

# Rules of Origin Within ASEAN and RCEP: Has It Been Resolved?

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## Abstract

As a well-established trading bloc, rules of origin (ROO) for ASEAN are expected to benefit member states' businesses by providing preferential tariff treatment which is the fundamental purpose of trade liberalization. However, these rules are prevented from being applied thoroughly due to the lack of government trust in certain member states in business actors and targets of duty collection for customs authorities. The self-certification by business actors has proven to be a solution to the problem but ASEAN A-X Formula may be counterproductive to ROO, eliminating the foundation of regionalization and potentially causing trade deflection. The First Protocol of ASEAN Trade in Goods Agreement (ATIGA) amendment simplifies the procedure of operational certification for ROO. Furthermore, the Regional Comprehensive Economic Partnership (RCEP) as a significant trading pact including ASEAN members and five major trading partners has adopted proof of origin allowing self-certification applied earlier in the European Union and NAFTA. Alternative solutions should also be explored since distrust and national financial interests have not been resolved. Recently, blockchain embedded with smart contracts has been applied in various business sectors which should be further applied in free trade area (FTA) applications. Blockchain's characteristics as an immutable ledger originating from the hashing process and cryptography would address the problem of ASEAN ROO application. Therefore, this study aimed to analyze the effectiveness of ROO within ASEAN and RCEP. A literature review and doctrinal study methodology were applied in this analysis.

**Keywords:** blockchain, rules of origin, smart contracts

## 1. Introduction

A product with nationality is determined through rules of origin (ROO). The reasons why it is important to affirm nationality also apply to ROO. The state as the highest organization currently decides who will be privileged according to the law. This depends on the individual's status of membership (nationality) to affirm the privileges and obligations. The same applies to ROO because a product origin will ascertain the privileges that the commodity can receive. In terms of international trade, ROO confirms the origin of a product which is consequently privileged for preferential tariff facility when both engaged countries (seller and buyer) join the same free trade areas (FTAs).

ROO is the backbone of any preferential trade agreement (PTA) as more regionalization leads to increased trade making the rules more influential (Latifah, 2015). When origin of a product cannot be determined, applying a lower or even zero tariff will be impossible since there is no legal basis. In a global value chain even when a product is stated to have originated in a particular country, it may contain components from different parts of the world.

For products entirely produced in a single country, there is no doubt about origin (Barcelo, 2006). Preferential tariffs will still apply to products including manufacturing processes and originating materials in two or more countries within the same PTA. However, will there be any scheme to claim a product as originating material when it is produced in a member state using non-originating materials? What also constitutes a non-originating product or material? Essentially, non-originating products or materials are products or materials obtained or manufactured in a PTA non-member state or undetermined origin. A product produced in a PTA member state that does not meet the PTA ROO may face complications. When a product is a combination of contributions such as materials, spare parts, or intermediary materials from various countries, determining originating country becomes complicated making ROO even more relevant.

The ROO concept originated in early 1923 when the International Convention relating to the Simplification of

Customs Formalities was held (UNCTD, 2011). The concept evolved to the 1973 International Convention on the Simplification and Harmonization of Customs Procedures held in Kyoto (the 1973 Kyoto Convention). The Annex of the 1973 Kyoto Convention defined ROO as “provisions that a country uses to determine origin of products developed from principles established by international agreements or through national legislation” (Latifah, 2015).

During the Uruguay Round, there was a common understanding to harmonize the concept of preferential ROO based on an international treaty and/or PTA and non-preferential ROO based on complementary or supervisory documents required by certain countries for exported products. Non-preferential ROO is necessary for MFN principles application such as safeguard measures, countervailing duties (CVD), anti-dumping (AD), origin-making requirements, and other discriminatory quantitative restrictions or tariff quotas, as well as for trade statistics and government procurement (Jakob & Fiebiger, 2003).

Based on the WTO Agreement, harmonization is pursued in both non-preferential and preferential ROO. Although the focus of the study is majorly on preferential ROO due to the relevance in PTAs, the actual scope includes non-preferential ROO for harmonization of the extensive terminology (Article 1 Paragraphs 1 and 2, Article 3 of WTO Agreement on ROO).

Indonesia is part of the countries that intensively conducts international trade and accommodates significant economic profit from trade liberalization. Through numerous international trade agreements, Indonesia has participated in several FTA schemes. This allows business owners to establish trading relationships and export products by obtaining preferential tariffs from other member states. Additionally, importers from other member states are also able to conduct importation by taking advantage of preferential tariffs from the country. Several FTA schemes have provided economic benefits for Indonesia, including ATIGA as the first FTA and RCEP implemented in 2023, contributing significantly to economic growth. However, several issues have further arisen throughout the implementation of FTA schemes and should be addressed promptly. Technology also plays a significant part in advancing the world presently. In this case, blockchain-based smart contract applications should be developed as an alternative and possible solution.

## 2. Method

The normative legal analysis adopts a qualitative study method using literature review and doctrinal methodologies and further relies on primary sources of legislation as well as secondary resources including books, journals, and articles. Combined with interdisciplinary analysis, this study aims to identify alternatives to address the existing questions of ROO application in ASEAN and RCEP contexts.

## 3. Results and Discussions

### 3.1 ROO Application in ASEAN and RCEP

#### 3.1.1 ROO

Many individuals found ROO to be unfamiliar, even entities active in international business for a long period. However, ROO played a substantial role in international commerce. As the name suggested, ROO was adopted to identify origin or nationality of a product traded internationally. It was an essential element of any regional or PTA and formed the basis for identifying products for normal customs-related reasons (non-preferential ROO). In the global economy without trade restrictions, it would be unnecessary. Due to trade and tariff policies applied in different countries, ROO was necessary to determine the appropriate treatment by tariff item. This was further classified into two types including.

