are 14 commodities that are recorded based on the amount traded (see table in Appendix 7).

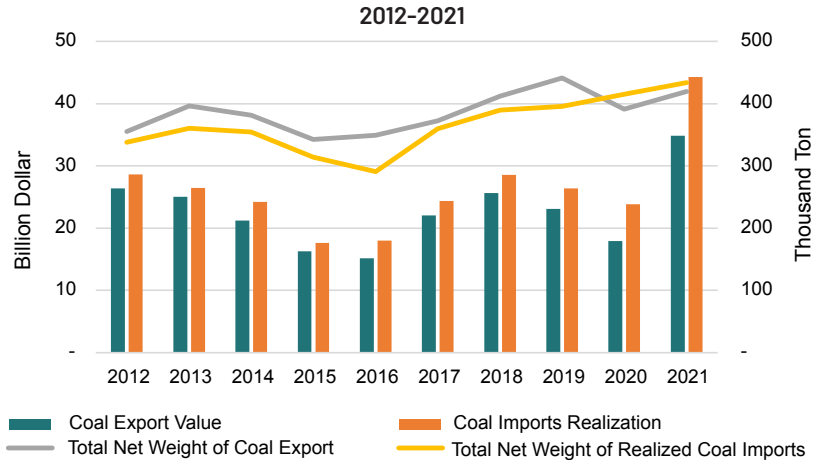
From the table in Appendix 7, it can be seen that the coal sub-sector other than anticite (code 270119) is the largest contributor to the export sector of coal and its derivatives both in terms of total net weight (kg) and total trade value (USD) in the last 10 years. Other coal products such as butimonous coal (270112) or lignite (270210) have a quite large difference from the first rank; coal other than anticite (code 270119). The export value of coal other than anticite (code 270119) is almost 1.5 times the export value of butimonous coal (270112) and almost 5 times the export value of lignite (270210).

4.2.1.2 Export Data and Revenue Realization in Destination Countries

In the period from 2012 to 2021, trade in the coal commodity sector and its derivatives

(code 27 UN Comtrade) between Indonesia and other countries was recorded to experience fluctuations both in terms of trade value (USD) and in terms of net weight of goods (kg). When using the approach by calculating mis-invoicing exports, we need to look at two sides, Indonesia as an exporter and the realization when the imported goods arrive in the destination country. The condition of trade records referred to here is an effort to compare data (total value and total net weight) of goods sent (exports) and receipt of goods from Indonesia to all partner countries (realized imports).

Graph 4.14 Differences in Exports and Realized Imports from the Coal Sector and Its Derivatives 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

If we look at the data in Graph 4.14, it is clear that there is a weight difference between exports and actual imports. This is obvious without having to calculate using the value in USD. The biggest difference in weight occurred in 2016 with a difference of 58 thousand tons. This already indicates the occurrence of mis-invoicing without having to calculate CIF. In general, exports are always higher than actual imports in the destination country.

From 2012-2021 there is a difference of USD 34.80 billion. This difference reaches 15.29% of total fisheries exports from 2012-2021. The biggest difference occurred in 2021, this year there was a difference that reached USD 9.47 billion.

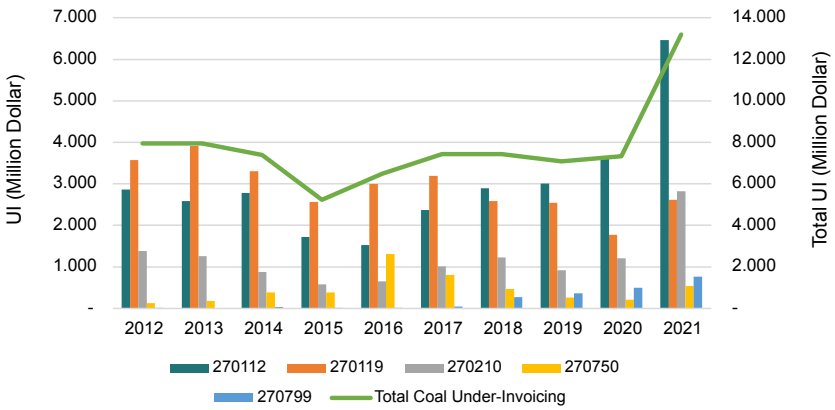
From this data, it can be seen that the difference in weight and the difference in money does not run linearly. The biggest weight occurred in 2016 which reached almost 58 thousand tons, but the biggest difference in money occurred in 2021 with a difference of USD 9.45 billion. This could happen due to the fact that the exported value differs in quantity between each year or, there is indeed an indication of intentional trade mis-invoicing using coal data.

4.2.1.3 Under-Invoicing the Export of Coal and Its Derivatives

Under-invoicing compared to the import realizable value occurs when the value of export is

lower. From the results of our research, by looking at more than 200 sub-categories in the fisheries sector and its derivatives, we get 5 sectors with the largest total under-invoicing. These five sectors include codes 270112, 270119, 270210, 270750 and 270799.

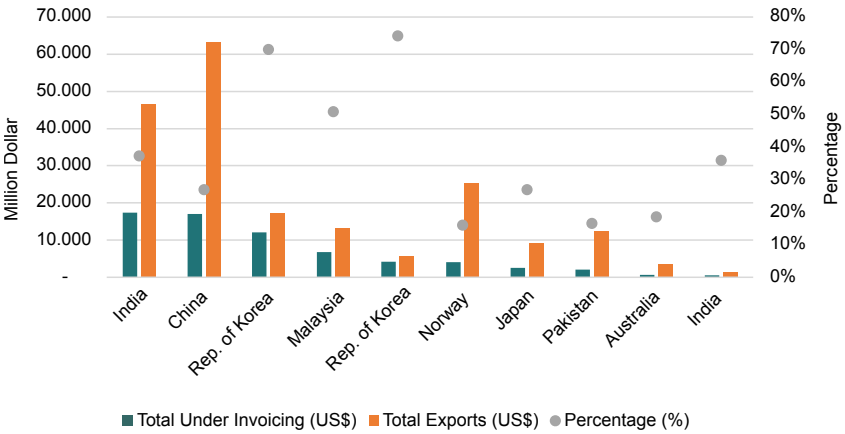
Graph 4.15 Export Under-Invoicing by Commodity for the Coal Sector and Its Derivatives 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

Code 270112 is the commodity with the largest under-invoicing, reaching more than USD 29.86 billion in the last 10 years, followed by codes 270119 (USD 29.067 billion) and 270219 (USD 11.9 billion). Looking at graph 4.15, it can be seen that under-invoicing is increasing every year, even 2021 is the highest year with under-invoicing for the last 10 years. This shows that the value of under-invoicing is increasing. This shows the possibility that the record will get worse or the outflow of money will increase.

