Do EPAs Promote Industrial Trade?

Evidence from the Share of African Manufactured Exports to the EU

Sara Berg & Lovisa Lindholm

Degree project/Independent project • 15 credits
Swedish University of Agricultural Sciences, SLU
Faculty of Natural Resources and Agricultural Sciences/Department of Economics
Political Science – Sustainable Development
Degree project/SLU, Department of Economics, 1744 • ISSN 1401-4084
Uppsala 2026

Do EPAs Promote Industrial Trade? Evidence from the Share of African Manufactured Exports to the EU

Sara Berg & Lovisa Lindholm

Supervisor:	**Sandra Kurniawati, Swedish University of Agricultural Sciences, Department of Economic**
Examiner:	Shon Ferguson, Swedish University of Agricultural Sciences, Department of Economic

Credits:	15 credits
Level:	Bachelor's level, G2E
Course title:	Independent project in Economics, G2E
Course code:	EX0903
Programme/education:	Political Science – Sustainable Development
Course coordinating dept:	Department of Economics
Place of publication:	Uppsala
Year of publication:	2026

Title of series:	Degree project/SLU, Department of Economics
Part number:	1744
ISSN:	1401-4084

Keywords:	Africa, Cohorts, Economic Partnership Agreement, Event Study, Manufactured Exports, Staggered Difference-in-Difference

Swedish University of Agricultural Sciences
Faculty of Natural Resources and Agricultural Sciences
Department of Economics

Abstract

The EU and African countries have implemented Economic Partnership Agreements since the beginning of the 2010s with the purpose of integrating Africa into the world market and contribute to economic growth. However, African countries exports are still dominated by primary goods. This thesis aims to investigate if these trade agreements affect the share of manufactured exports from African countries to the EU. To analyze this a staggered Difference-in-Difference is implemented using panel data for 45 African countries over 23 years. The results show no statistically significant overall effect, indicating that the agreements did not promote industrial trade. However, heterogeneity can be seen across different cohorts, suggesting that effects of EPAs vary across countries. Negative effects, indicating a decrease in the share of manufactured exports following EPAs, can be seen for cohort 2012 and 2019. The event study estimates further indicate that some negative effects may strengthen in later post-treatment periods.

Keywords: Africa, Cohorts, Economic Partnership Agreement, Event Study, Manufactured Exports, Staggered Difference-in-Difference

Table of contents

List of tables

List of figures

Abbreviations

ACP	African, Caribbean and Pacific
ATT	Average Treatment Effect on the Treated
DiD	Difference-in-Difference
EPA	Economic Partnership Agreement
ESA	Eastern and Southern Africa
FDI	Foreign Direct Investment
RTA	Regional Trade Agreement
SADC	Southern African Development Community
SITC	Standard International Trade Classification
TWFE	Two-Way Fixed Effects
WGI	World Governance Indicators

1. Introduction

Decades after the decolonization of the African continent, trade relations with the European Union are still dominated by raw material and primary commodity exports. While trade agreements between African countries and the EU have been framed as strategic pathways for African nations to enter the global trade market and as a catalyst for economic development, the transition to industrial upgrading remains largely unfulfilled. In 2024, primary products made up 71.3 percent of African exports to the EU, while only 27.3 percent were manufactured products (European Union 2025). This study aims to investigate if Economic Partnership Agreements (EPAs) between the EU and African countries promote the share of manufactured exports from Africa to the EU.

During the early 21st century, the EU entered negotiations with multiple regions in Africa for EPAs. The EPAs became relevant after the signing of the Cotonou partnership agreement in 2000, later replaced by the Samoa agreement in 2024, and are tailored trade and development agreements between the EU and African, Caribbean and Pacific (ACP) countries. They aim to help ACP countries benefit from the agreements by attracting investment and boosting economic growth (European Commission n.d.a).

However, critiques argue that these agreements serve to protect the European market access while holding back the development of local African industries (Hansen & Jonsson 2017; Oğurlu 2018; Langan & Price 2025). Since the EPAs replaced previous preferential with reciprocal trade agreements, this removed the favored status formal colonies have had and forced them to compete on equal terms with the rest of the world. When the two parties have vastly different levels of development, this system is seen to favor the more developed partner. For example, Africa exports mainly primary products while the EU exports manufactured goods.

1.1 Literature

Due to the pending status of many EPAs, numerous studies have previously used ex-ante methods to model the likely future impact of EPAs (Busse & Grobmann 2007; Fontagne et al. 2011; Troester et al. 2020). A recurring worry in these studies is the asymmetric trade relations and the risks of tariff revenue losses that in many cases are a critical revenue stream in developing countries. Since African countries already had existing trade agreements that granted duty-free, quota-free market access to the EU, concerns that the EPAs would not bring any additional export benefits but import competition arose.

While these ex-ante analyses provided a theoretical framework and predictions of the effects of EPAs, the actual implementations of these agreements have

enabled recent literature to conduct ex-post empirical studies. One of these contributions comes from Cipollina (2022) who looks at the effect of an EU-SADC EPA on trade growth. Using a Difference-in-Difference (DiD), with EU imports as the outcome variable, Cipollina (2022) estimates the impact of the EPA on the intensive and extensive margins of trade, relative to pre-implementation levels. The result of the study shows a positive impact from the agreement on the 6 members of the SADCs exports to the EU.

In contrast, a study by Stender et al. (2021) finds that the implementation of the EU-SADC EPA and the EU-ESA EPA resulted in a decrease in total and manufactured exports from the African countries to the EU. They note that this decrease is not surprising since these countries already have enjoyed trade benefits pre-EPA. To reach this conclusion, the authors use a gravity model to analyze diverse commodity aggregations, including total trade flows, agricultural trade flows, and manufacturing trade flows, defined as the sum of SITC group 5, 60-69, 7 and 8[1]. The difference between the findings from these studies could be caused by the different econometric approaches, as well as the specific dimensions of trade being measured. This contrast suggests that the impact of the EPAs is not fixed. While the agreements may help diversify the type of products being traded, as shown by Cipollina (2022), it may not be successful in increasing the overall export volumes, as shown in Stender et al.

As noted in the introduction, critiques argue that EPAs are often preferential to the EU at the expense of African industry (Hansen & Jonsson 2017; Oğurlu 2018; Langan & Price 2025). Ilora and Ngwakwe (2015) adds to this by investigate the underlying causes of the negative outcomes of the agreements, like those presented by Stender et al. (2021). They argue that the reluctance of African countries to sign EPAs in the beginning of 2010s was partly due to the pressure from the EU. Specifically, the authors mention that the EU issued a warning saying that the countries who failed to sign the agreement before October 1st, 2014, would lose access to the EU Market Access Regulations (MAR), which granted preferential access to the European market. The authors also raise concerns about the reciprocal nature of the EPA. Since African countries need to reduce their tariffs on EU imports, domestic industries may struggle to compete with more advanced European producers. Ultimately, Ilora and Ngwakwe (2015) argue that the EPAs can weaken industrial development and reinforce dependency on primary goods.

Apart from studies examining the effect on trade volumes, Fokam et al. (2024) shift the focus toward Africa's trade competitiveness in the context of free zones.

[1] SITC 5: Chemicals and related products, n.e.s.
SITC 6: Manufactured goods
SITC 7: Machinery and transport equipment
SITC 8: Miscellaneous manufactured articles

Unlike EPAs, free zones are designated areas within a country where benefits are granted to stimulate industrial activity. To measure trade competitiveness, a manufacturing export index is obtained using three indicators, the manufactured exports per capita, the share of total manufacturing export and medium- and high-tech manufactured exports in total exports. This index reflects a country's export capacity, intensity and technological deepening. The results show that the free zones, implemented by the own governments, significantly improve export competitiveness and their components, like the manufactured share of exports.

Nagengast & Yotov (2025) examine how regional trade agreements (RTAs) effect bilateral manufacturing trade by using a staggered treatment adoption design. Comparing their estimates to the standard TWFE estimations, they find that their extended TWFE with specific group-time effects show a significantly larger, positive effect, indicating that previous estimations in trade relations could be underestimated. Additionally, the effect of the RTAs appears to persist for several years after implementation. Abreha & Robertson (2025) extend the analysis by using data covering more than 200 countries over a 58-year period. They find significant evidence that the impact of RTAs has positive effects on bilateral trade and that the effect grows larger over time, when anticipation effects are considered.

This paper contributes to previous research by looking at the specific structure of exports from Africa to the EU in the context of EPAs. To the best of our knowledge, this is the first paper to do so in a setting with staggered DiD. Most of the research done on this topic focuses on the absolute values of trade, while this paper investigates if these agreements have led to upgrading in African countries export composition.

The remainder of this paper is organized as follows. Section 1.2 introduces the EU-Africa relationship in trade context, the EPAs and manufacturing trade. Section 2 presents the data. Here the dependent, independent and control variables are introduced, as well as some descriptive statistics. In section 3 the econometric model and its assumptions are introduced. The results and robustness tests are presented in section 4. Lastly, the discussion and conclusion can be found in section 5 and 6 respectively.

1.2 Background

1.2.1 EU-Africa relationship

The motivations behind the European colonization of Africa during the late 19th century has been widely discussed. While traditional views often link colonization with direct territorial occupation, other focuses on the economic facet of imperialism (Pétré-Grenouilleau 2004). The period of the colonization coincides with the second age of industrialization in Europe, when the strong growth of

production outpaced growth of internal demand. This imbalance forced Europe to look for new markets and sources of raw materials beyond their continental borders – particularly Africa.

While Africa's overall share of world trade remained small, around 1%, it still served as a source of primary supplies and an outlet for European manufactured goods. This historical process integrated Africa into the global economy as a provider of primary commodities. These trade patterns remain visible today. As shown in figure 1 and 2, EU imports from Africa are still dominated by primary goods while EU exports to Africa are dominated by manufactured goods (Eurostat 2022).

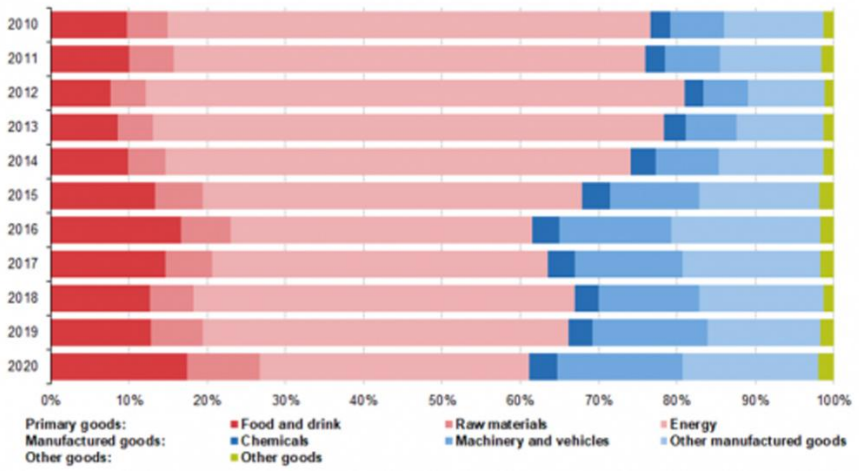

Figure 1. EU Imports by Goods from Africa by Main Product Groups, 2020. Shares of Total Exports in Value. Source: (Eurostat 2022)

