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Trade Protection and Import Shifts: A Country-level Difference-in-Differences Analysis of the Effect of the Trump Administration's April 2025 Tariff Measures on Real US Import Values

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Abstract

In recent years, the global multilateral trading system has been challenged by increasing geopolitical tensions that have led to an increase in protectionist trade measures and supply chain restructuring. The US tariff measures implemented by the second Trump Administration in April 2025 represent the most recent and substantial protectionist shock. This thesis analyzes the short-term impact of the recent trade policy shock on bilateral trade flows. It applies a Difference-in-Differences (DiD) regression to real monthly US import values from 14 US trading partners using monthly data from May 2024 to February 2026. Although the US tariffs in 2025 affected all trading partners simultaneously, the findings show heterogeneous short-term import responses across countries with respect to direction and magnitude. Most countries see a substantial decline in real US import values after April 2025, with China being the most-affected country. The empirical results indicate that Vietnam and Thailand are the only countries in the sample for which US import values increase relative to the control group following the trade policy shock. Indicative evidence illustrates that the increase in imports from Vietnam can be partially attributed to transshipment of Chinese goods through Vietnam to the US.

Abstract in Italiano

Negli ultimi anni, il sistema commerciale multilaterale globale è stato messo a dura prova da crescenti tensioni geopolitiche, che hanno determinato un aumento delle misure protezionistiche e una ristrutturazione delle catene di approvvigionamento. Le misure tariffarie statunitensi introdotte dalla seconda amministrazione Trump nell'aprile 2025 rappresentano lo shock protezionistico più recente e rilevante. La presente tesi analizza l'impatto di breve periodo di tale shock di politica commerciale sui flussi commerciali bilaterali. L'analisi applica una regressione Difference-in-Differences (DiD) ai valori reali mensili delle importazioni statunitensi provenienti da 14 partner commerciali degli Stati Uniti, utilizzando dati mensili da maggio 2024 a febbraio 2026. Sebbene i dazi statunitensi del 2025 abbiano colpito simultaneamente tutti i partner commerciali, i risultati evidenziano risposte eterogenee delle importazioni nel breve periodo tra i vari paesi, sia per direzione sia per entità. La maggior parte dei paesi registra un calo sostanziale dei valori reali delle importazioni statunitensi dopo l'aprile 2025, e la Cina risulta il paese più colpito. I risultati empirici indicano che Vietnam e Thailandia sono gli unici paesi del campione per i quali i valori delle importazioni statunitensi aumentano rispetto al gruppo di controllo a seguito dello shock di politica commerciale. Evidenze indicative mostrano che l'aumento delle importazioni dal Vietnam è in parte attribuibile al trasbordo di merci cinesi attraverso il Vietnam verso gli Stati Uniti.

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List of Abbreviations

ASEAN	Association of South East Asian Nations
ATT	Average treatment effect on the treated
BEA	Bureau of Economic Analysis
BLS	US Bureau of Labor Statistics
CPI	Consumer Price Index
DiD	Difference-in-Differences
EU	European Union
FDI	Foreign Direct Investment
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
HTS	Harmonized Tariff Schedule
IEEPA	International Emergency Economic Powers Act
IMF	International Monetary Fund
MFN	Most-Favored-Nation
NAFTA	North American Free Trade Agreement
NAICS	North American Industry Classification System
SUTVA	Stable unit treatment value assumption
TPU	Trade Policy Uncertainty
TWFE	Two-way fixed effects
UK	United Kingdom
US	United States

USMCA	United States-Mexico-Canada Agreement
USITC	United States International Trade Commission
WTO	World Trade Organization

1 Introduction

International trade has built the foundation for economic integration for decades. It has enabled the development of global supply chains, income convergence across countries, reductions in poverty, and improvements in living standards worldwide (Aiyar et al. (2023)). This integration was primarily driven by the establishment of the multilateral trading system in 1948 (Colantone (2025)). This system is now managed by the World Trade Organization (WTO). However, it has recently been challenged by rising geopolitical tensions, characterized by protectionism and the realignment of global supply chains (Aiyar et al. (2023)). This shift is reflected in a series of protectionist shocks like the Brexit, the US-China trade war, and the trade sanctions as response to Russia's invasion of Ukraine. The number of harmful policy interventions has increased substantially in recent years (Global Trade Alert (2026)). The most recent and significant example are the United States (US) tariff measures introduced in April 2025 by the Second Trump Administration. These tariff measures were implemented in a manner that affected nearly all US trading partners simultaneously. Given these developments, understanding the causal effect of trade protection on bilateral trade flows and its heterogeneity across countries is more important than ever, not only for economic research but also for evidence-based policymaking.

While the literature on the US-China trade war in 2018 is quite comprehensive, the literature on the US tariff measures in 2025 is still emerging. Given how recently the tariff shock occurred, so far early evidence focuses on descriptive analysis or simulation-based macroeconomic projections. There is yet no casual evidence for the recent US tariff measures 2025 driving short-term changes in bilateral trade flows. To address this gap, this thesis examines the impact of the US tariff measures in 2025 on US import flows from its main trading partners.

Tariffs are a form of trade policy with the purpose of collecting government revenue and boosting the domestic economy (Krugman, Obstfeld, and Melitz (2022)). According to the standard international trade policy theory of Krugman, Obstfeld, and Melitz (2022), a tariff leads to an increase in price in the importing country, which reduces consumer demand and consequently lowers the import volume in the target sector. Taking the recent tariff shock in 2025 as a natural experiment, this thesis empirically examines whether this theory holds at the country level.

The objective of this thesis is to quantify the short-term impact of the US tariff measures 2025 on US import values. It therefore applies the Difference-in-Differences (DiD) framework to real US import values from its main trading partners. Previous literature on the US-China trade war 2018 shows that US tariffs have led to trade diversion away from high-tariffed to low-tariffed countries (Nicita (2019)). To examine the heterogeneity of the tariffs' impact on bilateral trade flows, a DiD regression per country is performed. Moreover, Iyoha et al. (2025) find that during the US-China trade war 2018, Chinese products were partially transshipped through third countries like Vietnam to circumvent high tariffs. To further examine rerouting patterns in the recent tariff period, an additional descriptive analysis was conducted for selected US trading partners.