- a. Preferential ROO: According to Annex II, Paragraph 1 of the Marrakech Agreement, this was a law implemented by state members to confirm when a product was eligible for special treatment under autonomous or/and contractual commercial regimes leading to tariff preferences exceeding the implementation of Article 1, Paragraph 1(a) of GATT 1994. Preferential ROO was applied to identify the eligibility of a product for importation from members of regional FTA or other countries that agreed upon certain PTA (Jakob & Fiebiger, 2003). In this case, ROO applied in the PTA context was used to determine the eligibility of the product to receive preferential treatment (Bum & Joongi, 2009). In contrast to non-preferential which was only statistically significant when the product appeared as “foreign” and all relevant taxes had been paid, preferential ROO played a major role in providing preferential treatment. Rather than Most-Favored-Nation (MFN) tariffs, it frequently referred to no tariffs. Consequently, this type was typically stricter than the non-preferential ROO (LaNasa, 1996).
- b. Non-preferential ROO: According to Annex 1A of the Marrakech Agreement, this was a law implemented by state members to define origin of the product without connection with autonomous or/and contractual commercial regimes leading to tariff preference grants exceeding the application of Article I Paragraph 1

of GATT 1994. Non-preferential ROO was applied to confirm the nationality of the product imported from states with MFN status. MFN represented a set of principles in Article I of GATT 1994 that required all WTO members to avoid discriminating against products produced in or exported to various countries (Lavdari, 2021). The principle led to the evolution of MFN status which was granted to an international trading partner to ensure equal trade between all WTO partner countries. Concessions, privileges, and immunity had to be provided in trade agreements by a country that gives MFN status to another. This non-preferential ROO aimed to implement anti-dumping, countervailing, and security measures, requirements markers of origin, quantitative tariff quotas, or other discriminatory measures, as well as government procurement purposes.

In defining ROO, the main purpose was standardization and ease of administration but this was not constantly true. Several countries experienced the difficult task of simplifying, harmonizing, and liberalizing ROO. Until this objective was achieved, ROO remained fragmented. Traditionally, ROO considered various components such as origin element which classified materials based on the source (Onyejekwe, 1994). Other standards including consignment and documentary criteria could also be considered (*Ibid*).

Origin questions had become increasingly difficult as certain sectors and activities had become multinational (Sampliner & O'Shea, 1994). In certain circumstances, the manufacturer would acquire components from multiple countries or the product could be manufactured in stages in different states. Consequently, pinpointing where the final items originated from became difficult which was also a challenging task. Several methods for the same category of products could be implemented depending on how sensitive the product was in the country concerned. ROO was also important in preventing trade agreements from being used to acquire tariff benefits that would be inaccessible to third countries. Therefore, ROO prevented trade deflection which was the preferential import of non-member states' products through the member states with the lowest tariff.

There existed two basic criteria in determining the nationality or origin of products namely wholly and not wholly obtained or substantial transformation criteria. The criteria for classifying products as "wholly obtained or produced" were rigidly applied. Even minor amounts of imported inputs, parts, or materials of undetermined origin disqualify products from being classified as "wholly obtained or produced". Products generated, explored, or acquired from a place, or manufactured products made from locally derived materials could be further classified as "wholly obtained or produced" (Inama, 2022).

However, there were three methods of determining "not wholly obtained or produced" products namely (Singapore Customs, 2021).

- a. Change in tariff classification (CTC). Under this method, ROO was determined when the exported products fell into different tariff classifications with the imported inputs such as raw materials, spare parts, and components used in the production process (Das & Ratna, 2011).
- b. Value added. This method was defined as the transformation level required to confer nationality on products through the minimum input value percentage from the exporting country or the total amount of maximum value originating from imported inputs used (Vermulst, 1992).
- c. Specific manufacturing process. Certain processing or production processes for the products should be conducted in the exporting country to provide or deny origin status or nationality. Therefore, origin of the products could only be determined by allowing or prohibiting the use of inputs from the exporting country. This method was widely used in conjunction with changes in tariff classification and/or value-added criteria as well as certain features of rules governing the textile and garment industries (*Ibid*).

Each FTA's member state had import tariffs imposed for products entering the territory. These products should be considered as originating goods from other FTA member states to gain a preferential tariff. Without ROO, identifying origin of the products was impossible. Therefore, it was important to recognize that it differed in each FTA. By 2023, eighteen FTA schemes were negotiated and conducted by Indonesia including RCEP which was recently implemented in early 2023. AFTA (ASEAN Free Trade Area) existed before RCEP established ROO to boost ASEAN regional economy. ROO provisions were further regulated within ATIGA. More details on ROO in ASEAN and ATIGA, as well as ROO in RCEP, were elaborated in the subsequent sections.