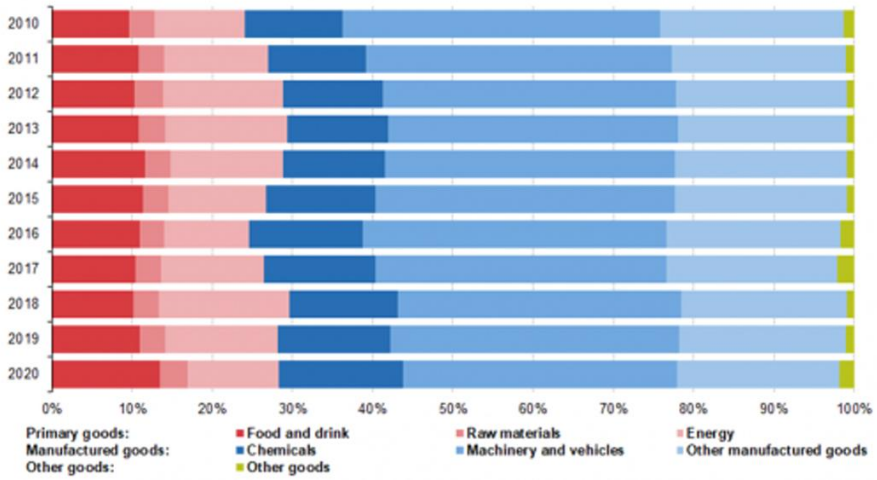

Figure 2. EU Exports of Goods to Africa by Main Product Groups, 2020. Shares of Total Exports in Value. Source: (Eurostat 2022)

1.2.2 Economic Partnership Agreement

The formal partnership between the EU and the ACP group of states was established with the signing of the 1975 Lomé convention. The convention was revised four times and served as the primary framework for trade and aid for 25 years. However, in 2000, the Lomé convention was replaced by the Cotonou agreement, which introduced a radical change in trade cooperation. Specifically, the principal of "non-reciprocal trade preferences" for the ACP countries – which granted ACP-exports preferential access to European markets without having to open their own market in return – was phased out in favor of the EPAs (ECDPM 2003). Unlike the Lomé convention, these agreements are based on reciprocity, where the ACP countries partially open their markets to the EU (average 80%). However, these liberalization levels may vary across regions and countries. For instance, while Zimbabwe opens 80% of its market, the Seychelles open 98% of theirs. Furthermore, the agreements allow for permanent protection of "sensitive goods", though the specific percentages and products vary. West Africa (Ghana and Ivory Coast) excludes 25% of its most sensitive products from liberalization – such as agriculture/fishery products, while Central Africa (Cameroon) excludes 20%, protecting local industries for products like meat, wines and spirits, and malt (European Commission n.d.b; n.d.c; n.d.d).

Currently, 15 African nations across five regions have provisionally applied EPAs with the EU (European Commission n.d.a). The agreement between the EU and the Southern African Development Community (SADC) stands as the continents first fully operational regional EPA; since 2018, all member states, except Angola, have implemented it. In other regions where a full regional consensus has yet to be reached, interim or "stepping-stone" agreements have been adopted with sole countries to facilitate trade in the absence of a collective signature.

1.2.3 Manufactured trade

The importance of manufacturing for the economic growth and development of developing countries has been a notable point of discussion. According to Haraguchi et al. (2017), industrialization remains an important path for sustained development. They suggest that manufacturing is an essential part of employment contribution and to world GDP. This study aligns with arguments made by Hausmann et al. (2007), which says that what countries export matters, and specializing in goods with higher productivity levels, rather than raw materials, sets forth a dynamic process of economic growth.

2. Data

The analysis utilizes panel data for 45 African countries in the ACP-group over 23 years (2002-2024). Sudan is excluded because of limited data. The sample is categorized into a treatment group and a control group. The treatment group comprises 15 countries that have implemented EPAs. The remaining 30 countries, which have not implemented an EPA during the observed period, serve as the control group. Table 1 presents all the countries in the control group, the year of EPA entry and which cohort they belong to. The control countries can be seen in table 7 in appendix 1.

Table 1. African Countries and the year they entered EPAs

Country	EPA entry	Cohort
Madagascar, Mauritius, Seychelles, Zimbabwe	2012	Cohort12
Cameroon	2014	Cohort14
Botswana, Eswatini, Ghana, Ivory Coast, Lesotho, Namibia, South Africa	2016	Cohort16
Mozambique	2018	Cohort18
Comoros	2019	Cohort19
Kenya	2024	Cohort24

2.1 Dependent variable

The main dependent variable is the share of manufactured exports from the 45 African nations to the European Union, covering the period 2002 to 2024. Using annual trade data from UN Comtrade, the variable is calculated as the aggregated value of the SITC manufacturing sections divided by the total value of exports for each of the 45 African nations in the sample (UN Comtrade n.d.b). Following the standard classification adopted by UNCTAD, manufactured goods are defined as the aggregate of SITC sections 5 through 8, excluding 68 (non-ferrous metals) and 667 (pearls, precious and semi-precious stones) (UNCTAD 2025).

This analysis uses import data from the EU as a proxy for export data from Africa. This choice is based on the greater level of detail available in the EU statistics.

Three other dependent variables are also constructed: the value of manufactured exports, the value of total exports and GDP. The value of manufactured exports is calculated as the aggregated value of SITC sections 5

through 8, excluding section 68 and 667. These variables are measured in current USD.

2.2 Independent Variable

In contrast to a normal DiD, this analysis uses a staggered DiD approach, which allows treatment to occur at different times across units (Callaway & Sant'Anna 2021; Freedman et al. 2024). The independent variable in this case is therefore a time-varying binary treatment indicator which is equal to 1 for country *g* in year *t* if an EPA was in effect, and 0 otherwise. For the control group, the treatment indicator will remain 0 for the whole sample period. For the treated group, the variable will switch from 0 to 1 in the specific year of entry. Never-treated countries serve as control groups.

2.3 Control Variables

In addition to the dependent variable and the main explanatory variable, a set of control variables are included to isolate the effect of EPA on share of manufacturing exports. The data on these variables is measured annually.

All control variables are time-invariant, in accordance with the Callaway & Sant'Anna estimator, across all years with the value of 2010 (Callaway & Sant'Anna 2021). Table 2 presents the control variables with description, period and data source.

Table 2. Control Variables

Variable	Description	Period	Source
Gross Domestic Product per capita (GDP/capita)[2]	Total value of goods and services produced in a country divided by population, in current USD	2010	UNIDO
Foreign Direct Investments (FDI)[3]	Inward flow, in USD at current prices in millions	2010	UNCTAD

[2] GDP/capita is conducted by dividing GDP data with population data (UNIDO 2026).

[3] FDI measures the net value of foreign direct investments made by a resident enterprise in one economy into a resident enterprise in another economy during a given period (one year in this paper) (UNCTAD n.d.). It includes equity capital, reinvested earnings and inter-company debt. FDI is usually used to capture the scale of cross-border investment activity and economic integration. There are 2 missing values for the countries Burundi and Guinea.

Institutional quality[4] (WGI)	Aggregated average of the 6 worldwide governance indicators (WGI)	2010	World Bank

2.4 Descriptive Statistics

Table 3 present descriptive statistics for all variables used in this paper. These statistics summarize mean and standard deviation for the control and treatment group separately and then presents the difference between them.

[4] Institutional quality is based on the Worldwide Governance indicators, one of the leading initiatives for measuring governance (World Bank 2025). It is measured as the aggregated average of the 6 WGIs; voice and accountability, political stability, governance effectiveness, regulatory quality, rule of law and control of corruption.

Table 3. Descriptive Statistics

Variable	Control n	Control mean	Control sd	Treatment n	Treatment mean	Treatment sd	Diff
GDP per capita	690	1650.02	2324.93	345	3497.07	3550.42	1,847.054*
Log GDP per capita	690	6.89	0.94	345	7.66	1.02	0.778**
FDI	686	596.19	1347.42	345	1015.47	2585.17	419.284
WGI	690	-0.77	0.48	345	-0.31	0.67	0.462**
Share of Manufactured Exports	690	0.16	0.25	345	0.16	0.19	0.009
Manufactured Exports	690	58743443.75	137846860.24	345	675059285.04	2163296549.94	616,315,841.290
Total Exports	690	1325745638.72	4310434912.87	345	2877967914.78	5985766174.79	1552222276.057

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

3. Method

To evaluate the effect of EPAs on the share of manufactured exports to the EU, a staggered DiD is implemented. While the traditional DiD framework performs well in simple two-period settings with constant treatment effect, the staggered DiD is appropriate given that the EPA implementation occurs at different points in time across entities, allowing for variation in treatment timing.

A key limitation of the standard two-way fixed effects DiD in settings with staggered treatment is that it imposes a homogeneous treatment effect across all units and time periods. In trade policy context, the effects of trade agreements may evolve over time and differ across countries, making staggered DiD a better fit (Sudhaharan n.d.).

This study applies the Callaway and Sant'Anna (2021) estimator, which computes cohort-time average treatment effects on the treated, denoted ATT(g,t). Cohorts are defined by the year in which a country first gets the treatment. As seen in Table 1, the cohorts are constructed based on the initial year of EPA entry. For example, the countries Madagascar, Mauritius, Seychelles and Zimbabwe, whom all implemented EPAs in 2012, form one cohort (Cohort12). Across the sample of 15 treatment countries, six cohorts are identified, corresponding to six different implementation years.

The estimator compares the treated countries to appropriate control units. Callaway and Sant'Anna suggests two different control groups, never-treated and not-yet treated (Callaway & Sant'Anna 2021). In this study, the never-treated countries are the 30 countries who have not implemented an EPA during the sample period. The not-yet treated countries would contribute to the control group up until the year they implement an EPA. For instance, Kenya (which implemented an EPA in 2024) would serve as a control unit for Botswana (which implemented its EPA in 2016) for all years prior to 2024. Once Kenya is treated, it is removed from the control pool. According to Callaway and Sant'Anna (2021) the never-treated control group should be used if the group is sizeable. As the sample in this study contains a sufficiently large group of never-treated units, they are used as the primary control group in the analysis.

.

3.1 Equations

3.1.1 Average Treatment Effects on the Treated

To account for staggered treatment adoption across units, treatment effects are estimated separately for each cohort and time and then aggregate into ATTs by cohort, calendar period, event time and lastly the overall ATT. The ATT by cohort and time is written as:

$$ATT_{g,t} = \mathbb{E}\left[Y_t(g) - Y_t(0) \mid G_g = 1 \right] \quad (1)$$

where $ATT_{g,t}$ denotes the average treatment effect on the treated for a specific cohort g and time t. $\mathbb{E}[Y_t(g) - Y_t(0) \mid G_g = 1]$ is the expected difference between the potential outcome under treatment and the potential outcome under no treatment, for units belonging to treatment cohort g.

The ATT by cohort is expressed as follows:

$$ATT_g = \frac{1}{T_g} \sum_{t \geq g} ATT_{g,t} \quad (2)$$

where the $ATT_{g,t}$ is aggregated over years post the cohort treatment year ($t \geq g$) and calculated as an average by dividing with the number of years post the cohort treatment year $\frac{1}{T_g}$. T_g denotes post treatment years for cohort g.

The ATT by year is expressed as follows:

$$ATT_t = \sum_g w_{g,t} ATT_{g,t} \quad (3)$$

where ATT_t is aggregated over cohorts, with $w_{g,t}$ representing the weights assigned to each cohort-specific treatment effect $ATT_{g,t}$ in each year, such that ATT_t represents the weighted average treatment effect across all cohorts each year.

The event-time ATT is expressed as follows:

$$ATT_k = \sum_g w_{g,k} ATT_{g,g+k} \quad (4)$$

where ATT_k is aggregated by cohorts, with $w_{g,k}$ representing the weights assigned to each cohort-specific treatment effect $ATT_{g,g+k}$ at event time k, where $g + k$ denotes the calendar time corresponding to cohort g observed k periods pre/post treatment.

The overall ATT is expressed as follows:

$$ATT = \sum_{g} \sum_{t \geq g} w_{g,t} ATT_{g,t} \quad (5)$$

where $ATT_{g,t}$ is aggregated over cohorts and years post the treatment cohort year ($t \geq g$), with weights assigned to each cohort and each year.

When aggregating the treatment effects over cohort more weights are put on cohorts with larger numbers of units.

3.1.2 Estimation Framework

To estimate the causal effect of the EPAs, this study defines the cohort-time average treatment effect:

$$\widehat{ATT}_{g,t} = \left(\bar{Y}_{g,t} - \bar{Y}_{g,g-1}\right) - \left(\bar{Y}_{c,t} - \bar{Y}_{c,g-1}\right) \quad (6)$$

where $\bar{Y}_{g,t}$ denotes the average outcome for the treated cohort *g* at time *t*, and $\bar{Y}_{g,g-1}$ denotes the average outcome for the treated cohort at the period prior to treatment ($g - 1$). Similarly, $\bar{Y}_{c,t}$ and $\bar{Y}_{c,g-1}$ denotes the averages for the control group *c* in the same periods. The specification compares the changes in outcome for treated units before and after treatment to corresponding changes in the control group.