The empirical analysis is based on import data from the United States International Trade Commission covering the time period from May 2024 to February 2026 at a monthly frequency. The data is disaggregated on a country-industry level and includes nine industries for each of the 14 included US trading partners. Eight of the nine industries are defined as affected and one as unaffected by the US tariff measures 2025. The DiD regression estimates the average change in real import values across all eight treated industries after the tariff implementation in April 2025 relative to the unaffected industry.

The regression results suggest a heterogeneous short-term response of real US import values to the implementation of the US tariffs after April 2025 at the country-level. Of 14 countries analyzed, twelve show real import declines, whereof the majority observe statistically significant declines. However, the magnitude of the import decreases varies widely from -7.28% for the United Kingdom (UK) to -36.62% for China. The regression results identify China as a clear outlier with approximately 16% difference to the next best performer, Canada. The heterogeneity between countries can be mainly explained by differences in country-specific tariff rates. Beyond the direct price effect of a tariff, factors like trade policy uncertainty, supply chain structures, and bilateral diplomatic relations may further explain the heterogeneous results.

Only two trading partners, Vietnam and Thailand, show US import increases after April 2025. However, both results are estimated to be statistically insignificant. These impacts may represent gains from trade diversion that offset the direct price effect of the tariffs.

Additionally, the results of the descriptive rerouting analysis provide indicative evidence that Chinese goods were partially transshipped through Vietnam before reaching the US market to avoid higher tariffs. This interpretation is supported by the parallel increase in Vietnam's imports from China and exports to the US following April 2025, combined with the simultaneous, substantial decrease in US imports from China identified in the main DiD analysis.

The remainder of this thesis is organized as follows. Section 2 provides an overview of the existing literature on the subject. Section 3 provides a qualitative description of the theoretical frameworks and the context of the empirical analysis. Section 4 outlines the methodology used, while section 5 introduces the data and presents the empirical results. Section 6 describes the limitations of the empirical analysis, followed by section 7, which provides a descriptive analysis of the rerouting hypothesis. Lastly, section 8 concludes the paper.

2 Literature review

The economic consequences of trade protection have been discussed since Adam Smith's foundational theory that free trade leads to efficient resource allocation and maximum productivity (Smith (1776)). Although tariffs are widely used as trade protection instruments, their effects on trade flows, global supply chains, and welfare are rather complex. To provide a good overview of these complex impacts, the literature review summarizes existing research in the following four aspects: (i) empirical evidence of tariff effects during the trade war 2018-2019 between the United States (US) and China, (ii) literature on trade diversion, as well as (iii) on global supply chain reallocation, and (iv) early evidence and projections of the effects of US tariffs 2025. The structure of this literature review reflects the need to connect established evidence from the 2018–2019 US-China trade war with emerging literature on US tariff measures in 2025. In this way, it can provide a framework for understanding both the immediate and longer-term impacts of trade protection instruments.

2.1 Baseline Evidence from the 2018-2019 US-China Trade War

The 2018-2019 US-China trade war provided a natural experiment through which the economic impacts of tariffs could be empirically examined. Thus, the already existing research on this period is wide-ranging. The key difference from the 2025 US tariff measures is that the 2018 trade war was primarily between the US and China (Hayakawa (2026)). Although the US first targeted specific products, import tariffs then focused on Chinese products only. These tariffs should mainly protect domestic sectors such as metals, machinery, computer products, and electronics (Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2020)).

The US tariffs on Chinese goods increased within two years from 3.1% at the beginning of 2018 to 21.0% at the end of 2019 covering roughly 67% of Chinese exports to the US (Bown (2025)). In the same time period, retaliatory tariffs of China increased from 8.0% to 21.8%, covering about 58% of US exports to China (Bown (2025)).

Several studies, including Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2020), Amiti, Redding, and Weinstein (2019), Amiti, Redding, and Weinstein (2020) and Nicita (2019) reveal that the exposed tariffs led to a significant decrease in US imports from China ranging from -13.5% to -31.7% and increased long-term import elasticities. Moreover, they find that the US tariffs were completely passed on to US consumers, since most foreign exporters did not adjust their prices. This result is later confirmed by Cavallo et al. (2021).

Prior to the implementation of the tariffs, several studies observed that US imports increased significantly, suggesting anticipation behavior. Specifically, US importers may have stockpiled inventory in anticipation of increasing costs (Bekkers and Schroeter (2020), Cavallo et al. (2021), Ma and Meng (2023)). Furthermore, Cavallo et al. (2021) discovered that imports from China increased by 40% immediately after the announcement of tariffs. Bekkers and Schroeter (2020) confirm this pattern of anticipation. They show that US imports of both tariff-affected and unaffected goods increased in 2018 before the tariff shock.

Empirical evidence from the 2018–2019 US-China trade war demonstrates that tariffs can trigger broad economic adjustments, such as a decline in import values or anticipation behavior. These mechanisms provide an important empirical foundation for assessing the potential consequences of the 2025 US tariff measures.

2.2 Trade Diversion in US-China Trade War

Beyond these direct effects on imports and prices of the US-China trade war, a subsequent literature examines whether and to what extent the resulting import decline from China triggered a trade reallocation to third countries, called trade diversion.

