MASTERARBEIT | MASTER'S THESIS

Titel | Title

The Impact of Trade Alliances and Trade-Restrictive Measures on Economic Growth: A Focus on the European Union

verfasst von | submitted by

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angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien | Vienna, 2026

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:	UA 066 913
Studienrichtung lt. Studienblatt | Degree programme as it appears on the student record sheet:	Masterstudium Applied Economics
Betreut von | Supervisor:	Univ.-Prof. Dipl.-Ing. Dr. Christine Zulehner Privatdoz.

Abstract

This thesis examines how trade alliances and tariff polices affect economic growth in the European Union (EU). The Synthetic Control Method as well as analyzing panel data is being used as econometric methods. Using scenario based simulations and counterfactual analyses, both short and long term effects on EU member states are assessed. The results indicate that trade alliances foster economic growth by expanding market access, encouraging specialization, and fostering innovation. Whereas, increases in tariffs reduce economic performance significantly. Combined scenarios show that trade alliances cannot offset the negative effects of protectionism. The study provides evidence based policy recommendations and shows that the EU's economic success depends on openness and cooperative trade strategies.

Abstract - DE

Diese Arbeit untersucht, wie Wirtschaftsbündnisse und Zollpolitik das Wirtschaftswachstum in der Europäischen Union (EU) beeinflussen. Die Synthetic Control Method sowie die Analyse von Panel Data werden hierfür als ökonometrische Methoden verwedent. Mithilfe szenariobasierter Simulationen und kontrafaktischer Analysen werden sowohl kurz- als auch langfristige Effekte für Mitgliedstaaten betrachtet. Die Ergebnisse zeigen, dass Handelsallianzen das Wachstum fördern, indem sie den Marktzugang erweitern, Spezialisierung begünstigen und Innovationen anregen, während Anhebungen von Zöllen die Wirtschaftsleistung signifikant verringern. Kombinierte Szenarien verdeutlichen, dass Allianzen die negativen Effekte des Protektionismus nicht vollständig ausgleichen können. Die Arbeit liefert evidenzbasierte Handlungsempfehlungen für die Politik und zeigt, dass der wirtschaftliche Erfolg der EU von Offenheit und kooperativen Handelsstrategien abhängt.

Contents

1 Introduction

The European Union (EU) has historically played a significant role in shaping global trade dynamics, leveraging its internal market and collective bargaining power to secure economic advantages for its member states on the world market. However, recent developments have challenged its unity and cohesiveness. Growing political fragmentation within member states, a marked shift toward nationalistic and Eurosceptic movements, and the rise of protectionist policies in major economies such as the United States and China have intensified debates surrounding the EU's future trade policy. These trends have raised critical questions about whether the EU should reconsider its traditionally open approach to trade or adopt more restrictive or defensive economic strategies.

In this context, understanding the interplay between trade alliances and restrictive measures such as tariffs is more important than ever. Trade policy is no longer a purely economic concern, it has become a central issue in broader political discourses with implications for national sovereignty, regional stability, and global competitiveness. As policymakers are confronted with increasing economic uncertainty and shifting geopolitical alliances, there is a growing need for evidence based analysis to inform strategic decision makers about trade integration and protection.

Despite the urgency of these issues, relatively few studies provide a comprehensive analysis of how trade alliances and restrictive trade measures jointly affect economic growth within the EU. Much of the existing literature focuses on isolated cases, such as the economic consequences of Brexit or the implications of U.S. tariff regimes, without offering a unified analytical framework that captures the dual dynamics of economic cooperation and protectionism. This thesis seeks to address this gap by conducting an empirical study that evaluates the combined impact of trade alliances and tariffs on economic performance within the EU. Through the use of scenario based simulations, this master thesis aims to provide actionable insights into the potential economic outcomes of different trade policy shocks. To that end, the thesis addresses the following research questions:

1. How do trade alliances impact economic growth?
2. How would a change in tariff policies affect the EU members' long-term economic path?

2 Literature Review

Beginning with David Ricardo's principle of comparative advantage classical trade theory emphasized efficiency gains from specialization, where countries benefit from producing goods in which they have relative productivity advantages. Building on this, the Heckscher–Ohlin model explained trade patterns through differences in factor endowments, predicting that countries would export goods in their abundant factors. Suggesting that liberalization benefits some domestic groups while harming others the Stolper–Samuelson theorem further highlighted the distributional consequences of trade.

These insights were later complemented by Krugman (1994) and his New Trade Theory, which introduced increasing returns to scale and product differentiation as explanations for intra-industry trade, particularly relevant for advanced economies such as the EU. The emergence of New Economic Geography reinforced the role of agglomeration effects and regional integration in shaping growth patterns (Krugman, 1998).

In addition, political economy perspectives challenged the assumption that trade policy is determined solely by efficiency considerations. Economists such as Rodrik (2011) emphasized the role of domestic institutions, interest groups, and political coalitions in shaping policy preferences. From this point of view, trade policy is not merely an economic choice but also a reflection of competing priorities between growth, sovereignty, and social protection. These theoretical debates provide the foundation for understanding the EU's dual role as a proponent of liberalization and a region grappling with protectionist pressures.

The European Union has historically been one of the most prominent actors in global trade governance. With its single market and common external tariffs, the EU has leveraged collective bargaining power to secure preferential agreements with a wide range of partners. Through its network of bilateral and multilateral free trade agreements (FTAs), the EU has sought not only economic gains but also geopolitical influence, embedding labor, environmental, and regulatory standards into its trade deals (Meunier & Nicoladis, 2013). However, the international trade environment has become increasingly volatile in recent decades. The rise of protectionism in the United States, exemplified by tariff escalations under the Trump administration (CONGRESS.GOV, 2025), and China's investment-led growth (European Central Bank, 2024) have introduced new challenges for the EU's traditionally open approach. Meanwhile, Brexit represented both a political and economic rupture, as the EU lost a major member state and was forced to renegotiate trade relations with the United Kingdom.
Within the EU itself, growing political fragmentation and the rise of Eurosceptic and nationalistic movements have complicated the consensus necessary for trade policymaking (European Commission, 2023). These internal pressures intersect with external shocks like global supply chain disruptions and geopolitical tensions raising questions about whether the EU should continue to champion liberalization or pivot toward a more defensive trade posture.

Trade alliances, particularly in the form of regional trade agreements (RTAs), have long been studied for their growth effects. Empirical evidence generally suggests that RTAs foster higher levels of trade and, in many cases, contribute positively to GDP growth (Frankel & Rose, 1997; Baldwin & Wyplosz, 2022). By reducing transaction costs, harmonizing regulations, and improving market access, alliances can enhance both static efficiency and dynamic innovation effects.

For the EU, integration through the Single Market Program and successive enlargements has consistently been linked to positive economic outcomes. Studies highlight that intra-EU trade expansion not only boosted aggregate growth but also fostered productivity gains through competition and knowledge spillovers (Campos et al.(2014)). The EU's external trade agreements with partners such as Canada (CETA) and Japan (EPA) further illustrate the strategic use of alliances to anchor growth and global competitiveness.

Yet, experts caution that the growth effects of alliances are not uniform. Distributional consequences, adjustment costs, and the risk of overdependence on particular partners can offset aggregate gains.

The literature on tariffs and growth presents more contested findings. Cross-country studies (e.g., Sachs & Warner (1995), Wacziarg & Welch (2008)) argue that openness, defined partly as low tariffs, is strongly associated with long-term growth. These studies position protectionist measures as detrimental to efficiency and innovation, limiting economies' ability to exploit comparative advantage.

However, more nuanced perspectives emphasize that tariffs may sometimes serve as tools for strategic development. Balassa (1965), for instance, highlights historical cases where temporary protection supported infant industries and facilitated industrial upgrading. Similarly, Grossman and Helpman (1995) suggest that political economy considerations often shape tariff policy, with governments balancing efficiency against demands for redistribution or national security.

In the EU context, the role of tariffs has been especially visible in disputes with external partners. U.S. tariffs on steel and aluminum, Chinese retaliatory

measures, and EU responses highlight the vulnerability of open economies to trade conflicts. Brexit similarly illustrated how the reintroduction of tariff and non-tariff barriers can reshape trade flows and growth trajectories.
Methodological advances, such as the Synthetic Control Method introduced by Abadie and Gardeazabal (2003) and later refined by Abadie, Diamond, and Hainmueller (2010), have been increasingly applied to evaluate the causal effects of trade shocks.

Although trade alliances and tariffs have each been extensively studied, their joint effects on economic performance remain underexplored. Much of the empirical literature isolates either the benefits of integration or the costs of protectionism, rarely considering how the two may interact within a single policy framework. Yet, in practice, states often pursue hybrid trade strategies, combining selective liberalization with targeted restrictions.
The case of Brexit illustrates this dual dynamic. On one hand, leaving the EU disrupted an established trade alliance, creating new tariff and non-tariff barriers. On the other hand, the UK simultaneously sought to negotiate new bilateral trade agreements, highlighting the complex interplay between fragmentation and realignment. Studies of Brexit's economic consequences (e.g., Born et al.(2019)) suggest that both alliance withdrawal and tariff reintroduction contributed to slower growth, but disentangling these effects remains challenging.
At the global level, the U.S.–China trade conflict further underscores the importance of analyzing alliances and tariffs together. Retaliatory tariffs coincided with a reshaping of supply chains and a strengthening of alternative trade partnerships in Asia. For the EU, these developments create indirect effects: while tariffs reduce global demand, new alliances may open compensatory opportunities.
Despite the relevance of these dynamics, existing empirical studies often fall short of capturing their simultaneous impact. This gap limits the ability to

assess how different combinations of alliances and restrictions shape long-term economic trajectories, particularly for highly integrated economies such as the EU. Addressing this shortcoming requires methodological tools capable of modeling counterfactual scenarios where alliances and tariffs shift in tandem, a challenge this thesis seeks to address.

The literature has increasingly turned to causal inference methods to evaluate the impact of major policy shifts. Among these, the Synthetic Control Method (SCM) developed by Abadie and Gardeazabal (2003) has gained prominence for its ability to construct credible counterfactuals. Their seminal application estimated the economic cost of terrorism in the Basque Country by comparing observed outcomes to a weighted combination of control regions.
Abadie, Diamond, and Hainmueller (2010) refined the approach, expanding its applicability to comparative case studies of policy interventions. Subsequent work has applied SCM to areas such as tobacco control, fiscal policy, and natural disasters, demonstrating its flexibility in contexts where randomized experiments are infeasible. Regarding trade it has been applied for analyzing the effects of introducing the Euro (e.g. Gabriel & Pessoa, 2024), Brexit(eg.g. Douch & Edwards, 2022), and more.

The review of existing literature highlights three key observations. First, theoretical debates emphasize both the efficiency gains of liberalization and the potential rationale for protectionism, but they rarely consider how these forces operate together in advanced regional blocs. Second, while the EU literature documents the benefits of integration and the challenges of external protectionism, studies typically examine these factors in isolation. Third, although Synthetic Control Methods have been successfully applied to various policy domains, their potential for analyzing the combined dynamics of trade alliances and tariffs remains underutilized.

This thesis seeks to fill these gaps by providing a comprehensive empirical assessment of how alliances and tariffs interact to shape economic outcomes within the EU. By applying SCM to scenario-based simulations, the study evaluates both short-term shocks and long-term trajectories of alternative trade policy strategies. In doing so, it contributes to both the academic debate and the policy discourse, offering evidence-based insights into whether the EU should maintain its open model or adopt more defensive trade measures in an era of rising global uncertainty.

3 Method

3.1 Trade Alliances

For simulating the effect of being part of the EU the study uses the Synthetic Control Method (SCM). The SCM is widely used in research to model a counterfactual scenario in situations of change.
The Synthetic Control Method (SCM) is a quantitative evaluation technique designed to estimate the causal effect of a specific intervention when randomized controlled trials are not feasible. It was originally introduced by Abadie and Gardeazabal (2003) and later refined by Abadie, Diamond, and Hainmueller (2010). SCM is particularly useful in comparative case studies where a single factor (e.g., a country, region, or firm) is exposed to a treatment like the introduction of a new policy, a natural disaster, or an economic shock while other similar units remain untreated which is the case for this study.
The key idea of this model is to construct a synthetic version of the treated unit by forming a weighted average of several untreated units from a donor pool. The weights are chosen so that the synthetic control closely matches the treated unit's characteristics and pre-treatment outcome trajectory. This synthetic control serves as an estimate of the counterfactual, the outcome that would have been observed in the absence of the treatment.