The main outcome variable is the share of manufactured exports.

3.2 Assumptions

To identify causal effects using the Callaway & Sant'Anna staggered DiD, a set of assumptions is required (Callaway & Sant'Anna 2021).

First, treatment is assumed to be irreversible, meaning that once a unit is treated, it will remain treated for all subsequent periods.

Second, the data is assumed to be independently and identically distributed (i.i.d), implying random sampling.

Third, treatment anticipation is limited for all "eventually treated" units. In some cases, this imposes a "no-anticipation" assumption. However, it can allow for some anticipation behavior, provided that the anticipation timing is understood and accounted for in the analysis.

Fourth, a conditional parallel trends assumption is imposed. This means that, in the absence of treatment, the average outcomes for the treated units and the control units have followed parallel paths, after conditioning for observed covariates. The parallel trends assumptions for the never-treated as control can be expressed as:

$$\mathbb{E}\left[Y_t(0) - Y_{t-1}(0) \mid \mathrm{X}, G_g = 1 \right] = \left[\mathbb{E}Y_t(0) - Y_{t-1}(0) \mid \mathrm{X}, \mathrm{C} = 1 \right] \qquad (7)$$

where $\mathbb{E}[Y_t(0) - Y_{t-1}(0) \mid \mathrm{X}, G_g = 1]$ is the expected change in outcomes for the treated unit over time, in absence of treatment, when conditioning for covariates X. $[\,\mathbb{E}Y_t(0) - Y_{t-1}(0) \mid \mathrm{X}, \mathrm{C} = 1\,]$ represents the same changes but for the control group. This specification says, if treatment never happened, the control and treatment group would follow the same trend over time.

Figure 3 presents the trends for the share of manufactured exports for the treated and control group, adjusted for the control variables.

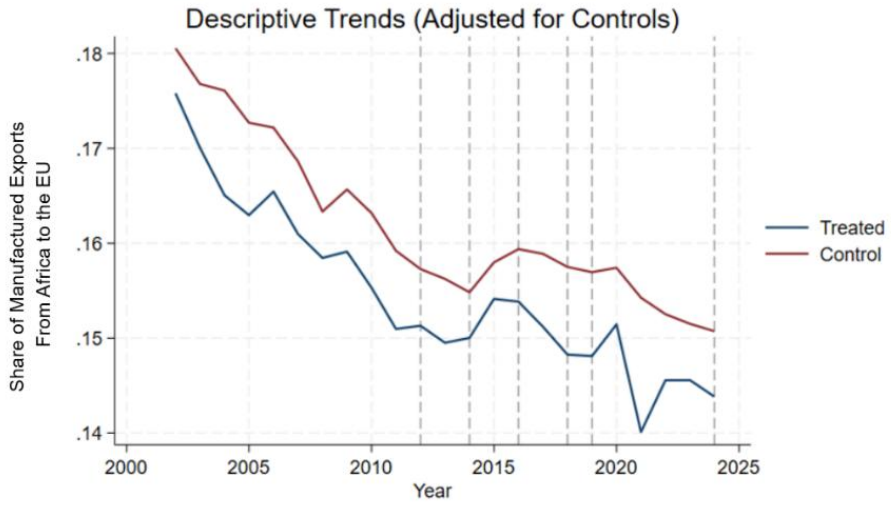

Figure 3. Descriptive Trends Adjusted for Control Variables

Finally, an overlap assumption is imposed. This assumption ensures that treatment status is not perfectly predictable and that each treated cohort has a comparable counterpart within the control group.

4. Results

4.1 Main results

Table 4 presents the estimated overall average treatment effect on the treated (ATT) on the share of manufactured exports from Africa to the EU.

Table 4. Overall ATT for Share of Manufactured Exports

Outcome Variable	ATT	Std. Error	z	p-value	95% CI
Share of Manufactured Exports	-0.0385	(0.0257)	-1.50	0.134	[-0.0888, 0.0118]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

The estimated overall ATT is negative (-0.039), pointing toward a reduction in the share of manufactured exports by 3.9 percentage points following the introduction of EPAs. However, the coefficient is not statistically significant at conventional significance levels (p=0.134), suggesting limited evidence regarding the effect.

In table 8 in appendix 2 the full ATT results for the share of manufactured exports are presented. The ATT by cohort shows heterogeneity across treated cohorts. Cohort 2012 och 2019 are strongly significant, at 5% and 1% significance level respectively, and have larger negative point estimates than the overall ATT (-0.106 and -0.056 respectively). Cohort 2024 shows a positive point estimate (0.033) statistically significant at the 10% level. The estimated cohort average ATT is negative (-0.038), indicating a decrease in the share of manufactured exports by 3.8 percentage points. However, the insignificant coefficient limits the evidence of the effect.

For the ATT by calendar period the calendar average shows a statistically significant estimate that is negative (-0,043). While all calendar periods have negative point estimates, statistical significance varies across years. For example, the estimate for 2014 is significant at 1% level, whereas other periods, such as 2020, are not statistically significant.

Table 5. Event Study Estimates for Share of Manufactured Exports

Variable	Coefficient	Std. Error	z	p-value	95% CI
Pre_average	-.0344945*	(.0206519)	-1.67	0.095	[-.0749714, .0059824]
Post_average	-.0535967*	(.0289232)	-1.85	0.064	[-.1102853, .0030918]
Tm6	-.0496949	(.0302569)	-1.64	0.101	[-.1089973, .0096075]
Tm5	-.0484295*	(.0258387)	-1.87	0.061	[-.0990723, .0022133]
Tm4	-.0100448	(.0190488)	-0.53	0.598	[-.0473798, .0272902]
Tm3	-.0174912	(.0195321)	-0.90	0.371	[-.0557735, .020791]
Tm2	-.0468121	(.029405)	-1.59	0.111	[-.1044448, .0108207]
Tp0	-.0058624	(.0117293)	-0.50	0.617	[-.0288515, .0171266]
Tp1	-.0278829	(.021046)	-1.32	0.185	[-.0691323, .0133665]
Tp2	-.0304754	(.0264044)	-1.15	0.248	[-.0822272, .0212763]
Tp3	-.0466103*	(.0270014)	-1.73	0.084	[-.099532, .0063114]
Tp4	-.0241149	(.0284365)	-0.85	0.396	[-.0798495, .0316196]
Tp5	-.0491682*	(.0263759)	-1.86	0.062	[-.1008641, .0025276]
Tp6	-.0293467	(.0328826)	-0.89	0.372	[-.0937954, .0351019]
Tp7	-.0057207	(.0474893)	-0.12	0.904	[-.0987979, .0873566]
Tp8	-.0327727	(.0335431)	-0.98	0.329	[-.098516, .0329706]
Tp9	-.1063272**	(.0446458)	-2.38	0.017	[-.1938314, -.0188231]
Tp10	-.0742695	(.0532605)	-1.39	0.163	[-.1786582, .0301191]
Tp11	-.1578176**	(.063584)	-2.48	0.013	[-.28244, -.0331952]
Tp12	-.106389	(.0661816)	-1.61	0.108	[-.2361026, .0233246]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

The event-study estimates, seen in table 5, provide insights into the dynamic effect of the treatment. The pre-treatment ATT (Pre_average) has a negative point estimate (-0.034) significant at the 10% significance level indicating a breach of the parallel trend assumption. The post-treatment ATT (Post_average) shows a negative point estimate (-0,054) significant at the 10% level indicating an average dynamic effect after treatment. Across individual event-time periods, all post-treatment periods (Tp) are negative, with some statistically significant estimates at 5% and 10% level. The magnitude of the coefficient increases across later post-treatment periods, indicating larger treatment effects in the long run.

Figure 4 & 5 presents the event study plots, with a 95% and 90% confidence interval (CI), respectively. At the 95% CI there are no significant pre-treatment trends, while the plot for the 90% CI one shows significant pre-treatment trends. The pre-treatment period is limited to 5 years to reduce noise in the pre-period.

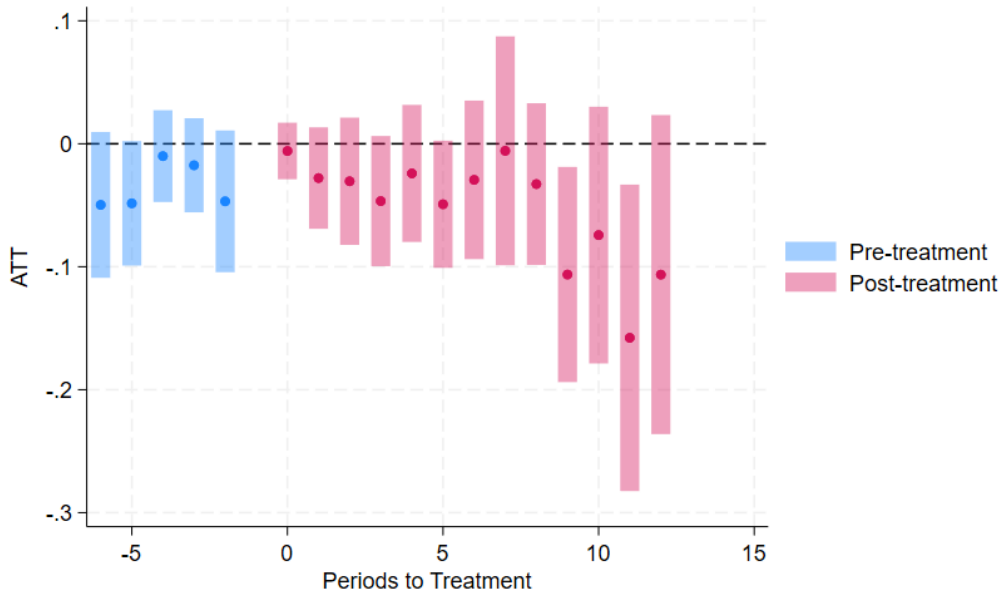

Figure 4. Event Study Plot. CI: 95%

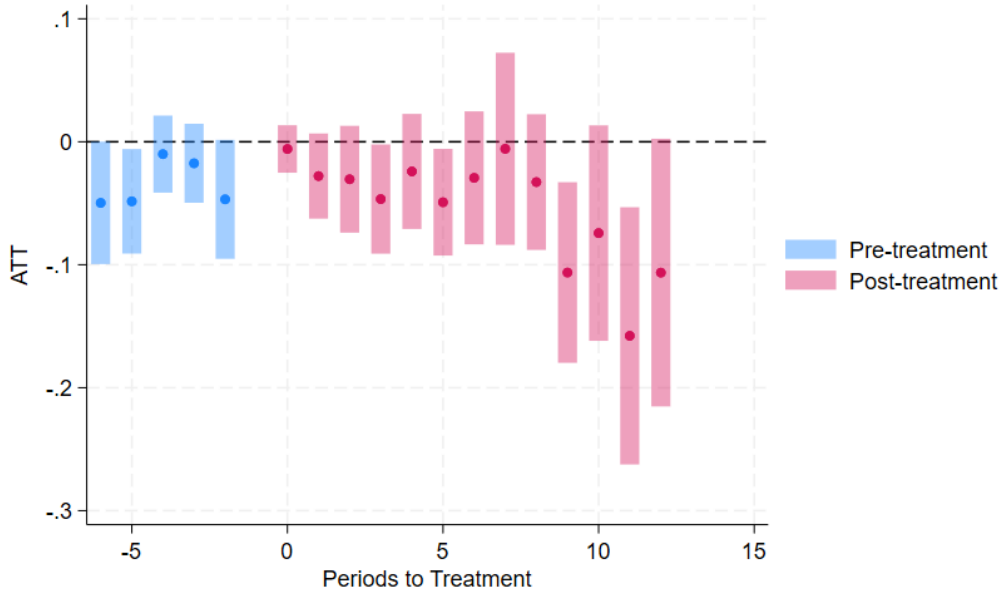

Figure 5. Event Study Plot. CI: 90%

4.2 Other Dependent Variables

To assess the robustness of the result and allow for more interpretation, the analysis is repeated using other dependent variables, including manufactured exports, total exports and GDP. The result for each specifications overall ATT is presented in table 6.