Graph 4.16 Total State Under-Invoicing for the Coal Sector and Its Derivatives 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

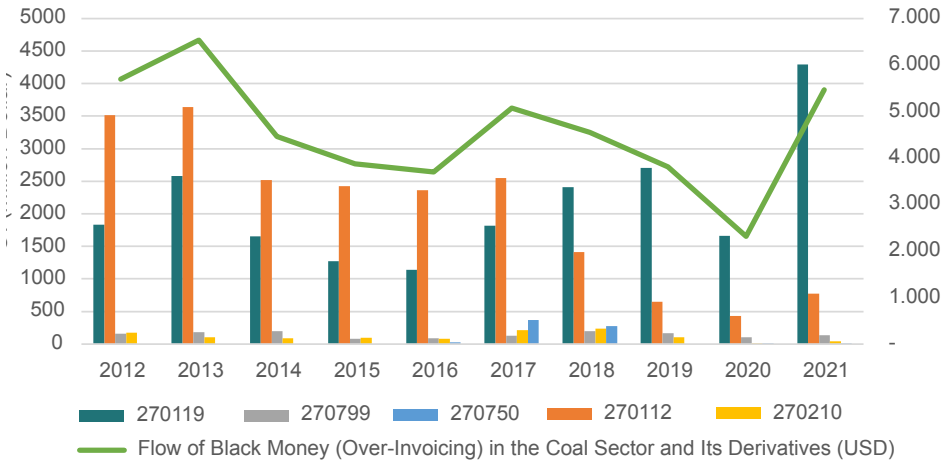
If we look at the countries, we can see that India, China, and South Korea are the countries with the highest under-invoicing. If we look at the countries, we can see that India experienced USD 17.44 billion, followed by China (USD 17.03 billion) and South Korea (USD 12.14 billion). China, Hong Kong is the country with the largest percentage of under-invoicing and has reached more than 74 percent in the last 10 years, followed by South Korea (70%) and Malaysia (51%).

The conclusion is, that the country with the largest under-invoicing and a lot of money going to India through the practice of trading coal and its derivatives. On the other hand, the record between the two countries, Indonesia and Hong Kong, are very out of sync with one another because the flow of money is not clear, the amount is very large and reaches 74 percent of the value of Indonesia's exports to Malaysia in the last 10 years.

4.2.1.4 Over-invoicing of Exports of Coal Sector and Its Derivatives

Over-invoicing occurs when the value of exports is higher than the realized value of imports. From the results of our research, by looking at 14 sub-categories in the coal sector and its derivatives, we get 5 sectors with the largest over-invoicing total. These five sectors are coded 270119, 270112, 270799, 270210 and 270750.

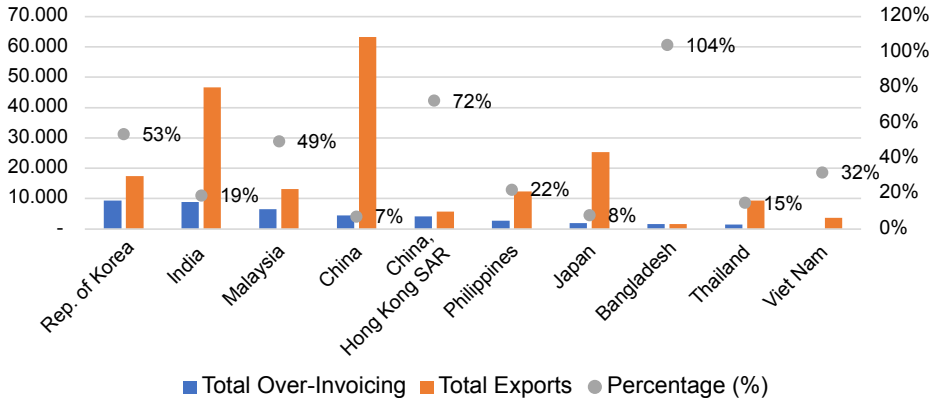
Graph 4.17 Over-invoicing of Exports by Commodity for the Coal Sector and Its Derivatives 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

Code 270119 is the commodity with the largest over-invoicing, reaching more than USD 21.36 billion. In the last 10 years, this commodity was followed by 270112 (USD 20.27 billion) and 270799 (USD 1.4 billion). It is clear that there is a considerable difference between position 3 and positions 2 and 1. Looking at graph 4.6, it can be seen that over-invoicing fluctuates every year and in 2021 it has increased very sharply to 136 percent from 2020.

Graph 4.18 Over-Invoicing of Exports for Coal and Its Derivatives by Country 2012-2021



Source: research findings (processed from UN Comtrade, 2022)

If we look at the countries, we can see that Korea, India and Malaysia have the highest over-invoicing. Over the last 10 years Korea has experienced over-invoicing reaching USD 9.2 billion, followed by India (USD 8.8 billion) and Malaysia (USD 6.5 billion). If you look at the percentage, Bangladesh is the country with the largest percentage of over-invoicing and has reached more than 104 percent in the last 10 years, followed by Hong Kong (72%) and Malaysia (49%).

In conclusion, due to the biggest over-invoicing, a lot of money are going to Korea through coal practices. On the other hand, the records between the two countries, namely Indonesia and Bangladesh, are very out of sync with one another because the flow of money is not clear, the amount is strangely large and has reached 104 percent of the value of Indonesia's exports to Bangladesh over the last 10 years.

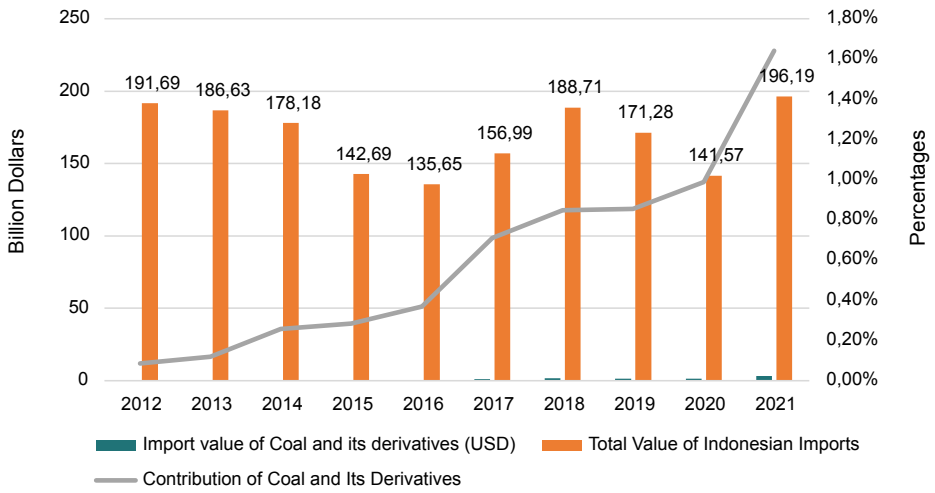
4.2.2 Mis-invoicing of Coal Sector Imports and Their Derivatives

4.2.2.1 Condition of Indonesia's Coal Sector Imports and Their Derivatives Records

Throughout 2012 to 2021, coal and its derivatives commodities have been imported to countries like Australia, China, Russia, Netherland, and Singapore. Indonesia's coal and its derivatives import in 2021 is the highest import value over the last 10 years.

Coal and its derivatives have an average contribution in Indonesia's total imports of 0.62 percent over the last 10 years with the highest contribution occurred in 2021 with 1.64 percent of total imports. Post COVID19 economic recovery considered to be one of the triggers for a significant increase in Indonesia's imports of coal and its derivatives.