### 3.1.2 ROO in ASEAN

#### 3.1.2.1 ASEAN and ATIGA

The establishment of the Association of Southeast Asian Nations (ASEAN) occurred on August 8, 1967, along with the signing of the Bangkok Declaration by Adam Malik representing Indonesia, Narciso Ramos acting as a representative of the Philippines, S. Rajaratnam standing in for Singapore, Thanat Khoman acting on behalf of

Thailand, and Tun Abdul Razak delegated by Malaysia (Tim Penyusun Kementerian Pendidikan dan Kebudayaan dan Kementerian Luar Negeri Indonesia, 2020). In the early stages, ASEAN only had five member states including the Philippines, Singapore, Thailand, Indonesia, and Malaysia, known as the founding countries (Fifield, 1979). Between the 1980s and 1990s, the membership increased after the joining of other Southeast Asian Countries namely Cambodia, Vietnam, Myanmar, Brunei Darussalam, and Laos. ASEAN's establishment showed attempts to prioritize economic growth along with cultural and social development in Southeast Asian countries (Keling et al., 2011). On economic grounds, AFTA was established in January 1992 during the Fourth Singapore ASEAN Summit to eliminate trade barriers between the member states, integrate the economies into a unified manufacturing ecosystem (Plummer et al., 2016), and develop a regional market of 500 million individuals. The elimination of tariffs and non-tariff barriers within the member states provided greater productivity and competitiveness in the long term (Wijatno & Gunadi, 2014).

In discussing AFTA, no further deliberation of FTA could proceed without mentioning preferential ROO. FTA ROO established certain criteria that should be met for a product manufactured in an FTA member state to enjoy preferential treatment in the importing country. However, it was designed to be stricter than non-preferential ROO to prevent third-country manufacturers from getting benefits from FTA preferences such as the implementation of MFN tariffs, anti-dumping, safeguard duties, countervailing measures, and government procurement. FTA ROO was further applied to motivate investment and prevent free-riding (Komuro, 2004).

ROO used for identifying the nationality of a product was first introduced in the Agreement on the Common Effective Preferential Tariff (CEPT) Scheme for the AFTA. In 2010, the ASEAN Trade in Goods Agreement (ATIGA) replaced this agreement. The signing of ATIGA showed the commitment to facilitate free and integrated regional trade against the worst economic recession since the Great Depression in 2009. The objectives of the CEPT to develop ASEAN as a unified market and manufacturing ecosystem through an open product flow, qualified labor, capital, and investments were expanded in ATIGA. This scheme was an agreement concluded between ASEAN member states to realize a cohesive and integrated economy through the commodities free flow while maintaining the concept of minimizing and removing international trade barriers either tariff or non-tariff. A component that played an essential part in eliminating trade barriers and strengthening ASEAN regional economic integration was ROO. Therefore, ATIGA was also included in the AFTA ROO provision for ASEAN region, particularly in Chapter 3 of the agreement.

### 3.1.2.2 ROO in ATIGA

ROO was implemented by ASEAN member states to identify when the products were entitled to preferential tariff treatment. The ATIGA Sub-Committee on Rules of Origin (SC-AROO) was established to support ASEAN member states in implementing ROO under ATIGA replacing ASEAN Task Force on Rules of Origin (ROO-TF) when ATIGA came into effect in 2010. SC-AROO ensured that ROO applied by ASEAN members was simplified, favorable to business, and trade-friendly for the commercial benefit of the region, specifically the participation of Micro, Small, and Medium Enterprises (MSMEs) for development, improvement, and deepen the regional connections (ASEAN, 2020).

Chapter 3 of the ATIGA provided ROO provisions regarding three criteria that should be fulfilled for a product to be considered originating good under the chapter including.

- a. **Origin Criteria.** As stipulated under Article 26, products imported from a member state into the territory of another should be treated as originating good despite being wholly or not wholly obtained in the exporting member state and were eligible under Articles 28 and 30 of ATIGA. Article 28 stipulated that products should be considered to have originated from the member state where the products were worked or processed when (i) the products comprised a regional value content (RVC) of a minimum of 40% or (ii) all non-originating materials used in the manufacturing of the products have been reclassified under different tariff classification on Harmonized System (HS) at the four-digit level.
- b. **Consignment Criteria.** Article 32 stated that products consigned directly between the territories of the exporting and importing member states would receive preferential tariff treatment. Consigned directly implied the following (a) transporting products originating from an exporting member state to an importing country, or (b) transporting products through member state(s) apart from both exporting and importing countries, or even through a non-member state provided that (i) transit entry was justifiable geographically or by transportation factors, (ii) products were not traded or consumed there, and (iii) products were not subjected to any action to maintain in good condition other than unloading and reloading.
- c. **Procedural Criteria.** Article 38 stated that products should be supported by a certificate of origin obtained

from a government authority and appointed by the exporting member state. This was further to inform others under the Operational Certification Procedures to be considered qualified for preferential tariff treatment.

A product had to cumulatively meet the three criteria to be qualified for preferential rates under ATIGA. This implied that when one of the three elements was not fulfilled, the product would not be considered originating good and would not qualify to obtain preferential tariffs (Fahri et al., 2022). As ASEAN member state, Indonesia had ratified ATIGA and implemented ATIGA ROO provisions across the various domestic regulations. By June 2022, Indonesia had fifteen schemes of international trade agreements with various partner countries including ATIGA. Currently, ATIGA has become the second most used FTA by exporters and importers as well as beneficially affecting the development and financial growth of the affiliated countries (Direktorat Jenderal Bea dan Cukai, 2022). Therefore, a deeper discussion about several ATIGA ROO regulations in Indonesia would be elaborated.

### 3.1.2.3 Special Section: ATIGA ROO Regulation in Indonesia

International trade was carried out regularly by all countries in the world including Indonesia. Various international agreements have been concluded by countries engaged in international trade to facilitate the seamless conduct of business. It had been a vision for ASEAN states to live in peace and be bound together as a community for dynamic development. This led ASEAN leaders to establish ASEAN Economic Community (AEC) in 2015 and was also predicted to bring great economic opportunities as well as big challenges to all countries in the region. The establishment of AEC contained four important features including (a) a unified market as well as a manufacturing base, (b) a region with an intensely competitive, (c) a fair economic growth, and (d) an integrated with the economy of the world. In creating a single market production-based, all economic ministers of ASEAN member states decided to strengthen the Common Effective Preferential Tariff for ASEAN Free Trade Agreement (CEPT-AFTA) into an even broader legal framework. Consequently, ASEAN member states agreed upon the formation and signing of the ATIGA (Hadi, 2016).