Table 6. Overall ATTs for other Dependent Variables

Outcome Variable	ATT	Std. Error	z	p-value	95% CI
Gross Domestic Product (GDP)	0.0210	(0.0673)	0.31	0.755	[-0.1109, 0.1528]
Total Export	-0.0247	(0.1273)	-0.19	0.846	[-0.2742, 0.2248]
Manufactured Export Value	-0.1446	(0.1935)	-0.75	0.455	[-0.5238, 0.2346]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

4.2.1 Manufactured Export Value

The estimated ATT for the manufactured export value, presented in table 6, is statistically insignificant (-0.145), indicating limited evidence of a decrease of 14.5 percent in manufacturing exports following the treatment.

The results for the ATTs by cohort, calendar period and event study estimates can be found in table 9, appendix 2.

The ATT by cohort shows variation across treated cohorts. For cohort 2019 and 2024, the estimates are statistically significant at the 10% and 1% level respectively. The cohort for 2019 has a strong negative point estimate (-0.396) while the cohort for 2024 has a strong positive point estimate (0.673). The average ATT by cohort is negative but not significant (-0.075), providing limited evidence of a 7.5 percent decrease in manufacturing exports following treatment.

The ATT by calendar period shows a negative estimate which is not statistically significant. None of the single periods are significant.

Lastly, the event-study estimates do not show any significant pre- or post-treatment effects. Both the post-treatment ATT and the pre-treatment ATT have a negative point estimate.

4.2.2 Total Exports

Table 6 presents the estimated treatment effect on treated on the total exports from Africa to the EU. The results for the ATTs by cohort, calendar period and event study estimates can be found in table 10, appendix 2.

The estimated ATT is not significant and has a negative point estimate (-0.025). The average cohort effect is negative but not significant. The ATT by cohort varies across treatment cohorts, with the cohort for 2019 and 2024 being the only significant estimates.

The ATT by calendar period has no statistically significant overall effect (0.001). The individual calendar period estimates are mainly positive and insignificant.

In the event study there are no significant pre- or post-treatment effects.

4.2.3 GDP

Table 6 presents the estimated overall average treatment effect on the treated on GDP. The full results can be found in table 11, appendix 2.

The estimated overall ATT is positive and not significant (0.021). The cohort average effect is positive but not significant, with some variation in specific cohorts.

The ATT by calendar period shows some difference in signs between the different periods, but none of them are statistically significant.

The event-study shows a positive, insignificant estimate in the pre-treatment average effect, and a positive, insignificant estimate in the post-treatment average.

4.3 Robustness Tests

To assess the validity of the main results, this section presents several robustness tests.

4.3.1 Placebo Test

A placebo test is conducted to examine whether the empirical strategy detects treatment effects in periods prior to the implementation of EPAs, where no treatment occurred. In this robustness test, the treatment cohorts are redefined using the years 2003, 2004, 2006, 2008, 2009 and 2011. Table 12 in appendix 3 presents result which shows that the ATT is small and statistically significant (0.098). This suggests that there is evidence of a treatment effect in the period before EPAs.

In addition, the placebo test serves as a critical check for the parallel trends assumption required by the Callaway & Sant'Anna estimator. By showing that statistically significant differences can be found in the periods before treatment, it cannot provide evidence that treated and control groups follow similar outcome dynamics prior to treatment.

4.3.2 Alternative Control Group

The Callaway & Sant'Anna estimator allows two different control groups to be used when doing a staggered DiD. While the main specification uses the never-treated as the control group, this robustness test uses the not-yet treated countries, i.e, countries that will be treated later in the sample period.

This alternative specification tests whether the results are sensitive to the choice of control group and helps assess the credibility of the main strategy.

Table 13, appendix 3, presents results showing that the estimated ATT remains negative and statistically insignificant (0.039). The consistency in sign and insignificance relative to the main results indicates that the findings are robust to the choice of control group.

4.3.3 Sample Restriction

To ensure that the main results are not driven by small cohorts, a sample restriction robustness test is performed. In this test, multiple cohorts are excluded from the treatment sample to check if the main results are driven by outliers.

The excluded cohorts are cohort14, cohort18, cohort19 and cohort24. After removing these, the model is re-estimated.

Table 14, appendix 3, presents results showing that the ATT remains negative and statistically insignificant (-0.045). This suggests that excluding small cohorts does not substantially change the estimated relationship between EPAs and the share of manufactured exports.

In an additional restriction test, only cohort24 is excluded to ensure that the results are not driven by a potential outlier, since this cohort only has a very limited post-treatment period. Table 15, appendix 3 presents results showing that the ATT remains negative and statistically insignificant (-0.039). This suggests that the overall ATT is not influenced by short-term fluctuations.

4.3.4 Standard Difference-in-Difference

As an additional robustness check, a conventional DiD is estimated, restricting the sample to a single treated group and a single control group. The treated group consists of countries in the Southern African Development Community (SADC), excluding Angola and Mozambique, which all signed an EPA in 2016. These countries are Botswana, Eswatini, Lesotho, Namibia and South Africa. The control group consists of countries in the East African Community (EAC), excluding Kenya, as these have not signed an EPA in the sample period. These countries are Burundi, Rwanda, Tanzania and Uganda.

Table 16, appendix 3, presents results showing that the interaction term is positive but statistically insignificant (0.015). This suggests that, within this simplified framework, EPAs shows no effect on the share of manufactured exports from Africa to the EU.

The purpose of this robustness test is to see if the results are robust when treatment heterogeneity is removed.

4.3.5 Sensitivity Test

As a sensitivity test, the control variables are removed one at a time from the baseline specification. When removing WGI the results changed considerably. These results are presented in table 17, appendix 3. Here, the estimated ATT coefficient is negative and statistically significant on a 5% level (-0.0519).

5. Discussion

5.1 Main Findings

This study examines whether the Economic Partnership Agreements promote the share of manufactured exports from African countries to the EU. The findings from the main results suggest that the introduction of EPAs may not have been sufficient to promote structural transformation toward higher value-added exports across African countries overall. This finding supports the concerns that moving from preferential trade agreements to reciprocal trade agreements would not benefit Africa more in terms of exports (Busse & Grobmann 2007; Fontagne et al. 2011; Troester et al. 2020).

While the average cohort effect is statistically insignificant, the cohort-specific effects show that cohort 2012 and 2019 experienced significant declines in the share of manufactured exports following treatment, by 10.6 and 5.6 percentage points respectively, while cohort 2024 experienced a positive effect of 3.3 percentage points. This suggests that the effect of the EPAs depend on country-specific conditions or how long the EPA has been in place. The decline that cohort 2012 and 2019 shows aligns with theories that the EPAs could possibly reinforce dependency on primary goods, since African countries now need to compete with more advanced European producers (Ilorah & Ngwakwe 2015).

The calendar average effect indicates a decrease in the share of manufactured exports. While only some of the specific calendar periods are significant, all of them are negative, suggesting that the negative effects are relatively persistent over time, rather than driven by one isolated period.

The significant post-average treatment effect from the event study (table 5) indicates that, when accounting for dynamic effects, the introduction of EPAs decreases the share of manufactured exports by 5.4 percentage points on average. The effects also seem to grow over time. This aligns with previous research suggesting that the effects of trade agreements may not reach full effect right away but instead develop over time (Abreha & Robertson 2025). This study finds that the long-run effects remain negative, indicating that the EPAs do not contribute to an increasing share of manufactured exports even after several years of implementation. The persistent negative estimates and the significant values in later post-treatment years aligns with previous research that these effects can be seen even after years of implementation (Nagengast & Yotov 2025).

The difference in significance between the overall ATT and the event study post-average may be explained by the difference in aggregation. While the overall ATT aggregates treatment effects across calendar time periods, the event study captures dynamic effects relative to the treatment year, which may influence the results.

5.2 Findings from Manufactured Export Value, Total Exports and GDP Specifications

Focusing on the other dependent variables, they provide weak evidence on treatment effects. For manufactured exports in absolute terms, the overall ATT estimate is negative but statistically insignificant. This suggests that EPAs did not contribute to a substantial increase in manufactured export values during the observed period. These findings reinforce the main result that EPAs has not promoted export diversification toward manufactured goods overall. Similarly, the total export estimates suggest that the agreements did not increase African export performance to the EU overall. This further supports the concerns of no additional export benefits for African countries following the EPAs (Busse & Grobmann 2007; Fontagne et al. 2011; Troester et al. 2020).

The estimates of the GDP specification also indicate that the introduction of EPAs had no measurable effect on economic growth. According to Hausman et al. (2007) an increase in manufacturing would lead to higher economic growth. Since the main results of this study show no evidence of increased manufactured export shares or volumes, the absence of significance in the GDP specification is therefore expected.

Compared to the other cohorts, the 2019 and 2024 cohorts stand out due to their statistical significance across most model specifications. Cohort 2019, representing the country Comoros, have statistically significant estimates with negative point estimates throughout all specifications except for the GDP specification. The decline in both total and manufactured exports from Comoros to the EU aligns with Stender et al. findings that the implementation of EPAs in some African regions resulted in a decrease in these exports (Stender et al. 2021). Looking at cohort 2024, representing Kenya, the estimates are statistically significant, but positive, in all specifications, indicating an increase of GDP, total exports, manufactured exports in value and in share following treatment. This aligns with evidence from the SADC-EU EPA where the agreements led to a positive effect on exports (Cipollina 2022). However, as discussed in section 5.5, the post-treatment period for Kenya is limited, only capturing the immediate effect of the EPA, which limits the interpretation.

5.3 Sensitivity Test

The results from the sensitivity test show significant negative effect of EPAs on the share of manufactured exports when WGI is removed from the specification. This differs from the main findings where the results are not statistically significant, suggesting that governance quality plays an important role in the manufactured export performance and that the success of a trade agreement depends on how well a country is run and how strong their institutions are. In

particular, the inclusion of WGI appears to absorb some part of the variation otherwise captured by EPAs. This indicates that countries with stronger governance structures may have a better chance of benefiting from these kinds of trade agreements.

5.4 Assessing the Identifying Assumptions

The parallel trends assumption demonstrates sensitivity to the chosen significance threshold as the 95% level (figure 4) shows statistically insignificant pre-trends while marginal significance can be seen in the 90% (figure 5) level. When combined with the highly significant placebo test, these results suggest that – while the evidence of a pre-treatment break in trends varies – the estimated EPA effect may reflect differences in export performance between treated and control countries, before the treatment. This is further confirmed by the significant event study pre-treatment average seen in table 5.

The random sampling assumption may be difficult to fully satisfy, since the treatment is not randomly assigned. The no anticipation assumption may also be hard to fully guarantee since negotiations could potentially influence export behavior. Despite these flaws in how well the assumptions are met, irreversible treatment assumption is plausibly satisfied since EPAs represents formal, long-term commitments.

5.5 Limitations

This study has several limitations which should be considered when interpreting the results. One concern is the restricted post-treatment period for cohort24, which is limited to the year of treatment (Tp0) since the data for the analysis only extends to the year 2024. This temporal limitation therefore only shows the immediate effects of the treatment and fails to account for long-run dynamics. This is particularly relevant since the main findings show that the treatment effect increases over time. As seen in table 15 in appendix 3, the results from the sensitivity test where cohort24 is excluded from the specification remain consistent with the main findings, indicating that the effect of the cohort may not change the overall results. However, the estimated effect of this specific cohort should be interpreted with caution.

Another limitation concerns potential endogeneity in EPA participation. Since countries did not enter into these agreements randomly the countries participating in the treatment may differ from untreated countries in ways that also affect the export performance. Although this analysis includes control variables, the risk of omitted variable bias and selection effects cannot be fully ruled out.

