Empowering SMEs export by export promotion policy: The case of duty exemption incentives for SMEs in Indonesia

By

NABILA, Alfi

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

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Committee in charge:

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Approval as of December, 2023

Acknowledgment

I would like to commence by expressing my gratitude to Allah SWT for His grace and blessings. Additionally, I extend my heartfelt appreciation to my parents and my family for their support and prayers for my journey in this study.

I would like to take this opportunity to extend my sincere thanks to Professor Yoon Chungeun for his unwavering support, invaluable guidance, and insightful mentorship in shaping my research. I am also deeply thankful to Professor Park Sungho, for his valuable contributions and feedback that enriched the development of my work. I would like also to express my gratitude to Professor Lee Siwook, who initially supervised my research before embarking on a new chapter in his career. His early guidance laid the foundation for my research journey.

Furthermore, I wish to convey my sincere appreciation to KOICA for their generous scholarship support, which has been instrumental in making my academic pursuits possible. I am also grateful to the professor at KDI School, whose enlightening courses and guidance have enriched my knowledge and academic experience. Lastly, thank also to my friends and my colleagues for their support.

Abstract

Empowering SMEs export by export promotion policy:

The case of duty exemption incentives for SMEs in Indonesia

The low SME participation in international trade has prompted government

intervention intended to increase SME involvement in global markets. In 2017, the Indonesian

government introduced a policy in which SMEs were granted exemptions from import duties

on imported raw materials intended for export-oriented production. Eligibility for this incentive

is contingent upon SMEs being registered as import duty exemption beneficiaries at their

convenience, thereby resulting in variations in the timing of SME utilization of this policy. In

this empirical study, I employed difference-in-differences methods with variations in the

treatment timing to explore the impact of implementing the duty exemption policy on SME

export and import activities. I used the Indonesian Customs dataset from 2015 to 2022. The

results revealed a statistically significant increase in both exports and imports by SMEs as a

consequence of the duty exemption policy. However, it is essential to highlight that the policy

does not have a lasting impact on exports in the long run, whereas its impact on imports

weakens over time. These findings carry implications for government policymaking,

particularly with regard to enhancing the sustained performance of SMEs' exports in the long

run.

Keywords: duty exemption, SMEs, export

ii

Table of Contents

Acknowledgment	i
Abstract	ii
Table of Contents	iii
List of Tables	iv
List of Figures	v
I. Introduction	1
II. Background	4
2.1. Export Incentives and Export Performances	5
2.2. Implementation of duty exemption as export promotion policy in Indonesia	6
III. Data and Methodology	9
3.1. Data Collection	9
3.2. Empirical Strategy	11
IV. Results	14
4.1. The impact of duty exemption policy on SME performance	14
4.2. The impact of duty exemption policy on SMEs performance compared to large	-scale
industries.	21
4.3. Robustness Check	24
V. Conclusion	27
5.1. Summary	27
5.2. Policy Implication	29
5.3. Limitation	30
References	31

List of Tables

Table 1 Summary of Descriptive Statistic	11
Table 2 Pre-trends log of exports and log of imports	15
Table 3 The impact of duty exemption policy on SME performance	17
Table 4 Pre-trends export and imports SME compared to large-scale industries	22
Table 5 The impacts of duty exemptions on SMEs compared to large-scale industries	23

List of Figures

Figure 1 Exports performance of SMEs in Indonesia2
Figure 2 The procedure of the duty exemption scheme
Figure 3 Number of SMEs that get duty exemption
Figure 4 Trend in exports and imports
Figure 5 SMEs export and import performance before and after the policy implementation .18
Figure 6 The impact of Covid-19 pandemic on the Customs Facilities Users20
Figure 7 Trend in export and import with large-scale industries as a control group21
Figure 8 SMEs export and import performance before and after the policy implementation
compared to large-scale industries
Figure 9 SMEs export and import performance before and after the policy implementation
use Callaway and Sant'Anna's (2020) model
Figure 10 SMEs export and import performance before and after the policy implementation
compared to large-scale industries use Callaway and Sant'Anna's (2020) model26

I. Introduction

Small and medium enterprises (SMEs) play a significant role in boosting economies (World Bank, n.d; OECD, 2017; Arnold, 2019; WTO, 2022). The World Bank (n.d) estimated that the share of formal SMEs in the gross domestic product (GDP) can reach 40% and will increase if informal SMEs are considered. However, the average rate of SMEs' participation in international trade is low at only 11.1% in 2016-2021, because of barriers such as information and lack of financing (WTO, 2022). In addition, WTO (2022) found that the export activities of SMEs in developing countries are lower compared to developed countries.

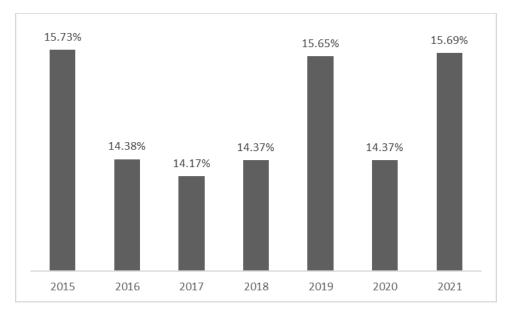
Indonesia as a developing country also faces the same situation regarding SMEs. The Ministry of Cooperatives and SMEs of the Republic of Indonesia (2019) showed that microfirms and SMEs are an important sector that contributes 61 % to Indonesia's GDP, consisting of 37.7% of micro-businesses and 23.3% of SMEs in 2019. In addition, SMEs can create jobs for 9,720,459 people, twice as much as the amount of labor that can be generated by large companies (Ministry of Cooperatives and SMEs, 2019). However, SMEs in Indonesia are still focusing on the local market and contributing to only 13% of exports (Ministry of Cooperatives and SMEs, 2019). According to CNN Indonesia (2020), the exports of Indonesia's SMEs are lower compared to other countries such as China (70%), Japan (50%), and South Korea (40%). Meanwhile, the OECD (2018) and Le (2021) argued that exports can benefit SMEs such as expanding markets, accelerating innovation, and increasing productivity.