Graph 4.19 Development of Coal Imports and Its Derivatives 2012-2021



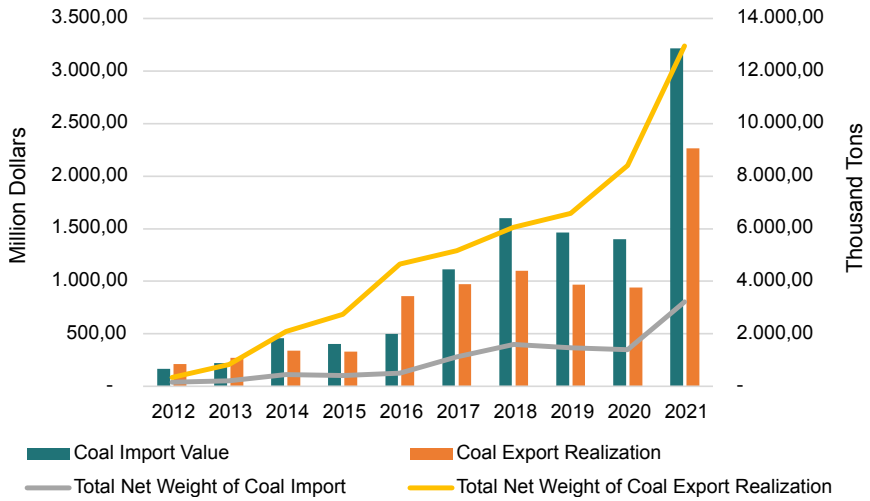
Source: research result (processedfrom UN Comtrade, 2022)

Coal and its derivatives import sector data (HS Code No. 27) recorded relatively stagnant trends. Even though there is an increasing trend, coal imports in 2012 increased from USD 191.69 billion to USD 196.18 billion in 2021. It can be seen in Graph 4.1 that the average contribution of coal and its derivatives exports is around 5.57 percent of total national exports for 10 years. The increase in contribution occurred in 2014 where it hit at 7.59 percent of national exports. In addition to the increase in national import contributions, the total import value of the coal mining and its derivatives sector has also increased by 114,22 percent with the value of USD 10.26 billion or nearly IDR 143 trillion in 2021 (see table in appendix 8).

From the table in Appendix 8, it can be seen that the bituminous coal sub-sector (code 270112) is the largest contributor to imports of the coal and its derivatives sector (code 27 UN Comtrade) both in terms of total net weight (kg) and total trade value (USD) in the period of the last 10 years. Other coal derivatives such as aromatic hydrocarbon (code 270750) or coke and semi coke (270400) have a very large difference from the first rank, namely bituminous coal (code 270112). The import value of bituminous coal (code 270112) is almost 4.2 times the import value of aromatic hydrocarbons (code 270750) and reaches 4.45 times the import value of coke and semi coke (270400).

4.2.2.2 Import and Export Data Realization from Destination Countries

Graph 4.20 Development of Coal and Its Derivatives Imports based on Trade Value and Net Weight 2012-2021



Source: research result (processed from UN Comtrade, 2022)

In the period from 2012 to 2021, Indonesia's trade of Coal and its Derivatives commodity sector (Code 27) with other countries was recorded to experience fluctuations both in terms of trade value (USD) and in terms of net weight of goods (kg). When using the approach of calculating import mis-invoicing, we need to look at two sides, namely Indonesia as an importer and the realization when these goods exports arrive at the destination country. The condition of trade records referred here is an effort to compare data (total value and total net weight) of goods shipped (exports) and receipt of goods from Indonesia to all partner countries (realized imports).

If we look at the data on Graph 4.3, there is a clear difference in weight between import and export realization. This clearly shown without the need to calculate its value in US Dollar. The biggest difference in weight occurred in 2012 with 176.1 thousand tons difference. This already indicates the occurrence of mis-invoicing without having to calculate CIF. In general, imports are always higher than exports realization of the destination country.

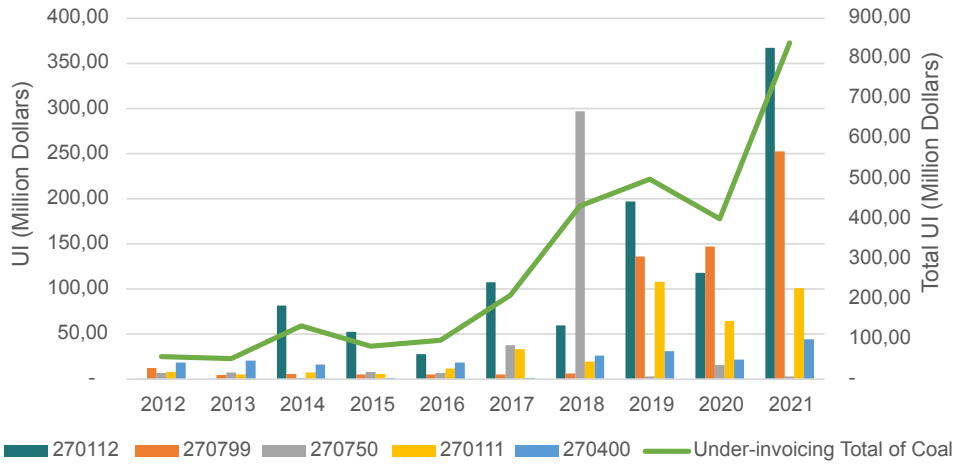
Throughout 2012-2021 there is a difference of USD 3.2 billion. This difference reaches 39 percent of total fisheries imports from 2012-2021. The biggest difference occurred in 2021, this year there was a difference reaching USD 953.1 million.

From the data above, it can be seen that the difference in weight does not run linearly with the difference in money. The biggest weight occurred in 2021 reaching 176,12 thousand tons, but the largest difference in money reaching USD 953.12 million. This could happen

because the exported value differs in quantity around this year or there is indeed an indication of intentional trade mis-invoicing using coal data.

4.2.2.3 Under-Invoicing of Coal and Its Derivatives Import

Graph 4.21 Under-Invoicing Import Based on Commodity for Coal and Its Derivatives 2012-2021

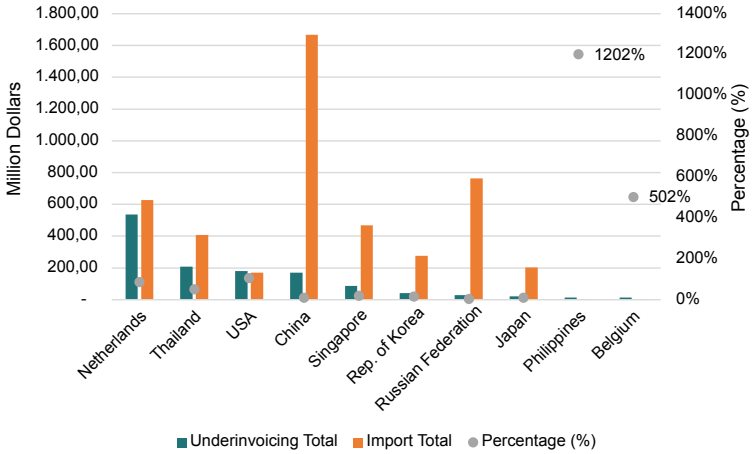


Source: research result (processed from UN Comtrade, 2022)

Under-invoicing occurs when import value is lower than export realization value. Based on the result of our research, by looking at 19 sub-categories in the coal mining and its derivatives sector, we found 5 sectors with the highest under-invoicing in total. These five sectors include codes 270112, 270799, 270750, 270111, dan 270400.

Code 270112 is the commodity with the largest under-invoicing, reaching more than USD 1 Billion for the last 10 years followed by code 270750 (USD 581.39 Million), and 270750 (USD 387.93 Million). Looking at Graph 4.4, it shows that under-invoicing fluctuates every year and will increase in 2021. This shows that the value of under-invoicing has a tendency to increase again, this also indicates worsen record or more money on the outflow.