An additional limitation is that the aggregated treatment effects, i.e. over cohort or calendar year, should be interpreted with caution (Nagengast & Yotov

2025). The composition of observations changes across cohorts and time periods, meaning that the effects may not only reflect the differences in treatment effects, but differences in which countries and time periods that are included in the estimates. For cohort specific effects, early treated cohorts have more observations post treatment than the later-treated cohorts. Differences in treatment effect could therefore reflect the differences in treatment lengths rather than true differences. Early treated cohorts may capture long-run effects while the later-treated cohort may capture short-run effects. The same goes for the calendar specific effects, where differences in treatment length or the composition of the treatment group at a specific point could complicate the interpretation.

Finally, the absence of real values for the dependent variables can cause some limitations. Data on exports is only available in nominal values, which limits the possibility to use real values in the analysis (UN Comtrade n.d.). Although real GDP was available, nominal GDP is used to ensure consistency throughout the variables. Because of this, changes in export volumes or GDP may reflect inflation or fluctuations in the exchange rate rather than the real changes in export capacity. Given the long period in the analysis, real values adjusted for inflation may have provided more accurate estimates. Since the focus of this study is to examine the trade shares, this limitation is less concerning for the main dependent variable.

6. Conclusion

The aim of this thesis was to examine the effect that Economic Trade Agreements have on the share of manufactured exports from Africa to the EU. The purpose of these EPAs is to support African economies and promote trade and economic development. However, due to the statistically insignificant results, this study finds no evidence that the trade agreements have significantly increased the share of manufactured exports overall. Similarly, the result for manufactured exports, total exports and GDP were statistically insignificant, suggesting that EPAs did not generate broader improvements in export performance or economic growth.

Since the results provide limited evidence that EPAs promoted manufactured exports, African countries may require stronger domestic industrial policies before opening fully to the EU market. Free zones are one example of what the own governments could implement to boost the export competitiveness and increase the share of manufactured exports (Fokam et al. 2024).

However, several limitations should be considered when interpreting these conclusions. The significant pre-treatment effects and placebo test violate the assumption for parallel trends. Furthermore, the absence of randomly assigned treatment raised concerns about potential endogeneity of EPA participation. Lastly, the composition of observations in the aggregated ATTs change over time and cohorts. Together, these limitations weaken the ability to interpret the estimated effects as causal.

Given that trade in manufactured goods is important for economic growth (Hausmann et al. 2007), this thesis highlights the need for more research examining the composition of both exports and imports between the EU and African countries in greater detail, such as disaggregated trade flows.

References

Abreha, K. & Robertson, R. (2025). Revisiting the Effects of Regional Trade Agreements Using Staggered Adoption Design. Atlantic Economic Journal, 53 (3), 113–124. https://doi.org/10.1007/s11293-025-09828-0

Busse, M. & Grobmann, H. (2007). The trade and fiscal impact of EU/ACP economic partnership agreements on West African countries. Journal of Development Studies, 43 (5), 787–811. https://doi.org/10.1080/00220380701384364

Callaway, B. & Sant'Anna, P.H.C. (2021). Difference-in-Differences with multiple time periods. Journal of Econometrics, 225 (2), 200–230. https://doi.org/10.1016/j.jeconom.2020.12.001

Cipollina, M. (2022). The Trade Growth under the EU–SADC Economic Partnership Agreement: An Empirical Assessment. Economies, 10 (12), 302. https://doi.org/10.3390/economies10120302

ECDPM (red.) (2003). The cotonou agreement: a user's guide for non-states actors. ACP Secretariat. The Cotonou Agreement: A User's Guide for Non-State Actors - ECDPM

European Commission (n.d.a). Economic Partnership Agreements (EPAs). https://trade.ec.europa.eu/access-to-markets/en/content/economic-partnership-agreements-epas [2026-04-15]

European Commission (n.d.b). EPA - Central Africa. https://trade.ec.europa.eu/access-to-markets/en/content/epa-central-africa [2026-05-21]

European Commission (n.d.c). EPA - Eastern and Southern Africa. https://trade.ec.europa.eu/access-to-markets/en/content/epa-eastern-and-southern-africa [2026-05-21]

European Commission (n.d.d). EPA - West Africa. https://trade.ec.europa.eu/access-to-markets/en/content/epa-west-africa [2026-05-21]

European Union (2025). European Union, Trade in goods with Africa (all countries). https://webgate.ec.europa.eu/isdb_results/factsheets/region/details_africa-all-countries_en.pdf [2026-04-15]

Eurostat (2022). Africa-EU - International trade in goods statistics. https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/71514.pdf [2026-05-05]

Fokam, D.N.D.T., Deffo, R.N., Youmto, E. & Kamga, B.F. (2024). Free zones and manufactured export competitiveness from Africa. Review of Development Economics, 28 (4). 1345–1373. https://doi.org/10.1111/rode.13103

Fontagne, L., Laborde, D. & Mitaritonna, C. (2011). An Impact Study of the Economic Partnership Agreements in the Six ACP Regions. Journal of African Economies, 20 (2), 179–216. https://www.proquest.com/econlit/docview/864378979/E8613EE330154018PQ/7?sourcetype=Scholarly%20Journals

Freedman, S.M., Hollingsworth, A., Simon, K.I., Wing, C. & Yozwiak, M. (2024). Designing Difference In Difference Studies With Staggered Treatment Adoption: Key Concepts and Practical Guidelines. Annual Review of Public Health, 45, 485-505. Designing Difference-in-Difference Studies with Staggered Treatment Adoption: Key Concepts and Practical Guidelines | Annual Reviews

Hansen, P. & Jonsson, S. (2017). Eurafrica Incognita: The Colonial Origins of the European Union. History of the Present, 7 (1), 1–32. https://doi.org/10.5406/historypresent.7.1.0001

Haraguchi, N., Cheng, C.F.C. & Smeets, E. (2017). The Importance of Manufacturing in Economic Development: Has This Changed? World Development, 93, 293–315. https://doi.org/10.1016/j.worlddev.2016.12.013

Hausmann, R., Hwang, J. & Rodrik, D. (2007). What You Export Matters. *Journal of Economic Growth*, 12 (1), 1–25. https://www.jstor.org/stable/40216112

Ilorah, R. & Ngwakwe, C.C. (2015). Economic Partnership Agreements between African-Caribbean-Pacific countries and the European Union: revisiting contested issues. Journal of African Business, 16 (3), 322–338. https://doi.org/10.1080/15228916.2015.1089689

Langan, M. & Price, S. (2025). Sovereignism, neo-colonialism and African states' discontent with geopolitical Europe in the era of the OACPS-EU Samoa Agreement. Third World Quarterly, 0 (0), 1–18. https://doi.org/10.1080/01436597.2025.2566237

Nagengast, A.J. & Yotov, Y.V. (2025). Staggered Difference-in-Differences in Gravity Settings: Revisiting the Effects of Trade Agreements. American Economic Journal: Applied Economics, 17 (1), 271–296. https://doi.org/10.1257/app.20230089

Oğurlu, E. (2018). European neo-colonialism in africa. International Journal of Political Studies, 4 (2). EUROPEAN NEO-COLONIALISM IN AFRICA - Uluslararası Politik Araştırmalar Dergisi

Pétré-Grenouilleau, O. (2004). From Slave Trade to Empire: European Colonisation of Black Africa 1780s-1880s. Taylor & Francis Group. http://ebookcentral.proquest.com/lib/slub-ebooks/detail.action?docID=199718 [2026-05-05]

Stender, F., Berger, A., Brandi, C. & Schwab, J. (2021). The Trade Effects of the Economic Partnership Agreements between the European Union and the African, Caribbean and Pacific Group of States: Early Empirical Insights from Panel Data. JCMS: Journal of Common Market Studies, 59 (6), 1495–1515. https://doi.org/10.1111/jcms.13201

Sudhaharan, R. (n.d.). Staggered Difference-in-Difference Estimation. https://www.tilburgsciencehub.com/topics/analyze/causal-inference/did/staggered-did/ [2026-05-05]

Troester, B., Von Arnim, R., Staritz, C., Raza, W., Grumiller, J. & Grohs, H. (2020). Delivering on Promises? The Expected Impacts and Implementation Challenges of the Economic Partnership Agreements between the European Union and Africa.

Jcms-Journal of Common Market Studies, 58 (2), 365–383. https://doi.org/10.1111/jcms.12923 [2026-05-02]

UN Comtrade (n.d.a). About the data. https://comtrade.un.org/labs/data-explorer/About.html?utm_source [2026-05-26]

UN Comtrade (n.d.b). Trade Data. https://comtradeplus.un.org/TradeFlow?Frequency=A&Flows=X&CommodityCodes=TOTAL&Partners=0&Reporters=all&period=2025&AggregateBy=none&BreakdownMode=plus [2026-05-22]

UNCTAD (2025). UNCTAD product groups and composition (SITC Rev. 3). https://unctadstat.unctad.org/EN/Classifications/DimSitcRev3Products_DsibSpecialGroupings_Hierarchy.pdf [2026-04-30]

UNCTAD (n.d.). Foreign direct investment. https://unctadstat.unctad.org/datacentre/reportInfo/US.FdiFlowsStock [2026-05-11]

UNIDO (2026). Data Browser. https://stat.unido.org/data/download?dataset=national-accounts [2026-04-30]

World Bank (2025). Worldwide Governance Indicators. https://www.worldbank.org/en/publication/worldwide-governance-indicators [2026-05-11]

Appendix 1

This appendix presents the control group.

Table 7. Control Group

Control Group – Never-treated
Angola, Benin, Burkina Faso, Burundi, Cabo Verde, Central African republic, Chad, Congo, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Guinea, Liberia, Malawi, Mali, Mauritania, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Tanzania, Togo, Uganda and Zambia.

Appendix 2

This appendix presents the full ATT result for all the dependent variables used in the analysis.

Table 8. ATT Results for Share of Manufactured Exports

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	-.0384764	(.02566)	-1.50	0.134	[-.0887691, .0118163]
ATT by Cohort	CAverage	-.0265273	(.0170279)	-1.56	0.119	[-.0599013, .0068467]
	C2012	-.1064339**	(.0441513)	-2.41	0.016	[-.1929689, -.019899]
	C2014	.001819	(.0121837)	0.15	0.881	[-.0220606, .0256985]
	C2016	.0064021	(.0226971)	0.28	0.778	[-.0380834, .0508876]
	C2018	.0040152	(.016476)	0.24	0.807	[-.0282773, .0363076]
	C2019	-.0561514***	(.0065378)	-8.59	0.000	[-.0689652, -.0433376]
	C2024	.0333288*	(.0184387)	1.81	0.071	[-.0028105, .069468]
ATT by Calendar Period	CPAverage	-.0429873*	(.0242173)	-1.78	0.076	[-.0904523, .0044778]
	T2012	-.0089674	(.0214962)	-0.42	0.677	[-.0510991, .0331644]
	T2013	-.0654167	(.0397122)	-1.65	0.100	[-.1432513, .0124178]
	T2014	-.1099336***	(.0350687)	-3.13	0.002	[-.178667, -.0412003]
	T2015	-.053885	(.0382952)	-1.41	0.159	[-.1289422, .0211722]
	T2016	-.0301352	(.0214141)	-1.41	0.159	[-.0721061, .0118356]
	T2017	-.0710886***	(.026038)	-2.73	0.006	[-.1221222, -.020055]
	T2018	-.0285386	(.0338103)	-0.84	0.399	[-.0948056, .0377284]