Formally consider $i = 1$ as the treated country and $j = 1, ..., N$ as the potential control units (the donor pool). Let $Y_{i,t}$ denote the outcome of interest for unit i at time t , and suppose the intervention occurs at time $t = 0$. The treatment effect for the treated unit at time t is:

$$\tau_t = Y_{1t}^{treated} - Y_{1t}^{untreated}$$

While $Y_{1t}^{treated}$ is the observed output at time t and $Y_{1t}^{untreated}$ is the generated output based on the simulation. Using the SCM the counterfactual is estimated using:

$$Y_{1t}^{untreated} = \sum_{j=1}^{N} w_j T_{jt}$$

The weights are selected to minimize the error between the treated unit's pre-treatment characteristics X_1 and weighted combination of the control unit's characteristics X_0W by solving:

$$\min_{W}(X_1 - X_0W)'V(X_1 - X_0W)$$

with V being a diagonal matrix that assigns relative importance to each predictor.

SCM offers several advantages: it relaxes the parallel trends assumption required in difference-in-differences, provides a transparent and visual approach to causal inference, and is well-suited to cases with limited treated units. However, its validity depends on the availability of a donor pool that can closely replicate the treated unit's pre-treatment characteristics, the length of the pre-treatment period, and the choice of predictors. If the pre-treatment match is poor, the resulting estimates may be unreliable.

The implementation is carried out using the `Synth` package in R, which estimate the optimal weights that minimize the pre-treatment errors. The choice of `Synth` is motivated by its widespread adoption in applied research and its consistent implementation of the method proposed by Abadie, Diamond, and Hainmueller (2010).

Throughout the thesis the dependent variable of interest is real GDP per capita.

In the first step the study uses all countries except for EU countries for the donor pool as potentially the enlargement might also have effect on their economic development for the control group. In the first stage of the analysis, the donor pool is intentionally kept broad to ensure that no potentially relevant control units are excluded prematurely. This allows the Synthetic Control Method (SCM) to begin from a maximally inclusive set of candidates, thereby reducing the risk of omitting suitable comparators.

After beginning with a maximally inclusive donor pool, the analysis proceeds by restricting the set of the potential donor pool in order to enhance the validity of the counterfactuals. The narrowing of the donor pool follows both methodological and substantial considerations. Methodologically, restricting the set of donors reduces the likelihood of overfitting the pre-treatment period, increases comparability by avoiding structurally dissimilar countries, and mitigates unobserved heterogeneity that could bias post-treatment estimates. Substantively, donor pools were refined to reflect groups of countries that are geographically proximate, economically comparable, or institutionally linked to the treated countries. This step ensures that the synthetic counterfactuals are constructed from units that plausibly represent realistic alternatives to EU membership.

For all enlargement a potential donor pool including all EU countries as of 2019. In addition two potential donor pools are set up for the specific countries.

For the 1995 enlargement (Austria, Finland, Sweden), two donor pools were specified. A narrow pool consisting of neighboring transition economies (e.g.,Iceland, Turkey, Ukraine, Belarus, Moldova, Albania) was used to provide regionally comparable counterfactuals. A broader version additionally incor-

porated advanced non-European OECD economies (United States, Canada, Japan, Australia, New Zealand, Israel, and Chile), ensuring that the synthetic controls were not overly constrained while still maintaining relevance.
For the 2004 enlargement, donor pools were tailored to subgroups of entrants that shared structural or geographical characteristics:

- Baltic states (Estonia, Latvia, Lithuania): A limited pool of Northern and Eastern European neighbors (Iceland, Ukraine, Belarus, Moldova, Russia, Azerbaijan, and Turkey) was used, with a broader specification again including selected OECD countries. This reflects the Baltics' historical, geographic, and post-Soviet economic context.

- Central European entrants (Czech Republic, Slovakia, Poland, Slovenia, and Hungary): The non-eupool emphasized regional comparators from the Balkans and post-socialist transition states (e.g., Bosnia and Herzegovina, North Macedonia, Albania, Ukraine, Belarus, Moldova, Turkey, and Azerbaijan), while the broader pool again included advanced OECD countries. This grouping recognizes the structural similarities and shared transition trajectories of Central European economies.

- Cyprus and Malta: Given their specific geographic and institutional circumstances, separate donor pools were created. For Cyprus, the non-eupool consisted of neighboring Mediterranean and Middle Eastern economies (Turkey, Israel, Jordan, Morocco, Tunisia, Albania, and Azerbaijan), while the broader pool added advanced OECD comparators and small European non-EU states. For Malta, the non-eupool similarly drew on Mediterranean and small neighboring economies, with a broader version incorporating advanced OECD economies. This ensured that both island economies were compared against units sharing similar structural constraints and regional contexts.

In all cases, four donor pool variants (EU vs. non-eu vs. small non-eu vs. unrestricted) were employed to evaluate the robustness of results with respect to donor selection. This dual approach balances the need for comparability with the need to avoid overly constraining the optimization. The final donor pool configurations thus reflect both theoretical relevance (regional, historical, and structural comparability) and empirical considerations (data quality and availability).

In addition to presenting the full post-treatment trajectories of the outcome variable, specific points in time are selected for closer comparison between treated and synthetic units. Following the approach of Abadie, Diamond, and Hainmueller (2010), the treatment effect is interpreted as the difference between the observed outcome and its synthetic counterpart at each point in time after the intervention. While the entire trajectory provides the most complete picture, focusing on selected horizons enhances interpretability and comparability across treated units. In this study, effects are reported at one year after accession (short-term adjustment), five years after accession (medium-term dynamics), and ten years after accession (longer-run structural effects). These benchmarks capture both immediate impacts and more persistent consequences of EU membership, and they align with standard practice in the synthetic control literature, where medium- and longer-run evaluations are often emphasized.

3.2 Tariffs

This study employs an econometric panel data framework to analyze the relationship between trade openness, common external tariff levels, and economic growth among the twenty-five EU member states as of 2004, focusing on trade relations between the EU and non-member countries. The analysis covers the period 2004–2019, which offers a balanced panel and encompasses both economic expansion and crisis periods, allowing for a richer understanding of the dynamics under different macroeconomic conditions. The empirical strategy is adapted from the specification proposed by S. M. Toufiqul Huq Sowrov in *Trade Openness, Tariffs and Economic Growth: An Empirical*

Study from Countries of G-20, but is modified to suit the institutional and economic characteristics of the EU context. The theoretical foundation is rooted in both neoclassical and endogenous growth theory: the former emphasizes the role of capital, labor, and technology in determining output, while the latter incorporates trade openness and policy variables as channels through which economies can influence their long-run growth trajectories via capital accumulation, technology transfer, and productivity gains.

The model specification follows a log-linear functional form, which is common in growth regressions due to its interpretability in elasticity terms and its ability to reduce skewness in macroeconomic variables. The dependent variable is the natural logarithm of real GDP at constant 2020 prices. The main explanatory variables are trade openness, measured as the ratio of the sum of exports and imports to GDP, and the weighted average tariff rate. Control variables include the natural logarithm of general government expenditure, gross domestic capital formation as a share of GDP, household final consumption expenditure as a share of GDP, and the natural logarithm of total employment for the working-age population. The baseline empirical specification is therefore:

$$
\begin{aligned}
ln(RGDP_{it}) = \beta_0 + \beta_1 ln(Trade_{it}) + \beta_2 ln(Tariffs_{it}) + \beta_3 ln(G_{it}) + \beta_4 ln(GDCF_{it}) + ln(\beta_5 HH_{it}) + \\
\beta_6 ln(E_{it}) + \epsilon_{it}
\end{aligned}
$$

where i indexes countries and t indexes the time in years.

$Trade_{it}$ is the sum of all exports and imports of an area in a fiscal year. This symbolizes the trade openness of an area. $Tariffs_{it}$ display the weighted tariffs. G_{it} measures the government expenditure. $GDCF_{it}$ shows the gross domestic capital formation which is commonly used as an indicator for an area's investments (World Bank Group, 2025). HH_{it} displays the total household consumption and E_{it0} employment as a percentage of the labor force which is defined as a country's population aged 15 or older (World Bank

Group, 2025).
Economic theory suggests that trade openness should have a positive impact on output by increasing market size and facilitating technology transfer, while tariff barriers should have a negative impact by restricting these channels. Gross domestic capital formation is expected to contribute positively to growth, whereas the effects of government expenditure and household consumption are theoretically ambiguous, depending on their composition. Employment is anticipated to exert a positive influence as it reflects the labor input available to the economy.

Estimation begins with the pooled Ordinary Least Squares (OLS) model, which treats the data as a single cross-section without distinguishing between countries. This serves as a baseline. However, in the context of panel data, unobserved heterogeneity across countries may bias pooled OLS estimates if such differences are correlated with the explanatory variables. To address this, the analysis proceeds to estimate a Fixed Effects (FE) model, which controls for all unobserved, time-invariant country characteristics by allowing each cross-sectional unit to have its own intercept. This is particularly important in the EU context, where structural, institutional, and geographic factors are likely to be both persistent and relevant to economic performance. For completeness, a Random Effects (RE) model is also estimated, which treats country-specific effects as random draws uncorrelated with the regressors. The choice between FE and RE is guided by the Hausman specification test, which formally assesses whether the RE assumption of orthogonality between country effects and regressors is tenable. A rejection of the null hypothesis in this test supports the FE estimator as the more consistent choice.
Across all specifications, heteroskedasticity and potential autocorrelation in the residuals are addressed by computing heteroskedasticity-robust standard errors clustered at the country level. This ensures that statistical inference remains valid even when the error variance differs across countries or when

residuals are serially correlated within a country's time series. Multicollinearity is assessed through variance inflation factors, and variable transformations such as logging real GDP, government expenditure, and employment are applied to improve interpretability and model fit. The regression analysis is complemented by descriptive and graphical analyses, including scatter plots of tariffs against GDP per capita, time-series trends of tariffs and output, and grouped GDP per capita trajectories based on EU accession year, providing a visual addition to the quantitative results.
Just as for the analysis of alliance R is being used for this part as well as the entrire empirical work of this thesis. The lm() function is used for OLS estimation, plm for panel estimators, and pgmm for dynamic panel estimation. Heteroskedasticity-robust and clustered standard errors are computed using the sandwich package, and statistical tests such as Breusch–Pagan and Hausman are implemented via lmtest and plm. Graphical outputs are created with ggplot2, and results are formatted for inclusion in the thesis using stargazer and xtable.

3.3 Combined Effects

To complement the baseline regression analysis, a counterfactual simulation to evaluate how alternative tariff regimes might have influenced economic performance in selected EU member states is implemented. The exercise focuses on Austria and Estonia, representing the 1995 and 2004 accession cohorts respectively, in order to assess whether tariff effects differ depending on the timing of EU membership.
The simulation is based on a fixed-effects (FE) panel regression estimated on a dataset of synthetic countries constructed from weighted donor pools. This approach is consistent with the synthetic control literature, where treated countries are approximated by a convex combination of similar donor economies, thereby reducing bias from idiosyncratic shocks or structural differences. The

estimation window covers 2004–2014, while the post-period 2015–2019 is used for simulation.

The initial specification mirrors the baseline growth regression and includes trade openness, tariffs, government expenditure, gross domestic capital formation, household consumption, and employment. However, diagnostic tests reveal severe multicollinearity among trade, government expenditure, capital formation, and household consumption, with pairwise correlations exceeding 0.94 and variance inflation factors far above conventional thresholds. This degree of collinearity undermines the stability and interpretability of coefficient estimates. To mitigate this problem, the specification is reduced to include only tariffs and employment, which remain relatively uncorrelated and theoretically central to growth models.

The simulation proceeds in three steps. First, baseline predictions of log GDP per capita are generated using the FE coefficients and country fixed effects, and are subsequently exponentiated into GDP levels. Second, counterfactual scenarios are constructed by assigning tariffs to hypothetical levels of 2.5 percent, 5 percent, and 10 percent, while holding employment at observed values. Third, the predicted counterfactual GDP trajectories are compared with actual observed GDP, and the results are visualized in time-series plots for each country.

As in the baseline analysis, heteroskedasticity-robust standard errors are computed using the sandwich estimator, and fixed effects ensure that unobserved, time-invariant country characteristics are controlled for. All estimation and simulations are conducted in R, using the plm package for fixed-effects regression, lm for OLS comparison, and ggplot2 for graphical presentation.

This counterfactual framework allows an assessment of the marginal effect of tariffs on GDP, controlling for structural country characteristics. By explicitly addressing multicollinearity and contrasting observed and simulated outcomes, the analysis provides a transparent and policy-relevant exploration of how different tariff regimes could have altered growth trajectories in the

EU context.