According to Humas (2015), since 2015, the Indonesian government already issued policy package mandates providing policies encouraging SMEs to increase exports. In addition, Sitorus (2017) reported that in 2017, the Indonesian government released a regulation regarding duty exemptions for SMEs that import for making finished goods for export purposes, the same incentives that have already been given to big-scale industries. It shows that there are already government policies to encourage SMEs to export but the fruition of impact is still ambiguous.

Moreover, based on the data of the Ministry of Cooperatives and SMEs of the Republic of Indonesia from 2015 to 2019, I found that the export contribution of SMEs tends to experience slow and even stagnant growth, around 13 - 14 % as shown in figure 1.

Figure 1

Exports performance of SMEs in Indonesia



Note. Adapted from the Ministry of Cooperatives and SMEs of the Republic of Indonesia.

Recent studies have explored the impact of fiscal incentives on export performance (Hussien, 2021; Adriyanto & Qibthiyyah, 2022; Rossari 2022). Hussien (2021) pointed out that since the export incentives were implemented in Ethiopia, the nation's export incomes in manufacturing industries have steadily increased. In addition, Adriyanto and Qibthiyyah (2022) identified a positive and significant correlation between export incentives and the export performance of SMEs in Indonesia. On the other hand, Rossari (2022) explained that fiscal incentives in Indonesia had a positive impact on the export performance of the large-scale industry.

Previous studies in the field of export promotion policy in Indonesia focused on measuring the impact of the incentive on export for each scale of the industry (for SMEs, see Adriyanto & Qibthiyyah, 2022; Perdamayan, 2022; for large-scale industries, see Rosari,

2022). Meanwhile, in this paper, I aim to examine the effect of the incentives on both the export and import performance of SMEs. Besides, I will also compare the impact of duty exemption on SMEs and large-scale industries in Indonesia. This study will use second-hand datasets from Indonesia Customs since 2015 to 2022. In this research, I will investigate the following research questions:

- 1. How does the duty exemption policy affect export of the SMEs?
- 2. How does the duty exemption policy affect import of the SMEs?
- 3. How is the impact of duty exemption policy on SMEs' performance compared to large-scale industries?

The result of this research will be of interest to policymakers to improve policy in the field of export promotion for different scale industries, especially SMEs.

This paper is organized into five sections. The first section deals with the background of the topics and research questions. In the second section, I present the existing literature on exports, government incentives, and SMEs. Then the third section will describe the methodology for measuring the impact of the incentive to export and the type of data collection used in this research. Meanwhile, the data are analyzed quantitatively in the fourth section. The last section is dedicated to conclusions and recommendations.

II. Background

Before answering the research question, we should clarify the definition of SMEs used in this study. It is important to note that there is no standard definition of SMEs. The definition of SMEs across the countries can differ because of the various standards in the number of employees and other criteria used to classify the industry scale (see ASEAN, 2020). OECD (2017) and WTO (2022) explain SMEs as firms with less than 250 workers. Meanwhile, according to Government Regulation of Republic of Indonesia Number 7 of 2021 on the Ease, Protection, and Empowerment of MSMEs, SMEs are firms that have a capital of less than Rp 10 billion and sales of less than Rp 50 billion a year. For the purpose of this study, the definition from the government of Indonesia will be adopted because the scope of this research is in Indonesia.

Several comprehensive studies in different countries argue that SMEs have a strong positive correlation with economic growth (for a study in Poland, see Wozniak et al.,2019; for a study in Indonesia, see Harahap, 2020; for a study in Malaysia, see Adan & Hussain, 2021). Considering how vital the role of SMEs is to the economy, the government must encourage the development of SMEs. One of the steps that can be taken is to encourage SMEs to expand the market through exports. The OECD (2018) states that exports can benefit SMEs by expanding markets, accelerating innovation, and increasing productivity. In addition, exporting allows businesses to improve their market reach and develop new talents, which boosts their profitability and promotes consumer spending among the company's owners, employees, and workers' families (Atkin et al., 2017). Furthermore, a strand of empirical studies finds a positive correlation between company performance and export (for an in-depth correlation between export and asset growth for SMEs, see Le, 2021; for understanding the link between export, competitiveness, and productivity, see Sahoo et al., 2022).

2.1. Export Incentives and Export Performances

Before turning to the analysis section, I want to make clear the type of export promotion that will be measured in this research. Lukita (2022) explained that the export-promotion strategy covers a broad definition: non-fiscal and fiscal incentives. Non-fiscal incentives, such as establishing export promotion organizations that provide information and assistance in new market penetration, export procedures, trade fair organization, or devaluation of domestic currency, do not involve any trade-off between incentive measures and potential tax revenue (Seringhaus & Rosson, 1990 as cited in Lukita, 2022). Meanwhile, Hussein (2021) states that fiscal incentives are actions that result in lost tax income, for example, preferential rates for public services, tax exemptions, duty drawbacks or rebates, and interest rates on an export guarantee or export funding. In this study, I will use fiscal incentives as a variable that impacts exports and imports.

A large number of studies find that fiscal incentives have a good impact on exports (see Hussien, 2021; Rossari, 2022; Lukita, 2022). Hussien (2021) argues that export incentives raise trade value. In addition, tax exemption significantly affects the export performance of Indonesia's manufacturing companies licensed to use the tax exemption policy (Lukita, 2022). Moreover, Rossari (2022) explained that fiscal incentives in Indonesia positively impacted the export performance of the large-scale industry. I additionally evaluated the role of export incentives in company performance, then I found that the significant studies from Uwaoma and Ordu (2016) in manufacturing industries point out that export incentives can be the catalyst for the industry to do the expansion.