	T2019	-.047766	(.0296091)	-1.61	0.107	[-.1057989, .0102668]
	T2020	-.0139595	(.0367047)	-0.38	0.704	[-.0858994, .0579805]
	T2021	-.0485991*	(.0269065)	-1.81	0.071	[-.1013348, .0041366]
	T2022	-.0429982	(.0333146)	-1.29	0.197	[-.1082937, .0222973]
	T2023	-.0253326	(.0449228)	-0.56	0.573	[-.1133796, .0627144]
	T2024	-.0122138	(.0288213)	-0.42	0.672	[-.0687025, .0442748]
Event Study: Dynamic Effects	Pre_average	-.0344945*	(.0206519)	-1.67	0.095	[-.0749714, .0059824]
	Post_average	-.0535967*	(.0289232)	-1.85	0.064	[-.1102853, .0030918]
	Tm6	-.0496949	(.0302569)	-1.64	0.101	[-.1089973, .0096075]
	Tm5	-.0484295*	(.0258387)	-1.87	0.061	[-.0990723, .0022133]
	Tm4	-.0100448	(.0190488)	-0.53	0.598	[-.0473798, .0272902]
	Tm3	-.0174912	(.0195321)	-0.90	0.371	[-.0557735, .020791]
	Tm2	-.0468121	(.029405)	-1.59	0.111	[-.1044448, .0108207]
	Tp0	-.0058624	(.0117293)	-0.50	0.617	[-.0288515, .0171266]
	Tp1	-.0278829	(.021046)	-1.32	0.185	[-.0691323, .0133665]
	Tp2	-.0304754	(.0264044)	-1.15	0.248	[-.0822272, .0212763]
	Tp3	-.0466103*	(.0270014)	-1.73	0.084	[-.099532, .0063114]
	Tp4	-.0241149	(.0284365)	-0.85	0.396	[-.0798495, .0316196]
	Tp5	-.0491682*	(.0263759)	-1.86	0.062	[-.1008641, .0025276]
	Tp6	-.0293467	(.0328826)	-0.89	0.372	[-.0937954, .0351019]
	Tp7	-.0057207	(.0474893)	-0.12	0.904	[-.0987979, .0873566]
	Tp8	-.0327727	(.0335431)	-0.98	0.329	[-.098516, .0329706]
	Tp9	-.1063272**	(.0446458)	-2.38	0.017	[-.1938314, -.0188231]
	Tp10	-.0742695	(.0532605)	-1.39	0.163	[-.1786582, .0301191]

	Tp11	-.1578176**	(.063584)	-2.48	0.013	[-.28244, -.0331952]
	Tp12	-.106389	(.0661816)	-1.61	0.108	[-.2361026, .0233246]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

‘

Table 9. ATT Results for Manufactured Exports

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	-.1446245	(.1934644)	-0.75	0.455	[-.5238078, .2345587]
ATT by Cohort	CAverage	-.0749166	(.1758266)	-0.43	0.670	[-.4195304, .2696972]
	C2012	-.3546404	(.2795844)	-1.27	0.205	[-.9026158, .1933351]
	C2014	-.0540409	(.0950576)	-0.57	0.570	[-.2403505, .1322686]
	C2016	-.0008335	(.3196377)	-0.00	0.998	[-.6273118, .6256448]
	C2018	.0780482	(.2033592)	0.38	0.701	[-.3205285, .4766248]
	C2019	-.3964304*	(.2039851)	-1.94	0.052	[-.7962339, .0033731]
	C2024	.6730704***	(.1102022)	6.11	0.000	[.4570781, .8890628]
ATT by Calendar Period	CPAverage	-.1420382	(.1724975)	-0.82	0.410	[-.4801271, .1960508]
	T2012	.0983658	(.1767047)	0.56	0.578	[-.2479691, .4447006]
	T2013	-.1207787	(.1900326)	-0.64	0.525	[-.4932357, .2516783]
	T2014	-.450225**	(.1964228)	-2.29	0.022	[-.8352066, -.0652435]
	T2015	-.1041103	(.2961838)	-0.35	0.725	[-.6846198, .4763993]
	T2016	.0138233	(.1949574)	0.07	0.943	[-.3682862, .3959328]
	T2017	-.139539	(.2489223)	-0.56	0.575	[-.6274177, .3483397]
	T2018	-.1324134	(.2937045)	-0.45	0.652	[-.7080637, .443237]
	T2019	-.2683797	(.2531685)	-1.06	0.289	[-.7645809, .2278215]
	T2020	.0808501	(.3183948)	0.25	0.800	[-.5431923, .7048925]
	T2021	-.2362657	(.244897)	-0.96	0.335	[-.7162549, .2437235]
	T2022	-.3084915	(.2653098)	-1.16	0.245	[-.8284892, .2115062]
	T2023	-.2858499	(.3104838)	-0.92	0.357	[-.8943869, .3226871]

	T2024	.0065178	(.2521343)	0.03	0.979	[-.4876565, .500692]
Event Study: Dynamic Effects	Pre_average	-.0208323	(.122662)	-0.17	0.865	[-.2612453, .2195808]
	Post_average	-.2160201	(.2110065)	-1.02	0.306	[-.6295852, .197545]
	Tm6	.2685484	(.1824013)	1.47	0.141	[-.0889515, .6260483]
	Tm5	-.0580623	(.1866746)	-0.31	0.756	[-.4239377, .3078131]
	Tm4	.0299274	(.1541532)	0.19	0.846	[-.2722074, .3320622]
	Tm3	-.0935544	(.1294862)	-0.72	0.470	[-.3473427, .1602338]
	Tm2	-.2510205	(.1726921)	-1.45	0.146	[-.5894907, .0874497]
	Tp0	.1507304	(.1223874)	1.23	0.218	[-.0891445, .3906053]
	Tp1	.0007347	(.2016155)	0.00	0.997	[-.3944244, .3958937]
	Tp2	-.0931513	(.273553)	-0.34	0.733	[-.6293054, .4430028]
	Tp3	-.2765005	(.265101)	-1.04	0.297	[-.796089, .243088]
	Tp4	-.1157662	(.2987198)	-0.39	0.698	[-.7012463, .4697138]
	Tp5	-.1864192	(.1995952)	-0.93	0.350	[-.5776186, .2047802]
	Tp6	-.2533321	(.231051)	-1.10	0.273	[-.7061837, .1995195]
	Tp7	-.116907	(.3233052)	-0.36	0.718	[-.7505735, .5167594]
	Tp8	.0075962	(.2553245)	0.03	0.976	[-.4928306, .508023]
	Tp9	-.4797572	(.3374782)	-1.42	0.155	[-1.141202, .181688]
	Tp10	-.3271699	(.3491113)	-0.94	0.349	[-1.011416, .3570757]
	Tp11	-.819763**	(.3613897)	-2.27	0.023	[-1.528074, -.1114522]
	Tp12	-.2985555	(.5783852)	-0.52	0.606	[-1.43217, .8350586]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Table 10. ATT Results for Total Exports

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	-.0246556	(.1272955)	-0.19	0.846	[-.2741502, .2248389]
ATT by Cohort	CAverage	-.0526661	(.1031198)	-0.51	0.610	[-.2547771, .1494449]
	C2012	.147034	(.2227639)	0.66	0.509	[-.2895752, .5836432]
	C2014	-.0835299	(.1352785)	-0.62	0.537	[-.3486708, .181611]
	C2016	-.0879294	(.1766634)	-0.50	0.619	[-.4341833, .2583245]
	C2018	.0898835	(.188968)	0.48	0.634	[-.280487, .4602541]
	C2019	-.8998773***	(.0617052)	-14.58	0.000	[-1.020817, -.7789374]
	C2024	.1309019**	(.0508602)	2.57	0.010	[.0312177, .230586]
ATT by Calendar Period	CPAverage	.0007591	(.119336)	0.01	0.995	[-.2331352, .2346535]
	T2012	.0401201	(.1040124)	0.39	0.700	[-.1637405, .2439806]
	T2013	.2170655	(.1547785)	1.40	0.161	[-.0862949, .5204258]
	T2014	.055448	(.2455992)	0.23	0.821	[-.4259176, .5368136]
	T2015	-.0116088	(.1704454)	-0.07	0.946	[-.3456756, .322458]
	T2016	.0562145	(.1045738)	0.54	0.591	[-.1487463, .2611753]
	T2017	.156875	(.1488623)	1.05	0.292	[-.1348897, .4486396]
	T2018	.0716353	(.1849044)	0.39	0.698	[-.2907708, .4340413]
	T2019	.0585403	(.1521483)	0.38	0.700	[-.2396648, .3567455]
	T2020	.0698928	(.1976307)	0.35	0.724	[-.3174562, .4572419]
	T2021	-.1327088	(.1617385)	-0.82	0.412	[-.4497105, .1842929]
	T2022	-.276457	(.1780628)	-1.55	0.121	[-.6254536, .0725396]
	T2023	-.1694191	(.162102)	-1.05	0.296	[-.4871331, .1482949]

	T2024	-.1257289	(.1453883)	-0.86	0.387	[-.4106848, .159227]
Event Study: Dynamic Effects	Pre_average	.0520586	(.0907715)	0.57	0.566	[-.1258503, .2299674]
	Post_average	-.0257839	(.1354882)	-0.19	0.849	[-.291336, .2397681]
	Tm6	.1617088	(.1156035)	1.40	0.162	[-.06487, .3882876]
	Tm5	.1782297	(.1278382)	1.39	0.163	[-.0723286, .428788]
	Tm4	.0039832	(.1237356)	0.03	0.974	[-.2385341, .2465006]
	Tm3	.0429387	(.1149912)	0.37	0.709	[-.18244, .2683174]
	Tm2	-.1265676*	(.0763945)	-1.66	0.098	[-.2762981, .0231628]
	Tp0	.0407989	(.0658082)	0.62	0.535	[-.0881828, .1697807]
	Tp1	.0582662	(.1089304)	0.53	0.593	[-.1552335, .2717658]
	Tp2	-.0946413	(.1488769)	-0.64	0.525	[-.3864347, .1971521]
	Tp3	-.1514933	(.1798676)	-0.84	0.400	[-.5040273, .2010407]
	Tp4	-.0715776	(.2107407)	-0.34	0.734	[-.4846217, .3414665]
	Tp5	-.0500126	(.1757528)	-0.28	0.776	[-.3944818, .2944566]
	Tp6	-.0315678	(.1655535)	-0.19	0.849	[-.3560467, .292911]
	Tp7	.0369916	(.1480433)	0.25	0.803	[-.2531678, .3271511]
	Tp8	.0774149	(.1834638)	0.42	0.673	[-.2821675, .4369974]
	Tp9	.0598195	(.2651581)	0.23	0.822	[-.4598809, .5795198]
	Tp10	-.1561869	(.2119767)	-0.74	0.461	[-.5716535, .2592797]
	Tp11	-.025149	(.221264)	-0.11	0.910	[-.4588185, .4085205]
	Tp12	-.0278539	(.2378497)	-0.12	0.907	[-.4940308, .4383229]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Table 11. ATT Results for GDP

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	.0209779	(.0672759)	0.31	0.755	[-.1108805, .1528363]
ATT by Cohort	CAverage	.0232994	(.0507934)	0.46	0.646	[-.0762538, .1228527]
	C2012	.1146383	(.131679)	0.87	0.384	[-.1434478, .3727243]
	C2014	.0651525	(.0470259)	1.39	0.166	[-.0270165, .1573215]
	C2016	-.0812938	(.063437)	-1.28	0.200	[-.205628, .0430404]
	C2018	.1497517***	(.0310038)	4.83	0.000	[.0889853, .2105181]
	C2019	.0174384	(.0199162)	0.88	0.381	[-.0215967, .0564735]
	C2024	.2276526***	(.0224264)	10.15	0.000	[.1836977, .2716076]
ATT by Calendar Period	CPAverage	.0327084	(.0595809)	0.55	0.583	[-.084068, .1494847]
	T2012	.0383688	(.0386571)	0.99	0.321	[-.0373976, .1141353]
	T2013	.0913869	(.0629476)	1.45	0.147	[-.0319881, .2147619]
	T2014	.0430316	(.0550959)	0.78	0.435	[-.0649544, .1510176]
	T2015	.1110421	(.0857883)	1.29	0.196	[-.0570999, .2791841]
	T2016	.0545291	(.0555663)	0.98	0.326	[-.0543788, .163437]
	T2017	.0841047	(.0582383)	1.44	0.149	[-.0300402, .1982496]
	T2018	.0693053	(.0632119)	1.10	0.273	[-.0545878, .1931984]
	T2019	.0317077	(.0722596)	0.44	0.661	[-.1099186, .1733339]
	T2020	-.0139189	(.085063)	-0.16	0.870	[-.1806394, .1528016]
	T2021	-.0059652	(.0785035)	-0.08	0.939	[-.1598291, .1478988]
	T2022	-.0404745	(.073236)	-0.55	0.580	[-.1840144, .1030654]
	T2023	-.0526812	(.0974669)	-0.54	0.589	[-.2437128, .1383504]