ATIGA was the first FTA in Indonesia following the agreement's signing in Thailand. During the fourteenth Summit Meeting of ASEAN, the agreements officially went into force on May 17, 2010, and all ASEAN member states including Indonesia were further obliged to comply with the provision and implement the domestic laws adhering to the ATIGA. Accordingly, the ATIGA had been ratified by Indonesia through the formation of Presidential Decree Number 2 of 2010 regarding the Ratification of ATIGA and Presidential Decree Number 84 of 2020 regarding the Ratification of First Protocol to Amend ATIGA. Following the ratification, both Finance and Trade Ministers also issued regulations that were expected to help the Indonesian authorities strengthen Indonesia's position in ASEAN. This included Finance Minister Regulation Number 81/PMK.04/2022 regarding the Implementation of Customs Tariffs on Imports Based on the ATIGA and Trade Minister Regulation Number 32 of 2022 regarding Indonesian ROO and Terms of Publication of Origin Declaration Documents for Goods Originating in Indonesia under the ATIGA.

Based on the Finance Minister Regulation, Indonesia could impose both a preferential tariff and the generally applicable import tariff (MFN) depending on the imported good's origin. As stipulated under Article 3, ROO was divided into origin, consignment, and procedural criteria. Origin criteria included wholly or not wholly obtained or produced products. Not wholly obtained or produced products referred to products with production process using Non-Originating Materials and final output of RVC reaching a percentage value with a minimum of 40% Free on Board (FOB) value. It also represented products manufactured using non-originating components that experienced a CTC at the first four digits of the HS known as a Change in Tariff Heading (CTH). Additionally, not wholly obtained products were also included in the PSR list as set out in Annex 3 of the ATIGA or accumulation. Consignment criteria comprised the following, (a) imported products sent directly from a member state issuing Form D Certificate of Origin and/or Origin Declaration into the Customs Territory, (b) imported products sent through the member states apart from both the exporting and importing countries, or (c) imported products sent via countries other than the member states.

Procedural provisions in regards to the issuing of a Form D Certificate of Origin should comply with several provisions such as (a) written in English, (b) using white ISO A4 paper size, (c) bearing a reference number for the Form D Certificate of Origin, (d) bearing the signature of the authorized official and an official stamp of the Certificate of Origin Publishing Authority, either manually or electronically, and (e) signed by the applicant. Additionally, there were procedural provisions regarding the issuing of Origin Declaration which should further comply with several provisions including (a) issued by the certified exporter, (b) issued in an invoice, commercial billing statement, delivery order, or packing list, (c) containing a certified exporter statement stating the products meet ROO, (d) containing the description of the products authorized by the Certified Exporter, and (e) containing

origin criteria for each description of products.

The Trade Minister Regulation broadly discussed documents related to ROO. Article 3 further stipulated that origin declaration documents for products originating in Indonesia were divided into Preference and Electronic Certificates of Origin, as well as Origin Declarations. These documents were issued under the operational certificate procedures of ATIGA.

Apart from ATIGA as Indonesia's first FTA, the country would be part of RCEP known as the world's "Mega FTA" by 2023. RCEP represented a free trade agreement that allowed accession from other countries for regional economic integration, minimizing tariffs, opening trade in services, and assisting developing states. Each FTA possessed different ROO provisions in determining the nationality of the products including RCEP. However, all FTA ROO including RCEP should correlate with the WTO ROO concept that has been globally accepted.

### 3.1.3 ROO in RCEP

#### 3.1.3.1 RCEP and ASEAN

In 2020, RCEP which represented ASEAN-led Regional Comprehensive Economic Partnership (RCEP) was signed and marked an essential turning point in the region's economic unification. RCEP was a significant FTA including the ten ASEAN member states such as Indonesia, Malaysia, Thailand, Vietnam, Myanmar, Cambodia, Singapore, Brunei Darussalam, Lao PDR, and the Philippines, as well as other dialogue partners comprising China, New Zealand, the Republic of Korea, Australia, and Japan. It was designed to allow for any accession of ASEAN FTA partners to join whenever ready. The agreement remained accessible to other additional parties. The decade-long discussions of RCEP showed ASEAN's determination to pursue economic connections with other global parties in the world and the integration of the regional market (Adila & Suryadipura, 2023). RCEP existed as the biggest regional trading bloc worldwide uniting 2.2 billion individuals with a collective regional GDP of around \$38,813 billion and 28% of global trade (Singh & Mishra, 2020). This extensive multilateral FTA established a major trade and regional integration agenda, as well as the development of evolving global and regional value chains of production (GVCs). By tapping into and unlocking substantial domestic markets in East Asia, it mobilized vast resources for global trade and investment. According to recent analyses, RCEP's impact extended not only across East Asia but also globally (Cyn-Young et al., 2021; Petri & Plummer, 2020). RCEP strengthened global trade and potentially wielded a significant influence on the recovery of the region after the pandemic (Kimura et al., 2022). Beyond tariff elimination, the benefits of RCEP further provided more comprehensive rules, enhanced trade facilitation, and led to a broader accumulation process of raw material which also simplifies access to products from the member states with preferential tariffs for business owners.