The literature does not find evidence for short-term trade diversion to third countries (Cigna et al. (2020), Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2020)). However, in the medium- and long-term, the US-China trade war affected so-called bystander countries, which were not directly involved in the trade war (Dang, Krishna, and Y. Zhao (2023)). While US imports from China decreased, imports from the rest of the world increased (Dang, Krishna, and Y. Zhao (2023), Fajgelbaum, Goldberg, Kennedy, Khandelwal, and Taglioni (2024), Nicita (2019)). Wang and Hannan (2023) show that the magnitude of this trade diversion depends on three aspects: the change in the US tariffs on Chinese imports, the subsequent decline of Chinese imports, and their substitutability. In addition, Dang, Krishna, and Y. Zhao (2023) discover that the most benefiting third countries had an existing comparative advantage in the specific exported good. Thus, these countries were already competitors of the country they were replacing, for example countries of the Association of South East Asian Nations (ASEAN) (Dang, Krishna, and Y. Zhao (2023)). Moreover, bystander countries experienced a spillover effect to non-tariffed products. This increased their global exports beyond only redirecting existing exports to the US (Fajgelbaum, Goldberg, Kennedy, Khandelwal, and Taglioni (2024)). A consistent set of countries emerge as primary beneficiaries of trade diversion in these studies. Nicita (2019) identify Taiwan, Mexico, the EU, and Vietnam as the largest winner. This is largely confirmed by Dang, Krishna, and Y. Zhao (2023), who identify the EU, Mexico, and ASEAN countries, and by Fajgelbaum, Goldberg, Kennedy, Khandelwal, and Taglioni (2024), who point to Vietnam, Thailand, South Korea, and Mexico as main beneficiaries.

The sectoral distribution of trade diversion shows that the shift mainly affects the machinery, electrical equipment, and communication equipment sectors (Bekkers and Schroeter (2020), Nicita (2019)). Mexico particularly gains in automobiles and automotive parts, as well as in iron and steel. Meanwhile, Vietnam's largest gains are in apparel, textiles, and electronics, while Taiwan reports the largest gains in semiconductors and office machinery (Alfaro and Chor (2023), Choi and Nguyen (2023)).

Despite these gains for selected third countries, the literature finds that trade diversion is incomplete. Nicita (2019) estimates that only 63% of the decline in US imports from China was replaced by third countries. The remaining part represents a net trade loss due to trade barriers, such as transportation costs or insufficient supply capacity of third countries (Nicita (2019)). Cigna et al. (2020) further point out that high switching costs for intermediate goods and supply chain disruption are other aspects that contribute to incomplete trade diversion. Important to note is that while trade destruction after trade policy shocks can be seen immediately, trade diversion effects take more time to materialize (Cigna et al. (2020)).

Rerouting as a related phenomenon provides a different perspective for the interpretation of trade diversion gains. Trade rerouting describes a pattern in which goods are not shipped directly from their country of origin to their final destination, but instead pass-through intermediary countries before reaching the original target market (Le Roux and Spital (2026)). This means that while trade diversion changes the supplier of the market, trade rerouting changes the path to the same market, but the underlying supplier remains the same. Iyoha et al. (2025) find that a share of export growth from third countries to the US during the US-China trade war represents trade rerouting rather than production relocation. Thus, Chinese goods were shipped to the US through third countries to avoid tariffs. Between 2017-2022 Vietnam, for example, replaced a large share of US imports that China had lost during the same period. Iyoha et al. (2025) estimate that 8.8% of Vietnam's export growth to the US can be attributed to rerouting instead of actual value addition. The growing number of new entities of Chinese-owned firms in Vietnam during that period adds to the rerouting argument and the incompleteness of trade diversion (Iyoha et al. (2025)).

In the medium- and long-term, not all third countries benefit from bilateral trade wars. Mao and Görg (2020) accumulate tariff rates along the supply chain to calculate the total tariff burden, including tariffs on intermediate goods. Using the total tariff burden along the supply chain, they show that countries in the supply chain are indirectly harmed without being directly involved. During the trade war 2018, the most affected countries were close US trading partners, for example, the EU, Canada, and Mexico (Mao and Görg (2020)). They were mainly affected in sectors that rely on imported intermediate goods like chemicals, electronics, automobiles (Mao and Görg (2020)).

In addition to subsection 2.1, the literature has not only studied the bilateral impacts of the US-China trade war, but also suggests that the impacts of the trade war triggered a broader reorganization of global trade patterns. Although several third countries benefited from trade diversion, these gains were uneven across countries and sectors. Moreover, evidence on rerouting indicates that part of the observed export growth in third countries reflected tariff circumvention rather than genuine production relocation.

2.3 Global Supply Chain Reallocation

In the long-term, sustained protective US trade policy also triggered a fundamental restructuring of global supply chains. Alfaro and Chor (2025) find that while overall US merchandise imports grew annually by 5.7% between 2017-2024, US imports from China gradually decreased during the same period. China's share of US imports peaked in 2017 at 21%. Since then, it has moderately declined, reaching 13% at the end of 2024 (Alfaro and Chor (2025)). Together, this suggests a gradual decoupling from China (Alfaro and Chor (2025)).

Studies have shown that after the trade war 2018, Chinese imports of products that were easily substitutable declined in the short-term (Alfaro and Chor (2025)). Contract- and relationship-intensive supply chains only began to relocate in the long-term (Alfaro and Chor (2025)). The reallocation of supply chains mainly took place among the top 20 existing US trading partners. This mainly benefited Vietnam, Mexico and Taiwan, each of which increased its share of US imports by 2 percentage points in the long-term (Alfaro and Chor (2025)). This result is again confirmed by Freund et al. (2024) who find that mainly large developing countries with an existing comparative advantage replaced the decline in China's share of US imports.

Empirical evidence for re- and nearshoring is mixed. Alfaro and Chor (2023) find some indication for reshoring. Since US imports became more upstream, this suggests a relocation of final stages of production to the US. In contrast, Freund et al. (2024) find little evidence for reshoring. They show that imports of goods that were subject to tariffs only grew marginally slower than those of goods that were not subject to tariffs after the US-China trade war. Regarding nearshoring, Mexico is clearly identified as a beneficiary of supply chain reallocation. However, evidence for Canada is mixed in the literature (Alfaro and Chor (2023), Alfaro and Chor (2025), Freund et al. (2024)). Freund et al. (2024) note that both near and distant countries benefit from the reallocation of global supply chains. Therefore, it can be assumed that geographic proximity alone does not determine which countries benefit.