Besides, numerous studies have investigated the effect of export incentives on the export performance of SMEs (see Falco & Simoni, 2014; Ahmad et al., 2017; Adriyanto & Qibthiyyah, 2022; Perdamayan, 2022). Esposito De Falco and Simoni (2014) examined the SMEs in Italy

and showed that the export incentives significantly affect the SMEs without prior foreign market experience to initiate their export activities. Nevertheless, the efficiency of these incentives hinges on certain conditions being met, including the company's human resources, managerial expertise, industry understanding, and the ability to recognize market opportunities. On the other hand, export incentives in Malaysia, including duty refunds and tax reliefs, have a notably favorable and substantial influence on the export achievements of SMEs (Ahmad et al., 2017). Moreover, the researchers emphasize that these export incentives are crucial in bolstering Malaysia's SMEs' competitiveness and long-term viability in the international marketplace. Meanwhile, studies in Indonesia argued that export facilities such as duty exemption are positively and significantly correlated to the export performances of SMEs (see Adriyanto & Qibthiyyah, 2022). In addition, Perdamayan (2022) explored the effect of the fiscal incentive value on SMEs' exports and found the export of these SMEs is higher than those of other SMEs that never use the fiscal incentives.

In contrast, Gebreyesus and Demile (2017) investigated the export incentive in Ethiopia and found that export incentives alone do not serve as a sufficient motivator for the private sector to engage in exports. Furthermore, the research highlights that the effectiveness of export incentives is hindered by bureaucratic challenges and inefficient coordination, which create obstacles for exporters to access these incentives and can lead to diversion and profit-driven behavior within the private sector. The study suggests that addressing the administrative hurdles related to incentives would not only enhance government initiatives to promote exports but also render export incentives more appealing when compared to investment incentives.

2.2. Implementation of duty exemption as export promotion policy in Indonesia

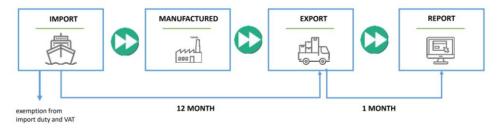
In Indonesia, there are several types of export promotion to help the firm to do export including non-fiscal programs such as mobility of export, giving information, and training, also fiscal incentives such as tax and duty exemption (see Fiscal Policy Agency, 2021; Heriqbaldi,

2023). In this study, I will use duty exemption, one of the fiscal incentives in Indonesia, as a variable to measure the impact of fiscal incentives on the export of SMEs. Before doing the measurement, I will briefly explain this duty exemption.

The Indonesian government exempts import duties for industries carrying out processing, assembly, and installation activities for export purposes. This incentive is divided into two, special incentives for SMEs and others. Even though there are differences, the essence of these two incentives is the same: providing an exemption from import duties and VAT in the context of imports for processing, assembly, or installation to produce goods to be exported. In the preamble of the regulations about those incentives, the government consistently wrote that the policy was meant to stimulate exports by lowering the cost of production by exempting the tax, which eventually led to more competitive prices of finished products in the international market. The difference is that SMEs has fewer requirements than other scale industry to register to receive this incentive. The concept of this incentive business process is depicted in Figure 2.

Figure 2

The procedure of the duty exemption scheme



Note. Adapted from Indonesia Customs (2022).

Firms can enjoy this duty exemption only if they register with the Directorate General of Customs and Excise (DGCE) and get a license. After the firm gets a license, it can import without paying duty import, VAT, or sales taxes of luxury goods imported by two conditions. First, when the firm is doing an import, they should declare themselves as a user of this

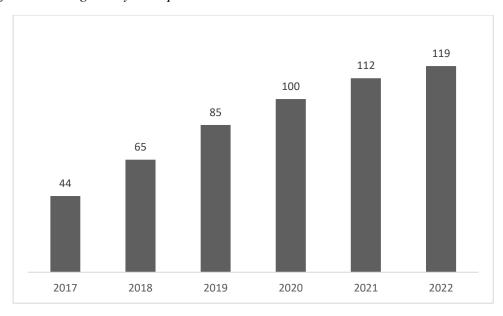
incentive. Second, the imported material that can get into this facility is only raw material for export purposes. This means the raw material will be produced after import to become finished goods sold overseas (exported). After exporting, they have to report to the Customs Office.

The Minister of Finance first issued regulation regarding import duty exemptions for export purposes in 2003 (MOF, 2011). Then, this regulation was changed several times, with the latest change being Minister of Finance Regulation number 149 of 2022 (MOF, 2022). Meanwhile, according to Humas (2017), regulations regarding providing import duty exemption facilities for SMEs started in 2017, marked by a launch opened by the President of Indonesia.

Since this policy was implemented in 2017, based on Indonesia Customs data (2023), the number of users of this import duty exemption facility continues to increase (see Figure 3). In the first year of this policy, 44 SMEs received permission to use this facility. This number has almost tripled after five years to 119 SMEs in 2022.

Figure 3

Number of SMEs that get duty exemption



Note. Adapted from Indonesia Customs 2023.

III. Data and Methodology

The Indonesian government provides a duty exemption incentive to SMEs with the goal of unlocking the export potential of SME products. In light of this objective, this research seeks to assess the effect of the duty exemption policy on the export performance of SMEs in Indonesia. Concurrently, this incentive is intricately linked to import activities, as it is designed to facilitate more cost-effective importation of raw materials by SMEs for exportation. Therefore, in addition, this study also undertakes an examination of the policy's impact on the import activities of SMEs.

In the subsequent section, we will elaborate on the data utilized in this study and outline the distinct categorization of treatment, control, and treatment groups. Following this, we will elucidate the empirical strategy, including the economic model that serves as the foundation for this research.

3.1. Data Collection

This research relies on data obtained from the export and import database maintained by Indonesia Customs. Indonesia Customs is a government agency operating under the Ministry of Finance of the Republic of Indonesia. This institution plays a critical role in granting duty exemptions and issuing permits to utilize this incentive. Moreover, Indonesia Customs is entrusted with the task of monitoring the usage of these exemptions. Additionally, it holds a central role in managing and maintaining the nation's export and import data. This includes information on SMEs benefiting from duty exemptions and records of export-import values, Therefore, Indonesia Customs is the most suitable source of data for this research.