#### 3.1.3.2 A Comparative Analysis of RCEP and Other Major FTAs

The RCEP has garnered significant attention in both global and regional trade discussions since the commencement of negotiations in 2012. However, a comprehensive evaluation of its relative desirability in comparison to other Regional Trade Agreements (RTAs) has yet to be fully explored. To provide a more holistic analysis, this paper will now assess other RTAs and conduct a comparative evaluation with the RCEP. The primary objective of the RCEP is to enhance market access by lowering trade costs among closely integrated economies, utilizing Regional Value Chains (RVCs) and existing sub-regional FTAs. More specifically, its objective is to foster broader and more profound regional integration within the Asia-Pacific by consolidating the five ASEAN+1 FTAs already implemented. A key differentiator of the RCEP, as opposed to other mega-regional agreements such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the European Union (EU), and the United States-Mexico-Canada Agreement (USMCA), is its increased flexibility, is its greater flexibility. It permits individual members to negotiate differentiated timelines for the implementation of specific provisions, thereby accommodating the diverse national circumstances and varying levels of development across its signatories.

Although the RCEP constitutes the largest regional trading bloc in the world, encompassing a population of 2.4 billion people—representing 30.3% of the global population in 2020—it lags behind other major trade agreements in terms of per capita income. In 2020, RCEP accounted for a regional GDP of \$25.873 trillion (30.6% of global GDP) and a trade volume of \$10.173 trillion (29.1% of global trade). However, the GDP per capita of RCEP members, at \$11,000, is significantly lower than that of CPTPP members (\$19,966) and USMCA members (\$56,072). The gap in GDP per capita is notably wider within the RCEP bloc compared to other FTAs. This disparity underscores the substantial developmental differences within RCEP, which includes a large proportion of developing countries and transitioning ASEAN economies, in contrast to the more advanced economies represented in the CPTPP and USMCA.

The scope and depth of the RCEP are assessed in relation to its tariff concessions and regulatory provisions, particularly when compared to other RTAs. In contrast to more comprehensive agreements, RCEP is notably absent of several key provisions, such as those addressing labor standards, environmental protection, regulatory harmonization, anti-corruption measures, transparency, state-owned enterprises, and competition policy. Additionally, the enforcement mechanisms for these provisions in RCEP are less stringent compared to those found in agreements such as the CPTPP. While RCEP does include provisions on e-commerce, services, and investment, these are relatively less robust and lack the regulatory rigor observed in other major international trade frameworks.

Another key distinction lies in the approach to liberalization and tariff reductions between RCEP and other agreements. The RCEP utilizes a positive list approach, in which it explicitly identifies the products to be liberalized, targeting the elimination of 86% to 100% of tariffs over a 20-year period, while addressing only a narrow subset of service sectors. In contrast, the CPTPP adopts a negative list approach, specifying the exceptions to liberalization, which leads to the elimination of 95% to 100% of tariffs and the opening of approximately 160 service industries. Regarding manufactured goods, RCEP reduces tariffs by 92%, a figure that falls short of the comprehensive tariff elimination achieved under the CPTPP. Additionally, while the CPTPP applies a uniform tariff concession rule across all member states, the RCEP tariff reduction schedule is more intricate, permitting differentiated preferential treatment between pairs of member countries (Innwon, 2022).

### 3.1.3.3 ROO in RCEP

Similar to other trade deals, RCEP was designed to minimize tariffs and trade barriers. This was expected to stimulate international trade's profits and volume. Additionally, RCEP was an essential part of enhancing the prior agreements' integration for ASEAN. A key aspect was ROO agreement in Chapter 3 of RCEP which was responsible for overseeing the specification of traded products. However, stringent and intricate rules within ROO became a hurdle acting as a trade barrier. Negotiations on ROO in RCEP were further among the most complicated aspects as each state engaged in multiple trade contracts with diverse partners. The complexity further arose from the need for RCEP to correlate with the interests of the engaged states without posing a threat to future trade efforts.

RCEP's ROO was praised for providing a consistent set of rules across a significant part of the region, replacing diverse bilateral trade agreements (Financial Times, 2020). The ability of RCEP to operate as a connecting element and a common denominator for ROO arose from the provision within these regulations. It allowed inputs from other RCEP partners to qualify as local content, fulfilling ROO prerequisites. This capability also termed "cumulation" existed in various modalities and geographical coverage in each FTA. Certain characteristics of RCEP ROO were as follows (Asian Development Bank, 2022).

- a. The cumulation requirements delayed the construction of an entire cumulation system for five years following RCEP's adoption emphasizing the article's difficulties.
- b. For direct shipment, RCEP required documentary evidence in certain manners. This requirement was less stringent compared to the bill of lading standards in several Asian FTA but still fell short of adhering to the principle of non-alteration.
- c. RCEP included rules for invoicing from third countries and established a mechanism for consecutive certifications of origin.
- d. RCEP clause titled "materials used in manufacturing" addressed intermediary resources similar to the United States model or the absorption principle observed in the European Union model which was filled as a significant absence in the region's prior FTA.
- e. The details regarding ROO certification and management within RCEP showed substantial disparities among member states. For instance, certain countries such as the PRC and Cambodia advocated maintaining Capable bodies or proficient entities and certificates of origin while others including Australia and New Zealand favored declarations from exporters and/or importers.