The observed decoupling from China is partly illusory, as indirect supply chain links to China persist through the so-called connector countries (Gopinath, Gourinchas, et al. (2025)). According to Gopinath, Gourinchas, et al. (2025), these are countries that are not aligned with geopolitical blocs. Gopinath, Gourinchas, et al. (2025) find a strong positive relation between countries that gain US import share and Chinese outward Foreign Direct Investment (FDI). This is particularly the case for Vietnam and Mexico that gain US import share and simultaneously see increased Chinese FDI and export shares. This result is confirmed by Alfaro and Chor (2023) who observed that China's share of imports from Vietnam and Mexico increased to 40% and 20%, respectively, in 2022. It suggests that while direct sourcing from China has decreased in recent years, indirect dependence on China is retained through supply chain links.

The literature suggests that the US-China trade war accelerated a gradual reorganization of global supply chains and reduced the direct dependence of the US on Chinese imports in the long-term. However, evidence also indicates that this restructuring did not lead to a complete decoupling from China. Instead, production networks were partially redirected through third countries such as Vietnam and Mexico.

2.4 Early Evidence and Projections of the 2025 US Tariff Measures

Compared to the extensive literature on the 2018 trade war, empirical evidence on the 2025 US tariff measures is still emerging. The existing literature primarily contains early descriptive studies and macroeconomic projections.

Gopinath and Neiman (2026) reveal a gap between the statutory and actual tariff rates imposed by the US. The statutory tariff rate captures the official tariff rate established by law or regulation for a specific imported product. In contrast to that, the actual tariff rate refers to the tariff rate that is effectively paid in practice. In a descriptive study Gopinath and Neiman (2026) compare both rates in April 2025. During this time, the actual rate was only half, specifically 14%, of the statutory rate, which was 32.8%. According to the authors, this gap arises due to shipping lags, tariff circumvention or inconsistent enforcement, product or company exemptions, as well as the increased utilization of United States-Mexico-Canada Agreement (USMCA) exemption. Under the USMCA, products for which a certain percentage of the value added was produced in Canada and Mexico are exempt from the tariffs. This shows that the actual tariff rates were not as high as announced. However, they still reached historic levels.

The responses of the affected countries were predominantly cooperative rather than retaliatory. Baldwin (2026) observes that most countries, except China and Canada, successfully negotiated bilateral agreements that further resulted in reduced tariff rates. This may have avoided more severe consequences. In a simulation-based quantitative analysis, Rotunno and Ruta (2025) find that economic integration through bilateral trade agreements is the only policy response that increases welfare both for the individual country and globally. In contrast, retaliation and policy subsidies result in additional welfare costs, even though they partially offset export losses (Rotunno and Ruta (2025)).

In the months preceding the tariff announcement, anticipation behavior resulted in a significant surge in US imports. Gopinath and Neiman (2026) document a peak in the US trade deficit from December 2024 to March 2025. This result is confirmed by Hayakawa (2026), who observes a significant increase in exports to the US by third countries in these months, using Poisson Pseudo Maximum Likelihood estimator.

However, after the tariff announcement, exports to the US decreased significantly in all product categories except steel (Hayakawa (2026)). High-income countries experienced the largest decrease in exports to the US (Hayakawa (2026)). Alfaro and Chor (2025) and Gopinath and Neiman (2026) highlight that the newly exposed tariffs further accelerated the decoupling from China. Both document a significant decrease in China's share of US imports, resulting in a share of 8% in September 2025 (Gopinath and Neiman (2026)).

Among the early empirical evidence, Hayakawa (2026) points out that low-income third countries partially substituted for declining Chinese exports to the US. Gopinath and Neiman (2026) identify India and Vietnam have gained US import share in products historically sourced from China. Moreover, using weighted linear regressions, Alfaro and Chor (2025) find that countries facing lower reciprocal tariff rates, particularly Canada and Mexico, gained US import share.

Beyond trade diversion, early evidence confirms that tariffs are being passed on to consumer prices at a rate of 94%, with retail prices gradually increasing to significant levels in August 2025 (Gopinath and Neiman (2026), Hacıoğlu-Hoke, Malladi, and Feler (2026)). This pass-through rate exceeds that observed in the 2018 trade war (Gopinath and Neiman (2026)). At the macroeconomic level, simulation-based studies predict a significant impact on output levels in most economies, particularly in the US, Canada, and Mexico. Countries that successfully negotiated bilateral tariff reductions are estimated to compensate for output losses through trade diversion (Kawasaki (2025), Rodríguez-Clare et al. (2025), H. Zhao (2025)).

The emerging literature suggests that the 2025 US tariff measures reinforce several mechanisms already observed during the 2018–2019 US-China trade war, including trade diversion, anticipation behavior, high tariff pass-through, and gradual decoupling from China. The important difference in the 2025 trade protection measure, however, lies in the fact that not only China was heavily impacted by higher tariffs but also other US trade partners. Thus, this thesis focuses on the 2025 tariff measures to study potential economic differences between the two protectionist periods.

2.5 Research Gap

Despite the extensive existing literature on the US-China trade war 2018-2019 and the growing studies on the US tariff measures 2025, several gaps remain in the literature.

First, existing studies on the 2025 US tariff measures are mainly simulation-based or descriptive. No study has yet applied a causal DiD regression to US import data at the country level for the US tariff measures in 2025. Second, the short-term effects of bilateral tariffs between the US and China in 2018 were examined by Cigna et al. (2020), who find no evidence of trade diversion. However, the short-term trade diversion effect of global tariffs, which affect all trading partners simultaneously, remains untested. Third, existing studies describe aggregate trade reallocation without a causal identification strategy. This leaves the question of who are the winners and losers of the US tariff measures 2025. Lastly, while Iyoha et al. (2025) and Gopinath, Gourinchas, et al. (2025) identify rerouting patterns for the trade war 2018-2019, there is no study that examines the same effect for the recent 2025 tariffs.

To address these research gaps, this thesis applies a DiD regression to monthly US import data in 14 countries and 9 industries. This provides a first causal country-level analysis of the effects of the 2025 US tariff measures on bilateral trade flows. In addition, it performs a descriptive rerouting analysis, examining whether winners identified with the DiD regression show parallel increases in Chinese imports. Based on these results, trade diversion may then be distinguished from transshipment.