Furthermore, this study employs panel data encompassing the export and import activities of firms over the period from 2015 to 2022. To facilitate the research objectives, the data is categorized into three distinct groups: the treatment group and two control groups.

In the treatment group, I have incorporated data from companies possessing permits designating them as duty exemptions-users. Given the possibility of permit revocations during the observation period, I have refined the dataset to encompass only those companies that maintain an active status as users of import duty exemptions until 2022. Consequently, the total count of registered SMEs considered in this research amounts to 83 entities.

On the other hand, the control group was stratified into two distinctive clusters. For the purpose of measuring the impact of duty exemption on SMEs, the first control group comprises SMEs who have never been involved in the duty exemption incentives. Due to the absence of an SME database in Indonesia, I obtained the data for the control group by selectively including companies with a high likelihood of meeting the criteria of the regulatory framework of the Indonesian government. Notably, these entities were also required to engage in manufacturing and export-import activities, aligning with the scope of this research. Consequently, the first control group comprises a total of 231 entities.

Meanwhile, to compare the impact of the duty exemption incentive between SMEs and large-scale industries, the second control group comprises large-scale industrial firms that have also registered as duty exemption users. It is worth highlighting that throughout the research duration, all firms in the second control group benefited from the duty exemption incentive because the duty exemption policy for large-scale industries has existed since 2003. I have constrained the inclusion of firms in the control group to encompass only those that maintained an active status throughout the examination period. Consequently, the total count of large companies considered in this research amounts to 182 entities.

In this study, the outcome of interest is export and import value. Table 1 provides an overview of the statistics of the export and import values of the treatment and control groups from 2015 to 2022. It is worth highlighting that, throughout this research, all variables have undergone a logarithmic transformation. This transformation serves a twofold objective: it

alleviates the influence of outliers and streamlines mathematical computations. As discernible from Table 1, the treatment group exhibits, on average, higher export and import values compared to the first control group but lower than the second control group.

Table 1Summary of Descriptive Statistic

Variable	All Group	Treatment Group	Control Group 1	Control Group 2
	(1)	(2)	(3)	(4)
Log of Export	10.675	11.294	6.059	16.184
	[7.262]	[6.375]	[5.927]	[4.816]
Log of Import	9.111	7.117	5.664	14.358
	[6.593]	[5.532]	[5.681]	[4.386]
Number of Observation	4000	680	1848	1472

Note. The data comes from Indonesia Customs (2023).

3.2. Empirical Strategy

To evaluate the impact of duty exemption policies on SMEs, this study employs the Differences-in-Differences (DID) method. In the field of econometrics, Baker et al. (2021) explained that DID has been frequently utilized by researchers to effectively assess the consequences of policies or disturbances occurring across two distinct time periods and establish causal relationships. The underlying concept of this method can be readily comprehended by considering a simplified version of the DID design, which involves two discrete times - pre and post-treatment - two groups of units (treatment and control), and a single treatment, shock or intervention (Baker et al., 2021).

This study grapples with a challenge stemming from the varying initiation times of treatment among firms within the treatment group. Specifically, SMEs become eligible for duty exemption only upon their registration as duty exemption users. The policy offering duty exemption incentives to SMEs was introduced in 2017. However, not all SMEs applied for this incentive in that year; instead, they registered as duty exemption users at different points in

time. Consequently, multiple time periods are associated with treatment initiation. To address this issue related to time-varying differences, the research employs a strategic approach that utilizes panel data and adopts a staggered DID method. Baker et al. (2021) argued that in theory, staggered DID designs are considered more credible and robust than DID designs with only one treatment period because they mitigate concerns that observed treatment effects are influenced by concurrent trends, thus addressing potential violations of the parallel trends assumption.

The econometric models to measure the impact of duty exemption on the SMEs are formally articulated as follows:

Within this context, the variable Yit signifies the outcome, specifically pertaining to either export or import activities. The variable Treatit assumes a binary character, taking on a value of one for firm i commencing from period t upon the acquisition of a duty exemption license for SMEs, and zero otherwise. The main parameter of interest, denoted as α , quantifies the effect of obtaining the duty exemption license for SMEs on the outcomes of these treated firms. To comprehensively account for unique characteristics inherent to individual firms, the model incorporates firm-specific effects ($\beta FirmFEi$), and to accommodate common external influences over time, it includes year-specific effects ($\delta YearFEt$). Meanwhile Ydistrict* Yeart and Yeart stand for control variable interaction between the location of the firm and year as well as interaction between sector of firm and year.

In Equation (1), I have introduced control variables, specifically district and sector, to enhance the robustness of the DID estimation. Given that the assignment of firms to the treatment group in this research is non-random, restricted to SMEs that have undergone registration, there arises a legitimate concern that firms within the treatment group may exhibit different trends compared to their counterparts in the control group. Mirenda et al. (2022) stated

that the validity of the DID approach dramatically depends on the presumption that, without the treatment, both the treated and control groups would have exhibited similar trends in their performance over time. Therefore, incorporating control variables is imperative in mitigating potential bias in the obtained results.

At the beginning of the analysis, I employed a staggered DID approach to ascertain the average effect of the duty exemption across distinct groups and throughout the observational timeframe. Furthermore, to complement the staggered DID analysis, I have incorporated the dynamic DID framework (event study method). Utilizing the event study method allows me to scrutinize the evolving effects of the treatment over time, thus facilitating a comprehensive examination of the treatment's temporal dynamics.

Sun and Abraham (2020) expounded that the event study design embodies a staggered adoption framework in which units undergo treatment at various junctures, potentially featuring both treated and never-treated units. This design also inherently encapsulates a DID paradigm, categorizing units into those initially exposed to treatment over time and those perpetually devoid of such exposure. A prevalent method for ascertaining this approach's validity involves examining pretends by pre-intervention coefficients. In practical terms, the assumption of the absence of differential pre-intervention trends is deemed satisfied if the pre-intervention coefficient is statistically indistinguishable from zero.