4 Data

The empirical analysis of the introduction of tariffs in this thesis is based on a balanced panel of annual macroeconomic indicators for 24 European Union (EU) member states over the period 2004–2019. The country sample includes all EU members which are part of the EU since at least 2004, namely[1]: Austria*, Belgium, Cyprus**, Czech Republic**, Denmark, Estonia**, Finland*, France, Germany, Greece, Hungary**, Ireland, Italy, Latvia**, Lithuania**, Luxembourg, Malta**, Netherlands, Poland**, Portugal, Slovakia**, Slovenia**, Spain and Sweden*.
The focus on this group ensures comparability in terms of institutional framework and data availability while covering economies with varying levels of development and openness.
Regarding the effect of being part of the EU the analysis focuses exclusively on the countries being part of the two enlargements which were set when the European Union was already developed to an extend and the economy was not affected by a major financial crises such it would be the case for the entry of Romania and Bulgaria in 2007 (European financial crises database, 2023). In addition the 2004 enlargement has been the largest enlargement of the European Union as of today (European Commission, 2025).
For the analysis itself the study is also using data of non-EU countries as this needed to estimate models which are not correlated with the treatment country.
The time coverage from 2004 to 2019 is determined by the availability of consistent tariff data and ensures that the sample reflects the post-enlargement EU economic environment. For some variables, earlier data exist, but the shorter time span ensures comparability across all indicators and countries.

[1] *part of 1995 enlargement, **part of 2004 enlargement

After cleaning the data for missing entries to work with balanced data, the study ends up with 117 countries for the alliance analysis and all EU countries for the tariff analysis. An overview of those countries can be found in the appendix 5.
The data is retrieved from two main sources, the Eurostat statistical database and the World Bank Data Bank. Both institutions apply internationally harmonized statistical methods, which ensure consistency across countries and over time.
The core measure of economic performance used in this study is *real GDP per capita* at constant 2010 prices (chain-linked volumes), sourced from Eurostat. This measure accounts for inflation and differences in population size, thereby enabling meaningful comparisons of economic growth between countries. Multiplication of the per capita values by population size provides the aggregate real GDP, which is subsequently transformed into logarithmic form for econometric estimation.

To capture the degree of integration into global markets, the analysis uses two measures of trade policy and performance. *Trade openness* is calculated as the sum of exports and imports of goods and services relative to GDP, expressed in percentage terms. Export and import data are obtained from Eurostat, while GDP levels are taken from the World Bank. The second measure, *weighted average tariffs*, reflects the average applied tariff rate weighted by the share of each product in total imports. This indicator is drawn from the World Bank's World Development Indicators and captures the protectionist stance of each country's trade regime.

Additional macroeconomic controls are included to account for structural and policy differences:

- **Government expenditure** — total expenditure of the general government, following the COFOG classification, expressed in logarithmic form.

- **Gross domestic capital formation (GDCF)** — total investment in fixed assets, as a share of GDP.

- **Household final consumption expenditure** — transformed into a GDP share to standardize across economies.

- **Employment** — total number of employed persons aged 20–64, in logarithmic form, from Eurostat's Labor Force Survey.

- **Unemployment rate** — harmonized Eurostat measure, expressed as a percentage of the labor force.

- **Consumer price index (CPI)** — annual CPI data from the World Bank, used as a proxy for domestic price inflation (OECD, 2025).

Preliminary descriptive statistics indicate considerable variation in real GDP per capita across the sample. Figure 1 presents the evolution of real GDP per capita for the three countries that joined the EU in 1995: Austria, Finland, and Sweden. These economies already belonged to the group of advanced industrial nations prior to accession, and their GDP levels were considerably higher than those of later entrants.

Between 1990 and 1995, all three countries experienced moderate fluctuations

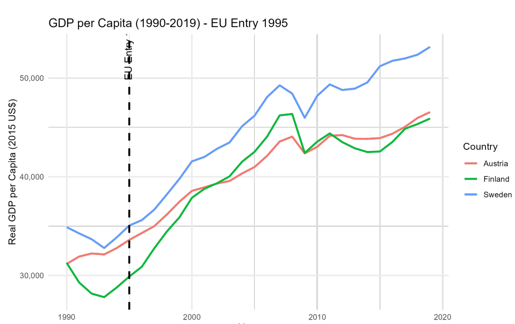

Figure 1: Real GDP 1995 entries in constant 2015 USD

associated with the European recession of the early 1990s. After joining the EU, they displayed robust growth, benefiting from deeper integration into the Single Market. Finland shows the strongest upward trajectory, driven by its technology sector and export performance, while Austria and Sweden also exhibit steady long-term expansion. The financial crisis of 2008 caused a visible dip in output, but recovery was relatively swift, and by 2019 all three countries had surpassed their pre-crisis GDP peaks. Overall, the 1995 entrants demonstrate stable and sustained economic growth within a high-income bracket, contrasting with the faster but more volatile convergence paths of the 2004 entrants.

Figure 2 displays the evolution of real GDP per capita (in constant 2015

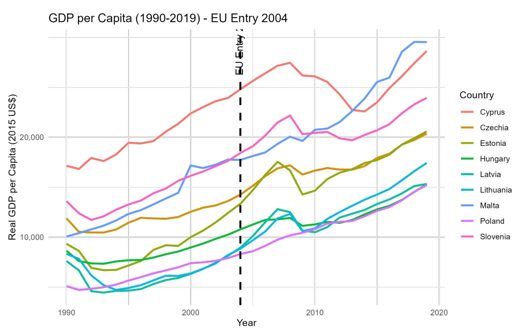

Figure 2: Real GDP 2004 entries in constant 2015 USD

USD) for the ten countries that joined the European Union in 2004. A general upward trend can be observed across all economies, although starting levels and growth trajectories differ substantially. At the beginning of the 1990s, these Central and Eastern European countries exhibited relatively low income levels, reflecting the ongoing transition from centrally planned to market economies. Following EU accession in 2004, growth accelerated markedly, particularly in the Baltic states (Estonia, Latvia, and Lithuania) and in Poland, supported by increased trade integration, structural fund inflows, and foreign direct investment. The 2008–2009 financial crisis caused a temporary slowdown in most countries, with the Baltic states showing sharp contractions

followed by rapid recoveries. From 2010 onward, GDP per capita continued to rise steadily, narrowing the income gap with Western Europe. By 2019, several of the 2004 entrants had roughly doubled their income levels compared to the early 2000s, indicating substantial real convergence within the EU.
Similarly, the external tariff rates remain low across the EU but differ slightly

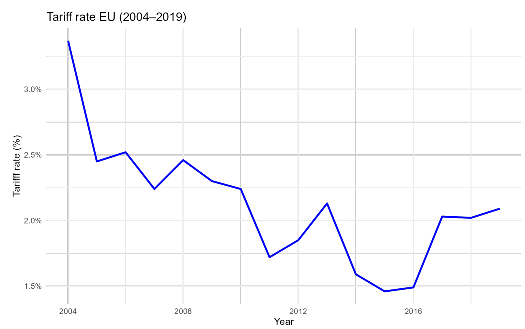

Figure 3: European Tariff rates 2004 - 2018

due to product composition and special trade arrangements. As Figure 3 illustrates the development of the average European Union's tariff rate between 2004 and 2018. Overall, there is a clear downward trend: tariff rates decreased from above 3 percent in 2004 to around 2 percent in 2018. Some fluctuations occurred, particularly around 2010 and 2014, which can be linked to shifts in EU trade policy and global economic events such as the financial crisis or changes in World Trade Organization (WTO) negotiations.
In general, the data indicate a gradual liberalisation of trade within this period, consistent with the EU's broader economic and trade strategies aimed at fostering open markets and global competitiveness.
This study is using France as a representative example for analyzing EU tariff rates because, since the establishment of the Common Commercial Policy (Article 207 TFEU), all EU member states have applied a common external tariff. This means that individual countries no longer set their own tariff rates; instead, they follow the unified EU customs policy. Therefore, the tariff rate observed for France accurately reflects the tariff level applied across the

entire European Union, making it a valid proxy for the EU as a whole.

The dataset thus combines measures of economic output, openness, fiscal stance, investment, consumption, and labor market performance, providing a comprehensive basis for examining the relationship between trade policies, openness, and economic growth in the EU context. Graphical representations and summary statistics for the main variables are presented in the following section, offering an initial visual inspection of patterns and correlations that inform the econometric analysis.

In addition to observe the development of the parameters themselves it is also crucial to consider changes within and outside the EU that influenced those developments.
Between 1990 and 2019 the European Union underwent several fundamental transformations that shaped its economic environment and are directly relevant when assessing the impact of membership on GDP growth. The early 1990s marked the institutional consolidation of European integration. With the signing of the Maastricht Treaty in 1992, which entered into force in 1993, the European Union was formally established, and the path toward Economic and Monetary Union was laid out (European Parliament, 2025). At the same time, the completion of the Single Market program in 1993 deepened the free movement of goods, services, capital, and people (European Commission, 2025). These developments provided the institutional and economic framework which later enlargements would unfold, and they created the structural conditions that could influence growth trajectories of both existing and new members.
The first enlargement of the EU in this time period took place in 1995 by Austria, Sweden and Finland (European Commission, 2025). Three years later in 1998 the European Central Bank was established, and in 1999 the euro was introduced as a common currency for participating states with

banknotes and coins following in 2002 (European Central Bank, 2022). The euro removed exchange-rate risks and transaction costs among members, while also requiring macroeconomic coordination and fiscal discipline. For countries that adopted it, the euro represented a major institutional change with potential effects on trade, investment, and growth dynamics, distinct from but related to EU membership itself.

The most transformative enlargement took place in 2004, when ten countries Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia entered the Union (European Commission, 2024). This was the largest single expansion in EU history and, unlike the 1995 round, it consisted mainly of lower-income transition economies. Their accession reshaped the economic composition of the EU, expanded the single market eastwards, and activated mechanisms such as structural funds and cohesion policy that were designed to foster convergence.

The subsequent decade was dominated by the global financial crisis of 2008 and the ensuing euro area sovereign-debt crisis. These shocks hit EU economies unevenly, interrupting growth and creating divergence between member states. For any empirical analysis, this crisis period must be accounted for, as it represents an external shock that could obscure or exaggerate the growth effects of accession.

Finally, institutional reforms such as the Lisbon Treaty, which entered into force in 2009, and the creation of post-crisis financial mechanisms like the European Stability Mechanism, reflected the EU's evolving capacity to respond to economic shocks (European Parliament, 2025). By the end of the 2010s, the growth trajectories of the 2004 entrants showed evidence of substantial convergence, though with differences across countries and growing political tensions around the Union itself. In addition three more countries entered the EU in this time period, Romania and Bulgaria in 2007 and Croatia in 2013 (European Commission, 2025).

5 Results

5.1 Trade Alliances

To estimate the counterfactual GDP trajectories for EU accession countries, synthetic control units were constructed using three donor pool configurations: unrestricted, non-eu, and non-eu+ OECD (hereafter referred to as small non-eu). These configurations allow for a robustness check of the treatment effects and help assess the sensitivity of the results to the choice of donor countries. Following the assumption that the non-eu and eu donor pool provides the best simulation this study will focus on those results in the upcoming part.

The composition of the synthetic controls reveals notable patterns. For the Baltic states Estonia, Latvia, and Lithuania the synthetic units were consistently dominated by Belarus, indicating that these countries shared similar pre-accession economic dynamics. For instance, Estonia's non-eu synthetic control is composed of 15.8 percent Iceland, 18.5 percent Belarus, 30.9 percent Chile, and 36.7 percent Moldova, while Latvia's and Lithuania's SCM are almost entirely based on Belarus (90.7 percent [LVA]/84.6 percent [LTU]). Regarding the European for both Estonia and Lithuania Croatia makes up the biggest share of the synthetic country (71.7 percent [EST]/76.6 percent [LTU]). For Latvia Bulgaria is the only country synthesizing the country in the model.

In Central Europe, countries such as Czech Republic, Slovakia, Poland, and Hungary exhibit more diverse synthetic compositions. The Czech Republic's non-eu donor pool includes 11.6 percent Japan, 36.6 percent Iceland, and 51.8 percent, while Slovakia's synthetic is heavily weighted toward Albania (42 percent) and New Zealand (20.7 percent). Poland's synthetic control is primarily composed of Albania (38.6 percent), Chile (25.6 percent), and Israel (23.6 percent). For all of them Bulgaria and Croatia are making up the majority of the synthetic country.

Southern EU entrants Cyprus, Malta, and Slovenia show distinct patterns. Cyprus' non-eu synthetic control is split among Japan (67.3 percent) and Chile (32.7 percent). Malta's synthetic control is dominated by Chile (62.9 percent), New Zealand (26.66 percent), and Japan (10.5 percent). While Slovenia's is heavily based on Albania (75.2 percent) and Chile (18.2 percent). In contrast to Malta and Slovenia which European synthetic controls are dominated by Romania, Cyprus is with 99.1 percent nearly entirely based on Portugal.