Graph 4.22 Under-Invoicing Import to Coal and Its Derivatives Based on Countries 2012-2021



Source: research result (processed from UN Comtrade, 2022)

If we look by the countries, we can see that the Netherlands, Thailand, United States are countries with the highest under-invoicing. The Netherlands experiences under-invoicing of USD 537.04 million followed by Thailand (USD 209.19 million) and United States (USD 179.82 million). However, if we look by the percentage, Phillipines is country with the largest percentage of under-invoicing and has reached more that 1,200 percent in the last 10 years, followed by Belgium (502%) and the United States (105%).

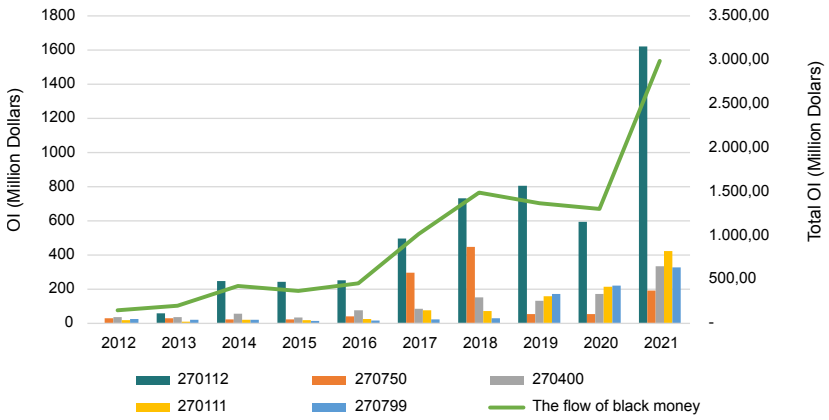
Conclusion

countries with the largest under-invoicing and a lot of money comes in from the Netherlands through the practice of trading coal and its derivatives.

On the other hand, the records between two countries, namely Indonesia and the Philippines, are very out of sync with one another due to the unclear flow of money, reaching 1,202 percent of the value of Indonesia's imports from the Phillipines over the last 10 years.

4.2.2.4 Over-Invoicing of Coal and Its Derivatives Import

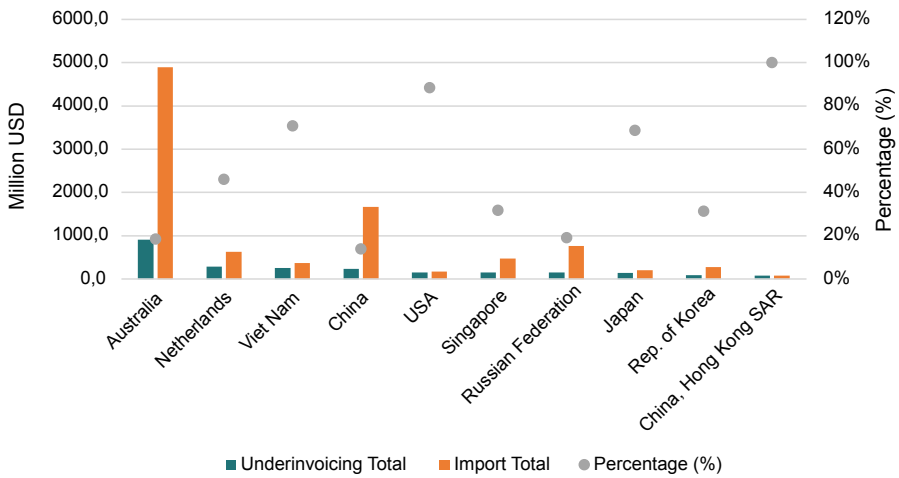
Graph 4.23 Over-Invoicing Import for Coal and Its Derivatives Based on Commodity 2012-2021



Source: research result (processed from UN Comtrade, 2022)

Based on our research findings by looking at 14 sub-categories in coal and its derivatives sectors, we found 5 sectors with the largest over-invoicing in total. These five sectors include in codes 270112, 270750, 270400, 27011, dan 270799. Code 270112 is the commodity with the highest over-invoicing, reaching more than USD 5 billion in the last 10 years. These commodities were followed by 270750 (USD 1.2 billion) and 270400 (USD 1.13 billion). Looking at Graph 4.6, it shows that over-invoicing fluctuates every year and in 2021 it has increased very sharply, up to 129.41% from 2020.

Graph 4.24 Over-Invoicing Import for Coal and Its Derivatives Based on Countries 2012-2021



Source: research result (processed from UN Comtrade, 2022)

If we look by country, we can see that Australia, the Netherlands and Vietnam have the highest over-invoicing. Over the past 10 years Australia has experienced over-invoicing reaching USD 903.4 million, followed by the Netherlands (USD 288.9 million) and Vietnam (USD 257.7 million). Looking at the percentage of China, Hong Kong SAR is the country with the largest percentage of over-invoicing and has reached more than 100 percent in the last 10 years, followed by Singapore (88%) and Vietnam (71%).

In conclusion, the largest over-invoicing country and a lot of money going to Australia through coal practices. On the other hand, records between two countries, namely Indonesia and Hongkong are out of sync to one another due to the unclear flow of the money reaching 100% of Indonesia's import value from Hongkong for the last 10 years.

Hongkong is similar to Singapore, this country is a trading hub for many commercial goods. This area is similar to Singapore. It is very likely that the new coal trade that occurs is in the nature of repeated exports and imports. Although Hongkong has natural resources (HKSS, 2022), it is impossible to export its resources to country like Indonesia that is rich in coal. There is a huge possibility that Indonesia will import high-calorie coal specifically for Indonesia from other countries through Hong Kong, whose tariffs can be lower for trade.

4.3 Calculation of Losses

Calculating state losses is to calculate both in terms of export mis-invoicing and import mis-invoicing. From the results of our research, we obtain several things that are a loss to the state in terms of tax potential. Some potential tax losses, namely for imports, PPN (Value-added-tax) (10%) and PPH (Income Tax) 22 (2.5%), on the other hand, for exports, there is a potential for royalties and PPH (Income Tax) (1.5%).

4.3.1 Calculation of Losses from Fisheries and Its Derivatives Sector

4.3.1.1 Export Mis-invoicing

4.3.1.1.1 Export Under-invoicing of Fisheries and Its Derivatives Exports

Export under-invoicing in fisheries commodity occurs when export value is lower than import realization in the involved countries. Based on the Regulation of Indonesia's Minister of Finance Number 39/PMK No. 010/2022 concerning the determination of export goods subject to export duties and fish export duties. The state has no losses with quantifiable units of money because these fishery commodities are not subject to taxes or export tariffs. On the other hand, with export under-invoicing, money flows to other countries with unclear records. This does not harm the state directly from tax or non-tax results.

4.3.1.1.2 Export Over-Invoicing in Fisheries and Its Derivatives Sector

Fishery export over-invoicing occurs when export value is higher than import realization in the involved countries. Based on the Regulation of Indonesia's Minister of Finance Number 39/PMK No. 010/2022 concerning the determination of export goods subject to export duties and fish export duties. The state will not face any quantifiable losses because fisheries sector is not subject to tax or export tariff. On the other hand, with export over-invoicing, money is coming to Indonesia from unclear sources. This could be a form of money laundering mode or other things outside of miscalculation records.

4.3.1.2 Import Mis-invoicing

4.3.1.2.1 Import Under-Invoicing of Fisheries and Its Derivatives Sector

Import under-invoicing in fisheries sector occurs when import value is lower than realization export to the involved countries. When under-invoicing occurs, the state suffers losses because it does not get any potential income. Potential income that occurs is obtained from PPN (Value-added-tax) (10%) and PPH (Income Tax) 22 (2.5%).