3 Foundational Background

This section establishes the theoretical and contextual framework for the empirical analysis of this thesis. It consists of two parts. First, the key theoretical frameworks underlying the analysis and the subsequent interpretation of the results are introduced. Specifically, this section introduces Viner's trade diversion concept, Armington's substitution framework, the impact of tariffs with vertical specialization, as well as the role of trade policy uncertainty and anticipation effects. Second, the April 2025 US tariff measures are described in terms of their legal basis, pursued objectives, and industry exemptions. This provides the empirical context for the DiD analysis.

3.1 Theoretical Frameworks

The main concept to which this work refers is trade diversion. Trade diversion was first introduced by Viner (2014) in the 1950s in the context of customs unions. He states that an effective tariff leads to reduced imports as it increases consumer prices and diverts the consumption from foreign to domestic goods. A customs union reduces tariffs between member states of the union. If used to move towards free trade, a customs union aims to shift the source of goods supply to lower cost sources (Viner (2014)). However, if used as an instrument of trade protection, it aims to shift the source of goods to higher cost sources (Viner (2014)). Thus, depending on the circumstances, it may have different goals. The resulting trade volume between member states after the implementation of a customs union consists of two types: completely new trade volume, known as the trade creation effect, and trade that substitutes former trade with third countries, the so-called trade diversion effect (Viner (2014)).

With the trade creation effect, Viner (2014) describes a situation in which a country acquires a specific good that was previously produced domestically, from another more efficient member state. This shift from high-cost domestic to low-cost foreign sourcing improves total welfare because it leads to efficient resource allocation.

On the other hand, trade diversion occurs when a country shifts its imports from third countries to member states due to lower tariff rates, rather than higher efficiency (Viner (2014)). Thus, it shifts sourcing from a more efficient, lower cost source to a higher cost source that only became competitive due to lower tariff rates. This benefits the respective union member while damaging the importing country and the third country, leading to a net welfare loss (Viner (2014)).

Viner (2014) concludes that the net welfare effect of customs unions depends on the magnitude of both effects, trade creation and diversion. The trade diversion concept can be applied to other policy measures like the US tariffs 2025 as well, which are the focus of this work. It can be argued that tariffs act like a reverse customs union: Instead of lowering the tariffs for member states, tariffs are raised for specific countries. This triggers the same trade diversion framework as introduced by Viner (2014).

While Viner's framework explains the direction of trade reallocation, away from efficient supplier to lower-tariffed partners, it does not explain why this trade reallocation may be incomplete. A country does not immediately lose its entire share of a specific export market if it faces higher tariffs. Furthermore, alternative suppliers do not fully replace that loss. This gap is addressed by Armington (1969). He challenged a common assumption in trade theory that goods of the same kind produced in different countries are perfect substitutes. He argues that products must be distinguished not only by product type, but also by their place of production. For example, French and Japanese machinery are imperfect substitutes, since they have two different origins. In response to price changes, trade reallocation is incomplete because buyers do not immediately and completely switch from one supplier country to another (Armington (1969)). Specifically, Armington (1969) concludes that alternative products of different origins are only a partial substitute for lost trade from now higher-cost origins.

Beyond the question of trade substitution, the structure of global supply chains further shapes the magnitude of the trade response to tariff changes. Yi (2003) demonstrates that the effect of a tariff change on trade amplifies when supply chains are vertically integrated. Specifically, he shows that under vertical specialization a one percentage point reduction in tariffs leads to a reduction in prices and costs by a multiple of one percentage point, and consequently a more than proportional increase in trade. Using the same logic, the effect of an increased tariff is compounded when goods cross international borders multiple times at different stages of production. This compounding effect may cause trade to respond more severely to a tariff change than the standard trade model would predict and may lead to disproportionate destruction in trade between vertically integrated countries.

In addition to these structural amplification effects, uncertainty about future trade policy itself shapes trade flows prior to any actual tariff change. Handley and Limão (2017) identify that trade flows are not only affected by actual changes in trade policy, but already react to uncertainty regarding future trade policy. They found that decreased trade policy uncertainty leads to higher investment, and thus increases trade flows. Vise versa, increased trade policy uncertainty results in decreased trade flows (Handley and Limão (2017)). Moreover, Handley and Limão (2017) highlight the role of trade agreements, when trading partners formally commit to a foreseeable trade policy. They further argue that these agreements reduce trade policy uncertainty and thus lead to price reductions and positive effects on aggregate welfare.

Building on that, Alessandria, Khan, and Khederlarian (2024) reveal that trade policy uncertainty may affect trade flows in the sense that a country's imports may increase significantly before an expected policy change. This increase in imports is called the anticipation effect, as importers fear future price increases and therefore stockpile inventory (Alessandria, Khan, and Khederlarian (2024)). Together, these findings explain why trade policy uncertainty and anticipation effects play a significant role in the following empirical identification.

3.2 US Tariff Measures 2025

The theoretical concepts outlined above have been studied primarily in the context of the US-China trade war 2018-2019. However, the US tariffs introduced by the second Trump Administration in 2025 represent a fundamentally different trade policy shock. The shock is unique in scope, as it affected nearly all trading partners simultaneously. Thus, it provides a new empirically relevant setting to test these theoretical concepts.

On 2 April 2025, the so-called Liberation Day, the current President of the US, Donald Trump, announced a broad-based tariff measure (Trump (2025b)). He referred to the International Emergency Economic Powers Act (IEEPA) when he declared the large US trade deficit a national emergency. According to Trump (2025b), the US has one of the lowest WTO's Most-Favored-Nation (MFN) tariff rates with 3.3% compared to its main trading partners, for example, India (17%), Vietnam (9.4%), China (7.5%) or the EU (5%). By making use of Section 301 of the Trade Act of 1974, President Trump addressed the lack of reciprocity in current US trade relations and the unfair trade practices of trading partners. These two issues are presented as the main cause of the substantial US trade deficit (Pauwelyn (2025)).