The 1995 entrants Austria, Finland, and Sweden rely more heavily on western European and OECD countries. Austria's non-eu synthetic model almost entirely consists of the USA with 99.9 percent and the European model on Portugal (63.4 percent), Luxembourg (23.9 percent), and Germany (12.7 percent). Finland is mostly composed of Japan (63.9 percent), and Iceland (29.7 percent) as well as Great Britain (83.9 percent) and Germany (16.1 percent) with a European donor pool. And lastly, Sweden's synthetic control is subject to Japan (46.3 percent),Iceland (28.3 percent), and the USA (25.1 percent) with a non-European donor pool and Portugal (69.1 percent) and Luxembourg (20.6 percent) when using European counties.

These compositions reflect the effort to construct credible counterfactuals by combining countries with similar economic trajectories and institutional characteristics prior to EU accession. The variation in donor pool weights across countries and specifications underscores the importance of donor pool selection in synthetic control analysis. All compositions can be found in detail in the Appendix in Figure 6.

The estimated treatment effects of EU accession on GDP are presented for three post-accession horizons: one, five, and ten years. These effects are derived using the Synthetic Control Method and are reported both in absolute terms (in millions of constant 2015 USD) and as percentage changes relative to the synthetic counterfactual. The analysis is conducted across four donor pool specifications, including an unrestricted donor pool, a non-eu, a small non-eu (restricted), and an EU pool, to assess the robustness of the results and the sensitivity to donor pool composition. All results are displayed in Figure 1.

For the 1995 enlargement, the results indicate generally positive effects, though with substantial variation across donor pools and over time. Austria experienced very modest short-term gains under the EU donor pool, with a 0.57 percent increase in GDP one year after accession. However, the effect turned negative in the medium and long run, reaching –2.68 percent after five years and –4.33 percent after ten years. The non-EU pool also produced negative long-run effects (–3.71 percent after ten years), while the small non-EU pool suggested comparatively strong positive effects throughout, underscoring the sensitivity of Austria's estimated gains to donor pool composition.

Finland exhibited consistently positive medium- and long-term effects across all donor pools, though short-term outcomes differed. Under the EU donor pool, GDP declined slightly one year after accession (–2.95 percent) but increased to 3.85 percent after five years and 7.64 percent after ten years. The non-EU pool yielded substantially larger long-run gains, estimating an 18.09 percent increase after ten years, while the unrestricted specification suggested even stronger effects (28.48 percent). These results indicate that Finland's accession benefits materialized gradually and were more pronounced when compared to non-EU counterfactuals.

Sweden also benefited from EU accession, though estimated effects vary markedly across donor pools. Under the EU specification, GDP declined slightly in the short and medium run (–0.78 percent after one year and –2.40 percent after five years) before turning marginally positive after ten years (0.52 percent). In contrast, the unrestricted and non-EU pools imply sizable long-run gains of 19.36 percent and 7.02 percent, respectively. The small non-EU pool produces positive short-term but negative long-term effects, again highlighting donor sensitivity.

Turning to the 2004 enlargement countries, the Baltic states—Estonia, Latvia, and Lithuania—show strong and mostly robust positive effects, particularly in the short run. Estonia experienced large gains across all donor pools, with GDP increasing by 13.44 percent one year after accession under the EU pool and by over 28 percent under the non-EU and small non-EU pools. Although the magnitude declined over time, the EU specification still shows a substantial 22.03 percent increase ten years after accession.

Lithuania displays a more mixed pattern. Under the EU donor pool, GDP fell sharply in the short run (–20.29 percent one year after accession) but recovered over time, reaching a positive effect of 12.25 percent after ten years. In contrast, the non-EU and small non-EU pools indicate consistently positive effects throughout, with long-run gains of 11.74 percent and 19.17 percent, respectively.

Latvia experienced strong and persistent positive effects across all specifications. Under the EU pool, GDP increased by 20.37 percent one year after accession and remained above 20 percent even after ten years. The non-EU and small non-EU pools, however, suggest that long-run effects were much smaller, falling to around 3 percent after ten years, again emphasizing sensitivity to the choice of counterfactual.

Slovakia shows steadily increasing gains over time under all donor pools. The EU donor pool estimates a 6.05 percent increase in GDP one year after accession, rising to 13.42 percent after five years and 18.25 percent after ten years. The non-EU pool implies even stronger long-run gains (21.03 percent), while the small non-EU pool yields more moderate but still positive effects.

The Czech Republic presents contrasting results across donor pools. Under the EU specification, GDP increased by 2.82 percent after one year and by 13.11 percent after ten years, suggesting sizable long-term benefits. In contrast, the non-EU and small non-EU pools yield negative long-run effects of –2.32 percent and –2.90 percent, respectively, pointing to considerable uncertainty regarding the magnitude—and even the direction—of accession effects for the Czech Republic.

Slovenia stands out as the only country with persistently large negative treatment effects across all donor pools and time horizons. Under the EU donor pool, GDP declined by 137.03 percent one year after accession and by 174.82 percent after ten years, broadly consistent with the severe negative effects estimated under alternative specifications.

Cyprus experienced strong positive short- and medium-term effects across all donor pools. Under the EU specification, GDP increased by 8.94 percent after one year and 13.83 percent after five years. While the long-run EU effect remains positive at 3.25 percent, the unrestricted and small non-EU pools suggest sizable negative effects after ten years, indicating a reversal of early gains.

Malta displays consistently positive treatment effects across all donor pools and horizons. Under the EU donor pool, GDP increased by 16.55 percent one year after accession and by 25.50 percent after ten years. Comparable magnitudes are found under the non-EU and small non-EU pools, suggesting that Malta's small and open economy benefited robustly from EU integration.

In summary, the table reveals predominantly positive GDP effects of EU accession, particularly for the 2004 entrants and over longer horizons. However, results vary substantially across countries and donor pool specifications, underlining the importance of robustness checks in synthetic control analyses. The heterogeneous outcomes reflect differences in initial economic conditions, institutional readiness, and the speed with which countries were able to capitalize on EU membership.

Table 1: Treatment effects of EU accession (Synthetic Control Method)

Treated Country	years after	absolute treatment effect				relative treatment effect (in pct)			
		unrestricted	non-eu	small non-eu	eu	unrestricted	non-eu	small non-eu	eu
AUT	1.000	206.041	-519.442	7962.980	265.864	0.442	-1.113	17.068	0.570
AUT	5.000	3177.090	-1399.577	5931.082	-1395.611	6.107	-2.690	11.401	-2.683
AUT	10.000	2485.101	-2075.550	3072.360	-2422.485	4.438	-3.706	5.487	-4.326
FIN	1.000	2270.195	1080.645	1294.338	-1093.486	6.133	2.919	3.497	-2.954
FIN	5.000	9376.795	5973.099	1874.525	1711.129	21.100	13.441	4.218	3.850
FIN	10.000	14645.292	9299.093	2414.623	3930.451	28.482	18.085	4.696	7.644
SWE	1.000	1566.968	194.994	1663.049	-316.288	3.883	0.483	4.121	-0.784
SWE	5.000	6335.299	1696.923	-301.689	-1099.616	13.836	3.706	-0.659	-2.402
SWE	10.000	10050.271	3642.876	-1004.958	270.136	19.357	7.016	-1.936	0.520
CYP	1.000	716.435	6269.159	7478.784	3575.566	1.792	15.678	18.703	8.942
CYP	5.000	2236.115	8508.091	7767.736	6122.317	5.052	19.223	17.550	13.833
CYP	10.000	-10831.312	-895.873	-3212.929	1192.982	-29.542	-2.443	-8.763	3.254
CZE	1.000	-717.713	-987.660	-2481.856	941.841	-2.147	-2.955	-7.426	2.818
CZE	5.000	2740.202	969.338	-1529.866	4220.265	6.801	2.406	-3.797	10.474
CZE	10.000	2111.079	-909.563	-1140.197	5148.850	5.374	-2.315	-2.903	13.107
EST	1.000	7603.501	7823.577	7828.220	3713.906	27.509	28.305	28.322	13.437
EST	5.000	7696.667	10474.667	10144.323	5608.806	22.272	30.311	29.355	16.230
EST	10.000	3829.330	8846.125	8248.400	7669.309	11.002	25.415	23.698	22.034
LTU	1.000	6875.883	2893.474	3397.088	-4432.487	31.472	13.244	15.549	-20.288
LTU	5.000	9120.153	5270.191	5864.678	-369.896	29.982	17.326	19.280	-1.216
LTU	10.000	10724.956	3813.589	6226.271	3978.197	33.016	11.740	19.167	12.246
LVA	1.000	6897.820	3880.046	3480.258	4186.953	33.557	18.876	16.931	20.369
LVA	5.000	9529.977	5228.291	4770.559	6882.239	33.204	18.216	16.621	23.979
LVA	10.000	7288.825	925.214	763.974	5755.386	25.710	3.264	2.695	20.301
MLT	1.000	5051.903	4543.967	7461.758	5293.835	15.792	14.204	23.325	16.548
MLT	5.000	7196.991	5991.359	8620.063	4639.518	19.878	16.548	23.809	12.814
MLT	10.000	11027.848	7537.250	10483.883	10384.439	27.084	18.511	25.748	25.504
SLV	1.000	-1593.063	-2893.189	-3510.365	-10745.167	-20.316	-36.896	-44.766	-137.029
SLV	5.000	-3318.465	-4820.301	-5583.542	-16770.159	-38.122	-55.375	-64.143	-192.654
SLV	10.000	-4721.347	-6090.602	-6235.076	-16306.479	-50.617	-65.297	-66.846	-174.820
SVK	1.000	-2540.367	2119.066	-401.130	1320.764	-11.641	9.710	-1.838	6.052
SVK	5.000	1690.454	7227.750	3036.353	3959.659	5.727	24.486	10.287	13.415
SVK	10.000	4239.055	6531.081	4478.826	5666.822	13.652	21.034	14.425	18.251

5.2 Tariffs

Table 2 reports the results of the baseline regression of real GDP (in natural logarithms) on trade openness, tariff levels, and a set of macroeconomic controls. Column (1) presents the pooled OLS estimates, whereas Column (2) shows the country Fixed Effects (FE) results, which account for time-invariant heterogeneity across member states.

The key variable of interest, tariff rates, is consistently estimated to exert a negative and statistically significant effect on GDP. In the OLS specification, a one-percentage-point increase in the average tariff rate is associated with a reduction of approximately 4.7 percent in real GDP ($\beta = -0.098$). It is important to note that this parameter is not significant on a alpha level equal or below 5 percent. When controlling for unobserved country characteristics in the FE model, the effect remains negative and significant, though smaller in magnitude ($\beta = -0.023$, $p < 0.001$). This pattern suggests that part of the variation captured in OLS reflects cross-country differences in structural characteristics, but even within countries over time, higher tariff barriers are associated with weaker economic performances. These findings are in line with trade theory, which predicts that tariffs restrict market access, hinder technology diffusion, and ultimately depress output growth.

Turning to the control variables, trade shows a strongly positive association with GDP in the OLS specification ($\beta = 0.857$, $p < 0.001$), but the effect becomes small and statistically more insignificant under the FE estimator ($\beta = 0.261$, $p < 0.05$). This suggests that much of the positive correlation observed in pooled OLS is driven by long-run differences between countries (e.g., small open economies versus larger domestic-market economies), rather than short-run within-country changes in trade integration.

Government expenditure also displays a notable divergence between specifications: in OLS, it is positively correlated with GDP ($\beta = 0.053$, $p < 0.001$), while in FE the relationship turns negative ($\beta = -0.002$, no significance ≤ 0.05). This may reflect the fact that richer countries tend to sustain higher levels of public spending, while within a given country, temporary expansions in government outlays often occur during downturns (counter-cyclical fiscal policy), which is captured in the FE results.

Gross domestic capital formation (GDCF) enters positively in the OLS specification ($\beta = 0.20$, $p < 0.01$), consistent with neoclassical growth theory, but loses in significance in the FE model and turns slightly negative with close to no effect ($\beta = -0.005$, $p < 0.05$), suggesting that its explanatory power largely comes from cross-sectional variation rather than within-country dynamics. Household consumption does not show any effect in this analysis for both the OLS as well as the FE model which can be explained by multicollinearity.

Finally, employment is robustly positive and highly significant in both models, as expected. In the OLS estimation, a one percent change in employment is associated with a 0.920 percent increase in GDP ($p < 0.001$), while the FE estimator yields a slightly higher but still highly significant coefficient ($\beta = 1.053$, $p < 0.001$). This underlines the central role of labor input in driving output across EU economies.

In terms of overall model performance, the OLS regression explains roughly about 94 percent of the variation in GDP, while the FE specification accounts for 60 percent. The drop in explanatory power when moving to FE is typical in panel data settings, as fixed effects absorb country-specific averages, but the FE estimator is considered more reliable for causal inference as it mitigates bias from unobserved heterogeneity.

