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The Role of Banking Services in Determining the Destination Countries for Indonesia's Non-Oil and Gas Export*

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Abstract

This study aims to examine whether the risk factor and banking services play a significant role in determining not only the export performance of a country but also the pattern of export destination markets, with the reference to the case of Indonesia. These two indicators are interrelated because the risk factor in export transactions can be mitigated by banking sector. Using the data of export Letter of Credits (LCs) for non-oil and gas exports of Indonesia as a banking instrument to mitigate special risk transactions to 102 export destination countries as well as a panel data methodology for the 2011–2018 period, this study discovers that the risk of export destination countries affects the decline in non-oil and gas exports of Indonesia to the alleged high-risk countries that are non-traditional export markets of Indonesia by 8.34%. In contrast, the LCs only significantly affect the increase in non-oil and gas exports of Indonesia to the low- and medium-risk countries by 0.024–0.029%, most of which are traditional export markets of Indonesia. It implies that banking sector in general does not have the appetite for providing financing for Indonesian exporters attempting to penetrate non-traditional export markets. This result underlines that commercial banks in Indonesia have a significant role in shaping the pattern of destination countries for Indonesian export. Consequently, government intervention is essentially needed by assuming or sharing part of the risk with state banks supposing the government continues to expect exporters to be able to penetrate into the non-traditional countries.

Keywords: risks; letters of credit; non-oil and gas export

JEL classifications: F14; F19; G21

1. Introduction

This paper aims to examine the role of banking sector in determining the pattern of destination countries for non-oil and gas export of Indonesia. The role is evident in the provision of export LCs from banks to the exporters to mitigate their ex-

port transaction risk.¹ This research is motivated by the fact that the pattern of Indonesian exports has not shifted over the years amidst the government's mission to diversify destination countries into non-traditional markets that are predominantly high-risk countries (Table 1)². Supposing an export destination country is perceived as high risk, exporters are likely to be reluctant to sell their goods to the

*The authors would thank the Department of Statistics, Bank Indonesia, for providing data on Indonesian non-oil and gas export payment methods. The authors also thank Oxford Economics for allowing to use of country risk data. Without their permission, this research can not be accomplished to attain the intended objectives. The authors also thank Dr. Telisa A. Falianty and Dr. Hera Susanti for their valuable and insightful input to this research.

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¹By observing the LCs data, we can investigate the nature of banks' support to exporters as well as the pattern of export destination countries. The issuance of LCs is specific, in the sense that banks only provide them to certain export destination countries in confirmation with the risk appetites of each banks.

²The top 20 export destination countries of Indonesia for the last decade are China, USA, Japan, Singapore, India, Malaysia, South Korea, Philippines, Thailand, Viet Nam, Taipei, Netherlands, Hong Kong, Germany, Australia, Pakistan, Bangladesh, Italy, Spain, and Saudi Arabia.

said country unless there are financial institutions willing to issue risk mitigation instruments such as Letters of Credit (LCs) or export insurance. A study by Niepmann & Schmidt-Eisenlohr (2014) in the United States (US) shows that the risk factor and LCs affect the pattern of US export (Niepmann & Schmidt-Eisenlohr 2014).³ Meanwhile, a study by Moser, Nestmann, & Wedow (2006) in Germany as well as a study by Baltensperger & Herger (2009) in the OECD countries discover that the risk of export destination country has a negative effect, while export insurance has a positive effect on the export performance of countries.

There have thus far been no similar studies on the case of Indonesia due to limited data collection. This study will be the first study in Indonesia that shows the relationship between export LCs of state banks and 102 destination countries for non-oil and gas export of Indonesia⁴. This study will also link the growth of non-oil and gas exports of Indonesia as well as the risk of export destination countries and Indonesia. Export destination countries are classified into 3 groups based on their levels of risk, namely (i) low-risk, (ii) medium-risk, and (iii) high-risk countries. On this note, the key hypothesis of this study is that the high risk of the destination countries for non-oil export will affect the performance of Indonesian exports and the use of export LCs will significantly determine the value and pattern of Indonesian exports, in particular those to high-risk countries. Supposing the impact of the risk factor and the role of financial institutions on export performance of Indonesia can be examined, the government can more optimally formulate national export development strategies.

³Niepmann & Schmidt-Eisenlohr (2014) examine the role of banking sector in providing export LCs in the US. The study asserts that the risk factor in the interaction with the LCs is highly relevant to the overall trade flows, i.e. not only to changes in the value of exports but also changes in the pattern of exports.

⁴The 102 destination countries selected based on data availability for Indonesia. The scope of the export sector is only limited to non-oil and gas exports due to data availability. However, non-oil and gas exports can explain the overall pattern of export because they account for more than 90% of total exports of Indonesia.

The importance of risk factor in international trade arose during the past episodes of economic crisis. When a crisis occurs, global economy will slow down, affecting various aspects including international trade. Export demand may decrease along with the ability of buyers to pay. It raises both demand risk and default risk. There was a considerably striking phenomenon wherein the decline in world trade growth was far greater than the decline in global GDP growth. During the 2009 financial crisis, global GDP grew negatively by 0.6% YoY, but the export growth declined further by a negative 11.3% YoY⁵. Therefore, there are likely other factors that may explain the effect on trade performance beyond the variables commonly found in the mainstream trade literature, particularly those related to economies of scale usually represented by GDP, product differentiation, and underlying costs for transactions such as tariffs. A number of recent studies assess that the key reason behind the emergence of such phenomenon is the risk factor in international trade transactions⁶. An economic crisis in a country may serve as an alarming signal of increasing risk in that country. Despite the fact that there exist trade potentials in the country, supposing the risk of the country increases, it will affect the decisions of both prospective exporters and importers (buyers) of future transactions. The exporters may face the risk of payment default, while importers are potentially faced with the risk of failure of goods shipment. Thus, the risk factor deserves a more significant place in the empirical model of international trade than has been recognized in the literature thus far.

This study employed an empirical approach by Niepmann & Schmidt-Eisenlohr (2014) but with a number of contributions. *First*, we expanded their empirical model by adding country risk from the viewpoint of the exporting country, in this case Indonesia. Country risk applies on two sides. In this sense, not only the risk of export destination country (in the

⁵Based on *World Economic Outlook IMF, October 2019*.