Table 4.2 Amount of Potential Income Losses from Coal Imports Under-Invoicing 2012-2021 (Million US Dollars)

Year	Under-invoicing Amount	PPN (Val-ue-added-tax) (10%)	PPH (Income Tax) 22 (2,5%)
2012	151.00	15.10	3.77
2013	105.44	10.54	2.64
2014	111.78	11.18	2.79
2015	86.45	8.65	2.16
2016	87.88	8.79	2.20
2017	290.29	29.03	7.26
2018	243.17	24.32	6.08
2019	185.88	18.59	4.65
2020	142.64	14.26	3.57
2021	201.43	20.14	5.04
Total	**1,605.97**	**160.60**	**40.15**

Source: research result (processed from UN Comtrade, 2022)

The country's total losess is more than USD 200 million in terms of PPN (Value-added-tax) (10%) or PPH (Income Tax) 22 (2.5%).

4.3.1.2.2 Import Over-Invoicing of Fisheries and Its Derivatives Sector

Fisheries import over-invoicing occurs when import value is higher than export realization from the involved countries. When import over-invoicing occurred, countries will get more income from PPN (Value-added-tax) (10%) or PPH 22 (Income Tax) (2,5%). However, there is an unclear flow of money to other countries.

Import over-invoicing makes it possible for a country to gain profit from taxes, but this source of money is not in accordance with its record to trading partners at the same time. This is resulted in the unclear amount of money getting into Indonesia.

4.3.2 Calculation of Losses in Coal Mining and Its Derivatives Sector

4.3.2.1 Export Mis-Invoicing of Coal and Its Derivatives Sector

4.3.2.1.1 Export Under-Invoicing of Coal Mining and Its Derivatives Sector

Coal export under-invoicing occurs when export value is lower than import realization in the involved countries. Based on the Regulation of Indonesia's Minister of Finance Number 39/PMK No. 010/2022 on the determination of export goods subject to export duties and coal export duty rates subject to PPH (Income Tax) and royalties.

Table 4.3 Total Loss Income Potential from Coal Export Under-Invoicing 2012-2021 (Million US Dollars)

Year	Under-invoicing Total	PPH (in-come tax) 1,5%	Royalty 5%
2012	7,940.64	119.11	397.03
2013	7,939.72	119.10	396.99
2014	7,386.59	110.80	369.33
2015	5,238.76	78.58	261.94
2016	6,487.61	97.31	324.38
2017	7,429.89	111.45	371.49
2018	7,440.23	111.60	372.01
2019	7,086.53	106.30	354.33
2020	7,332.32	109.98	366.62
2021	13,199.44	197.99	659.97
Total	77,481.72	1,162.23	3,874.09

Source: research result (processed from UN Comtrade, 2022)

The country's total loss is more than USD 5 billion in terms of PPH (income tax) (1,5%) or even royalty (5%). This loss consists of PPH (income tax) potential USD 1.16 billion and royalty potential loss at USD 3.87 billion over the last 10 years.

4.3.2.1.2 Export Over-Invoicing of Coal Mining and Its Derivatives Sector

Coal export over-invoicing occurs when export value is higher than import realization in the involved countries. Based on the Regulation of Indonesia's Minister of Finance Number 39/PMK No. 010/2022 on the determination of export goods subject to export duties and coal export duty rates subject to PPH (Income Tax) and royalties. Coal is subject to income tax and royalties, but because the understanding here is over-invoicing where goods are exported more than they should, the government gets additional income from PPH (income tax) and royalties. There is no loss to the state in terms of money valuation that occurs here.

On the other hand, export over-invoicing consists of money coming to Indonesia without clear sources. This can lead to money laundering mode or other illegal things outside of miscalculation records.

4.3.2.2 Import Mis-invoicing of Coal Mining and Its Derivatives Sector

4.3.2.2.1 Import Under-Invoicing of Coal Mining and Its Derivatives Sector

Table 4.4 Total of Income Tax Potential Loss from Coal Import Under-Invoicing (Million US Dollars)

Year	Under-invoicing total	PPN (Val-ue-added-tax) 10%	PPH 22 (in-come tax) (2,5%)
2012	56.43	5.64	1.41
2013	51.76	5.18	1.29
2014	133.52	13.35	3.34
2015	82.85	8.29	2.07
2016	97.84	9.78	2.45
2017	209.56	20.96	5.24
2018	431.89	43.19	10.80
2019	498.56	49.86	12.46
2020	400.40	40.04	10.01
2021	838.49	83.85	20.96
Total	**2,801.32**	**280.13**	**70.03**

Source: research result (processed from UN Comtrade, 2022)

The country's loss more than USD 350 million only from PPN (Value-added-tax) (10%) or PPH 22 (income tax) (2.5%). This loss if divided coming from PPN (Value-added-tax) (USD 280 million) and PPH 22 (income tax) (USD 70 Million).

4.3.2.2.2 Import Over-Invoicing in Coal and Its Derivatives Sector

Coal import over-invoicing occurs when import value is higher than export realization from the involved countries. When import over-invoicing happens, the country will get more income from taxes such as PPN (value-added-tax) (10%) or PPH 22 (income tax) (2.5%). On the other hand, there is an unclear outflow of the money to other countries.

Import over-invoicing makes it possible for a country to gain profit from tax, but this source of money is not in accordance with other trade partners. This makes it unclear if money is leaving Indonesia, even though there is no loss to the state in this case.

Table 4.5 Research Result Recapitulation from Fisheries and Coal Sector with Their Derivatives

Commodity	*Illicit Mode*	*Mis-invoicing*	Largest Black Commodity	Mis-invoicing Total for 10 years (Million US Dollars)	Largest Black Money Countries	Country Loss (Million US Dollars)			
						PPN (Value-added-tax) (10%)	Royalty (5%)	PPH 22 (Income Tax) (2,5%)	PPH (Income Tax) (1,5%)
Fisheries	Export Mis-invoicing	Under Invocing	30617 Crustaceans; frozen, shrimps and prawns...	6,248.17	USA	-	-	-	-
		Over-invoicing	30617 Crustaceans; frozen, shrimps and prawns ...	1,100.29	USA	-	-	-	-
	Import Mis-invoicing	Under Invocing	30354 Fish; frozen, mackerel ...	1,605.97	China	160.60	-	40.15	-
		Over-invoicing	30354 Fish; frozen, mackerel ...	742.89	USA	-	-	-	-

Batu Bara	Misinvoicing Ekspor	Under Invocing	270112 Coal; bituminous, whether or not pulverised, but not agglomerated	77,481.72	India	-	3,874.09	-	1,162.23
		Over Invoicing	270119 Coal; (other than anthracite and bituminous), whether or not pulverised but not agglomerated	45,490.03	South Korea	-	-	-	-
	Misinvoicing Impor	Under Invocing	270112 Coal; bituminous, whether or not pulverised, but not agglomerated	2,801.32	Netherlands	280.13	-	70.03	-
		Over Invoicing	270112 Coal; bituminous, whether or not pulverised, but not agglomerated	9,779.69	Australia	-	-	-	-
						440.73	3,874.09	110.18	1,162.23
						5,587.23			

Sumber: hasil penelitian (diolah dari UN Comtrade, 2022)

Table 4.5 shows that countries facing income loss worth USD 5.58 billion or IDR 74 trillion, equal with 3.7% of the country's income in 2021 over the last 10 years. This loss is based on 4 tax sources, namely PPN (value-added-tax), Royalties, PPH (Income Tax) Article 22 (2 .5%) and PPH (income tax)(1.5%). Through the trade mis-invoicing method from both sides, exports and imports, we get country and commodity sources that have experienced the greatest embezzlement.