In sum, the results provide robust evidence that higher tariffs are detrimental to economic performance of EU member states, even after controlling for country-specific characteristics and other macroeconomic factors. The estimates thus support the theoretical expectation that tariff reductions, by promoting openness and integration, contribute positively to growth within and of the Union.

Table 2: OLS & FE Model

	Dependent variable:	
	ln(RGDP)	
	OLS	*linear* Fixed Effects
	(1)	(2)
ln(Trade)	0.857^{***}	0.261^{*}
	(0.132)	(0.102)
ln(Tariff)	-0.047	-0.023^{***}
	(0.049)	(0.003)
ln(Government Expenditure)	0.053^{***}	-0.002
	(0.005)	(0.001)
ln(GDCF)	0.020^{**}	0.005^{*}
	(0.007)	(0.002)
ln(Household Consumption)	0.00000^{***}	0.00000
	(0.00000)	(0.00000)
ln(Employment)	0.920^{***}	1.053^{***}
	(0.023)	(0.140)
ln(Constant)	15.295^{***}	
	(0.297)	
Observations	253	253
adjusted R^2	0.939	0.600
Note:	*p<0.05; **p<0.01; ***p<0.001	

5.3 Combined Effects

To complement the baseline regression analysis, a counterfactual simulation has been implemented to evaluate how alternative tariff regimes might have influenced economic performance in selected EU member states. The analysis focuses on Austria and Estonia, representing the 1995 and 2004 EU enlargement cohorts, respectively, to assess whether the impact of tariffs differs depending on the timing of EU membership.

The counterfactual analysis builds on the synthetic control estimates obtained from real data, which capture the country-specific effects of EU accession under different donor pool specifications. These estimates are combined with the tariff elasticities derived from the fixed-effects specification discussed in the previous subsection in order to simulate GDP trajectories under alternative tariff regimes. Given the strong multicollinearity detected among several control variables in the baseline regressions, the simulations focus exclusively on the coefficients of tariffs and employment, which remain relatively uncorrelated and theoretically central to growth models.

Regarding the parameters of the simulated data, only the coefficients on tariffs and employment are compared across real and simulated outcomes for both the OLS and FE models. Looking at the non-eu donor pool of the 1995 enlargement an its OLS specification, the effect of tariffs decreases by 0.011 percentage points when moving from real to simulated data, while statistical significance increases from non-significance on a 5 percent level to below the 5 percent level. At the same time, the employment coefficient increases substantially from 0.92 to 1.692, with both estimates remaining statistically significant on a below 1 percent level. In the FE model, the simulated data imply that a 1 percent increase in tariffs leads to a 0.048 percent reduction in GDP, compared to a 0.023 percent decrease in the real-data estimation. A 1 percent increase in employment is associated with a 0.092 percent increase in GDP in the simulation, compared to 1.053 percent in the baseline FE specification. Both coefficients remain significant at the 1 percent level.

When extending the donor pool to include EU member states resulting in the corresponding synthesized data , the OLS model yields a tariffs coefficient of -0.049 compared to and an employment coefficient of 0.121 (non-significant), while the FE model produces a tariffs coefficient of -0.038 and an employment coefficient of 0.78. Although the magnitude of the coefficients differs under the EU specification, the signs and levels of statistical significance remain consistent with the baseline results. While these estimates are not intended for direct real-world prediction, they provide an important parameter basis for the simulation of combined effects.
The counterfactual simulations therefore use the FE coefficients to predict GDP trajectories under alternative tariff levels of 2.5 percent, 5 percent, and 10 percent, holding employment at observed values. Figure 4 illustrates the resulting counterfactual GDP paths for Austria. An overview of the corresponding percentage changes is reported in Table 7 in the appendix.

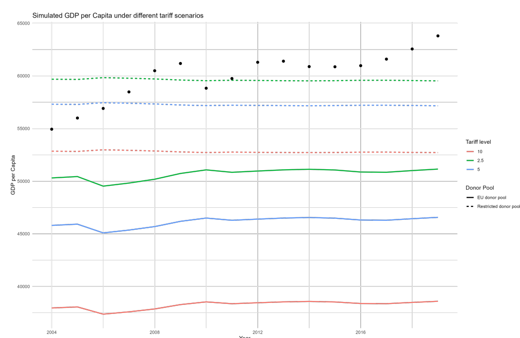

Figure 4: Combined treatment effects

The results indicate that higher tariffs are consistently associated with lower GDP growth relative to observed outcomes. The magnitude of the effect differs depending on the donor pool specification. For Austria, the simulated changes remain relatively moderate across tariff scenarios; however, higher tariff rates lead to increasingly negative GDP deviations over time. In particular, a tariff rate of 10 percent results in a noticeable reduction in GDP by 2019, with the decline being more pronounced when the EU donor pool is used compared to the non-EU donor pool. This suggests that Austria's economic performance is more sensitive to tariff increases when benchmarked against EU member states, potentially reflecting the importance of preferential intra-EU trade relations and a high degree of economic integration within the European Union.

Overall, the counterfactual framework allows for a transparent assessment of the marginal effects of tariffs while controlling for unobserved, time-invariant country characteristics. The simulations highlight that even moderate increases in tariffs could have substantial negative impacts on economic performance, particularly for more recently integrated EU member states. These findings underscore the importance of tariff policy in shaping growth trajectories within the EU context.

Table 3: Model Estimation with non-eu donor pool

	Dependent variable:			
	ln(RGDP)			
	OLS 1995	FE 1995	OLS 2004	FE 2004
	(1)	(2)	(3)	(4)
ln(trade)	0.000		0.000^{**}	
	(0.000)		(0.000)	
ln(tariffs)	-0.026^{**}	-0.016^{***}	-0.031^{***}	-0.048^{***}
	(0.012)	(0.001)	(0.011)	(0.006)
ln(G)	0.000		0.000^{***}	
	(0.000)		(0.000)	
ln(gdcf)	0.000		0.000^{*}	
	(0.000)		(0.000)	
ln(HHC)	0.000		0.000^{***}	
	(0.000)		(0.000)	
ln(e)	1.692^{***}	0.092	0.032^{***}	0.050^{***}
	(0.605)	(0.174)	(0.006)	(0.003)
Constant	3.676		10.064^{***}	
	(2.469)		(0.067)	
Observations	33	33	99	99
adjusted R^2	0.938	0.243	0.617	0.474
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 4: Model Estimation with eu donor pool

	Dependent variable:			
	ln(RGDP)			
	OLS 1995	FE 1995	OLS 2004	FE 2004
	(1)	(2)	(3)	(4)
ln(trade)	-0.000		0.000^{**}	
	(0.000)		(0.000)	
ln(tariffs)	-0.049^{**}	-0.038^{***}	-0.027^{***}	-0.026^{***}
	(0.020)	(0.005)	(0.005)	(0.005)
ln(G)	0.000^{***}		0.000^{***}	
	(0.000)		(0.000)	
ln(gdcf)	0.000^{***}		0.000	
	(0.000)		(0.000)	
ln(HHC)	-0.000^{***}		-0.000^{*}	
	(0.000)		(0.000)	
ln(e)	0.121	0.578^{***}	0.815^{***}	0.533^{*}
	(0.322)	(0.037)	(0.226)	(0.275)
Constant	10.328^{***}		6.808^{***}	
	(1.302)		(0.900)	
Observations	33	33	99	99
adjusted R^2	0.865	0.320	0.819	0.563
Note:		*p<0.1; **p<0.05; ***p<0.01		

6 Discussion

The findings of this thesis provide a nuanced understanding of how trade alliances and tariff policies interact to shape economic performance within the European Union. The analysis, based on the Synthetic Control Method, demonstrates that trade alliances have a clear and positive effect on long-term economic growth, while increases in tariffs on non EU products and services tend to reduce growth potential. The combined scenario, in which both variables change simultaneously, reveals that although alliances can mitigate some of the negative effects of protectionism, their capacity to do so is limited. In sum, these results underline the structural dependence of the EU's economic prosperity on open trade and integration.

The strong growth effects associated with trade alliances are consistent with the predictions of classical and modern trade theory. By expanding market access, enhancing specialization, and promoting intra-industry trade, alliances increase productivity and competitiveness. This echoes findings by Frankel and Romer (1999) and Baldwin (2022), who show that regional integration generates both static efficiency gains and dynamic innovation effects. Within the EU, such effects are amplified by regulatory harmonization and cross-border investment, which reduce transaction costs and foster long-term institutional convergence. The results of this study confirm these theoretical expectations and demonstrate empirically that alliance-based integration remains a central driver of economic performance in Europe.

However, the analysis also shows that the benefits of trade alliances are not evenly distributed among member states. Core economies such as Germany, France, and the Netherlands, which are deeply embedded in global value chains, experience stronger positive effects than other economies. This pattern aligns with the arguments of New Economic Geography, which emphasize that regions with existing industrial capacity and agglomeration advantages are better positioned to exploit the gains from integration. The results further suggest that the benefits of alliances materialize gradually. The long-term trajectory of positive growth effects highlights that the advantages of integration accumulate over time through institutional adaptation, learning, and innovation diffusion, factors often overlooked in short-term policy debates.

In contrast, the simulations involving changes in tariff policies reveal a largely negative relationship between protectionism and economic growth. The introduction or increase of tariffs reduces efficiency, trade volumes, and competitiveness over the long term. These findings are consistent with liberal economic perspectives such as those of Sachs and Warner (1995) and Wacziarg and Welch (2008), which identify openness as a key determinant of sustained growth. Yet, the results also show that the short-term effects of tariffs are more ambiguous. In a few cases, moderate protection appeared to provide temporary relief to specific sectors, suggesting limited infant industry effects as described by Balassa (1965). These gains, however, proved to be transitory. Over time, the negative impact of reduced trade and innovation spillovers outweighed the initial benefits, leading to slower aggregate growth. This confirms that, while tariffs can serve tactical or political purposes, they are unlikely to provide a viable long-term growth strategy within the highly integrated EU market.

The joint analysis of alliances and tariffs produces the most policy-relevant insight. When considered together, the results demonstrate that the growth-promoting effects of alliances are constrained by the presence of trade barriers. In other words, deep integration and protectionism cannot easily coexist. While strong alliances can cushion some of the damage caused by tariffs, they cannot fully offset their impact. This asymmetry highlights an important structural dependency: the benefits of alliances derive from openness, not isolation. Once tariff barriers are introduced, the mechanisms through which alliances generate growth such as specialization, innovation, and efficiency gains are disrupted. This finding has direct implications for the EU's current trade debate. As political pressures for strategic autonomy and defensive trade policies increase, policymakers must recognize that protectionist measures can undermine the very integration mechanisms that have historically supported European prosperity.

The results thus speak directly to the EU's broader strategic dilemma. While growing geopolitical tensions and global supply chain vulnerabilities justify calls for resilience and diversification, these goals should not be pursued through protectionist means. Instead, the empirical evidence suggests that the EU's competitiveness depends on maintaining and deepening open alliances both internally and externally, while complementing them with targeted industrial or technological policies that enhance strategic capacity without imposing trade barriers. The findings also reinforce the importance of coordination among member states. Divergent national trade policies, combining liberalization in some areas and protectionism in others, risk eroding the collective benefits of integration and creating internal distortions that weaken the single market. Beyond the policy sphere, this study contributes to the academic debate by integrating theoretical and political economy perspectives. It confirms the core insights of traditional trade theory regarding the efficiency of openness but also acknowledges the institutional and distributive constraints emphasized by Rodrik (2011) and others. By applying the Synthetic Control Method, this thesis demonstrates how modern causal inference techniques can be used to evaluate complex and overlapping policy shocks, offering a methodological contribution that extends beyond the EU context.

Nonetheless, several limitations must be recognized. The analysis is based on scenario simulations, meaning that results depend on the quality of data and model specification. While the Synthetic Control Method provides credible counterfactuals, it cannot capture all behavioral adjustments or policy feedback effects that may occur in reality. In combination with the challenge of the selection of the potential donor pool this might lead to significant estimation errors. The choice of potential donor countries is especially challenging because trade alliances and tariff policies are inherently systemic and may generate cross-country spillovers, identifying a set of fully untreated and structurally comparable control units is difficult. While the donor pool was constructed to maximize pre-treatment fit and economic similarity, alternative donor compositions could yield slightly different counterfactual trajectories. This sensitivity reflects a broader limitation of applying Synthetic Control Methods to highly integrated economies such as the EU, where policy changes may indirectly affect non-treated units. Consequently, the estimated effects should be interpreted as conservative approximations rather than precise point estimates, capturing the direction and relative magnitude of the impact rather than its exact size.