In addition to targeting a reduction in the persistent US trade deficit, the US tariff measure 2025 aimed at three main objectives. First, it should restore US manufacturing (Weng (2025)).

Historically, the growing wage gap between the US and Asia motivated US firms to locate their production abroad (Weng (2025)). In his tariff announcement, Trump (2025b) pointed out that the decline in US manufacturing accounts for more than 5 million lost jobs since 1997. With tariffs, this offshoring should be reduced as firms would be forced to relocate their production back to the US (Weng (2025)). Second, according to Weng (2025), additional tariff revenue should help reduce US fiscal deficits. The US fiscal deficit has accumulated in the past due to excessive borrowing and bond issuance. Third, tariffs should suppress trade with rival countries, for example China, to prevent them from becoming a major competitor in the global economy (Weng (2025)).

The broad-based tariff measure included a 10% baseline tariff on all US imports from all trading partners, taking effect on 5 April 2025. Additionally, Trump (2025b) announced country-specific tariff rates, known as reciprocal rates, effective on 9 April 2025. These rates were calculated as necessary rates to bring bilateral trade deficits to zero (U.S. Trade Representative (2025)). Surprisingly, the majority of trading partners decided not to react with retaliatory tariffs, but immediately approached the US to make bilateral deals (Pauwelyn (2025)). Therefore, a few days after initially announcing the tariff measures, President Trump paused the reciprocal tariffs for 90 days. The majority of the main US trade partners managed to agree on lower tariff rates than initially expected (Kawasaki (2025)). Nevertheless, the actual tariff rate in the US has reached a peak of 22.5% in 2025, a level that was last seen in 1909 (Weng (2025)).

One of the very few countries that retaliated was China. The US-China escalation already started before the Liberation Day. The US government introduced an additional 10% on all Chinese goods in February 2025, as well as 20% on steel and aluminum, and 25% on automobiles and automotive parts in March 2025 for imports from China (Baldwin (2026)). With the reciprocal tariffs in April 2025, the cumulative tariff rate on Chinese goods increased to 145% (Baldwin

(2026)). China retaliated step by step by adding rates for specific sectors and finally increased to a combined rate of 125% on imports from the US by 11 April 2025 (Weng (2025)). On 12 May in Geneva, both countries agreed to greatly reduce their cumulative tariffs to 10% (Baldwin (2026)). In terms of the trade-weighted average rate, the tariff applied to Chinese goods fell to approximately 52% and the tariff applied to US goods fell to around 33% (Bown (2025)).

Although all trading partners were affected, some products, in Annex II of Executive Order 14257 of 2 April 2025, were initially exempted from additional tariffs (Trump (2025b)). Those exemptions included, for example, steel and aluminum, automobiles and automotive parts, copper, semiconductors, critical minerals, and energy and energy products (Trump (2025b)). However, during the course of 2025, tariffs were imposed on nearly all of these exceptions (Burkhart and Hammond (2026)).

On 20 February 2026, the US Supreme Court ruled that the US President was not authorized to impose tariffs under the IEPPA (Bown (2026)). With that, any tariff that was introduced under the IEPPA including the tariffs imposed to address bilateral trade deficits to all global trading partners were ended on the same date (Bown (2026)). Simultaneously, only a few days later, a new 10% tariff on all US imports, with some fewer exclusions, was introduced for 150 days based on Section 122 of the Trade Act of 1974 to address fundamental international payment problems (The White House (2026)).

The US tariff measures of 2025 represent a complex and highly relevant trade policy shock that is likely to have generated heterogeneous effects across countries and sectors. As described in the previous section 2, literature on this recent trade shock is still emerging and its impacts have not yet been fully studied empirically. Hence, subsection 3.2 first described the different stages of the trade shock after subsection 3.1 laid the theoretical foundation of the empirical analysis for this thesis. The next section will turn towards the empirical approach used in this thesis to examine the impacts of the recent trade shock empirically.

4 Econometric Approach

The Difference-in-Differences model is a statistical method often applied to data arising from a natural experiment (Wooldridge (2016)). A natural experiment equals a situation, where an exogenous event, called treatment in the DiD context, causes a change in the economic environment (Wooldridge (2016)). Therefore, the DiD method is commonly used to analyze the effect of policy changes on a specified economic outcome variable (Angrist and Pischke (2015)).

To examine the impacts of the recent trade shock empirically, this thesis bases its empirical analysis on a Difference-in-Differences framework. Specifically, it will calculate a two-way fixed regression. The following section outlines the econometric approach, beginning with a brief explanation of the DiD method and then focusing on the specific case of a two-way fixed regression DiD equation.

4.1 The Difference-in-Differences Method

Within the canonical 2×2 DiD setup, two groups will be distinguished: The first one is the so-called treatment group, which is affected by the exogenous event. The other group, the so-called control group, is not affected. Furthermore, the setup focuses on two time periods, one before and one after treatment (Baker et al. (2026)).

The objective of the DiD method is to estimate the average treatment effect on the treated (ATT). Callaway (2022) describes this in more detail as the ”average path of outcomes experienced over time by the treated group relative to the average path of outcomes that the treated group would have experienced had it not participated in the treatment" (Callaway (2022), p.2). In other words, to estimate the ATT, the change in outcomes for the untreated group is subtracted from the change in outcomes for the treated group: the difference of two differences. Specifically, Fredriksson and Oliveira (2019) show that with two groups and two periods the DiD estimate, the ATT, can be written as:

$$ATT = \left(\overline{Y}_{D=1,t=after} - \overline{Y}_{D=1,t=before}\right) - \left(\overline{Y}_{D=0,t=after} - \overline{Y}_{D=0,t=before}\right) \tag{1}$$

where $\overline{Y}$ equals the average value of the dependent variable, D_i denotes the treatment dummy variable and t the time. The treatment dummy D_i is equal to one for the treated groups and zero for the untreated groups.