⁶For example, Amiti & Weinstein (2011) find that bank shocks reduce international trade more than domestic sales.

eyes of exporters) is relevant, but the risk of exporting country (in the eyes of importers) is also important. Why? Supposing the exporting country is considered high risk, this will likely increase the reluctance of overseas buyers to import goods. The buyers are worried about ordering goods supposing the country of origin is considered high risk from both political and commercial perspective, of which may cause delays and even a non-fulfillment of ordered goods according to agreed specifications. In other words, risks can impede trade flows in terms of exports as well as imports.

Second, we added a new variable to represent the degree of banking development. One indicator to observe the development of banking industry of a country is the number of bank branches compared to 100,000 adults⁷. A high number of bank branches means more exporters to be served. LC requires export documents that will be easier to meet with a sufficient number of banks. *Third*, in relation to the use of LCs in Indonesia, we also introduced the policy of the mandatory use of LCs for certain export goods as a dummy variable. In 2015, the Government through the Regulation of the Ministry of Trade No. 4/M-DAG/PER/1/2015 issued a policy on the mandatory use of LCs for export transactions of certain goods, namely minerals (such as iron concentrate, manganese concentrate, copper telluride, copper concentrate, lead concentrate, zinc concentrate, ilmenite concentrate, nickel, silver, and gold), coal, oil and gas, and CPO. Based on the more recent Government Regulation of No. 102 of 2018 as an Amendment to the Regulation of the Ministry of Trade No. 94 of 2018, oil and gas exports are exempted from this obligation. However, since its formulation, the said policy has been subjected to different opinions regarding its effectiveness. Thus, it is necessary to scrutinize the effectiveness of the

⁷World Bank provides at least two indicators to observe the development of banking industry, namely the ratio of credit per GDP and the number of bank branches per 100,000 adults. We used the number of bank branches instead of the credit ratio considering that the export facility must be equipped with some documents that must be obtained directly from the bank. In addition, the portion of export credit to total credit is too small, namely only 2.5%.

policy.

There are a number of key findings in our study. *First*, banks in Indonesia have been confirmed to influence the pattern of national export. The use of LCs as a risk mitigation instrument has a significant positive effect on the performance of non-oil exports of Indonesia to the low-risk and medium-risk countries, the majority of which are traditional markets of Indonesia. The results of this variable are contradictory to previous studies, thus they are not in accordance with the initial hypothesis of this study⁸. The risk appetite of the prevailing banks is in favor of financially facilitating exports to traditional markets of Indonesia, in turn helping in shaping the pattern of destination countries for current Indonesian exports. It is more difficult for firms to obtain a letter of credit from another bank in smaller markets, where fewer banks are active. Should banks are willing to play a greater role in mitigating the risk of Indonesian exports to the high-risk countries, this will provide a confidence boost to exporters and may increase the share of Indonesian exports to the non-traditional countries to a far higher figure today. On the other hand, the risk of export destination countries has a significant negative effect on the growth of non-oil exports of Indonesia to the high-risk countries. This is in line with the hypothesis of the study. However, the country risk of Indonesia has a significant negative effect on the growth of non-oil and gas exports of Indonesia to all classifications of countries. This concludes that the LCs appear to be an irrelevant instrument to mitigate risks of high-risk countries.

Second, the degree of banking development as represented by a proxy variable of the number of bank branches per 100,000 adults has a positive impact on the increase in non-oil exports of Indonesia. The more the number of bank branches is, the easier

⁸For example, Amiti & Weinstein (2011) find that the effect of US trade finance supply shocks on export growth is only significant for smaller markets. Supply shocks have stronger effects on exports to smaller and riskier countries when aggregate uncertainty is high. The effects may also be increasing in risk because letters of credit are used more intensively in high-risk countries in general.

financial access is for exporters⁹. *Third*, the policy on the mandatory use of LCs in Indonesia significantly poses a negative influence on the growth of non-oil exports of Indonesia to all risk groups of countries. This LCs-related policy is proven to be inconsistent with the intended use of LCs as an instrument for risk mitigation. This policy has been in fact imposed on export commodities of which their exporters already have ongoing business relations with buyers. As such, they do not require LCs as a payment method.

Following this introductory section, the second section of the study will further elaborate the structure of export LC market. In the third section, we will closely observe the data used in this study, including the sources. The fourth section is reserved subsequently for our empirical models and the results. The fifth and final section closes with the conclusion and recommendation for further researches in this relatively new area.

2. Literature Review

2.1. Risk in International Trade

In recent years, new thinking has emerged by expanding the international trade model to include an element of "uncertainty" or risk factor. The risk factor will influence the decisions of both exporters and importers in agreeing on transactions. Apart from the performance and credibility of each exporters and importers as business actors, another component that will greatly influence transaction decisions is the risk of the country where the exporters and importers are located.

The risk of the export destination country or the importing country may arise supposing there is a fundamental change in the country that impacts the performance of buyers in the local country. The disrupted performance of buyers is reflected in the

⁹Lo Turco & Maggioni (2017) find that the development of banking sector has a positive and significant role in the first entry of export of small enterprises (SEs) in the Turkish manufacturing sector.

failure of buyers to make payments for export orders, known as the risk of default. The risk of default is most likely to occur supposing there are some risks in the importing country, including economic risks, commercial risks, and political risks.

The importance of risk factor in export destination countries encourages the development of international trade theory that incorporates this aspect into the gravity model. Moser, Nestmann & Wedow (2006) find strong evidence that the risk of importing countries has a negative impact on the exports of a country. This study reveals the statistically and economically significant impact of country risk (specifically political risk) in the empirical trading model, having been largely ignored in the previous trade literature. Political risk is an important hidden transaction cost that affects international trade. This form of risk is an additional transaction cost that a company must take into account in its export decisions because political events can lead to delinquency in payments or even default.

Currently developing international trade theory states that the risks in international trade do not only come from the export destination country (importing country) but also from the exporting country. One of them is the theoretical model of Gervais (2018) stating that differences in the variability of input prices between various suppliers of raw materials from abroad (exporters) will encourage business actors (importers) to tend not to import from high-risk countries.