Moreover, the study focuses primarily on macroeconomic outcomes such as GDP growth, leaving aside sectoral and distributional impacts that may shape political preferences toward trade policy. Non-tariff barriers, regulatory divergence, and institutional reforms were also beyond the scope of this analysis, though they increasingly define the modern trade environment. Finally, the time horizon covered may underestimate long-term structural transformations, such as technological adaptation or the reorganization of production networks following major policy shifts.

Despite these limitations, the evidence presented here leads to a clear conclusion: trade alliances remain a cornerstone of economic growth and resilience of the European Union and its members, whereas tariff-based protectionism poses a long-term threat to competitiveness. While hybrid strategies combining openness and selective protection may offer short-term political appeal, they are economically inconsistent and risk undermining the foundations of the Single Market. In an era of heightened global uncertainty, the EU's most effective path forward lies in deepening integration, maintaining openness, and developing coordinated, innovation-oriented responses to external challenges rather than retreating behind tariff barriers.

7 Conclusion

This thesis examines how trade alliances and tariff policies jointly shape economic growth in European Union member states. Motivated by growing political fragmentation, global protectionist tendencies, and renewed debates on strategic autonomy, the study aimed to provide an empirical foundation for assessing the consequences of different trade policy trajectories. Using the Synthetic Control Method and scenario-based simulations, the analysis explored how the EU's economic performance responds to varying configurations of openness and restriction. The results provide clear and consistent evidence: trade alliances promote long-term growth, tariffs constrain it, and mixed strategies that attempt to combine both approaches generate ambiguous and often suboptimal outcomes.

The empirical findings align with classical and modern trade theories, which emphasize the efficiency and innovation gains derived from openness and integration. Alliances enhance competitiveness by expanding markets, harmonizing regulations, and encouraging specialization. Within the EU, these mechanisms are reinforced by institutional convergence and cross-border investments, magnifying their impact on productivity and growth. The positive association between alliances and economic performance observed in this study therefore supports the theoretical expectation that integration remains a cornerstone of European (economic) prosperity.

Conversely, the analysis demonstrates that tariff increases consistently depress economic growth over time. While short-term effects may include limited sectoral protection or temporary fiscal gains, these benefits are outweighed by efficiency losses, reduced trade volumes, and slower innovation over a longer period. The results confirm that protectionism undermines the very channels (competition, specialization, and knowledge diffusion) through which economies achieve sustainable expansion and growth. This finding carries significant policy implications for the European Union, where calls for defensive trade measures and industrial protection have re-emerged in response to global uncertainty. The evidence presented here cautions that such strategies, even if politically expedient, are economically counterproductive in the long run.

The combined scenario analysis reveals a crucial structural insight: trade alliances cannot fully compensate for the negative effects of tariffs. Although integration provides resilience by facilitating adjustment and maintaining investment flows, its benefits erode when protectionist barriers disrupt the underlying mechanisms of openness. This asymmetry underscores the incompatibility of deep integration and restrictive trade policies. The European Union thus faces a fundamental policy choice whether to reaffirm its commitment to open trade and cooperative alliances or to risk gradual economic stagnation through defensive protectionism even if this is only set against non members and other trade alliances.

Beyond empirical contributions, this thesis advances the methodological and conceptual debate on trade policy evaluation. By applying the Synthetic Control Method to simulated scenarios, the study demonstrates the potential of causal inference techniques for analyzing policy interactions that cannot be directly observed in the real world. This approach offers a robust framework for examining counterfactual trade configurations, allowing researchers and policymakers to estimate the dynamic effects of alternative strategies in a credible and transparent manner. Moreover, the integration of economic and political perspectives throughout the analysis bridges the gap between theoretical efficiency arguments and the institutional realities of EU policy-making. Several limitations must be acknowledged. The results depend on the accuracy of data inputs and model specifications, and real-world feedback effects such as political responses, market adjustments, or shifts in investor expectations cannot be fully captured in simulated settings. Additionally, the study focuses primarily on aggregate economic outcomes, leaving aside the sectoral and distributive dimensions of trade policy that often determine political support for integration. Future research could extend this work by incorporating firm-level or regional data, examining non-tariff measures, and exploring how digital trade and green transition policies interact with traditional trade frameworks. Further refinement of synthetic control applications to multi-treatment or networked settings would also enhance their relevance for complex policy analysis.

In conclusion, the findings of this thesis reaffirm the enduring importance of openness and cooperation for the European Union's economic trajectory. Trade alliances remain a powerful engine of growth, innovation, and stability, while tariff-based protectionism, despite its short-term appeal, threatens to undermine these achievements. The path forward for the EU should not be a retreat from global markets but a strategic deepening of integration, one that combines openness with targeted investments in technology, sustainability, and resilience. By embracing this approach, the EU can strengthen its position in an increasingly uncertain global economy and ensure that integration continues to serve as a foundation for shared prosperity and political cohesion across the continent.

8 Appendix

Country Overview

Table 5: Included Countries

"Albania"	"Czechia"	"Lao PDR"	"Romania"
"Algeria"	"Denmark"	"Latvia"	"Russian Federation"
"Angola"	"Dominican Republic"	"Libya"	"Samoa"
"Australia"	"Ecuador"	"Lithuania"	"Saudi Arabia"
"Austria"	"El Salvador"	"Luxembourg"	"Senegal"
"Azerbaijan"	"Equatorial Guinea"	"Madagascar"	"Singapore"
"Bahrain"	"Estonia"	"Malawi"	"Slovak Republic"
"Bangladesh"	"Eswatini"	"Malaysia"	"Slovenia"
"Barbados"	"Ethiopia"	"Maldives"	"Solomon Islands"
"Belarus"	"Fiji"	"Mali"	"South Africa"
"Belgium"	"Finland"	"Malta"	"Spain"
"Belize"	"France"	"Mauritania"	"Sri Lanka"
"Benin"	"Gabon"	"Mauritius"	"St. Lucia"
"Bhutan"	"Germany"	"Mexico"	"St. Vincent and the Grenadines"
"Bolivia"	"Ghana"	"Moldova"	"Sudan"
"Botswana"	"Greece"	"Mongolia"	"Suriname"
"Brazil"	"Guatemala"	"Morocco"	"Sweden"
"Brunei Darussalam"	"Guinea-Bissau"	"Myanmar"	"Switzerland"

"Bulgaria"	"Haiti"	"Nepal"	"Syrian Arab Republic"
"Burkina Faso"	"Honduras"	"Netherlands"	"Tanzania"
"Burundi"	"Hungary"	"New Zealand"	"Thailand"
"Cabo Verde"	"Iceland"	"Niger"	"Togo"
"Cameroon"	"India"	"Nigeria"	"Tonga"
"Canada"	"Indonesia"	"Norway"	"Trinidad and Tobago"
"Central African Republic"	"Iraq"	"Pakistan"	"Tunisia"
"Chad"	"Ireland"	"Panama"	"Turkiye"
"Chile"	"Israel"	"Papua New Guinea"	"Ukraine"
"China"	"Italy"	"Paraguay"	"United Kingdom"
"Colombia"	"Jamaica"	"Peru"	"United States"
"Costa Rica"	"Japan"	"Philippines"	"Uruguay"
"Cote d'Ivoire"	"Jordan"	"Poland"	"Vanuatu"
"Croatia"	"Kenya"	"Portugal"	"Zambia"
"Cyprus"	"Kuwait"	"Qatar"	NA

Synthetic Control Method: Composition Table

Table 6: Composition Table

Country	Donor Pool Type	Weight	Donor
AUT	eu	0,127	DEU
AUT	eu	0,239	LUX
AUT	eu	0,634	PRT
AUT	non-eu	0,999	USA
AUT	small non-eu	1	ISL
AUT	unrestricted	0,001	ALB, BGR, BRA, BRB, BWA, COL, DZA, ECU, GHA, HTI, IRQ, JOR, LAO, LKA, MDG, MNG, MWI, NGA, POL, ROU, SUR, SWZ, TTO, TUR, URY, ZAF
AUT	unrestricted	0,002	AZE, BDI, BLR, CAF, CIV, CMR, CPV, CRI, DOM, ESP, ETH, GAB, GNB, GNQ, HND, HUN, IDN, IND, ISR, JAM, KEN, LCA, MAR, MDA, MMR, MRT, MUS, NPL, PNG, PRY, RUS, SLB, TGO, TUN, TZA, UKR, VCT
AUT	unrestricted	0,003	BEN, BFA, BGD, BLZ, BOL, GTM, IRL, LBY, MEX, MLI, NER, NZL, PAK, PHL, SEN, SVN, SYR, TCD, TON, VUT, WSM
AUT	unrestricted	0,004	AUS, BTN, CAN, CHL, FJI, FRA, GBR, GRC, PAN

AUT	unrestricted	0,005	CHN, DNK, ISL, ITA, MYS, THA, USA
AUT	unrestricted	0,006	BEL, NLD, PER, PRT, SAU
AUT	unrestricted	0,007	DEU, NOR
AUT	unrestricted	0,01	HRV
AUT	unrestricted	0,011	SGP
AUT	unrestricted	0,019	QAT
AUT	unrestricted	0,028	CHE
AUT	unrestricted	0,03	BHR
AUT	unrestricted	0,053	MDV
AUT	unrestricted	0,055	KWT
AUT	unrestricted	0,096	BRN
AUT	unrestricted	0,107	LUX
AUT	unrestricted	0,313	JPN
CYP	eu	0,009	LUX
CYP	eu	0,991	PRT
CYP	non-eu	0,327	CHL
CYP	non-eu	0,673	JPN
CYP	small non-eu	1	ISR
CYP	unrestricted	0,001	NOR
CYP	unrestricted	0,01	IRL
CYP	unrestricted	0,017	KWT
CYP	unrestricted	0,031	MDV
CYP	unrestricted	0,032	HRV
CYP	unrestricted	0,041	NLD
CYP	unrestricted	0,067	TON
CYP	unrestricted	0,085	PRY
CYP	unrestricted	0,11	SGP
CYP	unrestricted	0,111	QAT
CYP	unrestricted	0,192	JPN
CYP	unrestricted	0,3	THA
CZE	eu	0,001	HRV, NLD

CZE	eu	0,019	LUX
CZE	eu	0,299	ROU
CZE	eu	0,68	PRT
CZE	non-eu	0,116	JPN
CZE	non-eu	0,366	ISL
CZE	non-eu	0,518	CHL
CZE	small non-eu	0,382	ALB
CZE	small non-eu	0,618	ISL
CZE	unrestricted	0,001	AUS, BDI, BEL, BEN, BFA, BGD, BGR, BLR, BOL, BRA, BRN, CAF, CHL, CIV, CMR, COL, CPV, CRI, DEU, DNK, DOM, ECU, ETH, FJI, GBR, GHA, GRC, GTM, HND, HRV, HTI, HUN, IND, IRL, IRQ, ISL, ISR, ITA, JAM, KEN, MAR, MDA, MDG, MNG, MRT, MUS, MWI, NGA, NLD, NPL, NZL, PER, PHL, POL, PRT, PRY, ROU, SEN, SLB, SVN, SYR, TGO, THA, TON, TUR, URY, USA, VUT, WSM
CZE	unrestricted	0,002	BHR, CHN, GNQ, IDN, LAO, PNG, TZA
CZE	unrestricted	0,003	BTN, MYS
CZE	unrestricted	0,011	SGP
CZE	unrestricted	0,014	KWT
CZE	unrestricted	0,015	MEX
CZE	unrestricted	0,023	MMR
CZE	unrestricted	0,029	TCD
CZE	unrestricted	0,109	GNB

CZE	unrestricted	0,119	AZE
CZE	unrestricted	0,291	MDV
CZE	unrestricted	0,298	NOR
EST	eu	0,097	ROU
EST	eu	0,185	BGR
EST	eu	0,717	HRV
EST	non-eu	0,158	ISL
EST	non-eu	0,166	BLR
EST	non-eu	0,309	CHL
EST	non-eu	0,367	MDA
EST	small non-eu	0,001	UKR
EST	small non-eu	0,007	RUS
EST	small non-eu	0,168	ISL
EST	small non-eu	0,236	BLR
EST	small non-eu	0,277	MDA
EST	small non-eu	0,31	TUR
EST	unrestricted	0,001	LUX
EST	unrestricted	0,011	BRN
EST	unrestricted	0,037	JPN
EST	unrestricted	0,074	DZA
EST	unrestricted	0,115	BLR
EST	unrestricted	0,136	SGP
EST	unrestricted	0,146	GNB
EST	unrestricted	0,479	AZE
FIN	eu	0,161	DEU
FIN	eu	0,839	GBR
FIN	non-eu	0,001	CAN, CHL, ISR, NZL
FIN	non-eu	0,002	ALB
FIN	non-eu	0,057	MDA
FIN	non-eu	0,297	ISL
FIN	non-eu	0,639	JPN
FIN	small non-eu	0,088	ALB