In addition, to check the robustness of my results, I use a different specification of the DID model, based on the methods developed by Callaway and Sant'Anna (2020). The method from Callaway and Sant'Anna (2020) is a general framework for estimating average treatment effects in panel data settings with multiple periods and multiple groups, which can handle various types of treatment heterogeneity, selection bias, and unobserved confounders. By employing this approach, I aim to examine whether the results of this study remain consistent when applying an alternative specification of the DID model.

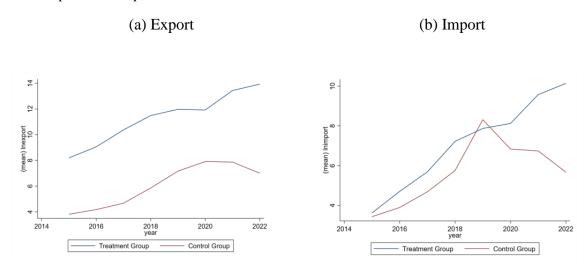
IV. Results

4.1. The impact of duty exemption policy on SME performance

In this empirical analysis, the underlying assumption is that the outcome variables of interest would have changed similarly in the absence of the duty exemption for SMEs. To substantiate this assumption, I visually analyze the trends in the outcome variables, specifically export and import values. Figure 4 presents a graph of the export and import performance trajectory for both the treatment group (subject to duty exemption for SMEs) and the control group (not subject to this exemption). Notably, it becomes evident that in the year preceding the initiation of the duty exemption for SMEs in 2017, there is a noticeable convergence in the trends exhibited by these two groups.

Figure 4

Trend in export and import



Note. Author's own. Presents the mean of dependent variables in each group over the 8 years.

In addition, I conducted a formal assessment to ascertain whether there existed any statistically significant differences in the pre-intervention trends on exports and imports between the treatment and control groups. This was accomplished by making slight modifications to Equation (1).

The findings from the pre-trend analysis are presented in Table 2. In Column (1) of Table 3, it is observed that the coefficients of the pre-trend variable are statistically significant at the 5% level. These results imply the presence of different export trends between the two groups, which raises questions regarding the validity of the key trend assumption. The concern is that disparities in the pre-treatment characteristics, which influence the dynamics of performance variables, may exist between the treated and untreated SMEs. To mitigate this concern, I introduced district-year and sector-year controls into the baseline equation in this study. As a consequence, the results in columns (2) and (4) of Table 3 indicate insignificance. These outcomes suggest that both the treatment and control groups exhibited similar trends in the periods leading up to the intervention, thus reinforcing the validity of the key trend assumption.

 Table 2

 Pre-trends log of exports and log of imports

	Log of Export	Log of Export	Log of Import	Log of Import
VARIABLES	(1)	(2)	(3)	(4)
Pre-trends	0.659** (0.269)	0.531 (0.346)	0.407 (0.281)	0.399 (0.332)
Observations	948	924	948	924
R-squared	0.913	0.922	0.832	0.848
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
district*year	No	Yes	No	Yes
sector*year	No	Yes	No	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note. Author's own.

Implementing the duty exemption policy for SMEs may have stimulated an increase in SME export activities, concurrently leading to a boost in SME imports. I estimate Equation (1) to investigate these hypotheses and present the empirical findings in Table 3. This table

provides an overview of the results of implementing the duty exemption policy for SMEs on both export and import values. It is important to note that all regression models include firm-level fixed effects and year-level fixed effects. Specifically, I use two different specifications for each dependent variable. For the export and import log in columns (1) and (3), I used only fixed effect for firm and year. Meanwhile, in columns (2) and (4), I added the interaction between district and year and sector and year.

Columns (1) and (2) of Table 3 show the impact of introducing duty exemption for SMEs on exports. If the SEMs registered as duty-exemption users, it would expect to observe a positive and statistically significant estimate of α in equation (1). The estimated coefficient is 1.931, statistically significant at the 1% level. According to these results, the duty exemption user status increases the export of the treated SMEs by 1.931 compared to the never-treated SMEs. The finding is in accordance with several studies which state that incentives can encourage increased exports (see Falco & Simoni, 2014; Ahmad. et al.,2017; Hussien, 2021; Rossari, 2022; Lukita, 2022; Adriyanto & Qibthiyyah, 2022; Perdamayan, 2022).

Furthermore, the impact on import is shown in the column (3) and (4) of Table 3. The provision of exemptions from import duties serves as a catalyst for heightened imports of commodities and raw materials from specific nations, thereby engendering cost advantages and augmenting competitiveness within the import sector. The empirical findings in columns (3) and (4) give evidence for this hypothesis. These results indicate that the enactment of duty exemptions for SMEs leads to an increase in the import of the treatment group, surpassing that of the control group by 3.824, with statistical significance observed at the 1% level. This duty exemption policy allows SMEs to do the import without paying customs duty; therefore, the SMEs can save their expenditure and can allocate to do more import.

Table 3The impact of duty exemption policy on SME performance

VARIABLES	Log of Export (1)	Log of Export (2)	Log of Import (3)	Log of Import (4)
Treat	1.787*** (0.429)	1.931*** (0.562)	3.237*** (0.401)	3.824*** (0.499)
Observations R-squared	2,528 0.557	2,464 0.589	2,528 0.435	2,464 0.482
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
district*year	No	Yes	No	Yes
sector*year	No	Yes	No	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note. Author's own.

The subsequent analysis employed the event study method to examine how the trend in exports and imports changed over time before and after the implementation of the duty exemption policy for SMEs. Figure 5 reveals the results of the event study outcomes concerning export and import dynamics. The x-axis represents the time relative to the treatment, with zero being the first period of treatment. The y-axis represents the difference in the outcome variable between the treatment and control groups, adjusted for firm and time-fixed effects and also the control variable (district and sector). Both graphs manifest a pre-intervention phase wherein the disparity between the treatment and control groups is characterized by a negative and statistically insignificant. This implies that there is no systematic difference in the outcome variable between the two groups prior to the treatment.