The aforementioned explanation emphasizes the importance of the marginal role of risk in the business decisions of a company. Efficient supply chain risk management is an important determinant of company performance. Delay and even failure to deliver raw material lead to increased costs, lots sales, and ultimately lower profits. This condition is a risk faced by importers that motivate them to avoid buying from buyers in high-risk countries.

2.2. The Role of Banking Sector in Risk Mitigation

When exporters and importers engage in trade transactions, both parties must agree on who will finance the trade and who will assume the risks. Every transaction carries a risk supposing the consequences are not met by one of the trading partners. In the open account payment method, the goods are shipped in advance by the exporters and the importers make payment after the goods are received. However, there is a risk for the exporters supposing the importers do not pay after receiving the goods. Conversely, in the cash advance payment method, the importers pay in advance and the goods are shipped by the exporters. However, there is a risk for the importers supposing the exporters do not ship the goods. Even in the absence of a crisis, there remain risks in international trade. Such risks will likely increase even more in crisis situations.

To overcome potential troubles arising from usually lengthy trade negotiations of which the party will assume the risk and secure the transaction, banks may help facilitate the issuance of letters of credit (LCs) as a risk mitigation instrument for both exporters and importers. When there is a trade deal, the importers can request a bank in their country to issue an LC to guarantee that the ordered goods will be paid through a particular bank in the exporting country. The bank in the exporting country will pay the exporters when the goods are shipped in accordance with the agreed contract. Thus, the LCs will in this respect mitigate the risk of payment default and the failure of goods shipment. Therefore, the presence of LCs as a risk mitigation instrument plays a major role in the realization of export transactions. For information, non-bank financial institutions such as insurance companies can also alternatively mitigate this risk through the provision of export insurance.

Banks clearly play an important role in supporting the export performance of a country. In addition to LCs, banks can also provide export credits in the form of working capital financing and export invest-

ment financing to facilitate production processes. Thus, supposing banks reduce export financing facilities, it will surely affect the activities of the exporters. More than 90 percent of today world trade depends on credit, insurance, or LCs issued by banks or other financial institutions (Auboin 2007). According to the IMF estimation, the world trade finance market ranges from 35-45 percent to the global merchandise trade (Asmundson et al. 2011).

Niepmann & Schmidt-Eisenlohr (2014) examine the role of banking sector in providing export LCs in the US. The study asserts that the risk factor in interactions with the LCs is highly relevant to the overall trade flows, i.e. not only to changes in the value of exports but also changes in the pattern of exports. By observing the LCs data, we can investigate the nature of banks' support to exporters as well as the pattern of export destination countries. The issuance of LCs is specific, in the sense that banks only provide them to certain export destination countries in confirmation with the risk appetites of each banks. In short, by evaluating the LCs data, we can measure not only their role in national exports but also changes in the patterns of export destination countries. Studies on the role of banks in direct export transactions are rarely found, including studies in the last 5 years because the specific and detailed banking LC data are usually confidential for certain countries. In fact, such data are significantly effective as a source of data to build a research on the relationship between banks and international trade. However, this condition is understandable because it is related to the business competition between exporters and banks.

2.3. Banking Development and the Structure of Export LC Market

Financial institutions, especially banks, have facilities to support exporters. Exporters need export facilities because there is a lag between production and sales proceeds, as well as the difficulty in enforcing payments from importers abroad. Considering the risk of export business, banks must

have the ability to manage risks that may arise at every stage of the risk management process including identification, analysis, mitigation, and risk allocation and diversification, both from the macro and micro sides. For this reason, the level of risk management capability is reflected in the progress of banking. Banking development will influence the ability of banks to analyze risk. Banking development can be reflected in several indicators, such as credit to GDP (Minetti et al. 2018) and the number of banks in a country (Lo Turco & Maggioni 2017).

Banking development is reflected in the highly concentrated structure of LCs market in many countries, including Indonesia. In the last few years, the issuance of Indonesian export LCs have mostly been carried out by 4 Indonesian state-owned banks known as “Himbara” banks¹⁰. The national share of the issuance of LCs by Himbara banks has increased to 41.85% in the period of January-May 2020 (Figure 1). Several factors responsible for this figure include the following: (i) large export corporates are traditionally customers of Himbara banks, (ii) Himbara banks have a vast global correspondence network, and (iii) Himbara banks have a vast number of branches throughout Indonesia. The main competitors of Himbara banks in the LCs business are foreign-owned banks that also have a worldwide network. However, the national share of the issuance of LCs through foreign-owned banks has a downward trend from 32% in 2018 to 19.9% in the period of January to May 2020.

In the US, the top 5 banks accounted for 92% of all trade finance claims in 2012 (Niepmann & Schmidt-Eisenlohr 2014). In Italy, the LCs market is concentrated in only 10 most important banks (Del Prete & Federico 2014). The high concentration of the LCs market is likely due to high fixed costs involved. When banks confirm LCs to support exports to a country, banks need to have contacts with companies or banks in the importing country as well as

knowledge about credit and banking credibility in the said country. This business is a relationship-intensive business, in the sense that information and knowledge obtained has been accumulated over time and not easily transferred. Therefore, only large banks have the capacity to provide LCs.

An alternative risk-mitigation instrument to the LCs is credit insurance. However, the cost of credit insurance is higher than that of the LCs because there are additional costs for transferring risks to other agents. The higher the risk of a country, the higher the cost of export insurance premiums is. Supposing LCs cannot be obtained and trade insurance is considerably expensive or cannot be purchased, importers and exporters may not be willing to carry out trade transactions, eventually resulting in lower export rates.

3. Method

3.1. Data Description

This study used a rich annual data set on non-oil and gas exports of Indonesia to 102 destination countries during the period of 2011–2018. The data of non-oil and gas export of Indonesia and the export LCs used were obtained from Goods Export Notification (PEB) documents.¹¹ The data on country risk both for export destination countries and Indonesia were obtained from the Oxford Economics. The Oxford Economics calculates risk scores for each country in the range of 1 to 10. The calculation score is a composite of exchange rate risk, demand risk, sovereign risk, trade risk, and political risk. A score of 1 represents the lowest risk score while 10 represents the highest risk score. In this study, we then classified the scores into 3 groups of country risk. The low-risk group has a score of 1.0–4.0; the medium-risk group has a score of 4.1–6.0;

¹⁰Himbara stands for the Association of State-Owned Banks. Himbara consists of Bank Mandiri, Bank Rakyat Indonesia (BRI), Bank Negara Indonesia (BNI), and Bank Tabungan Negara (BTN).