FIN	small non-eu	0,912	ISL
FIN	unrestricted	0,001	AUS, BEL, BFA, BHR, BLZ, CAF, CAN, CHE, CHN, CIV, CMR, CPV, DEU, DNK, FJI, FRA, GAB, GBR, GRC, ISL, ISR, ITA, MDV, MLI, MRT, MUS, MYS, NER, NLD, NOR, NPL, NZL, PAN, PHL, PRT, SAU, SEN, SGP, SVN, SYR, TCD, TGO, THA, TUN, USA, VUT, WSM
FIN	unrestricted	0,003	MAR
FIN	unrestricted	0,102	LBY
FIN	unrestricted	0,115	BRN
FIN	unrestricted	0,342	BRB
FIN	unrestricted	0,382	JPN
HUN	eu	0,053	ESP
HUN	eu	0,083	HRV
HUN	eu	0,101	GRC
HUN	eu	0,147	PRT
HUN	eu	0,294	ROU
HUN	eu	0,323	BGR
HUN	non-eu	0,003	UKR
HUN	non-eu	0,045	CHL
HUN	non-eu	0,068	MDA
HUN	non-eu	0,092	TUR
HUN	non-eu	0,129	ISL
HUN	non-eu	0,135	ALB
HUN	non-eu	0,227	BLR
HUN	non-eu	0,301	ISR
HUN	small non-eu	0,034	UKR
HUN	small non-eu	0,059	BLR

HUN	small non-eu	0,184	TUR
HUN	small non-eu	0,349	ISL
HUN	small non-eu	0,375	ALB
LTU	eu	0,089	ESP
LTU	eu	0,165	BGR
LTU	eu	0,746	HRV
LTU	non-eu	0,154	JPN
LTU	non-eu	0,846	BLR
LTU	small non-eu	0,09	ISL
LTU	small non-eu	0,33	UKR
LTU	small non-eu	0,58	BLR
LTU	unrestricted	0,001	JPN
LTU	unrestricted	0,044	BRN
LTU	unrestricted	0,138	DZA
LTU	unrestricted	0,205	LBY
LTU	unrestricted	0,611	AZE
LVA	eu	1	BGR
LVA	non-eu	0,093	ISR
LVA	non-eu	0,907	BLR
LVA	small non-eu	0,051	ISL
LVA	small non-eu	0,07	TUR
LVA	small non-eu	0,879	BLR
LVA	unrestricted	0,037	BLR
LVA	unrestricted	0,057	BRN
LVA	unrestricted	0,424	ALB
LVA	unrestricted	0,482	AZE
MLT	eu	0,447	PRT
MLT	eu	0,552	ROU
MLT	non-eu	0,105	JPN
MLT	non-eu	0,266	NZL
MLT	non-eu	0,629	CHL
MLT	small non-eu	0,301	MAR

MLT	small non-eu	0,699	ISR
MLT	unrestricted	0,001	AGO, AZE, BRB, BRN, ECU, LUX, MDA, MWI, QAT, ROU, RUS, SAU, SUR, TUR, UKR, ZMB
MLT	unrestricted	0,002	ALB, BDI, BOL, BRA, CAF, CHE, CHN, CIV, COL, CRI, DOM, DZA, ETH, GAB, GHA, GNB, GRC, GTM, HND, HRV, HTI, HUN, IDN, IRQ, ISL, ISR, JAM, KEN, LAO, LKA, MDG, MEX, MLI, MMR, MNG, NGA, NZL, PAK, PNG, POL, SDN, SEN, SLB, SVN, SWZ, TTO, TZA, URY, ZAF
MLT	unrestricted	0,003	AUS, BEL, BEN, BFA, BGD, BGR, BLR, BTN, BWA, CAN, CMR, DEU, DNK, ESP, GBR, GNQ, IND, ITA, LCA, MRT, MUS, NER, NLD, NPL, PER, PHL, PRY, SYR, TCD, TGO, TON, USA
MLT	unrestricted	0,004	BHR, FRA, NOR, PRT
MLT	unrestricted	0,005	FJI, WSM
MLT	unrestricted	0,006	CHL, THA, TUN
MLT	unrestricted	0,007	MDV
MLT	unrestricted	0,025	SGP
MLT	unrestricted	0,039	VCT
MLT	unrestricted	0,04	IRL
MLT	unrestricted	0,046	CPV
MLT	unrestricted	0,047	KWT

MLT	unrestricted	0,051	VUT
MLT	unrestricted	0,054	BLZ
MLT	unrestricted	0,174	JPN
MLT	unrestricted	0,262	MYS
POL	eu	0,017	ESP
POL	eu	0,052	HRV
POL	eu	0,167	ROU
POL	eu	0,763	BGR
POL	non-eu	0,004	BLR
POL	non-eu	0,117	TUR
POL	non-eu	0,236	ISR
POL	non-eu	0,257	CHL
POL	non-eu	0,386	ALB
POL	small non-eu	0,16	TUR
POL	small non-eu	0,217	ISL
POL	small non-eu	0,623	ALB
SLV	eu	0,001	HRV
SLV	eu	0,297	BGR
SLV	eu	0,702	ROU
SLV	non-eu	0,027	MDA
SLV	non-eu	0,04	UKR
SLV	non-eu	0,182	CHL
SLV	non-eu	0,752	ALB
SLV	small non-eu	0,067	ISL
SLV	small non-eu	0,933	ALB
SLV	unrestricted	0,001	AUS, BEL, BEN, BHR, CAN, CHE, DEU, DNK, ESP, ETH, FRA, GBR, GNQ, IRL, ISL, ITA, JPN, LBY, NLD, NOR, NZL, PRT, RUS, SAU, SGP, UKR, USA

SLV	unrestricted	0,002	AGO, AZE, BDI, BGD, BLR, BLZ, BOL, BRB, BTN, CHL, CIV, CMR, DOM, ECU, FJI, GAB, GHA, GRC, GTM, HRV, HUN, IDN, IND, IRQ, ISR, KEN, LAO, LCA, MDA, MDV, MEX, MLI, MMR, MRT, MUS, MWI, MYS, NGA, PAK, PHL, PNG, ROU, SLB, SUR, SVN, SYR, THA, TON, TTO, TUR, TZA, URY, VUT, WSM
SLV	unrestricted	0,003	BGR, BRA, BWA, CRI, HND, HTI, JAM, MDG, MNG, NPL, POL, PRY, TUN, VCT, ZAF
SLV	unrestricted	0,004	COL, LKA, PER, TCD, ZMB
SLV	unrestricted	0,006	CAF
SLV	unrestricted	0,007	SWZ
SLV	unrestricted	0,008	SDN
SLV	unrestricted	0,01	KWT
SLV	unrestricted	0,016	GNB
SLV	unrestricted	0,017	BFA
SLV	unrestricted	0,112	NER
SLV	unrestricted	0,115	ALB
SLV	unrestricted	0,16	PAN
SLV	unrestricted	0,167	CPV
SLV	unrestricted	0,177	CHN
SVK	eu	0,001	GBR
SVK	eu	0,002	PRT
SVK	eu	0,036	IRL
SVK	eu	0,242	HRV
SVK	eu	0,718	BGR

SVK	non-eu	0,095	MDA
SVK	non-eu	0,11	TUR
SVK	non-eu	0,166	ISR
SVK	non-eu	0,207	NZL
SVK	non-eu	0,42	ALB
SVK	small non-eu	0,311	ISL
SVK	small non-eu	0,689	ALB
SVK	unrestricted	0,001	ALB, BDI, BEN, BFA, BGD, BOL, BTN, BWA, CAF, CHL, CHN, CIV, CMR, COL, CRI, DOM, ECU, ETH, GAB, GHA, GNB, GRC, GTM, HND, HTI, HUN, IND, ISR, JAM, KEN, LKA, LUX, MDV, MLI, MNG, MRT, MUS, MYS, NER, NPL, PAK, PER, PHL, PNG, QAT, SEN, SGP, SLB, SWZ, SYR, TCD, TGO, THA, TON, URY, WSM, ZAF
SVK	unrestricted	0,002	IDN, MDG, MEX, MWI, SDN, SVN, TZA, ZMB
SVK	unrestricted	0,003	LAO, NGA
SVK	unrestricted	0,005	IRQ, ROU
SVK	unrestricted	0,007	BRA, POL
SVK	unrestricted	0,01	MMR
SVK	unrestricted	0,011	AZE
SVK	unrestricted	0,016	KWT
SVK	unrestricted	0,082	DZA
SVK	unrestricted	0,106	GNQ
SVK	unrestricted	0,109	IRL
SVK	unrestricted	0,121	HRV
SVK	unrestricted	0,193	TUR

SVK	unrestricted	0,244	BRB
SWE	eu	0,001	DEU
SWE	eu	0,101	BGR
SWE	eu	0,206	LUX
SWE	eu	0,691	PRT
SWE	non-eu	0,001	ALB
SWE	non-eu	0,251	USA
SWE	non-eu	0,283	ISL
SWE	non-eu	0,463	JPN
SWE	small non-eu	1	ISL
SWE	unrestricted	0,001	AZE, BEL, BEN, BFA, BGD, BOL, BTN, CAF, CHN, DEU, ETH, FJI, GTM, MYS, NER, NLD, NOR, PAK, PAN, PER, PHL, PRT, QAT, SAU, SEN, SLB, TCD, TGO, THA, TON, UKR, USA, WSM
SWE	unrestricted	0,002	BHR, ISL, MLI, SGP
SWE	unrestricted	0,034	MDA
SWE	unrestricted	0,055	MDV
SWE	unrestricted	0,08	BRN
SWE	unrestricted	0,116	ALB
SWE	unrestricted	0,137	CHE
SWE	unrestricted	0,527	JPN

Combined Effects: Percentage Changes

Table 7: Composition Table

Country	Year	2.5 percent non-eu	5 percent non-eu	10 percent non-eu	2.5 percent eu	5 percent eu	10 percent eu
"AUT"	2004	0.0864	0.0433	-0.038	-0.0843	-0.1663	-0.309
"AUT"	2005	0.0654	0.0231	-0.0566	-0.0993	-0.18	-0.3204
"AUT"	2006	0.0514	0.0096	-0.069	-0.1297	-0.2076	-0.3433
"AUT"	2007	0.0222	-0.0184	-0.0949	-0.148	-0.2244	-0.3571
"AUT"	2008	-0.0129	-0.0521	-0.126	-0.1703	-0.2447	-0.374
"AUT"	2009	-0.0257	-0.0644	-0.1373	-0.1707	-0.245	-0.3743
"AUT"	2010	0.0121	-0.0281	-0.1038	-0.1318	-0.2096	-0.3449
"AUT"	2011	-0.0027	-0.0424	-0.117	-0.1491	-0.2253	-0.3579
"AUT"	2012	-0.0282	-0.0668	-0.1395	-0.1685	-0.243	-0.3726
"AUT"	2013	-0.0302	-0.0687	-0.1413	-0.1681	-0.2427	-0.3723
"AUT"	2014	-0.0222	-0.061	-0.1342	-0.1601	-0.2354	-0.3663
"AUT"	2015	-0.0217	-0.0606	-0.1337	-0.161	-0.2362	-0.3669
"AUT"	2016	-0.0228	-0.0616	-0.1347	-0.1657	-0.2404	-0.3704
"AUT"	2017	-0.0326	-0.071	-0.1434	-0.1745	-0.2484	-0.3771
"AUT"	2018	-0.048	-0.0858	-0.157	-0.1846	-0.2577	-0.3847
"AUT"	2019	-0.0669	-0.104	-0.1738	-0.1983	-0.2701	-0.3951
"EST"	2004	-0.2465	-0.3319	-0.4749	0.0814	0.014	-0.1085
"EST"	2005	-0.2981	-0.3777	-0.5109	0.0152	-0.0481	-0.1631

Country	Year	2.5 percent non-eu	5 percent non-eu	10 percent non-eu	2.5 percent eu	5 percent eu	10 percent eu
"EST"	2006	-0.3624	-0.4347	-0.5556	-0.0718	-0.1297	-0.2349
"EST"	2007	-0.4219	-0.4875	-0.5972	-0.1509	-0.2038	-0.3
"EST"	2008	-0.4636	-0.5244	-0.6262	-0.191	-0.2415	-0.3331
"EST"	2009	-0.4358	-0.4998	-0.6068	-0.1439	-0.1973	-0.2943
"EST"	2010	-0.3404	-0.4152	-0.5403	9e-04	-0.0615	-0.1749
"EST"	2011	-0.3607	-0.4332	-0.5545	-0.0738	-0.1316	-0.2365
"EST"	2012	-0.4089	-0.4759	-0.5881	-0.1604	-0.2127	-0.3079
"EST"	2013	-0.43	-0.4947	-0.6028	-0.1648	-0.2169	-0.3115
"EST"	2014	-0.4411	-0.5045	-0.6105	-0.1707	-0.2224	-0.3164
"EST"	2015	-0.4601	-0.5213	-0.6238	-0.1928	-0.2431	-0.3346
"EST"	2016	-0.4692	-0.5294	-0.6301	-0.2023	-0.2521	-0.3425
"EST"	2017	-0.4843	-0.5428	-0.6406	-0.2151	-0.264	-0.353
"EST"	2018	-0.511	-0.5665	-0.6592	-0.2526	-0.2992	-0.3839
"EST"	2019	-0.5263	-0.58	-0.6699	-0.2686	-0.3142	-0.3971

References

Abadie, A., Diamond, A., & Hainmueller, J. (2010). Synthetic control methods for comparative case studies: Estimating the effect of california's tobacco control program. *Journal of the American statistical Association*, *105*(490), 493–505.