	T2024	.0147724	(.1052087)	0.14	0.888	[-.1914328, .2209775]
Event Study: Dynamic Effects	Pre_average	.035197	(.0307262)	1.15	0.252	[-.0250252, .0954191]
	Post_average	.0288432	(.0870009)	0.33	0.740	[-.1416755, .1993618]
	Tm6	.0913129*	(.0484744)	1.88	0.060	[-.0036951, .1863209]
	Tm5	.0760374*	(.0450744)	1.69	0.092	[-.0123067, .1643816]
	Tm4	.0283258	(.0483816)	0.59	0.558	[-.0665004, .1231521]
	Tm3	.0039046	(.0284901)	0.14	0.891	[-.051935, .0597442]
	Tm2	-.023596	(.0170931)	-1.38	0.167	[-.057098, .0099059]
	Tp0	.0161338	(.0269586)	0.60	0.550	[-.036704, .0689716]
	Tp1	.0375819	(.0281251)	1.34	0.181	[-.0175423, .092706]
	Tp2	.0133095	(.0286915)	0.46	0.643	[-.0429248, .0695438]
	Tp3	-.0035317	(.049168)	-0.07	0.943	[-.0998992, .0928359]
	Tp4	.0220263	(.0721876)	0.31	0.760	[-.1194588, .1635115]
	Tp5	.0742714	(.0722403)	1.03	0.304	[-.067317, .2158598]
	Tp6	.0639203	(.0935134)	0.68	0.494	[-.1193626, .2472033]
	Tp7	-.0325243	(.1097328)	-0.30	0.767	[-.2475966, .1825479]
	Tp8	-.0738905	(.1081837)	-0.68	0.495	[-.2859266, .1381455]
	Tp9	.0153574	(.151678)	0.10	0.919	[-.2819261, .3126409]
	Tp10	.0836901	(.1427701)	0.59	0.558	[-.1961342, .3635143]
	Tp11	.0815078	(.2111794)	0.39	0.700	[-.3323961, .4954118]
	Tp12	.077109	(.2136347)	0.36	0.718	[-.3416073, .4958253]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Appendix 3

This appendix presents robustness tests, where the dependent variable is the share of manufactured exports in all specifications.

Table 12. Placebo Test

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	.0980062***	(.0305692)	3.21	0.001	[.0380917, .1579207]
ATT by Cohort	CAverage	.072207***	(.0212716)	3.39	0.001	[.0305155, .1138985]
	C2003	.159751***	(.0487637)	3.28	0.001	[.0641759, .2553261]
	C2004	.0337356**	(.0159786)	2.11	0.035	[.0024181, .0650531]
	C2006	.0959703***	(.0345361)	2.78	0.005	[.0282809, .1636598]
	C2008	-.0081558	(.0065445)	-1.25	0.213	[-.0209829, .0046712]
	C2009	-.2765981***	(.0077327)	-35.77	0.000	[-.2917539, -.2614424]
	C2011	.0233268	(.0143133)	1.63	0.103	[-.0047268, .0513804]
ATT by Calendar Period	CPAverage	.0840324***	(.0274138)	3.07	0.002	[.0303024, .1377624]
	T2003	-.0017882	(.0405899)	-0.04	0.965	[-.0813429, .0777665]
	T2004	.0113524	(.0309943)	0.37	0.714	[-.0493954, .0721001]
	T2005	.1084498	(.0724893)	1.50	0.135	[-.0336266, .2505262]
	T2006	.0604501	(.0439544)	1.38	0.169	[-.025699, .1465992]
	T2007	.0926465*	(.0491487)	1.89	0.059	[-.0036832, .1889763]
	T2008	.1261669***	(.0374322)	3.37	0.001	[.0528012, .1995327]
	T2009	.0922016**	(.0426508)	2.16	0.031	[.0086077, .1757956]

	T2010	.1496151***	(.0461439)	3.24	0.001	[.0591747, .2400555]
	T2011	.1171974**	(.0510464)	2.30	0.022	[.0171483, .2172465]
Event Study: Dynamic Effects	Pre_average	-.1320196*	(.0751276)	-1.76	0.079	[-.279267, .0152278]
	Post_average	.1271019***	(.0361164)	3.52	0.000	[.0563151, .1978886]
	Tm6	-.2091945	(.171938)	-1.22	0.224	[-.5461868, .1277979]
	Tm5	-.1351437	(.1061551)	-1.27	0.203	[-.3432039, .0729165]
	Tm4	-.1049469	(.0674834)	-1.56	0.120	[-.237212, .0273183]
	Tm3	-.1040141	(.0882631)	-1.18	0.239	[-.2770066, .0689784]
	Tm2	-.1067989	(.0714783)	-1.49	0.135	[-.2468937, .033296]
	Tp0	-.0082147	(.0323921)	-0.25	0.800	[-.071702, .0552726]
	Tp1	.0104284	(.0420147)	0.25	0.804	[-.0719188, .0927756]
	Tp2	.0571049	(.0464759)	1.23	0.219	[-.0339862, .1481961]
	Tp3	.1025754***	(.0299396)	3.43	0.001	[.0438948, .161256]
	Tp4	.16846***	(.0271649)	6.20	0.000	[.1152178, .2217021]
	Tp5	.172915***	(.0337295)	5.13	0.000	[.1068063, .2390237]
	Tp6	.174202**	(.0778413)	2.24	0.025	[.0216359, .3267682]
	Tp7	.2235641***	(.0824394)	2.71	0.007	[.0619858, .3851424]
	Tp8	.2428815***	(.082657)	2.94	0.003	[.0808768, .4048863]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Table 13. Alternative Control Group. Not-Yet Treated

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	-.0386159	(.0255097)	-1.51	0.130	[-.088614, .0113822]
ATT by Cohort	CAverage	-.0265635	(.0167211)	-1.59	0.112	[-.0593363, .0062092]
	C2012	-.1070025**	(.0433851)	-2.47	0.014	[-.1920356, -.0219693]
	C2014	-.0010252	(.0126387)	-0.08	0.935	[-.0257966, .0237461]
	C2016	.0070585	(.0223827)	0.32	0.752	[-.0368108, .0509279]
	C2018	.0041034	(.0141181)	0.29	0.771	[-.0235675, .0317743]
	C2019	-.0562598***	(.0063789)	-8.82	0.000	[-.0687622, -.0437575]
	C2024	.0333288*	(.0184387)	1.81	0.071	[-.0028105, .069468]
ATT by Calendar Period	CPAverage	-.0437385*	(.0233727)	-1.87	0.061	[-.089548, .0020711]
	T2012	-.0136916	(.0139571)	-0.98	0.327	[-.041047, .0136638]
	T2013	-.0812502***	(.0259178)	-3.13	0.002	[-.1320482, -.0304522]
	T2014	-.0913454***	(.034325)	-2.66	0.008	[-.1586212, -.0240696]
	T2015	-.0616627*	(.0366079)	-1.68	0.092	[-.133413, .0100875]
	T2016	-.0321753	(.0217968)	-1.48	0.140	[-.0748964, .0105457]
	T2017	-.0725186***	(.025923)	-2.80	0.005	[-.1233267, -.0217105]
	T2018	-.0305126	(.0348397)	-0.88	0.381	[-.0987971, .0377719]
	T2019	-.0463253	(.0292464)	-1.58	0.113	[-.1036472, .0109966]
	T2020	-.012568	(.0361561)	-0.35	0.728	[-.0834327, .0582968]
	T2021	-.0477732*	(.0262945)	-1.82	0.069	[-.0993095, .0037631]
	T2022	-.0427001	(.0327459)	-1.30	0.192	[-.1068809, .0214807]
	T2023	-.0238635	(.0444108)	-0.54	0.591	[-.110907, .0631801]

	T2024	-.0122138	(.0288213)	-0.42	0.672	[-.0687025, .0442748]
Event Study: Dynamic Effects	Pre_average	-.0342702*	(.02041)	-1.68	0.093	[-.0742731, .0057328]
	Post_average	-.0534714*	(.0286847)	-1.86	0.062	[-.1096923, .0027494]
	Tm6	-.0438861	(.0324398)	-1.35	0.176	[-.107467, .0196948]
	Tm5	-.0460423*	(.0241887)	-1.90	0.057	[-.0934512, .0013666]
	Tm4	-.0120853	(.0163538)	-0.74	0.460	[-.044138, .0199675]
	Tm3	-.0176573	(.0198383)	-0.89	0.373	[-.0565396, .021225]
	Tm2	-.0516799*	(.0285976)	-1.81	0.071	[-.1077302, .0043703]
	Tp0	-.006994	(.0104346)	-0.67	0.503	[-.0274456, .0134575]
	Tp1	-.0330601*	(.0199404)	-1.66	0.097	[-.0721427, .0060224]
	Tp2	-.0241735	(.0260321)	-0.93	0.353	[-.0751954, .0268485]
	Tp3	-.0484407*	(.0286198)	-1.69	0.091	[-.1045346, .0076531]
	Tp4	-.0259821	(.0291529)	-0.89	0.373	[-.0831208, .0311565]
	Tp5	-.0495282*	(.026072)	-1.90	0.057	[-.1006284, .0015719]
	Tp6	-.0299535	(.0338813)	-0.88	0.377	[-.0963596, .0364525]
	Tp7	-.0038964	(.0470838)	-0.08	0.934	[-.0961791, .0883862]
	Tp8	-.0322234	(.0333067)	-0.97	0.333	[-.0975033, .0330565]
	Tp9	-.1049813**	(.0442713)	-2.37	0.018	[-.1917514, -.0182112]
	Tp10	-.0734091	(.0528704)	-1.39	0.165	[-.1770331, .0302149]
	Tp11	-.1560972**	(.0630233)	-2.48	0.013	[-.2796206, -.0325738]
	Tp12	-.106389	(.0661816)	-1.61	0.108	[-.2361026, .0233246]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Table 14. Drop Single Cohorts

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	-.0446194	(.0301677)	-1.48	0.139	[-.103747, .0145082]
ATT by Cohort	CAverage	-.0346292	(.0224028)	-1.55	0.122	[-.0785378, .0092794]
	C2012	-.1064339**	(.0441513)	-2.41	0.016	[-.1929689, -.019899]
	C2016	.0064021	(.0226971)	0.28	0.778	[-.0380834, .0508876]
ATT by Calendar Period	CPAverage	-.0502986*	(.0271366)	-1.85	0.064	[-.1034854, .0028883]
	T2012	-.0089674	(.0214962)	-0.42	0.677	[-.0510991, .0331644]
	T2013	-.0654167	(.0397122)	-1.65	0.100	[-.1432513, .0124178]
	T2014	-.1388469***	(.0300041)	-4.63	0.000	[-.1976539, -.0800399]
	T2015	-.081263**	(.0369238)	-2.20	0.028	[-.1536324, -.0088937]
	T2016	-.035538	(.0224649)	-1.58	0.114	[-.0795684, .0084924]
	T2017	-.0792915***	(.0269355)	-2.94	0.003	[-.132084, -.0264989]
	T2018	-.032239	(.0394324)	-0.82	0.414	[-.1095249, .045047]
	T2019	-.0518556	(.0369821)	-1.40	0.161	[-.1243393, .0206281]
	T2020	-.029088	(.044335)	-0.66	0.512	[-.115983, .057807]
	T2021	-.0596735*	(.0333332)	-1.79	0.073	[-.1250053, .0056584]
	T2022	-.0280404	(.0359227)	-0.78	0.435	[-.0984475, .0423668]
	T2023	-.0179976	(.0553575)	-0.33	0.745	[-.1264963, .0905011]
	T2024	-.0256637	(.0368922)	-0.70	0.487	[-.097971, .0466437]
Event Study: Dynamic Effects	Pre_average	-.0304397	(.0223317)	-1.36	0.173	[-.0742089, .0133295]
	Post_average	-.0595357*	(.0319424)	-1.86	0.062	[-.1221417, .0030704]
	Tm6	-.0387894	(.0287892)	-1.35	0.178	[-.0952153, .0176365]