¹¹Based on the Decree of the Minister of Finance of the Republic of Indonesia Number 557/KMK.04/2002, Export Declaration of Goods (PEB) is a customs document used for notification of the export of goods which can be written on a form or electronic media.

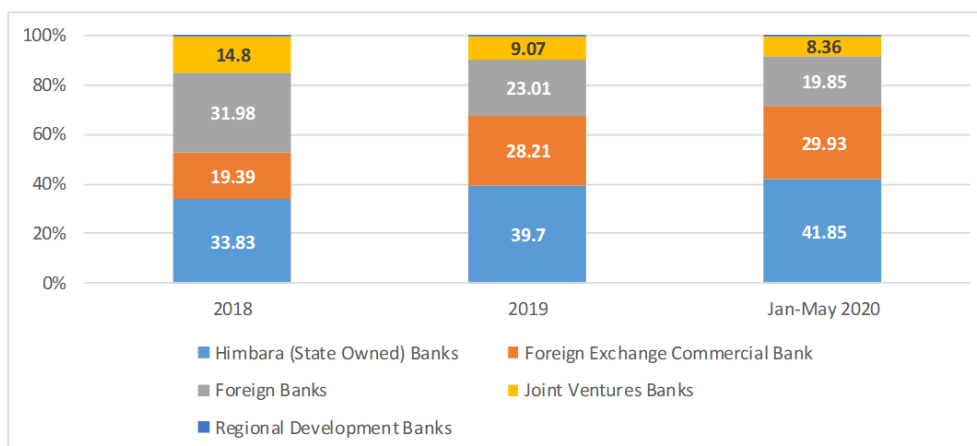


Figure 1. The Market Share of Export LCs of Banks in Indonesia

Source: Statistics Department, Bank Indonesia

and the high-risk group has a score of 6.1–10.0. The grouping is based on the average country risk score of each country during the 2011–2018 period. We also used the mandatory use of LCs for certain goods as a dummy variable, in which the value of 0 is attached to the period of 2011–2014 when the policy was not implemented and the value of 1 to the period of 2015–2018 when the policy was implemented. The last variable is the degree of banking development in Indonesia, represented by a proxy in the form of the number of bank branches per 100,000 adults.¹² The data were sourced from the World Bank.

3.2. Empirical Approach

We estimated the impact of risk and LCs using the model developed by Niepmann & Schmidt-Eisenlohr (2014) yet with a number of modifications. The dependent variable is non-oil and gas exports of Indonesia by considering data availability. The data remain relevant because more than 90% of

Indonesian exports are non-oil and gas exports. We also provided some additional variables. First, the policy on the mandatory use of LC for certain goods that have been implemented since 2015 in Indonesia¹³. Considering that the variable to be investigated is the LC export, then the policy related to LC will also be tested as one of the control variables. Second, the country risk of Indonesia because the country of origin of the goods also poses a risk to the buyers whether there is the credibility that the goods will be received according to the order¹⁴. Third, the degree of banking development in Indonesia represented by the number of bank branches per 100,000 adults.¹⁵ The proxy measures the degree of facilitation provided by banks to exporters in the form of the issuance of export LCs. Since the issuance of LCs requires the completion of a number of documents, a significant number of bank

¹²Lo Turco & Maggioni (2017), who conducted a case study in Turkey, examined the important impact of banking development. Using the Linear Probability Model (LPM) to regress the development of financial institutions against SMEs in the manufacturing sector entering export markets for the first time. Banking development is marked by the growth in the number of bank branches. As a result, banking development influenced SMEs to enter the export market for the first time. With the increasing number of banks, the easier and faster access for business actors to export.

¹³Regulation of the Ministry of Trade of the Republic of Indonesia Number 4-2015 regarding the provisions for the Use of Letter of Credit for the Export of Certain Goods.

¹⁴Based on the theoretical model of Antoine Gervais (2018).

¹⁵Lo Turco & Maggioni (2017), conducting a case study in Turkey, examine the important impact of banking development using the Linear Probability Model (LPM) to regress the development of financial institutions against SMEs in the manufacturing sector entering export markets for the first time. Banking development is marked by the growth in the number of bank branches. As a result, banking development influences SMEs to enter the export market for the first time. The increasing number of banks indicates the easier and faster access for business actors to export.

branches will significantly facilitate the LCs process.

The new equation is as follows:

$$\begin{aligned} XNM_{it} = & \alpha + \beta_1 LC_{it} + \beta_2 Risk_{it} + \beta_3 IndRisk_t \\ & + \beta_4 Keb_t + \beta_5 BankDev_t + e \quad (1) \end{aligned}$$

XNM_{it} is non-oil and gas exports of Indonesia to country i at time t . LC_{it} is the growth in the use of LCs in country i at time t . $Risk_{it}$ is the risk of the export destination country i at time t . We also added the risk of Indonesia, $IndRisk_t$. Indonesia as an emerging country with its moderate risk can be perceived as risky by its trading partners (importing countries), especially if the trading partners are in the low-risk category. Keb_t represents the policy of the mandatory use of LCs in Indonesia at time t —implemented since 2015. $BankDev_t$ is a proxy variable that shows banking development in Indonesia at time t , namely the number of bank branches to 100,000 adults.

The model was employed using the panel data analysis method with 3 scenarios, namely (i) Scenario 1 for the group of low-risk countries (the majority of which are developed countries/high-income countries), (ii) Scenario 2 for the group of medium-risk countries (the majority of which are emerging countries/middle-income countries), and (iii) Scenario 3 for the group of high-risk countries (the majority of which are developing countries/low-income countries).