Baker et al. (2026) state that the same result can be obtained as the (weighted) least squares estimate of $\beta^{2\times 2}$ in the following linear regression specification:

$$Y_{i,t} = \beta_0 + \beta_1(Post_t) + \beta_2(Treatment_i) + \beta_3(Treatment_i \times Post_t) + \epsilon_{i,t} \tag{2}$$

where $Y_{i,t}$ denotes the outcome for unit i at time t. $Treatment_i$ is a dummy variable for being in the treatment group. $Post_t$ is a dummy variable for the post-treatment period. $Treatment_i \times Post_t$ captures the interaction term and $\epsilon_{i,t}$ denotes the error term. The key variable of interest in this equation is β_3, which captures the DiD estimator, the ATT.

By combining a before-after and treatment-control group comparison, two factors are controlled for: First, any other change occurring during the observation period and affecting the control group is netted out. Second, any difference in characteristics between both groups, if constant over time, is netted out as well (Fredriksson and Oliveira (2019)).

4.2 The Two-way Fixed Effects Regression as a special Case of the DiD Method

Contrary to the above equation, the DiD model is not limited to the the classic two-period and two-group (2×2) setup. Baker et al. (2026) mention different reasons why empirical studies may deviate from the typical DiD setup. For example, studies may use datasets covering multiple periods, and units may enter (or exit) the treatment at different times. Furthermore, it may be the case that the treatment varies in its amount or intensity or other variables are used to make treated and untreated units more comparable. In this regard, the authors state that it has become common practice to estimate complex DiD designs using linear regressions with unit and time fixed effects, the so-called two-way fixed effects (TWFE) regression.

Baker et al. (2026) further argue that the TWFE regression setup is the most popular approach adopted by practitioners, because it is easy and familiar. Furthermore, Angrist and Pischke (2009) see another key advantage of this model as it allows the addition of units and periods as well as covariates to the regression without complex modification. Baker et al. (2026) state that the TWFE regression takes on the following form:

$$Y_{i,t} = \theta_t + \eta_i + \beta D_{i,t} + \epsilon_{i,t} \tag{3}$$

where $Y_{i,t}$ denotes the outcome variable of unit i (often states) at time t. θ_t denotes time fixed effects, while η_i denotes unit fixed effects. $D_{i,t}$ is the interaction dummy variable and $\epsilon_{i,t}$ denotes the error term. The key variable of interest in the TWFE regression is β as it captures the DiD estimator, the ATT. It measures the treatment's effect on the average outcome Y.

Angrist and Pischke (2009) state that incorporating time and unit fixed effects into the econometric approach may improve causal identification by removing important sources of omitted variable bias. Firstly, macroeconomic shocks may affect all relevant units simultaneously, for example recessions or policy shifts. By including time fixed effects into the regression, those changes are controlled for and may not be mistaken for treatment effects (Angrist and Pischke (2009)). Secondly, unit fixed effects control for all time-invariant heterogeneity. Specifically, units usually differ in systematic ways that do not change over time. Unit fixed effects ensure that these permanent characteristics do not bias estimates if correlated with the treatment (Angrist and Pischke (2009)).

4.3 Assumptions

The DiD model is based on several assumptions that, when verified, ensure the credibility of the results. Specifically, Lechner (2011) states that the following three assumptions have to hold: (i) the parallel trends assumption, (ii) the stable unit treatment value assumption (SUTVA) and (iii) the exogeneity assumption. The next subsection will elaborate on these assumptions in more detail.

The main assumption is the parallel trends assumption. It presumes that both the control and the treatment group would show common trends in the absence of the treatment (Angrist and Pischke (2009)). The so-called counterfactual represents the trend that would be observed for the treatment group in absence of the treatment (Angrist and Pischke (2009)). The parallel trends assumption is crucial for the DiD approach since the calculation of the treatment effect relies on it (Callaway (2022)). Specifically, Baker et al. (2026) describe that since the untreated potential outcomes for both groups share the same trend, any observed deviation from the trend of the treated group will be attributed to the effect of the treatment and not to differences in other characteristics of the treatment and control group. Thus, the deviation equals the treatment effect. However, since the treatment group is not observed untreated, the parallel trends assumption is by its definition untestable (Fredriksson and Oliveira (2019)).

The literature suggests different strategies to test the parallel trends assumption. According to Fredriksson and Oliveira (2019) the best practice to support it is to identify similar patterns between the treatment and the control group in multiple pre-treatment periods, and to visualize this trend over time. Another formal approach to test the assumption is to conduct a placebo regression test. The purpose of the placebo test is to test an alternative hypothesis and generate insignificant findings that support the actual hypothesis (Cunningham (2021)). Fredriksson and Oliveira (2019) state that an option to set up a placebo test is to apply the DiD method to the pre-treatment period only. In order to support the parallel trends assumption, the placebo DiD estimate should not demonstrate a significant treatment effect (Fredriksson and Oliveira (2019)).

The second assumption that has to hold is the SUTVA assumption. In this context, the assumption implies that the model does not allow for any spillover effect between the treatment and the control group during the observed time period (Fredriksson and Oliveira (2019)). Closely related to this is the concept of compositional stability, which states that the composition of the treatment and the control group should not change as a consequence of the treatment itself (Angrist and Pischke (2009)). Violating these assumptions can result in a biased treatment effect (Angrist and Pischke (2009), Fredriksson and Oliveira (2019)).

The last assumption of the DiD model is the exogeneity of the treatment to guarantee conditional independence. Hansen (2022) states that this means that the treatment is unaffected by the outcome variable. Consequently, given the included controls and model specification, the treatment variable should be uncorrelated with the regression error term. According to Hansen (2022), the assumption of exogeneity must be supported by a well-founded structural argument to ensure compliance with these acceptance criteria. Moreover, Hansen (2022) states that the regression must be the “correct conditional expectation” (Hansen (2022), p. 654). Meaning, that it must include all relevant trends, fixed effects, and interaction terms to avoid omitted-variable bias (Hansen (2022)).