Commodity with the largest embezzlement are shrimps (30617) and mackerel (30354) on relatively significant value. In total, the embezzlement coming from fisheries and its derivatives sector worth USD 9.67 billion along with the country's potential loss worth USD 200 million or IDR 2.7 trillion during 2012-2021.

In coal sector, the largest embezzlement happens with trade partners such as India, South Korea, Netherlands, and Australia. Coal commodities with the largest illicit occurs in baruea bitominious commodity (270112) and coal other than anthracite and bitominous (270119). From the coal and its derivatives sector, the country experienced a total embezzlement of USD135.5 billion with a potential loss of state income of USD 5.3 billion or IDR 70.3 trillion during 2012-2021.

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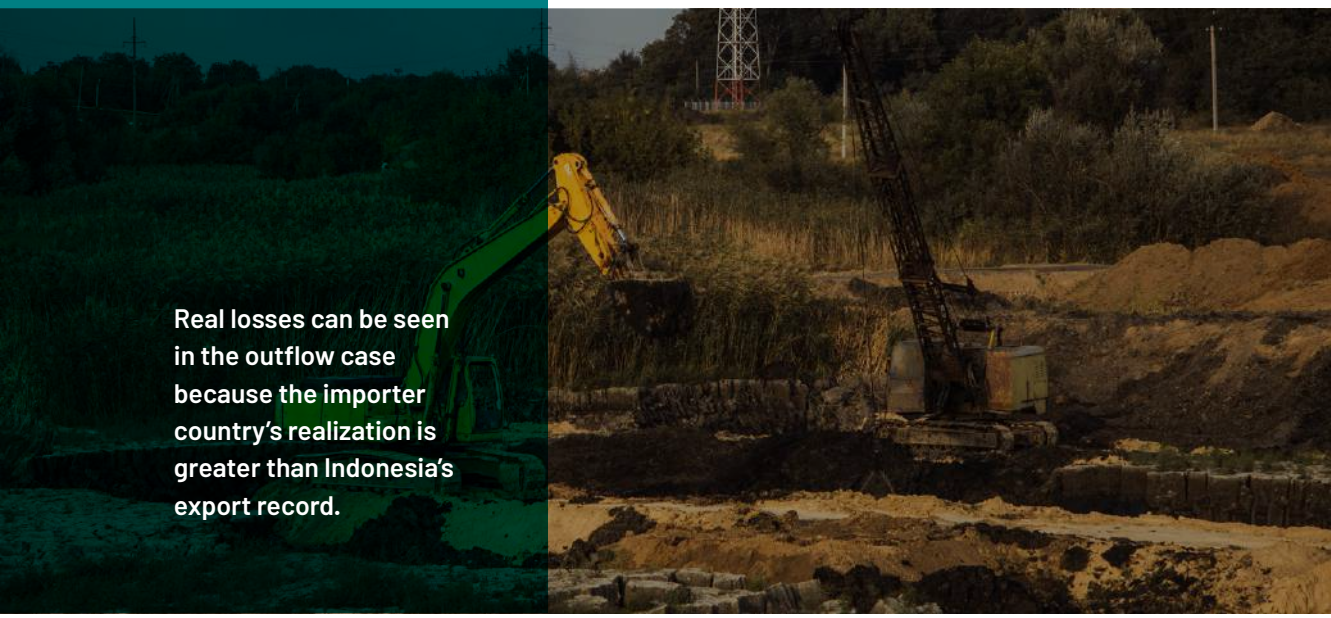
CHAPTER 5 CLOSING



Real losses can be seen in the outflow case because the importer country's realization is greater than Indonesia's export record.

5.1 Conclusion

Illicit Financial Flows indicate the existence of unclear flow of money coming in or going out in a country. There are two financial flows in calculating illicit financial flows called inflow and outflow. Inflow occurs due to over-invoicing while outflow occurs with under-invoicing mode. Real losses can be seen in the outflow case because the importer country's realization is greater than Indonesia's export record. The difference must be taxed, in this study it is fisheries or coal and their derivatives commodity taxes for customs. Potential losses are also calculated based on assumption using PNBP (Non-tax revenue) through royalties.

Based on the practices of illicit financial flows occurred in several developed and developing countries analyzed in this research, it is known that illicit financial flows can occur due to, among other things, first, the self-assessment reporting system likely to trigger gaps in recorded trade. Second, there is a transit process at the time of delivery of goods which creates a potential recording gap. Third, the recording of international transactions is not centrally synchronized.

It is predicted that Indonesia lost its potential income worth USD 5.58 billion from trade mis-invoicing practices in fisheries and coal sector during 2012-2021.

The largest potential loss comes from coal sector with USD 5.32 billion and fisheries with USD 200 million over the last 10 years.

In fisheries sector, the largest embezzlement occurred in the United States and China. Commodity with the biggest embezzlement are crustaceans (30617) and mackerel (30354) whose values are relatively significant. In the coal sector, the largest embezzlement occurred with trading partners India, South Korea, the Netherlands and Australia. The coal commodity with the biggest illicit occurs in bituminous coal (270112) and coal other than anthracite and bitominous (270119).

5.1.1 Fisheries Sector

In the fisheries sector over the last 10 years, it was found that there was embezzlement value worth USD 9.7 billion or IDR 128.6 trillion. This value consists of export mis-invoicing worth USD 7.34 billion (IDR 97.3 trillion) and import mis-invoicing worth USD 2.3 billion (IDR 30.5 trillion). The largest export mis-invoicing in terms of under and over occurs in crustacean commodity (code 30617). On the under-invoicing side of USD 6.2 billion (IDR 82.2 trillion) and over-invoicing USD 1.1 billion (IDR 14.6 trillion rupiah). Both are recorded by partner country of the United States with the country ranks first in terms of export mis-invoicing.

Import mis-invoicing in terms of under and over occurs to the same commodity, mackerel (code 30354). On the under-invoicing side of USD 1.6 billion (IDR 21.2 trillion) and over-invoicing USD 742 million (IDR 9.8 trillion). The largest under-invoicing occurs in China and

there is a state loss of USD 200.7 million (IDR 2.7 trillion) from both PPN (value-added-tax) and PPH 22 (income tax). Over-invoicing occurred in the United States.

From these results, the commodity that needs to be monitored more closely in the fisheries sector and its derivatives is the export of crustaceans (code 301617), particularly to the United States. Meanwhile, from the import side, commodity that needs to be monitored closely is the frozen mackerel sub-commodity imported from China and the United States.

5.1.2 Coal Sector

In coal sector, over the last 10 years there has been embezzlement value worth USD 133.5 billion or equal with IDR 1.770 trillion. This value consists of export mis-invoicing of USD 122.9 billion (IDR 1.639 trillion) and import mis-invoicing of USD 12.5 (IDR 165.8 trillion). This number is far greater than mis-invoicing value occurred in fisheries sector.

Export mis-invoicing occurs into two different commodities where under-invoicing happened to bituminous coal (270112), while over-invoicing happened to coal other than anthracite (270119). From export mis-invoicing point of view worth USD 122.9 billion (IDR 1.630 trillion) there are two sides of embezzlement, under-invoicing of USD 77.5 billion (IDR 1.028 trillion) and over-invoicing of USD 45.49 billion (IDR 603 trillion). The largest export under-invoicing occurs in India while the largest export over-invoicing occurs in South Korea.