There are three approaches to apply the panel data (Gujarati 2004). *First*, the Common-Constant method or Pooled Ordinary Least Square (PLS). This approach cannot observed the differences among individuals and differences across time because of the similar intercept and slope in the model. *Second*, the Fixed Effect Model (FEM). Using this approach, the model obtains varied intercepts of each individual. *Third*, the Random Effect Model (REM). Using this approach, differences across time and among individuals are accommodated through errors. The errors are divided into individual errors, time component errors, and combined errors. The intercept represents the average value of all in-

dividuals. To determine the approach to be carried out, a series of tests was conducted, namely (i) the chow test to determine the best model between PLS and FEM, (ii) the Hausman test to choose between the FEM or REM model, and (iii) Langrage Multiplier Test (LM) to determine the selected PLS or REM model. We also tested the stationarity through the unit root test for each variable using Levin Lin Chu test.

4. Result

Table 2 presents the regression results from the estimation of equation 1 using the PLS method following various stages of testing.¹⁶ However, differences among individuals and differences across times cannot be observed due to the similar intercept and slope of the model. All variables are stationary as shown in table 3. This research reveals that the risk factor and banking sector play a significant role in explaining the export performance of a country. The risk has a significant negative impact on Indonesian export to high-risk countries. In contrast, the LCs only have a significant positive effect on low and medium-risk categories. It also seeks an answer to a puzzle of why the pattern of Indonesian export in terms of export destinations has never changed in the last few decades. We also showed the estimation results using FEM in table 3 where the results of variable significance tend to be the same as the PLS method.

The risk of export destination countries is significantly responsible for the decline in the growth of non-oil and gas export of Indonesia to high-risk countries. Every increase in the risk score index by 1 in the group of high-risk countries causes Indonesian exports to that group of countries decrease by 8.34%. This is because Indonesian exporters are concerned about dealing with buyers in the high-risk countries due to potential payment defaults. Countries in this group are mostly non-traditional

¹⁶Various stages testing are the Chow test, Hausman test and Langrage Multiplier test.

Table 1. Variables and Data Description

Variables	Description	Sources	Unit	Expected Sign
Growth of Non-Oil and Gas Export (Dependent Variable)	The growth of non-oil and gas export of Indonesia to each country	Trademap	% yoy (year-on-year)	positive (+)
Country risks, both export destination countries and Indonesia	The level of risk ranging from a value of 1 (low risk) up to 10 (high risk). The low-risk group scores from 1.0 to 4.0. The moderate-risk group scores from 4.1 to 6.0. The high-risk group scores from 6.1 to 10.0 Average score	Oxford Economics	Score Range of 1–10	negative (-)
Growth of Export LCs	Growth in the use of LCs for non-oil and gas exports to each country	Notification of Export of Goods (PEB) from Bank Indonesia	% yoy (year-on-year)	positive (+)
The policy on the mandatory use of LCs	The dummy variable will be used to distinguish the period when the policy has been and has not been applied	Oxford Economics	Policy applied = 1; Policy not applied = 0	
Banking Development	The number of bank branches per 100,000 adults	World Bank	% yoy (year-on-year)	positive (+)

countries for Indonesian exports. Such conditions will thus greatly determine the performance of Indonesian exports to this group of countries.

It is understandable why the share of non-oil and gas exports of Indonesia to non-traditional markets is significantly small (5–6%) and relatively unchanged over the years, considering that Indonesian exporters tend to avoid risky transactions. Exporters who continue to carry out export transactions with these countries are likely those who already have existing buyers. The aspiration for Indonesian exporters to penetrate or shift their exports to the non-traditional countries are deemed difficult to realize as long as their concern when facing such enormous trade risk is not addressed.

The trade risk is not only associated with the risk of export destination country. The country of exporters must also manage its domestic risk carefully because it will affect the appetite of overseas buyers to place orders from them. An interesting result is obtained from this study, showing that risk of Indonesia has a significant effect on the decline in the growth of non-oil and gas export of Indonesia to all groups of countries. Supposing the risk index of Indonesia rises by 1, Indonesian exports will decline in the range of 24.95% (low-risk coun-

tries) to 43.66% (medium-risk countries). This result shows that overseas buyers are concerned supposing there is an increase in the country risk of Indonesia since the production process and shipment of goods may likely be disrupted, in turn may result in failure of goods delivery.

On the contrary, most exporters believe that the traditional markets are low-risk countries, thus providing the exporters with an assurance of good export payment. Indonesian banks are more than happy to provide exporters with export financing. This is reflected by the growth of LCs that has significantly affects the increase in the growth of non-oil and gas export of Indonesia to the low- and medium-risk countries. However, the growth of LCs does not affect the growth of non-oil and gas exports of Indonesia to the high-risk countries. The intensive use of LCs for exports to the low-risk and medium-risk countries is due to a number of factors. *First*, the initiation of an LC from the perspective of the buyers is carried out to mitigate risks associated with potential failure of goods shipment. This is in line with the previous result that the risk factor of Indonesia affects non-oil and gas exports of the country. Considering the country risk of Indonesia is in the medium-risk group, overseas buyers in the low or equivalent risk group as Indonesia attempt to

Table 2. PLS Method Regression Result

VARIABLES	(1) XNM	(2) XNM	(3) XNM
LC	0.0184*** (0.00101)	0.0287*** (0.00167)	0.000653 (0.00265)
Risk	-0.0394 (2.217)	-1.798 (3.079)	-8.344* (5.020)
IndRisk	-26.76*** (6.937)	-43.66*** (9.201)	-35.71** (15.58)
Keb	-9.420** (4.407)	-20.82*** (5.719)	-16.68* (9.652)
BankDev	0.221*** (0.0668)	0.215** (0.0836)	0.584*** (0.132)
Constant	144.4*** (36.45)	253.0*** (52.18)	258.1*** (90.20)
Observations	312	296	216
R-squared	0.713	0.542	0.169

Note: Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

(1) Low-Risk, (2) Medium-Risk, (3) High-Risk

XNM is Dependent Variable: Non-Oil and Gas Export Growth

Independent Variables:

- ✓ LC: Growth in the use of LC for non-oil and gas exports
- ✓ Risk: risk of export destination countries
- ✓ IndRisk: risk of Indonesia
- ✓ Keb: policy on the mandatory use of LCs
- ✓ BankDev: Banking Development