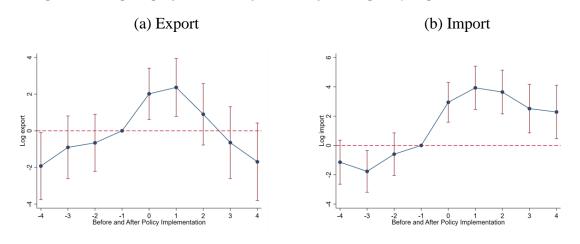
Upon closer inspection of the export graph, it becomes apparent that during the year of policy implementation (year zero) and the ensuing year, a positive and statistically significant differential surfaces between the treatment and control groups, by 2.018 and 2.368. The results indicate that the policy affected the export as the outcome variable. Nevertheless, as one

progresses into the second year and the subsequent years post-implementation, the influence steadily diminishes and loses statistical significance, potentially attributed to countervailing factors emerging over the long term.

Consistent with the export graph, the import graph in Figure 5 shows a similar trend throughout the observed years. The treatment had a positive and statistically significant effect during the year of implementation (2.944) and the immediate year after that (3.933) compared to the control group. Moreover, the impact experienced a declining trend in the subsequent years by 2.284 in the fourth year of implementation. However, the effect remains positive on the import side, but the statistical power gets reduced compared to the implementation year and the year immediately following.

Figure 5

SMEs export and import performance before and after the policy implementation



Note. Author's own.

The similar trend in the findings of exports and imports in this study substantiates the underlying rationale for the government's enacting the duty exemption policies for SMEs. The regulatory framework outlined by the Ministry of Finance of Indonesia (2017) explicitly articulates the primary objective of these policies: to bolster domestic industries by facilitating their access to essential materials through imports and harnessing these imported materials to enhance export performance. Indonesia Customs (2022) reported one success story of SMEs

that get duty exemption: SMEs can save 91% of their budget to lower their product price and increase their competitiveness in the global market.

Additionally, the scholarly inquiry conducted by Pane and Patunru (2023) investigates the ramifications of incorporating imported inputs on firms' productivity and export activities within the context of Indonesia and finds a positive impact of imports on exports, highlighting that the utilization of imported inputs confers substantial advantages upon firms by expanding their production capacities. In contrast, when import restrictions such as tariffs are implemented, it can lead to negative consequences by undermining competitiveness and impeding growth, resulting in harmful effects on the export industry (Pane & Patunru, 2023).

This research found that in the long term, there was no impact on SME exports from granting import duty exemptions. The observation period in this research was from 2015 to 2022, when, in 2020, the COVID-19 pandemic began to occur in Indonesia. To conclude that this incentive has no impact on exports in the long term could be biased by the Covid-19 pandemic.

In 2020, Indonesia Customs surveyed firms that benefit from customs facilities such as duty exemption, bonded zones, MITA, and AEO. According to Indonesia Customs (2020), it was observed that 90% of the industrial sector was adversely affected by the pandemic. Figure 6 presents the results of the survey. The survey results revealed that 60% of the respondents experienced a decline in their export activities. Additionally, 34% of the respondents reported a loss of orders, while 24% had to lay off employees. This situation has posed significant challenges for these firms in performing their production activities under conditions deviating from the norm.

Figure 6

The impact of Covid-19 pandemic on the Customs Facilities Users



Note. Adapted from Indonesia Customs (2020).

Furthermore, in both 2021 and 2022, the Indonesian Customs and Excise Authority conducted assessments of the performance of users benefiting from import duty exemptions (SMEs and large-scale industries) through surveys. The findings for 2021 indicate that approximately 31% of import duty exemption users, encompassing both SMEs and large-scale industries, have resumed their normal business activities. Notably, by the subsequent year, 2022, this proportion has shown a notable increase, with approximately 50% of SMEs and 48% of large-scale industries utilizing import duty exemptions demonstrating stable operational performance. The impact of the COVID-19 pandemic faced by SMEs could potentially be a determining factor in why the import duty exemption facility does not impact SME exports in the long term.

Furthermore, it is noteworthy to consider the alterations in the regulations regarding the duty exemption for SMEs; the rules were relaxed during the pandemic Covid-2019. Typically, SMEs registered as import duty exemption beneficiaries are obligated to export their imported goods, which have not paid import duties, within a maximum period of one year following the importation. However, in response to the pandemic, the government introduced supplementary

incentives that temporarily suspended the export requirement, permitting SMEs to sell their products within the domestic market; this was implemented from 2020 through 2022. Additionally, SMEs were granted the ability to defer their export obligations, subject to government approval, citing the COVID-19 pandemic as grounds for the delay. This, potentially, represents a second influential factor impacting the long-term export performance of the treated SMEs.

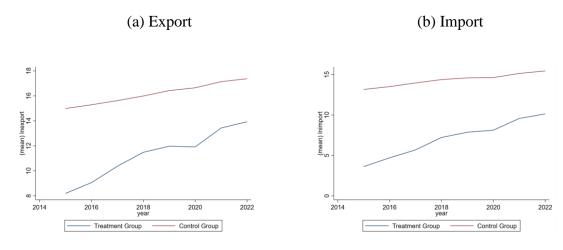
4.2. The impact of duty exemption policy on SMEs performance compared to large-scale industries.

This section investigated the impact of the duty exemption policy on SMEs by altering the control group to include large-scale industries. The analytical approach employed in this section remained consistent, commencing with the DID method and extending to event study analysis. As a result, I find that the output of this part is consistent with the previous section.

Figure 7 illustrates the patterns of export and import activities for the treated SMEs compared to the large-scale industries. It is evident that these lines display similar trends leading up to the implementation of the duty exemption policy in 2017.

Figure 7

Trends in Export and Import with large-scale industries as a control group



Note. Author's own.