Losses occur in export under-invoicing due to country loss of potential income from royalties and PPH (income tax). The potential income loss occurs worth USD 3.8 billion (IDR 50.4 trillion) in royalties and USD 1.16 billion (IDR 15.4 trillion) from PPH (income tax) (1.5%). From under-invoicing side causing the country's loss from income tax happened with Indonesia and India, meanwhile from over-invoicing side occurs in South Korea.

Import mis-invoicing from both under and over occurs to the same commodity, namely coal bituminous (code 270112). From under-invoicing side of USD 2.8 billion (IDR 37.1 trillion) and over-invoicing USD 9.7 billion (IDR 128.6 trillion). The largest under-invoicing occurs in the Netherlands with the country's loss of USD 350.16 million (IDR 4.6 trillion) from both PPN (value-added-tax) or even PPH 22 (income tax). Meanwhile, over-invoicing occurs in Australia.

In conclusion, commodity that needs to be monitored from export perspective is coal with 270012 code (coal; bituminous) and 270119 (coal other than anthracite) to India and South Korea. Meanwhile, from import cases, commodity that needs to be monitored is 270112 (coal bituminous) from the Netherlands and Australia.

5.2 Recommendation

Based on the research findings, there are several recommendations as follows:

1. The Ministry of Finance, Directorate General of Taxation plays an active role in integrating information activities across countries through the Automatic Exchange of Information (AEOI) mechanism related to export and import activities so that mis-invoicing practices can be minimized.
2. The Directorate General of Customs and Excise shall review the reporting system that uses a self-assessment system because it still has weaknesses causing a huge gap in the occurrence of trade mis-invoicing, such as not filling the correct information. In addition, the government can improve their supervision of compliance with the fulfillment of tax obligations both formally and materially, especially for sectors that have a high risk of IFF practices.
3. The Directorate General of Customs and Excise can map the HS (Harmonized System) code recording for more responsible records. The recording/determination of the HS code for exported and imported goods to match those with the code listed in the applicable Indonesian Customs Tariff Book (BTKI) to avoid IFF practices.
4. The Ministry of Mineral and Coal Resources needs to harmonize the applicable laws and regulations, especially those related to the authority to grant licenses for mining activities. By the existence of laws and regulations that are aligned, not overlapping, and conflicting with one another, as well as to provide legal certainty, it is hoped that the IFF practices because of the use of gray areas or loopholes by certain parties for laws and regulations that are not aligned can be avoided.
5. The Ministry of Industry and Trade shall form a team of authorities in monitoring exports for each commodity. Along with integrating the information and data across government agencies related to export and import activities, as well as the collection of the country's income in the form of taxes, customs and non-tax stat revenues, so that the database is formed as a basis of supervision for exporters and importers. The business process database from the upstream to downstream for sectors vulnerable to IFF practices needs to be made digitally, regularly updated, and integrated.
6. The Ministry of Maritime Affairs and Fisheries needs to update the benchmark price of fish periodically for the calculation of levies on fishery products, so that the reference price for fishery commodities can better reflect the prevailing market price which will ultimately be reflected in state revenues that are more in line with the condition of the fish market price.

7. The Ministry of Maritime Affairs and Fisheries, the Ministry of Industry and Trade together with various stakeholders including the private sector need to determine the types of fish listed in the standard price of fish with reference to the generally accepted HS code to create a database that refers to a standardized classification system in creating a valid database.
8. The government can involve GAFEKSI/INFA (All Indonesian Forwarders and Expeditionary Association/Indonesian Forwarders Association) to supervise export and import activities to prevent and reduce IFF problems.

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Appendices

Appendix 1. Table of National Trade Total and Growth

Year	National Export Total	Export Growth	National Import Total	Import Growth	Difference in Ex-port and Import
2012	90,031,839,234		191,690,908,079		-1,659,068,845
2013	182,551,754,383	-3.94%	86,628,630,620	-3%	-4,076,876,237
2014	176,036,194,332	-3.57%	178,179,340,198	-5%	-2,143,145,866
2015	150,366,281,305	-14.58%	142,694,802,188	-20%	7,671,479,117
2016	144,489,796,416	-3.91%	135,652,799,792	-5%	8,836,996,624
2017	168,827,553,995	16.84%	156,985,501,122	16%	11,842,052,873
2018	180,215,034,046	6.75%	188,711,171,618	20%	-8,496,137,572
2019	167,682,995,083	-6.95%	171,275,708,684	-9%	-3,592,713,601
2020	163,191,837,261	-2.68%	141,568,761,235	-17%	21,623,076,026
2021	231,522,458,083	41.87%	196,189,955,586	39%	35,332,502,497

Appendix 2. Total of Fisheries Export Net Weight and Trade Value, 2012 – 2021 (Based on the largest export)

Code	Description	Total Net Weight (ton)	Total Trade Value (Million USD)
30617	Crustaceans; frozen, shrimps and prawns, excluding...	2,762,626.35	26,085.09
30743	Molluscs; cuttle fish and squid, whether in shell or not...	1,201,251.47	4,048.52
30389	Fish; frozen, n.e.c. in heading 0303, excluding fillets...	3,290,397.46	3,960.52
30487	Fish fillets; frozen, tunas (of the genus Thunnus), ...	428,299.29	2,916.45

30499	Fish meat, excluding fillets, whether or not minced...	679,783.40	2,330.79
30489	Fish fillets; frozen, of fish n.e.c. in heading 0304.8	303,170.42	1,750.60
30749	Molluscs; cuttle fish and squid, whether in shell or not, frozen, dried, salted, in brine, or smoked, cooked or	768,474.38	1,501.62
30343	Fish; frozen, skipjack or stripe-bellied bonito, excluding fillets, fish meat of 0304, and edible fish ...	966,445.18	1,460.89
30461	Fish fillets; frozen, tilapias (Oreochromis spp.)	220,733.44	1,399.22
30289	Fish; fresh or chilled, n.e.c. in heading 0302, excluding fillets, fish meat of 0304, and edible fish ...	791,067.53	1,322.11
	Dan 190 + kode lainnya		

Source: UN Comtrade, 2022 (processed)

Appendix 3. Fisheries Sector Category Based on Total Trade Value 2001 – 2021

Code	Description	Total Net Weight (ton)	Total Trade Val-ue (Million USD)
30354	Fish; frozen, mackerel ...	889,566.14	846.58
30614	Crustaceans; frozen, crabs, ...	52,914.62	525.18
30353	Fish; frozen, sardines ...	395,976.90	247.39
30214	Fish; fresh or chilled, Atlantic salmon...	13,674.35	123.38
30617	Crustaceans; frozen, shrimps and prawns, ...	15,387.30	117.05
30211	Fish; fresh or chilled, trout...	9,806.50	84.53
30363	Fish; frozen, cod ..	21,515.54	83.3
30342	Fish; frozen, yellowfin tunas...	37,989.99	74.58
30359	Fish; frozen, n.e.c. in item ...	47,939.35	49.07
30389	Fish; frozen, n.e.c. in heading 0303, excluding fillets...	44,404.81	48.28

Source: UN Comtrade, 2022 (processed)

Appendix 4. Development of Export in Fisheries and Its Derivatives Sector 2012 – 2021

Year	Fisheries Export	Total Export	Percent
2012	2,753,071,881	190,031,839,234	1.45%
2013	2,856,355,256	182,551,754,383	1.56%
2014	3,111,926,026	176,036,194,332	1.77%
2015	2,658,638,176	150,366,281,305	1.77%
2016	2,900,603,629	144,489,796,416	2.01%
2017	3,273,305,247	168,827,553,995	1.94%
2018	3,311,915,869	180,215,034,046	1.84%
2019	3,268,801,475	167,682,995,083	1.95%
2020	3,513,112,771	163,191,837,261	2.15%
2021	3,709,542,307	231,522,458,083	1.60%