Table 3. FEM Method Regression Result

VARIABLES	(1) XNM	(2) XNM	(3) XNM
LC	0.0184*** (0.00074)	0.0289*** (0.0018)	0.000645 (0.00281)
Risk	-7.642 (5.800)	-3.409 (6.255)	-15.216 (10.207)
IndRisk	-26.17*** (7.134)	-43.51*** (9.324)	-34.47** (15.86)
Keb	-9.696** (4.428)	-20.77*** (5.802)	-15.83* (9.834)
BankDev	0.2295*** (0.0640)	0.214** (0.0846)	0.577*** (0.133)
Constant	164.8*** (41.78)	260.0*** (52.13)	298.02*** (104.74)
Observations	312	296	216
R-squared between	0.672	0.535	0.454

Note: Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

(1) Low-Risk, (2) Medium-Risk, (3) High-Risk

XNM is Dependent Variable: Non-Oil and Gas Export Growth

Independent Variables:

- ✓ LC: Growth in the use of LC for non-oil and gas exports
- ✓ Risk: risk of export destination countries
- ✓ IndRisk: risk of Indonesia
- ✓ Keb: policy on the mandatory use of LCs
- ✓ BankDev: Banking Development

mitigate the risk. This option is especially feasible supposing the buyers cannot inquire Indonesian exporters to use the open account payment method.

Table 4. Levin Lin Chu Unit Root Test

Group	ADF Regression	Adjusted t-stat	Prob
XNM	1 lag	-18.3016	0.0000
LC	1 lag	-12.3604	0.0000
Risk	1 lag	-13.5674	0.0000
IndRisk	1 lag	-15.3977	0.0000
Keb	1 lag	-6.9488	0.0000
BankDev	1 lag	-2.7957	0.0000

Second, Indonesian banks are prepared to confirm LCs from low-risk and medium-risk countries, while the banks refuse to take risks to facilitate exports to high-risk countries. This phenomenon is further reinforced by the fact that the low- and medium-risk countries, mostly developed and emerging countries, have developed banking systems to facilitate LCs.

Different results are however found in the case of high-risk group of countries. The LCs do not significantly affect the increase in the growth of non-oil and gas export of Indonesia to those countries. This finding is in line with the risk variables in those countries that negatively affect non-oil and gas exports of Indonesia. Banks are reluctant to financially facilitate countries with high political and commercial risks. In terms of high-risk countries, most banks in Indonesia also do not have bank lines for transactions for reasons associated with the lack of banking development in those countries. Since financial institutions are reluctant to financially facilitate countries with these characteristics, the use of LCs or export insurance is irrelevant to support exports to that group of countries. Not surprisingly, the share of Indonesian exports to this group remains significantly small. Thus, supposing the government continues to want Indonesian exporters to engage with these countries, the government must play a greater role, particularly in the form of providing risk protection schemes for the banking facilitation.

The intensive use of LCs in international trade transactions is thus highly dependent on the degree of

the banking development both in exporting and importing countries. The positive role of LCs in the performance of non-oil and gas exports to low-risk countries (the majority of which are developed countries) and medium-risk countries (the majority of which are emerging countries) is greatly made possible by the advanced development of banking industries in these countries. This is reflected in the considerably higher number of commercial bank branches per 100,000 adults and the higher ratio of credit to GDP than those in the high-risk countries (Table 5¹⁷).

Table 5. Average Banking Development

Group	Commercial Branches per 100,000 adults (2017)	Credit to GDP-% (2018)
Low-Risk	23,9	105,3
Medium-Risk	16,8	64,6
High-Risk	7,2	28,7

Source: World Bank

Regarding the policy on the mandatory use of LCs, the estimation results show that the policy variable has a negative effect on the growth of non-oil and gas exports of Indonesia to all groups of countries. Considering the intended use of LCs as a risk mitigation instrument, this negative effect is most likely due to the fact that this policy has been imposed on export commodities of which their exporters already have business relations with buyers. As such, they both do not require LCs as a payment method. The mandatory use of LCs instead exerts additional costs to exporters and buyers. There is a pertinent concern that this persisting condition may lead overseas buyers to divert their orders from Indonesia to other countries. On this note, the government is encouraged to formulate alternative policies to attain the intended goals of conserving natural resources, downstreaming, or optimizing foreign exchange export proceeds, in addition to the policy on the mandatory use of LCs. However, this finding has limitations and needs to be tested further, especially by considering other aspects that play an

¹⁷We averaged based on the availability data on each risk group.

important role in export performance, such as the world economic cycle, including the existence of trade agreements between partner countries of Indonesia and other countries that have other indirect impacts on Indonesia, and other factors.

Related to the degree of banking development, several current bank services do not need to be completed through branch offices because they can obviously be carried out digitally. The number of branch offices per 100,000 adults in Indonesia has decreased over the years. In addition to the growing population of the country, increasingly digitalized banking services is partly responsible for the lower number of branch offices. However, digital bank services remain currently limited mostly for routine consumer activities such as transfers, payments, or credit cards. To process working capital or investment loans and LCs facilitation, banks are still required to physically verify related documents or make a site visit to the production location of the clients. Therefore, the presence of bank branch offices is highly essential to financially reach and facilitate exporters. This is confirmed by the estimation results of this study as the degree of banking development as represented by a proxy variable of the number of bank branches per 100,000 adults has a positive impact on the increase in non-oil exports of Indonesia. The more the number of bank branches is, the easier financial access for exporters is. Based on the latest data from the Indonesia FSA, the largest number of branch offices is still held by the 4 state-owned (Himbara) banks, followed by national private banks.

5. Conclusion

The risk factor and banking sector also plays a significant role in explaining the export performance of a country. This finding provides a new perspective on other factors affecting non-oil and gas export of Indonesia that has been recognized in the empirical model of international trade. On this note, the key hypothesis that the high risk of non-oil export destination countries will affect the performance of

Indonesian exports, and the use of export LCs will significantly determine the value and pattern of Indonesian exports, in particular those to high-risk countries, are not proven. Most exporters believe that the traditional markets are low-risk countries, providing an assurance of good export payment. Indonesian banks are more than happy to provide exporters with export financing. Meanwhile, supposing an export-destination country is in the high-risk category, banks are reluctant to provide financing. Furthermore, as exporters, they will choose traditional export markets to sell their product. This will create a kind of vicious circle that keeps the pattern of export destination countries relatively unchanged for decades. This result underlines that commercial banks in Indonesia have a significant role in shaping the pattern of non-oil export destination of Indonesia.