To substantiate the accuracy of these pre-existing trends, a validation process was undertaken by examining the coefficients of the estimations preceding the policy's implementation. This validation incorporated the inclusion of control variables encompassing the interaction between district and year and the interaction between sector and year. The results, as presented in Table 4, specifically in columns (2) and (4), reveal insignificance in these coefficients. This insignificance supports the assertion that there indeed exists parallelism in export and import trends between SMEs and large-scale industries.

 Table 4

 Pre-trends export and imports SME compared to large-scale industries

VARIABLES	Log of Export (1)	Log of Export (2)	Log of Import (3)	Log of Import (4)
	. ,	, ,	. ,	
Pre-trends	0.772***	0.877	0.630**	0.00670
	(0.280)	(0.547)	(0.276)	(0.571)
	, ,	, ,	, ,	, ,
Observations	807	762	807	762
R-squared	0.908	0.921	0.916	0.927
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
distric*year	No	Yes	No	Yes
sector*year	No	Yes	No	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note. Author's own.

Table 5 provides the primary findings in this section, particularly in columns (2) and (4), where firm and year-fixed effects, along with control variables, were integrated into the analysis. As expected, the implementation of the duty exemption policy for SMEs demonstrated a statistically significant positive effect on export and import activities compared to the control group. To specify, the export and import values rise by 3.092 and 4.408, respectively. These findings support the results in part 4.1, where duty exemption increases the export and import of the users compared to SMEs that were never treated.

Table 5The impacts of duty exemptions on SMEs compared to large-scale industries

VARIABLES	Log of Export (1)	Log of Export (2)	Log of Import (3)	Log of Import (4)
Treat	2.788*** (0.402)	3.092*** (0.614)	3.881*** (0.368)	4.408*** (0.527)
Observations R-squared	2,152 0.717	2,056 0.751	2,152 0.777	2,056 0.814
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
distric*year	No	Yes	No	Yes
sector*year	No	Yes	No	Yes

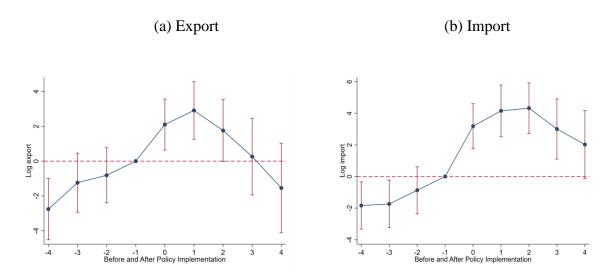
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note. Author's own.

An event study was also conducted in this section to further explore the dynamics. The findings are presented in Figure 8. Importantly, the observed trends closely mirror those documented in the preceding Section 4.1.

Figure 8

SMEs export and import performance before and after the policy implementation compared to large-scale industries



Note. Author's own.

Concerning the export side, the implementation of duty exemption policies positively impacted exports during the initial phase of the issuance of duty exemption licenses and then in the first- and two years following implementation. Export values increased by 2.102, 2.912, and 1.759, respectively, compared to the large-scale industries. However, there is no impact in subsequent years, reaching a point of statistical insignificance, indicative of the absence of an enduring influence over the long run.

Meanwhile, on the import side, the impact remains statistically significant starting from the first year of implementation and extends for over four years following the policy enactment. Nonetheless, the magnitude of this impact progressively diminishes over time. During the period when SMEs obtained licenses as duty exemption users, the results indicate an increase of 3.184 at a 1% level of statistical significance. However, after four years or more, the import figures register an increase of 2.025, reaching a significance level of 10%.

In the long run, the declining or no impact of duty exemption provisions could be attributable to the confluence of factors, including the effect of the COVID-19 pandemic and the relaxation of the regulations exhibited throughout the pandemic. This relaxation of the rule conferred SMEs with the option to defer or abstain from export activities, thereby influencing the observed decrease in the efficacy of import duty exemptions over time, as explained in section 4.1.

4.3. Robustness Check

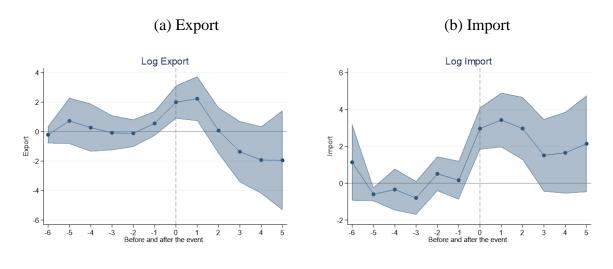
To check the robustness of this research, I conduct different specifications of the DID method by Callaway and Sant'Anna (2020). The outcomes of this analysis reveal a similar estimate and trend that supports the validity of this result.

Figure 9 illustrates the impact of the duty exemption policy on the export and import of SMEs using treatment group and control group one (SMEs that never get the duty exemption). The graph shows an increase in the year of implementation and is statistically significant. The

upward trend continues into one year after implementation. However, the line starts to decrease in the remaining year and becomes insignificant, implying no effect in the long run. Similarly, the import side shows the same result. During the initial two years of implementation of the duty exemption user, the import value is increased and significant. However, the impact is still positive in the remaining year, with a lower magnitude compared to those two initial years. The findings are similar to the event study results, reinforcing the empirical evidence's robustness and consistency.

Figure 9

SMEs export and import performance before and after the policy implementation use Callaway and Sant'Anna's (2020) model

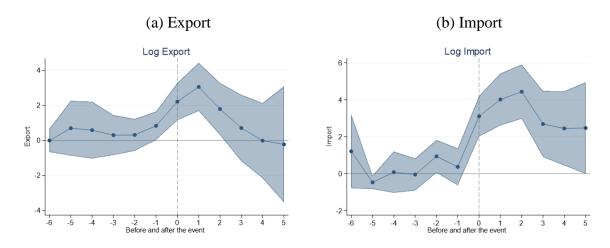


Note. Author's own.