According to Article 3.2 of RCEP regarding Originating Goods, a product qualified as originating when it fulfilled the following. (a) The products were entirely obtained or made within a member state. (b) The products were produced solely within a member state using materials from multiple parties. (c) The products were made within a member state using non-originating substances, meeting the specified criteria outlined in Annex 3A (Product-Specific Rules). These criteria could be calculated using either the Indirect/Build-Down or the Direct/Build-Up Formulas. Goods and materials fulfilling origin criteria as detailed in Article 3.2 and used as materials in creating another product or material within a different state party were regarded as originating from the state party where the final product or material underwent processing or production.

Originating product maintained origin status when the following criteria were met. (a) The product was directly

transported from an exporting to an importing country, or (b) It was transported through multiple parties excluding the exporting and importing parties or non-parties provided the product (i) had not experienced further processing in the intermediate or non-partner countries, except for logistical tasks such as unloading, reloading, storage, or necessary operations to maintain the condition or facilitate the delivery to the importing party, and (ii) remained under the supervision of customs authorities in the intermediate or non-partner countries (Article 3.15 of RCEP).

An importing party was required to provide preferential tariff benefits to originating product upon verification of origin. There were certain documents considered Proof of Origin under RCEP including (Article 3.16 RCEP).

- a. Certificate of Origin. This would be issued by an authority upon request from an exporter, producer, or authorized representative. The certificate following a format agreed upon by member states should include a distinct Certificate of Origin number to be written in English and possess an official signature as well as a seal from the issuing body of the exporting member state.
- b. Declaration of Origin made by an approved exporter who referred to an entity authorized to export goods in compliance with the laws and regulations of each member state. The exporter was required to submit an application either written or electronic and furnish all required assurances verifying the goods' origin status to the competent authority of the exporting member state to gain approval for exporting goods under a Declaration of Origin.
- c. Declaration of Origin by either an exporter or producer. This declaration should adhere to Annex 3B of RCEP which had to be written in English, contain the certifying individual's signature and name, as well as provide the completion date for the Declaration of Origin.

The role of ROO in international trade which mainly aimed to achieve world trade liberalization often experiences problems. However, what was intended for ROO's implementation could not be adequately executed. Certain problems were further discovered in the usage of ROO such as the inability of the public to maximize the use in gaining business profits and the evolution of FTA shopping concept which was unethical in the legal sense. Therefore, using technology such as blockchain to solve problems was the possible best solution.

### *3.2 Possibility of Blockchain Application in ROO Application*

#### *3.2.1 Blockchain*

Blockchain had become a popular term since the invention in 2008 (Bashir, 2018). Using blockchain technology assisted in upholding a strong decentralized record-keeping system (Greenspan, 2015). A network of nodes or computers formed blockchain which allowed access to a specific sequence of blocks while performing actions based on the information held by each machine or node (Böhme et al, 2015). A block could consist of any number of records where each contained the previous hash function, transaction information, and date (Nzuva, 2019). When a block was completed, it would be uploaded to blockchain in chronological order and could not be edited. Despite the presence of untrusted, dishonest, or malicious nodes, the network accurately verified transactions, safeguarded the ledger from manipulation through a mathematical process known as proof of work, and removed the necessity for human participation or administrative control (Atzori, 2015). The features made blockchain technology extremely helpful since it was safe, dependable, and allowed the monitoring of digital transactions (Kosba et al., 2016).

Blockchain process was initiated by a transaction between two parties exchanging data. This could be in the form of contracts or any other asset that could be digitally described. Depending on the parameters of the network, the transaction could either experience instant validation or be transcribed securely and placed in a queue for later processing. In these instances, nodes would decide when a transaction was valid or not by following a set of mutually accepted rules within the network. Furthermore, every block was distinguished by a hash and formed through an algorithm accepted by the network. A block comprised of a header referencing the hash of the previous block and a collection of transactions. A series of connected hashes would further form a secure chain of interdependencies which was verified before appending a block to blockchain (Sarmah, 2018). Once the block was verified, it was then distributed across the interconnected system or the connected group. Every node appended the block to the predominant chain which comprised the network's unchangeable and verifiable blockchain. Therefore, the technology ensured the recording of all transactions in chronological order with each block becoming an immutable locked historical record connected to previous and future blocks or transactions (Akbar et al., 2021). Given the broad nature, experts classified blockchain technology into four categories namely (Gamage et al., 2020; Paul et al, 2021).

- a. Public Blockchain. This was a significant form of blockchain that was both open and decentralized. With this type of blockchain technology, anyone interested in a transaction could access the computer network.



In a public blockchain that was permissionless and unrestricted, anyone with access could authorize the receipt of data or segments of blockchain.

- b. Private Blockchain. A private blockchain possessed limitations but included access functionalities. This blockchain allowed authorization of transactions with the support of system administrators and operated solely within enclosed systems and networks. It was often beneficial in organizations and businesses where participation was limited to selected members.
- c. Hybrid Blockchain. This combined elements from both public and private, requiring a higher degree of control to achieve greater objectives. The blockchain managed both centralized and decentralized systems.
- d. Consortium Blockchain. This represented a semi-decentralized variant capable of overseeing a network based on blockchain technology. It also allowed activity even from a single organization.

Blockchain technology could further enhance both individuals and communities to reshape engagements across various sectors significantly in overall economic and business activities. This was carried out through extensive intermediary procedures relying on automated and trustworthy transactions on an unparalleled scale. Particularly, blockchain played a significant role in international businesses as it affected international trade. It was also a technological advancement in global trade. As a digital record, blockchain could take a crucial role in various global supply chains related to international trade (Derindag, 2020).