Appendix 5. Table of Import Development of Fisheries and Its Derivatives Sector 2012 – 2021

Year	Fisheries Export	Total Export	Percent
2012	2,753,071,881	190,031,839,234	1.45%
2013	2,856,355,256	182,551,754,383	1.56%
2014	3,111,926,026	176,036,194,332	1.77%
2015	2,658,638,176	150,366,281,305	1.77%
2016	2,900,603,629	144,489,796,416	2.01%
2017	3,273,305,247	168,827,553,995	1.94%
2018	3,311,915,869	180,215,034,046	1.84%
2019	3,268,801,475	167,682,995,083	1.95%
2020	3,513,112,771	163,191,837,261	2.15%
2021	3,709,542,307	231,522,458,083	1.60%

Source: UN Comtrade, 2022 (processed)

Appendix 6. Table of Coal and Its Derivatives Commodity Export Based on Trade Value 2012 – 2021

Code	Description	Total Net Weight (ton)	Total Trade Value
(Million USD)	Crustaceans; frozen, shrimps and prawns, excluding...	2,762,626.35	26,085.09
30743	Molluscs; cuttle fish and squid, whether in shell or not...	1,201,251.47	4,048.52
30389	Fish; frozen, n.e.c. in heading 0303, excluding fillets...	3,290,397.46	3,960.52
30487	Fish fillets; frozen, tunas (of the genus Thunnus), ...	428,299.29	2,916.45
30499	Fish meat, excluding fillets, whether or not minced...	679,783.40	2,330.79
30489	Fish fillets; frozen, of fish n.e.c. in heading 0304.8	303,170.42	1,750.60
30749	Molluscs; cuttle fish and squid, whether in shell or not, frozen, dried, salted, in brine, or smoked, cooked or	768,474.38	1,501.62
30343	Fish; frozen, skipjack or stripe-bellied bonito, excluding fillets, fish meat of 0304, and edible fish ...	966,445.18	1,460.89
30461	Fish fillets; frozen, tilapias (Oreochromis spp.)	220,733.44	1,399.22
30289	Fish; fresh or chilled, n.e.c. in heading 0302, excluding fillets, fish meat of 0304, and edible fish ...	791,067.53	1,322.11
...	dan 200 lebih HS Code lainnya	...	...

Source: UN Comtrade, 2022 (processed)

Appendix 7. Table of Coal and Its Derivatives Commodity Export Based on Trade Value 2012 – 2021

Code	Description	Total Net Weight (ton)	Total Trade Value
(Million USD)	Coal; (other than anthracite and bituminous), whether or not pulverised but not agglomerated	2,185,095,865	106,456
270112	Coal; bituminous, whether or not pulverised, but not agglomerated	1,039,832,258	70,732
270210	Lignite; whether or not pulverised, but not agglomerated, excluding jet	620,471,181	24,124
270799	Oils and other products of the distillation of high temperature coal tar; n.e.c. in heading no. 2707	5,944,551	3,281
270750	Aromatic hydrocarbon mixtures; n.e.c. in heading no. 2707, of which 65% or more by volume (including losses) distils at 250 degrees Celsius by the ASTM D 86 method	2,250,471	1,434
270111	Coal; anthracite, whether or not pulverised, but not agglomerated	6,338,012	524
270400	Coke and semi-coke; of coal, lignite or peat, whether or not agglomerated; retort carbon	1,026,187	206
270710	Oils and products of the distillation of high temperature coal tar; benzol (benzene)	101,448	49
270600	Tar; distilled from coal, lignite or peat, and other mineral tars, whether or not dehydrated or partially distilled, including reconstituted tars	109,199	31
270740	Oils and products of the distillation of high temperature coal tar; naphthalene	32,770	27
270120	Briquettes, ovoids and similar solid fuels; manufactured from coal	226,969	19
270220	Lignite; agglomerated, excluding jet	105,770	4
270810	Pitch; obtained from coal tar or from other mineral tars	71	0

270500	Gases; coal, water, producer and similar gases (excluding petroleum and other gaseous hydrocarbons)	5	0

Source: research result (processed from UN Comtrade, 2022)

Appendix 8. Table of Coal and Its Derivatives Import Commodity Based on Trade Value 2012 – 2021

Code	Description	Total Net Weight (thou-sands ton)	Total Trade Value (Mil-lion USD)
270112	Coal; bituminous, whether or not pulverised, but not agglomerated	39,535.35	5468.4
270750	Aromatic hydrocarbon mixtures; n.e.c. in heading no. 2707, of which 65% or more by volume (including losses) distils at 250 degrees Celsius by the ASTM D 86 method	1,725.93	1300.7
270400	Coke and semi-coke; of coal, lignite or peat, whether or not agglomerated; retort carbon	4,869.45	1227.5
270111	Coal; anthracite, whether or not pulverised, but not agglomerated	6,371.59	1125.4
270799	Oils and other products of the distillation of high temperature coal tar; n.e.c. in heading no. 2707	1,744.75	932.4
270119	Coal; (other than anthracite and bituminous), whether or not pulverised but not agglomerated	1,636.96	188.4
270810	Pitch; obtained from coal tar or from other mineral tars	272.95	164.8
270600	Tar; distilled from coal, lignite or peat, and other mineral tars, whether or not dehydrated or partially distilled, including reconstituted tars	112.41	55.5
270730	Oils and products of the distillation of high temperature coal tar; xylol (xylenes)	47.57	39.1

270791	Oils and other products of the distillation of high temperature coal tar; creosote oils	22.87	15.8
270740	Oils and products of the distillation of high temperature coal tar; naphthalene	13.43	3.8
270120	Briquettes, ovoids and similar solid fuels; manufactured from coal	4.18	2.4
270220	Lignite; agglomerated, excluding jet	0.83	1.7
270300	Peat; (including peat litter), whether or not agglomerated	4.77	1.6
270720	Oils and products of the distillation of high temperature coal tar; toluol (toluene)	0.3	1.3
270210	Lignite; whether or not pulverised, but not agglomerated, excluding jet	0.27	0.6
270500	Gases; coal, water, producer and similar gases (excluding petroleum and other gaseous hydrocarbons)	0.04	0.1
270710	Oils and products of the distillation of high temperature coal tar; benzol (benzene)	0	0

Source: research result (processed from UN Comtrade, 2022)

PRAKARSA
Welfare Initiative for Better Societies

The PRAKARSA is a research and capacity-building institution established to create a democratic, just, and prosperous society through ideas development, policy and institutional reforms, and evidence-based problem-solving innovations. The PRAKARSA focuses on fiscal policy, social policy, and sustainable development issues.

We conducts research activities, policy analysis, and training on a wide range of topics related to welfare issues. In executing its various activities, The PRAKARSA consistently adopts collaborative and engagement approaches to collaborate with varied parties: governments, parliaments, civil society organizations, universities, think tanks, international organizations, private sectors, development donor agencies, and mass media.

We believe that this multi-stakeholder approach will strengthen our works and initiatives in the knowledge production and dissemination as well as the evidence-based policymaking process. We also believe that networking will facilitate and reinforce one another. Therefore, we have received support from various donors and participated in multifarious initiatives with The PRAKARSA partners.

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