However, this research has limitations in testing risk factors using an index score. In the future, risk data in the form of standard deviation can be an alternative. In addition, limitations also exist in the impact of the implementation of LC policy, requiring further tests, especially by considering other aspects that play an important role in export performance, such as the world economic cycle, including the existence of trade agreements between Indonesia and other countries.

On this note, the Government is encouraged to reevaluate their target countries for export destination. Subsequent to examining export potentials and opportunities, the following step is advised to identify country risks that can affect international trade transactions. It is advised to focus on export market penetration to countries whose level of risk is manageable and can be facilitated by financial institutions (by the issuance of LCs or export insurance). Those are countries in the middle-risk group, majority of which are countries in the middle-income group. Since the export share of Indonesia to those countries is currently still below 30%, there remain a potential for a significant increase in export. Supposing the government continues to want to target an export expansion to the non-traditional

high-risk markets, the government needs to initiate a special program, in which the government needs to be involved in each trade transaction to mitigate risks of the exporters and the financial institutions or banks. Suggestions for further research are as follows: (i) to deepen the research into more detailed sectors and commodities, (ii) to examine the role of other financial institution instruments on the export performance of Indonesia, namely export insurance.

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Appendices

Table A1. List of 102 Destination Countries

Algeria	Danish	Israeli	Netherlands	Slovenia
Angola	Dominican Republic	Italian	New Zealand	South Africa
Argentina	Ecuador	Ivory Coast	Nigeria	South Korea
Australia	Egypt	Japanese	Norway	Spain
Bahrain	Estonian	Kenya	Oman	Sri Lanka
Bangladesh	Ethiopia	Kuwait	Pakistan	Sweden
Belgium	Finland	Laos	Panama	Switzerland
Benin	French	Latvia	Papua New Guinea	Taiwan
Brazil	Gabon	Lebanon	Paraguay	Tanzania
Bulgaria	German	Lithuanian	Peru	Thailand
Cambodia	Ghana	Malawi	Philippines	Trinidad Tobago
Cameroon	Greece	Malaysia	Poland	Tunisia
Canada	Guatemala	Mali	Portugal	Turkey
Chile	Guinea	Malta	Qatar	Ukraine
China	Haiti	Mauritius	Rep. Czech	United Arab Emirates
Colombia	Honduras	Mexico	Romania	United Kingdom
Congo	Hungary	Morocco	Saudi Arabia	United States
Costa Rica	India	Mozambique	Siera Leone	Uruguay
Croatia	Iran	Myanmar	Singapore	Venezuela
Cyprus	Iraq	Nepal	Slovakia	Vietnam
Cyprus	Irish			

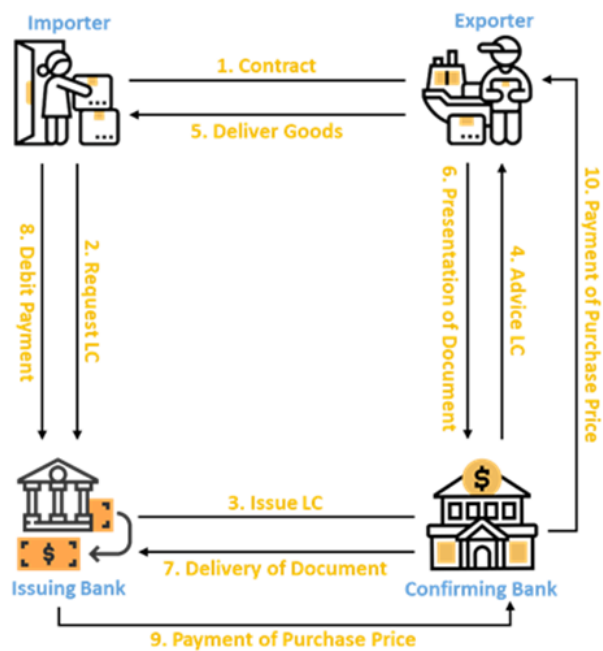


Figure A1. How A Letter of Credit Works

Source: Author

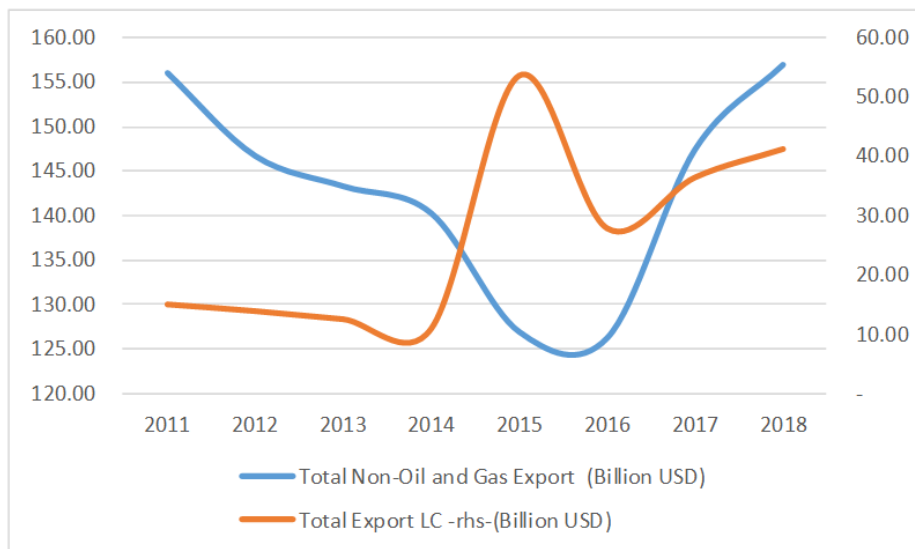


Figure A2. Export LCs and Indonesian Exports
Source: Statistics Department, Bank Indonesia