Abadie, A., & Gardeazabal, J. (2003). The economic costs of conflict: A case study of the basque country. *American economic review*, *93*(1), 113–132.

Balassa, B. (1965). Tariff protection in industrial countries: an evaluation. *Journal of Political Economy*, *73*(6), 573–594.

Baldwin, R., & Wyplosz, C. (2022). *Ebook the economics of european integration 7e*. McGraw Hill.

Born, B., Müller, G. J., Schularick, M., & Sedláček, P. (2019). The costs of economic nationalism: evidence from the brexit experiment. *The Economic Journal*, *129*(623), 2722–2744.

CONGRESS.GOV. (2025). *Presidential 2025 tariff actions: Timeline and status.* Retrieved from `https://www.congress.gov/crs-product/R48549` (Accessed on October 1, 2025)

Corden, W. M. (1966). The structure of a tariff system and the effective protective rate. *Journal of Political Economy*, *74*(3), 221–237.

Douch, M., & Edwards, T. H. (2022). The bilateral trade effects of announcement shocks: Brexit as a natural field experiment. *Journal of Applied Econometrics*, *37*(2), 305–329.

European Central Bank. (2022). *Economic and monetary union (emu).* Retrieved from `https://www.ecb.europa.eu/ecb/history-arts-culture/history/emu/html/index.en.html` (Accessed on September 2, 2025)

European Central Bank. (2024). *The evolution of china's growth model: challenges and long-term growth prospects.* Retrieved from https://www.ecb.europa.eu/press/economic-bulletin/articles/2024/html/ecb.ebart202405_01~a6318ef569.en.html (Accessed on October 20, 2025)

European Comission. (2023). *The development trap: a cause of euroscepticism?* Retrieved from https://ec.europa.eu/regional_policy/whats-new/panorama/2023/09/09-06-2023-the-development-trap-a-cause-of-euroscepticism_en (Accessed on October 9, 2025)

European Commission. (2025a). *From 6 to 27 members.* Retrieved from https://enlargement.ec.europa.eu/enlargement-policy/6-27-members_en (Accessed on March 23, 2025)

European Commission. (2025b). *Programme of the commission for 1992.* Retrieved from https://ec.europa.eu/commission/presscorner/detail/en/doc_92_1 (Accessed on August 8, 2025)

European financial crises database. (2023). *The treaty of lisbon.* Retrieved from https://www.esrb.europa.eu/pub/financial-crises/html/index.en.html (Accessed on October 21, 2025)

European Parliament. (2025a). *Mastricht treaty.* Retrieved from https://www.europarl.europa.eu/about-parliament/en/in-the-past/the-parliament-and-the-treaties/maastricht-treaty (Accessed on August 8, 2025)

European Parliament. (2025b). *The treaty of lisbon.* Retrieved from https://www.europarl.europa.eu/factsheets/en/sheet/5/the-treaty-of-lisbon (Accessed on September 2, 2025)

eurostat. (2024). *Employment and activity by sex and age (1992-2020) - annual data.* Retrieved from https://ec.europa.eu/eurostat/databrowser/view/lfsi_emp_a_h/default/table?lang=en&category=labour.employ.lfsi.lfsi_emp_h (Accessed on March 9, 2025)

eurostat. (2025a). *Beginners:gdp - comparing gdp: growth rate and per capita.* Retrieved from https://ec.europa.eu/

eurostat/statistics-explained/index.php?title=Beginners:GDP_-_Comparing_GDP:_growth_rate_and_per_capita (Accessed on August 8, 2025)

eurostat. (2025b). *Employment and activity by sex and age - annual data.* Retrieved from https://ec.europa.eu/eurostat/databrowser/view/lfsi_emp_a/default/table?lang=en&category=labour.employ.lfsi.lfsi_emp (Accessed on March 9, 2025)

eurostat. (2025c). *eurostat.* Retrieved from https://ec.europa.eu/eurostat (Accessed on August 8, 2025)

eurostat. (2025d). *Gdp deflator.* Retrieved from https://ec.europa.eu/eurostat/databrowser/view/teina110/default/table (Accessed on March 11, 2025)

eurostat. (2025e). *General government expenditure by function (cofog).* Retrieved from https://ec.europa.eu/eurostat/databrowser/view/gov_10a_exp__custom_15699358/default/table?lang=en (Accessed on March 9, 2025)

eurostat. (2025f). *Household final consumption expenditure by purpose (coicop 1999).* Retrieved from https://ec.europa.eu/eurostat/databrowser/view/nama_10_co3_p3__custom_15699349/default/table?lang=en (Accessed on March 9, 2025)

eurostat. (2025g). *Investment share of gdp by institutional sectors.* Retrieved from https://ec.europa.eu/eurostat/databrowser/view/sdg_08_11__custom_15703957/default/table?lang=en (Accessed on March 9, 2025)

eurostat. (2025h). *Population on 1 january by age and sex.* Retrieved from https://ec.europa.eu/eurostat/databrowser/view/demo_pjan__custom_15738902/default/table?lang=en (Accessed on March 11, 2025)

eurostat. (2025i). *Real gdp per capita.* Retrieved from https://ec.europa.eu/eurostat/databrowser/view/sdg_08_10/default/table (Accessed on March 9, 2025)

Frankel, J. A., & Rose, A. K. (1997). Is emu more justifiable ex post than ex ante? *European Economic Review*, *41*(3-5), 753–760.

Frankel, J. A., & Rose, A. K. (1998). The endogenity of the optimum currency area criteria. *The economic journal*, *108*(449), 1009–1025.

Gabriel, R. D., & Pessoa, A. S. (2024). Adopting the euro: a synthetic control approach. *European Journal of Political Economy*, *83*, 102537.

Grossman, G. M., & Helpman, E. (1991). Trade, knowledge spillovers, and growth. *European economic review*, *35*(2-3), 517–526.

Grossman, G. M., & Helpman, E. (1995). Technology and trade. *Handbook of international economics*, *3*, 1279–1337.

Krugman, P. (1994). *Rethinking international trade.* MIT press.

Krugman, P. (1998). What's new about the new economic geography? *Oxford review of economic policy*, *14*(2), 7–17.

Leamer, E. E., et al. (1995). *The heckscher-ohlin model in theory and practice.* International Finance Section, Department of Economics, Princeton University.

Meunier, S., & Nicolaïdis, K. (2013). The european union as a conflicted trade power. In *The european union and the new trade politics* (pp. 112–131). Routledge.

OECD. (2025). *Definition.* Retrieved from `https://www.oecd.org/en/data/indicators/inflation-cpi.html#:~:text=Inflation%20is%20measured%20by%20consumer,total%20excluding%20food%20and%20energy` (Accessed on July 17, 2025)

Rodrik, D. (2011). *The globalization paradox: why global markets, states, and democracy can't coexist.* Oxford University Press.

Romer, C. D., & Romer, D. H. (2010). The macroeconomic effects of tax changes: estimates based on a new measure of fiscal shocks. *American economic review*, *100*(3), 763–801.

Sachs, J. D., Warner, A., Aslund, A., & Fischer, S. (1995). Economic reform and the process of global integration. *Brookings papers on economic activity*, *1995*(1), 1–118.

Sowrov, S. (2024). Trade openness, tariffs and economic growth: An empirical study from countries of g-20. *arXiv preprint arXiv:2405.08052*.

Wacziarg, R., & Welch, K. H. (2008). Trade liberalization and growth: New evidence. *The world bank economic review*, *22*(2), 187–231.

World Bank. (2025). *World bank open data.* Retrieved from `https://data.worldbank.org/` (Accessed on August 8, 2025)

World Bank Group. (2025a). *Consumer price index (2010 = 100).* Retrieved from `https://data.worldbank.org/indicator/FP.CPI.TOTL` (Accessed on July 17, 2025)

World Bank Group. (2025b). *Employment to population ratio, 15+, total (percentage) (national estimate).* Retrieved from `https://data.worldbank.org/indicator/SL.EMP.TOTL.SP.NE.ZSD` (Accessed on September 9, 2025)

World Bank Group. (2025c). *Exports of goods and services (constant 2015 usd).* Retrieved from `https://data.worldbank.org/indicator/NE.EXP.GNFS.KD` (Accessed on September 8, 2025)

World Bank Group. (2025d). *Gdp per capita, ppp (constant 2021 international dollar).* Retrieved from `https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?locations=AL` (Accessed on March 14, 2025)

World Bank Group. (2025e). *General government final consumption expenditure (constant 2015 us$).* Retrieved from `https://data.worldbank.org/indicator/NE.CON.GOVT.KD` (Accessed on September 9, 2025)

World Bank Group. (2025f). *Households and npishs final consumption expenditure (constant 2015 usd).* Retrieved from `https://data.worldbank.org/indicator/NE.CON.PRVT.KDD` (Accessed on September 9, 2025)

World Bank Group. (2025g). *Imports of goods and services (constant 2015 usd).* Retrieved from `https://data.worldbank.org/indicator/NE.IMP.GNFS.KD` (Accessed on September 8, 2025)

World Bank Group. (2025h).

Tools

Croissant, Y., & Millo, G. (2008). Panel data econometrics in R: The plm package. *Journal of Statistical Software*, *27*(2), 1–43. doi: 10.18637/jss.v027.i02

Dahl, D. B., Scott, D., Roosen, C., Magnusson, A., & Swinton, J. (2019). xtable: Export tables to latex or html [Computer software manual]. (R package version x.x-x)

Google Scholar. (2025). *Google scholar.* Retrieved from `https://scholar.google.com/` (Used for literature research)

Grammarly. (2025). *Grammarly.* Retrieved from `https://www.grammarly.com/` (Used for formulation, grammar and spelling checks)

Hlavac, M. (2022). stargazer: Well-formatted regression and summary statistics tables [Computer software manual]. Bratislava, Slovakia. Retrieved from `https://CRAN.R-project.org/package=stargazer` (R package version 5.2.3)

Jens Hainmueller aut cre, Alexis Diamond aut, & Alberto Abadie aut. (2011). Synth: An r package for synthetic control methods in comparative case studies. *Journal of Statistical Software*, *42*(13), 1–17. Retrieved from `https://www.jstatsoft.org/v42/i13/`

Kleiber, C., & Zeileis, A. (2008). *Applied econometrics with R.* New York: Springer-Verlag. Retrieved from `https://CRAN.R-project.org/package=AER` doi: 10.1007/978-0-387-77318-6

OpenAI. (2025). *Chatgpt: A large language model.* Retrieved from `https://chat.openai.com` (Used for correcting error in code)

Overleaf. (n.d.). *Overleaf: Online latex editor.* Retrieved from `https://www.overleaf.com`

Posit team. (2025). Rstudio: Integrated development environment for r [Computer software manual]. Boston, MA. Retrieved from `http://www.posit.co/`

R Core Team. (2021). R: A language and environment for statistical computing [Computer software manual]. Vienna, Austria. Retrieved from `https://www.R-project.org/`

Research Rabbit. (2025). *Research rabbit.* Retrieved from `https://www.researchrabbit.ai/` (Used for literature research)

Wickham, H. (2016). *ggplot2: Elegant graphics for data analysis.* Springer-Verlag New York. Retrieved from `https://ggplot2.tidyverse.org`

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., … Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software*, *4*(43), 1686. doi: 10.21105/joss.01686

Zeileis, A. (2006). Object-oriented computation of sandwich estimators. *Journal of Statistical Software*, *16*(9), 1–16. doi: 10.18637/jss.v016.i09

Zeileis, A., & Hothorn, T. (2002). Diagnostic checking in regression relationships. *R News*, *2*(3), 7–10. Retrieved from `https://CRAN.R-project.org/doc/Rnews/`