Figure 10 shows the impact of the duty exemption policy on the export and import of SMEs using treatment group and control group two (large-scale industries). The effect of the duty exemption on the export is positive and significant in the early years of the implementation but not in the long run. Meanwhile, the impact for the import side is better. Duty exemption gives an increase in import compared to large scale industry. However, in the long run, the effect is less intense. The results of this analysis are consistent with the results from the event study. It supports the validity of this research.

Figure 10

SMEs export and import performance before and after the policy implementation compared to large-scale industries use Callaway and Sant'Anna's (2020) model



Note. Author's own.

V. Conclusion

5.1. Summary

This study centers on examining the impact of duty exemptions on the performance of SMEs engaged in international trade. The duty exemption policy aims to stimulate export activities by facilitating the procurement of imported materials without paying import duties. SMEs desiring to utilize these incentives must undergo a registration process and obtain the requisite licenses as duty exemption beneficiaries. This policy is specifically designed for SMEs engaged in both manufacturing and import-export activities. Meanwhile, other regulations give duty exemption for large-scale industries with application requirements that are more complex than regulations for SMEs.

This research focuses on the examination of three primary research questions. Firstly, it seeks to ascertain the impact of the duty exemption policy on the export activities of SMEs. Given that the primary objective of this policy is to incentivize and promote exports, this study endeavors to discern empirical evidence in the export performance of SMEs. The second research question pertains to how the duty exemption policy influences the import activities of SMEs. The duty exemption policy, in its essence, fosters export activities by alleviating the import duty burden. Hence, this investigation also takes an evaluation of import performance. The outcomes obtained from analyzing the import aspect may establish correlations with the export performance. Lastly, this research tries to compare the impact of the duty exemption policy on SMEs with its effects on large-scale enterprises. Given that the same policy is applied to large industrial entities, it becomes interesting to analyze the differential effects experienced by these two distinct categories of businesses.

To address the research questions, a staggered DID is employed. This analysis utilizes data from 2015 to 2022, with varying initial implementation years of the duty exemption policy for SMEs as duty exemption beneficiaries. Specifically, this policy was introduced for SMEs

in 2017, while large-scale industries have been eligible for this incentive since 2003. To assess the annual effects of the policy, an event study analysis is also conducted to collect information about the policy's impact each year.

The initial step examines SMES that have never received treatment, serving as the control group. The results indicate that the policy increases exports by 193% in comparison to the SMEs that were never treated. This finding supports other studies that have found fiscal incentives' positive and statistically significant impact on exports (Rossari, 2022; Lukita, 2022; Adriyanto & Qibthiyyah, 2022; Perdamayan, 2022). Meanwhile, the duty exemption incentive exhibits a more pronounced effect on imports, increasing by 382%. Notwithstanding the more significant impact on imports, the Indonesia Customs (2022) reported a positive ratio of exports to imports for SMEs benefiting from the duty exemption, implying that these firms continue to engage in more export activities than imports. The heightened import activity also implies a more significant impact on exports. Pane and Patunru (2023) affirm this point, highlighting that imports positively impact exports, underlining the substantial benefits firms derive from utilizing imported inputs to expand their production capacities. The second step employed large-scale industries as the control group. The outcomes are close to the first step, indicating that the duty exemption policy leads to a 279% increase in exports and a 441% increase in imports.

However, the event study indicates that the policy does not seem to work effectively in the long run. In the context of exports, the policy impacts only during the year of its introduction and the subsequent year, with no enduring implications for the more extended term. Meanwhile, concerning imports, the lasting effects exhibit a somewhat diminished strength. It is vital to acknowledge that various factors could contribute to these outcomes, such as the influence of the COVID-19 pandemic and the regulatory adaptations concerning duty exemption during this period. These adaptations permitted enterprises to shift their focus

towards domestic markets or defer their export, thereby potentially influencing the longer-term dynamics of imports and exports.

To ensure the validity of the test, I also applied the method proposed by Callaway and Sant'Anna (2020), which allows to estimate the average treatment effects on the treated for each group and period in a difference-in-differences framework. Moreover, this model can also show the result of the effect on a year-by-year basis, which reveals the temporal pattern of the treatment effects over time. This method accounts for the heterogeneity and dynamics of the treatment effects and provides robust inference based on cluster-robust standard errors. The results from this model are similar to the main findings and show no effect on exports in the long run.

5.2. Policy Implication

Several studies conducted in Indonesia have focused on examining the implications of duty exemption for SMEs on export activities, employing diverse methodological approaches (e.g., Adriyanto & Qibthiyyah, 2022; Perdamayan, 2022). Meanwhile, this thesis distinguishes itself through its distinctive scope, not only for exports but also imports, and undertaking comparative analyses across varying scales of industries. Moreover, this research not only focuses on the average impact but also the temporal dynamics of these effects.

The findings of this research have implications for governmental policy formulation, particularly in the context of supporting SMEs. While the policy in question effectively provides financial incentives to assist SMEs in their early stages, it does not appear to maintain its effectiveness in the long run. Therefore, it is advisable for the government to explore additional measures that can help SMEs enhance their competitiveness in the global market, ultimately enabling them to achieve sustained long-term export growth.

5.3. Limitation

This study has limitations that may affect the results. One of the limitations is the lack of data on the characteristics of the treatment and control groups. The data sources used in this study did not provide sufficient information on labor, capital, age, gender, and other characteristic which could have confounded the effects of the intervention. To overcome this limitation, future studies should collect and report more detailed data on the characteristics of the participants and adjust for potential confounding variables in the analysis.

In addition, this paper only focuses on the effects of the intervention on the export and import performance of the participating firm. However, there may be other outcomes that are relevant for evaluating the impact of the duty exemption, such as employment, profit, and productivity. These outcomes were not examined in this study due to data limitations of the data. Therefore, the results of this study may not capture the full benefits of the intervention. Future studies should explore other outcome indicators that can provide a more comprehensive assessment of the duty exemptions' effectiveness.

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