Table A2. Top 20 Export Destination Countries of Indonesia

Rank	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
1	China	China	China	China	Japan	Japan	Japan	Japan	Japan	Japan
2	USA	Japan	USA	USA	USA	China	China	China	China	China
3	Japan	USA	Japan	Japan	China	Singapore	Singapore	Singapore	Singapore	Singapore
4	Singapore	India	India	Singapore	Singapore	USA	USA	Korea.Rep	USA	Korea.Rep
5	India	Singapore	Singapore	India	India	India	India	USA	Korea.Rep	India
6	Malaysia	Korea.Rep	Malaysia	Malaysia	Korea.Rep	Korea.Rep	Korea.Rep	India	India	India
7	Korea.Rep	Malaysia	Korea.Rep	Korea.Rep	Malaysia	Malaysia	Malaysia	India	India	Malaysia
8	Philippines	Philippines	Philippines	Thailand	Thailand	Taipei	Thailand	Thailand	Taipei	Taipei
9	Thailand	Thailand	Thailand	Philippines	Taipei	Thailand	Taipei	Taipei	Thailand	Thailand
10	Viet Nam	Taipei	Taipei	Taipei	Philippines	Thailand	Taipei	Taipei	Thailand	Thailand
11	Taipei	Viet Nam	Netherlands	Netherlands	Australia	Australia	Australia	Australia	Australia	Australia
12	Netherlands	Netherlands	Netherlands	Netherlands	Netherlands	Netherlands	Netherlands	Netherlands	Netherlands	Netherlands
13	Hong Kong	Australia	Germany	Viet Nam	Netherlands	Philippines	Philippines	Philippines	Philippines	Philippines
14	Germany	Australia	Germany	Viet Nam	Viet Nam	Germany	Germany	Germany	Germany	Germany
15	Australia	Hong Kong	Australia	Germany	Germany	Hong Kong	Hong Kong	Hong Kong	Hong Kong	Hong Kong
16	Pakistan	Pakistan	Hong Kong	Hong Kong	Saudi Arabia	Viet Nam	Viet Nam	Italy	Italy	Italy
17	Bangladesh	Spain	Spain	Pakistan	Hong Kong	Italy	Italy	Italy	Italy	Italy
18	Italy	Italy	Italy	Italy	Pakistan	Saudi Arabia	Spain	Spain	Spain	Spain
19	Spain	Bangladesh	Bangladesh	Saudi Arabia	Italy	Pakistan	Saudi Arabia	Spain	Viet Nam	Viet Nam
20	Saudi Arabia	Saudi Arabia	Bangladesh	Bangladesh	Spain	Spain	Pakistan	Saudi Arabia	Saudi Arabia	Saudi Arabia

Source: Trademap, International Trade Centre (ITC)

Table A3. Levin-Lin-Chu and Im-Pesaran-Shin Panel Unit Root Test for Growth Of Non-Oil and Gas Export

Levin-Lin-Chu unit-root test for xnm		
Ho : Panels contain unit roots		Number of panels = 102
Ha : Panel are stationary		Number of periods = 8
AR parameter: Common		Asymptotics : $N/T \geq 0$
Panel means: Included		
Time tren: Not included		
ADF regressions: 1 lag		
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)		
	Statistics	p-value
Unadjusted t	-29.1202	
Adjusted t'	-18.3016	0.0000

Table A4. Levin-Lin-Chu and Im-Pesaran-Shin Panel Unit Root Test for Growth of LC

Levin-Lin-Chu unit-root test for lc		
Ho : Panels contain unit roots		Number of panels = 102
Ha : Panel are stationary		Number of periods = 8
AR parameter: Common		Asymptotics : $N/T \geq 0$
Panel means: Included		
Time tren: Not included		
ADF regressions: 1 lag		
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)		
	Statistics	p-value
Unadjusted t	-24.6317	
Adjusted t'	-12.3603	0.0000

Table A5. Levin-Lin-Chu and Im-Pesaran-Shin Panel Unit Root Test for the Risk of Destination Country

Levin-Lin-Chu unit-root test for risk		
Ho : Panels contain unit roots		Number of panels = 102
Ha : Panel are stationary		Number of periods = 8
AR parameter: Common		Asymptotics : $N/T \geq 0$
Panel means: Included		
Time tren: Not included		
ADF regressions: 1 lag		
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)		
	Statistics	p-value
Unadjusted t	-18.1335	
Adjusted t'	-13.5674	0.0000

Table A6. Levin-Lin-Chu and Im-Pesaran-Shin Panel Unit Root Test for the Risk of Indonesia

Levin-Lin-Chu unit-root test for indrisk		
Ho : Panels contain unit roots		Number of panels = 102
Ha : Panel are stationary		Number of periods = 8
AR parameter: Common		Asymptotics : $N/T \geq 0$
Panel means: Included		
Time tren: Not included		
ADF regressions: 1 lag		
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)		
	Statistics	p-value
Unadjusted t	-16.1471	0.0000
Adjusted t'	-15.3977	0.0000

Table A7. Levin-Lin-Chu and Im-Pesaran-Shin Panel Unit Root Test for Banking Development

Levin-Lin-Chu unit-root test for bankdev		
Ho : Panels contain unit roots		Number of panels = 102
Ha : Panel are stationary		Number of periods = 8
AR parameter: Common		Asymptotics : $N/T \geq 0$
Panel means: Included		
Time tren: Not included		
ADF regressions: 1 lag		
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)		
	Statistics	p-value
Unadjusted t	-1.4053	0.0800
Adjusted t'	-2.7957	0.0026

Table A8. Levin-Lin-Chu and Im-Pesaran-Shin Panel Unit Root Test for the Policy on LCs

Levin-Lin-Chu unit-root test for keb		
Ho : Panels contain unit roots		Number of panels = 102
Ha : Panel are stationary		Number of periods = 8
AR parameter: Common		Asymptotics : $N/T \rightarrow 0$
Panel means: Included		
Time tren: Not included		
ADF regressions: 1 lag		
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)		
	Statistics	p-value
Unadjusted t	-110.635	
Adjusted t'	-69.458	0.0000