Tm5	-.0360524	(.0256158)	-1.41	0.159	[-.0862585, .0141537]
Tm4	-.0065558	(.0219124)	-0.30	0.765	[-.0495034, .0363918]
Tm3	-.0147524	(.0232369)	-0.63	0.526	[-.0602959, .0307911]
Tm2	-.0560485	(.0379554)	-1.48	0.140	[-.1304397, .0183427]
Tp0	-.005653	(.0136129)	-0.42	0.678	[-.0323338, .0210278]
Tp1	-.048686**	(.0219057)	-2.22	0.026	[-.0916204, -.0057516]
Tp2	-.0417947	(.0318335)	-1.31	0.189	[-.1041872, .0205977]
Tp3	-.036584	(.0254678)	-1.44	0.151	[-.0865, .0133321]
Tp4	-.0151827	(.0340418)	-0.45	0.656	[-.0819033, .0515379]
Tp5	-.0680985**	(.0301929)	-2.26	0.024	[-.1272755, -.0089216]
Tp6	-.0353107	(.0384142)	-0.92	0.358	[-.1106011, .0399797]
Tp7	-.0054312	(.0517414)	-0.10	0.916	[-.1068425, .0959801]
Tp8	-.034028	(.0364359)	-0.93	0.350	[-.1054411, .0373851]
Tp9	-.1264129**	(.0503592)	-2.51	0.012	[-.2251151, -.0277107]
Tp10	-.0925753	(.0624186)	-1.48	0.138	[-.2149135, .029763]
Tp11	-.1578176**	(.063584)	-2.48	0.013	[-.28244, -.0331952]
Tp12	-.106389	(.0661816)	-1.61	0.108	[-.2361026, .0233246]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Table 15. Drop Cohort 2024

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	-.038993	(.0258218)	-1.51	0.131	[-.0896029, .0116168]
ATT by Cohort	CAverage	-.0308028*	(.0181573)	-1.70	0.090	[-.0663904, .0047849]
	C2012	-.1064339**	(.0441513)	-2.41	0.016	[-.1929689, -.019899]
	C2014	.001819	(.0121837)	0.15	0.881	[-.0220606, .0256985]
	C2016	.0064021	(.0226971)	0.28	0.778	[-.0380834, .0508876]
	C2018	.0040152	(.016476)	0.24	0.807	[-.0282773, .0363076]
	C2019	-.0561514***	(.0065378)	-8.59	0.000	[-.0689652, -.0433376]
ATT by Calendar Period	CPAverage	-.0432375*	(.0243502)	-1.78	0.076	[-.090963, .004488]
	T2012	-.0089674	(.0214962)	-0.42	0.677	[-.0510991, .0331644]
	T2013	-.0654167	(.0397122)	-1.65	0.100	[-.1432513, .0124178]
	T2014	-.1099336***	(.0350687)	-3.13	0.002	[-.178667, -.0412003]
	T2015	-.053885	(.0382952)	-1.41	0.159	[-.1289422, .0211722]
	T2016	-.0301352	(.0214141)	-1.41	0.159	[-.0721061, .0118356]
	T2017	-.0710886***	(.026038)	-2.73	0.006	[-.1221222, -.020055]
	T2018	-.0285386	(.0338103)	-0.84	0.399	[-.0948056, .0377284]
	T2019	-.047766	(.0296091)	-1.61	0.107	[-.1057989, .0102668]
	T2020	-.0139595	(.0367047)	-0.38	0.704	[-.0858994, .0579805]
	T2021	-.0485991*	(.0269065)	-1.81	0.071	[-.1013348, .0041366]
	T2022	-.0429982	(.0333146)	-1.29	0.197	[-.1082937, .0222973]
	T2023	-.0253326	(.0449228)	-0.56	0.573	[-.1133796, .0627144]
	T2024	-.0154669	(.0304634)	-0.51	0.612	[-.075174, .0442403]

Event Study: Dynamic Effects	Pre_average	-.0371865*	(.0217299)	-1.71	0.087	[-.0797763, .0054032]
	Post_average	-.0538121*	(.0289596)	-1.86	0.063	[-.1105718, .0029476]
	Tm6	-.0541654*	(.0319074)	-1.70	0.090	[-.1167027, .0083719]
	Tm5	-.050529*	(.0273768)	-1.85	0.065	[-.1041866, .0031287]
	Tm4	-.0107426	(.0201823)	-0.53	0.595	[-.0502992, .0288141]
	Tm3	-.0196724	(.0203971)	-0.96	0.335	[-.05965, .0203052]
	Tm2	-.0508233	(.0311578)	-1.63	0.103	[-.1118914, .0102448]
	Tp0	-.0086618	(.0120866)	-0.72	0.474	[-.0323512, .0150275]
	Tp1	-.0278829	(.021046)	-1.32	0.185	[-.0691323, .0133665]
	Tp2	-.0304754	(.0264044)	-1.15	0.248	[-.0822272, .0212763]
	Tp3	-.0466103*	(.0270014)	-1.73	0.084	[-.099532, .0063114]
	Tp4	-.0241149	(.0284365)	-0.85	0.396	[-.0798495, .0316196]
	Tp5	-.0491682*	(.0263759)	-1.86	0.062	[-.1008641, .0025276]
	Tp6	-.0293467	(.0328826)	-0.89	0.372	[-.0937954, .0351019]
	Tp7	-.0057207	(.0474893)	-0.12	0.904	[-.0987979, .0873566]
	Tp8	-.0327727	(.0335431)	-0.98	0.329	[-.098516, .0329706]
	Tp9	-.1063272**	(.0446458)	-2.38	0.017	[-.1938314, -.0188231]
	Tp10	-.0742695	(.0532605)	-1.39	0.163	[-.1786582, .0301191]
	Tp11	-.1578176**	(.063584)	-2.48	0.013	[-.28244, -.0331952]
	Tp12	-.106389	(.0661816)	-1.61	0.108	[-.2361026, .0233246]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Table 16. Standard Difference-in-Difference Results

	(1) Share of Manufactured Exports
Treated	1.564***
	(0.013)
Post	0.008
	(0.055)
Treated*Post	0.010
	(0.033)
GDP per capita	-0.393***
	(0.000)
FDI	0.000***
	(0.000)
WGI	-0.620***
	(0.000)
Observations	207.000
R-squared	0.818

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 17. Sensitivity Test

Section	Variable	Coefficient	Std. Error	z	p-value	95% CI
Average Treatment Effect on the Treated	ATT	-.0518535**	(.0223151)	-2.32	0.020	[-.0955902, -.0081168]
ATT by Cohort	CAverage	-.0398042**	(.0153907)	-2.59	0.010	[-.0699695, -.009639]
	C2012	-.1082417***	(.0382254)	-2.83	0.005	[-.183162, -.0333214]
	C2014	-.0075651	(.0111982)	-0.68	0.499	[-.0295132, .014383]
	C2016	-.0212239	(.0241959)	-0.88	0.380	[-.068647, .0261992]
	C2018	.0203074	(.0170704)	1.19	0.234	[-.01315, .0537648]
	C2019	-.0648955***	(.009935)	-6.53	0.000	[-.0843677, -.0454232]
	C2024	.0366235**	(.0176997)	2.07	0.039	[.0019327, .0713143]
ATT by Calendar Period	CPAverage	-.0532842**	(.0215072)	-2.48	0.013	[-.0954375, -.0111308]
	T2012	-.0181027	(.0148195)	-1.22	0.222	[-.0471485, .0109431]
	T2013	-.0739828**	(.0311747)	-2.37	0.018	[-.1350842, -.0128815]
	T2014	-.0936441**	(.0390617)	-2.40	0.017	[-.1702036, -.0170847]
	T2015	-.0481994	(.0390619)	-1.23	0.217	[-.1247593, .0283604]
	T2016	-.0481413***	(.0169088)	-2.85	0.004	[-.0812818, -.0150007]
	T2017	-.0501382*	(.0286833)	-1.75	0.080	[-.1063564, .00608]
	T2018	-.0734851***	(.0271652)	-2.71	0.007	[-.1267279, -.0202424]
	T2019	-.0784429***	(.0235503)	-3.33	0.001	[-.1246007, -.0322851]
	T2020	-.0352884	(.0398128)	-0.89	0.375	[-.11332, .0427432]
	T2021	-.0487109**	(.0238976)	-2.04	0.042	[-.0955494, -.0018724]
	T2022	-.0501092	(.0319167)	-1.57	0.116	[-.1126647, .0124463]
	T2023	-.0451869	(.0419256)	-1.08	0.281	[-.1273596, .0369857]

	T2024	-.029262	(.0237683)	-1.23	0.218	[-.0758471, .017323]
Event Study: Dynamic Effects	Pre_average	-.026787	(.0173782)	-1.54	0.123	[-.0608477, .0072736]
	Post_average	-.0653194***	(.0250243)	-2.61	0.009	[-.1143662, -.0162727]
	Tm6	-.0342536	(.0281478)	-1.22	0.224	[-.0894222, .020915]
	Tm5	-.0415187*	(.0236966)	-1.75	0.080	[-.0879631, .0049257]
	Tm4	-.0192361	(.0140664)	-1.37	0.171	[-.0468058, .0083336]
	Tm3	-.0181193	(.0144583)	-1.25	0.210	[-.0464569, .0102184]
	Tm2	-.0208075	(.0152917)	-1.36	0.174	[-.0507788, .0091637]
	Tp0	-.0247274**	(.009941)	-2.49	0.013	[-.0442113, -.0052434]
	Tp1	-.018071	(.0191446)	-0.94	0.345	[-.0555937, .0194516]
	Tp2	-.0572128**	(.0222085)	-2.58	0.010	[-.1007407, -.013685]
	Tp3	-.0695951***	(.0238188)	-2.92	0.003	[-.1162791, -.0229111]
	Tp4	-.0408713	(.0292944)	-1.40	0.163	[-.0982872, .0165445]
	Tp5	-.0443288*	(.0226249)	-1.96	0.050	[-.0886729, .0000153]
	Tp6	-.0420384	(.0287897)	-1.46	0.144	[-.0984652, .0143885]
	Tp7	-.0319368	(.0422187)	-0.76	0.449	[-.114684, .0508105]
	Tp8	-.0580786**	(.0269442)	-2.16	0.031	[-.1108883, -.0052689]
	Tp9	-.111657***	(.0413888)	-2.70	0.007	[-.1927776, -.0305364]
	Tp10	-.0799583*	(.0478531)	-1.67	0.095	[-.1737486, .013832]
	Tp11	-.1613123***	(.0538396)	-3.00	0.003	[-.266836, -.0557886]
	Tp12	-.109365*	(.0560298)	-1.95	0.051	[-.2191813, .0004513]

Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Publishing and archiving

Approved students' theses at SLU can be published online. As a student you own the copyright to your work and in such cases, you need to approve the publication. In connection with your approval of publication, SLU will process your personal data (name) to make the work searchable on the internet. You can revoke your consent at any time by contacting the library.

Even if you choose not to publish the work or if you revoke your approval, the thesis will be archived digitally according to archive legislation.

You will find links to SLU's publication agreement and SLU's processing of personal data and your rights on this page:

- https://libanswers.slu.se/en/faq/228318

☒ YES, I, Lovisa Lindholm, have read and agree to the agreement for publication and the personal data processing that takes place in connection with this

☒ YES, I, Sara Berg, have read and agree to the agreement for publication and the personal data processing that takes place in connection with this.

☐ NO, I/we do not give my/our permission to publish the full text of this work. However, the work will be uploaded for archiving and the metadata and summary will be visible and searchable.