A major advancement in blockchain technology was smart contracts. Blockchain was often combined with smart contracts and the schemes recorded the operation when certain criteria were satisfied. The blocks were frequently served to automate the implementation of an agreement to ensure each party could be certain of the conclusion immediately, without the need for an intermediary. Smart contracts could automate a workflow by subsequent steps once specific criteria were satisfied.

### 3.2.2 Smart Contracts

Smart contracts were initially presented as forms of digital transaction mechanisms to conduct an agreement's provisions (Zsabo, 1997). Nick Szabo who was the inventor of smart contracts envisioned encoding contracts that would be both trustless and self-enforcing, fostering productivity as well as reducing uncertainty from contractual agreements. The objective behind this vision was to remove the need for trust between engaged parties by raising assurance that contract would be carried out exactly as planned. Nick used the analogy of a vending machine to showcase this point. When coins were deposited into the machine and the correct amount was provided, the machine dispensed the requested products. In this transaction, there existed minimal or no reliance on trust between the participating parties. The vending machine was obliged to deliver the products upon receiving the coins with no choice available. Consequently, the machine's technological design ensured the fulfillment of contracts (Filippi et al., 2021). Szabo further defined smart contracts as a set of commitments that were negotiated by the parties and subsequently transformed into a digital form or protocol when the parties fulfilled the pledges (Mazalio, 2023). Others defined contracts as self-executing contracts that used blockchain technology to implement, confirm, and facilitate contract performance digitally (Christidis & Devetsikiotis, 2016).

Furthermore, smart contracts possessed the same concept as regular agreements. Smart contract's parties initially defined terms and conditions that should be fulfilled to execute automatically and attach a digital signature. Contracts referred to legally enforceable agreements between participating parties where both parties were committed to the agreement. For contracts to be legally binding, there should be a legal entity with centralized control to ensure the agreement. However, smart contracts took the place of trusted third parties or intermediaries among contracting parties. To achieve this, smart contracts used the code of execution that was automatically distributed and validated by nodes within a decentralized blockchain network. Furthermore, smart contracts enabled transactions among untrustworthy parties without the need for any direct interaction, dependency on third parties, or even mediator commission expenses (Taherdoost, 2023).

### 3.2.3 Blockchain-based Smart Contracts Application to ROO

Empirical studies have assessed the impact of ROO on trade flows. A comprehensive product-level analysis of NAFTA revealed that ROO lead to a shift in sourcing from external markets to within the trade bloc (Conconi et al, 2018). This finding suggests that deeper integration within FTA can be welfare-enhancing. Similarly, Krishna proposes that firms develop greater proficiency in meeting ROO requirements as they accumulate experience in exporting to FTA partners (Krishna et al, 2021). In order to optimize the benefits of ROO in international trade, the integration of blockchain-based smart contracts may be utilized effectively.

The potential advantages of blockchain-based smart contracts are primarily realized in their capacity to record and trace the provenance of goods and their constituent components. By leveraging this technology, the need for

intermediary third parties to authenticate the origin of products in international trade may be obviated, as provenance data becomes directly traceable within the blockchain. This mechanism significantly mitigates the risk of human error and ensures the immutability of the underlying code, preventing unauthorized alterations. Additionally, it serves as a safeguard against inaccuracies or fraudulent activities related to the determination of product origins. Moreover, the adoption of blockchain technology streamlines and expedites the process of origin verification. The decentralized nature of the system further facilitates controlled access to relevant information, allowing it to be made available to authorized parties or, where appropriate, to the public at large.

Facing several problems regarding the use of ROO, there was a significant possibility to use blockchain-based smart contracts in the application of ROO. Combining the automation of smart contracts and blockchain recording systems in executing international transactions provided a solution to address issues arising from ROO implementation. There were two authorities responsible for FTA scheme namely issuing and receiving authorities. The issuing authority referred to the exporter state would issue the certificate of origin for the product. Furthermore, the receiving authority which was located in the importing state would verify the certificate issued by the issuing authority and assess the product's eligibility for preferential tariffs (Hadi, 2016).

An issue experienced when implementing ATIGA and RCEP ROO was the inability of the public to maximize the use in gaining business profits. Several procedures should be completed by the public or business owners to use ROO to obtain preferential tariffs for exported products. Business owners should further ensure that the products produced and distributed to other member states were originating goods. Subsequently, businesses should also obtain a certificate of origin stating the nationality or origin of goods being exported. This certificate of origin ensured that the products were made, manufactured, and/or distributed from originating country. Business owners would face greater challenges at this point in managing the operations due to the necessity of incurring various costs for obtaining the certificate of origin. Therefore, blockchain tracking technology could be adopted to eliminate the procedures and provide more benefits to the exporter. Importer states would no longer require a certificate of origin as all details about origin of the products could be logged onto blockchain system that the importer's government could access. Subsequently, the government could verify when the goods qualify for preferential tariffs.

Another problem that arose from the application was the evolution of FTA Shopping concept based on Market Access Negotiation. This represented the process of offering and requesting tariffs among member states in exchange for a certain product entering the domestic market (tariff commitments). Furthermore, the public or business owners would be able to select a less expensive or cheaper FTA scheme when it came to import tariffs. For instance, there were three FTA schemes between Indonesia and Japan namely The Indonesia–Japan Economic Partnership Agreement, ASEAN-Japan Comprehensive Economic Partnership (AJCEP), and RCEP. The existence of these schemes would undoubtedly provide more options for the public, specifically both importers and exporters in Indonesia and Japan to determine the most beneficial tariff to use. Tariffs were essential aspects to be considered in international trade since higher tariffs also increase business costs. However, the company's cash flow would be more efficient with the help of lower tariffs as it could lead to lower tax costs.

From the perspective of business, the application was common and profitable for business owners. However, it led to unequal treatment from a legal perspective. Business owners had the opportunity to compare FTA schemes, referring to the concept of “shopping”. The tariff imposed between member states should have been consistent in all FTA. For instance, although three FTA schemes existed in the Indonesia-Japan relationship, the same tariff should be applied in all FTA schemes to ensure equal treatment. Given this issue, the application of blockchain-based smart contracts could assist in settling the problem by identifying origin of products within the global supply chain. Once the nationality of the products was confirmed, it would be possible to determine when the preferential tariff should be applied.

The application of blockchain-based smart contracts needed media to take information from the real world and upload it into the blockchain. This role was performed by blockchain oracles. In this case, two oracles could be used namely human and hardware. Human oracles were adopted to obtain information about the product manufacturing procedure, all the spare parts used, sources, product's quality and origin, as well as other useful data. Hardware oracles on the other hand recorded all events related to the product such as the use of a QR code sensor which tracked the time and location of the product during the manufacturing process.

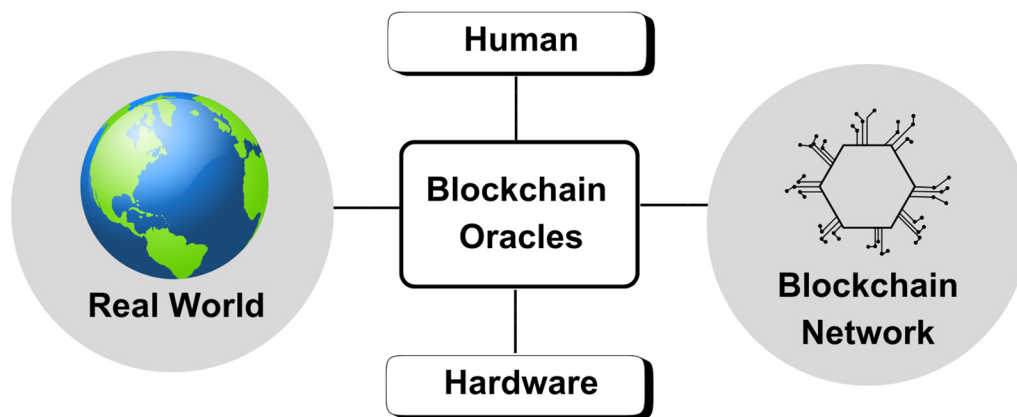


Figure 1. Blockchain flow

Blockchain recorded transactions occurring throughout the international business process. The transaction followed the agreement of all parties mentioned in smart contracts. To overcome the limitations of the internal blockchain system which could not verify facts relating to the conditions of transactions undertaken in smart contracts, the oracles served as connections between the internal and outside world. Blockchain would further record certain information related to a product such as the condition, quality, origin, the spare parts' origin, and even trace the product's location. After obtaining the information, it would be uploaded into a blockchain system and processed using smart contracts. Smart contracts would then automatically show the product offered, as well as information about the condition, origin, production, and supply chain. This would determine where the product was entirely produced either in FTA member state or not and decide the eligibility for a tariff preference. When a transaction was completed, the nodes would verify the transaction data before the inclusion in the blockchain.

Additionally, consortium blockchain was used with the integration of two networks namely public and private into a single system. A public blockchain was used by both consumers and business owners to trace product transaction data. As a public network, blockchain could connect all participating business owners in the product's manufacturing. The data would subsequently be used by consumers to track a certain product. Through this data, the number of transactions that occurred for a certain product could be obtained. With the presence of a product's history transaction, the nationality status of a product could be ensured. Furthermore, a private blockchain represented a private network used as a transaction validator by the Minister of Finance and the Minister of Trade. Both would assess the product's data, which was connected to the blockchain system, and determine the product's nationality and the applicable tariff.

Certain policy analysts contend that the global expansion of trade agreements leads to inefficiencies in the trading system, primarily due to the proliferation of complex and varied ROO. Reports from various companies indicate that managing multiple, divergent sets of preferential ROO necessitates "substantial efforts to organize and analyze data, documentation, and compliance measures" to meet diverse ROO requirements. Sometimes the administrative burdens associated with navigating the increasingly fragmented regulatory for origin determination may outweigh the benefits derived from FTAs (Ikenson, 2006). The determination of a product's country of origin can be complex, particularly when the adequacy of specific manufacturing processes or procedures in achieving "substantial transformation" is called into question. This complexity is largely due to the fact that, particularly in the case of non-preferential (MFN) origin rules, customs authorities often must make determinations on a case-by-case basis (Wong, 2020). The lack of uniformity in ROO eventually gives rise to the problem of "FTA shopping," where firms seek to exploit the terms of particular trade agreements to gain a competitive advantage.

While the implementation of blockchain-based smart contracts has the potential to simplify the process of tracking and determining the origin of goods for both businesses and governments, the ongoing inconsistency in origin rulings across different customs authorities, along with the lack of harmonization in ROO, introduces new ethical dilemmas in international trade. Therefore, most trade professionals emphasize the need for harmonization of ROO as a practical solution to these issues (Ernst & Young, 2021).

#### 4. Conclusion

In conclusion, several issues arose in the implementation of ATIGA and RCEP ROO. This included the inability of the public to optimize the use of ROO in fostering profits for businesses and the rise of FTA shopping concept which was inappropriate in a legal context. Therefore, the application of blockchain-based smart contracts appeared to be a better solution problem.

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