5 Empirical Application

Sections 3 and 4 illustrated the theoretical framework, context, and the econometric approach used in this thesis. Together, these sections have established the theoretical foundation for the quantitative analysis to follow. The subsequent section applies the econometric methodology to the data used in this thesis to address the research question of whether and how the US tariff measures 2025 affected bilateral import flows from the main trading partners of the US.

5.1 Data

The thesis examines the impact of the US tariff measures in 2025 on bilateral import flows with US main trading partners. The empirical analysis to study this impact is based on monthly data covering the time period from May 2024 to February 2026, which represents 22 months of data. The DiD regression is implemented using data on real import values in USD taken from the U.S. International Trade Commission (2026a) (USITC). The following subsection illustrates the data and its transformation in more detail.

The thesis uses monthly customs value of US import for consumption to measure US imports for the empirical analysis. The data was extracted from the USITC Dataweb. Monthly customs values are extracted for selected industries to provide a benchmark for US imports per country. Values were chosen instead of volumes because of the diversity of metrics in the relevant industries, which cannot be merged. To account for inflation, nominal import values in USD were converted into real import values with the US Consumer Price Index (CPI) for All Urban Consumers from the U.S. Bureau of Labor Statistics (2026) (BLS). It includes 88% of the total US population. Thus, it covers best the majority of the US population compared to other CPIs. The BLS primary index base is $1982 = 100$ for the CPI. However, for the empirical analysis the CPI was re-indexed to the start date of the dataset that is used throughout this thesis. Specifically, the CPI was normalized to January 2010 as the start date. Due to the US government shutdown in October 2025, the respective CPI value for this month is missing. To replace this missing data point, the average of the values for the months before (September 2025) and after (November 2025) was calculated.

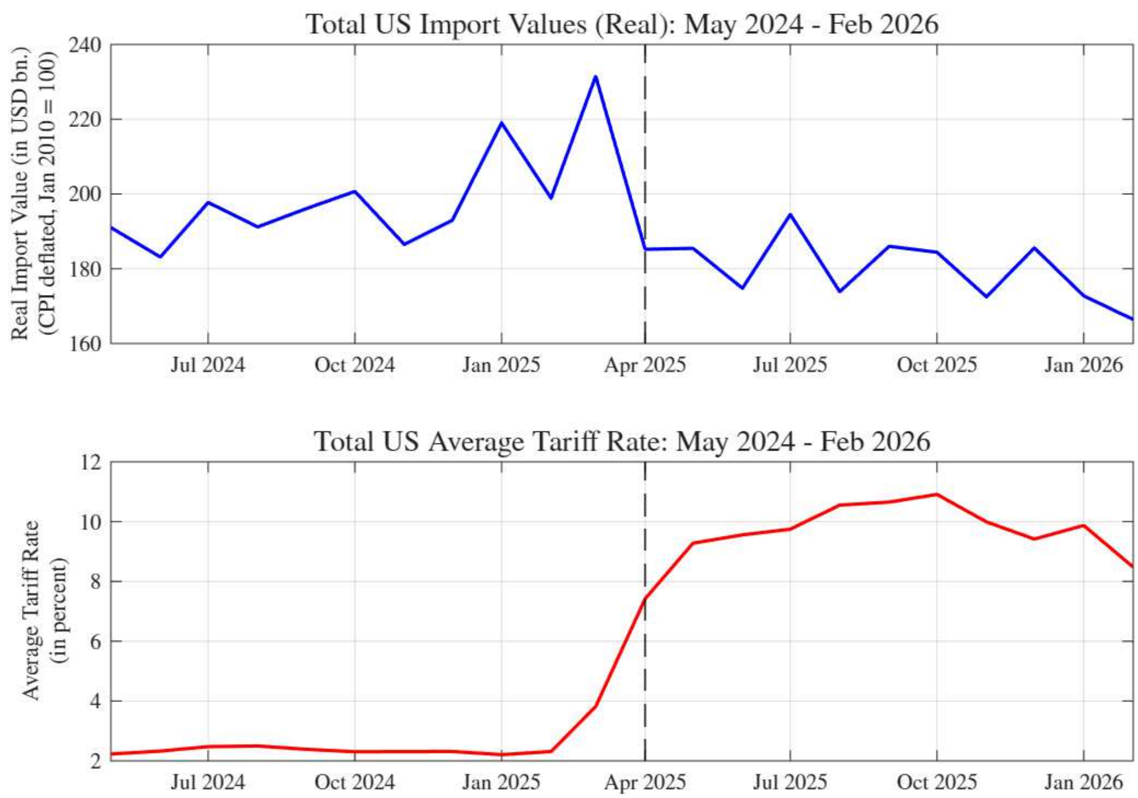
In addition to US imports, a measure of the tariff rate is needed to study the impact of US tariff measures in 2025. In this regard, monthly calculated duties of US import for consumption were extracted from the USITC Dataweb. To calculate the average effective tariff rate, monthly calculated duties on these US imports are divided by import customs values. The result is then multiplied by 100 to express it as a percentage. This can be considered as the effective tariff rate, as it equals what was effectively paid in practice.

Figure 1 illustrates in two separate plots (i) the development of the total real monthly US import values and (ii) the effective monthly tariff rate from May 2024 to February 2026. In the first plot, it can be seen that the total US import value sharply dropped in April 2025 after experiencing a surge in early 2025 (January - March). This may reflect a tendency of companies to stockpile certain import products in anticipation of the expected tariff shock. Excluding this pre-treatment peak, after April 2025 import levels have stabilized at a lower level compared to baseline levels observed throughout 2024. This suggests an overall negative response of imports to the tariff measures.

In the second plot, it can be seen that in the beginning of the observation period, the average effective tariff rate was at a low level. This changes shortly before April 2025. Between March and

May 2025, the average effective tariff rate suddenly increased from 2.5% to 9.5%. This gives an early indication on the treatment date (April 2025) and thus on the first post-treatment month. The sharp increase in the average effective tariff rate from April 2025 is then followed by an elevated level throughout the post-treatment period. This confirms that the tariff measures were substantial and sustained.

Figure 1: Total US Import Values and Average Effective Tariff Rate



Notes: The figure shows two panels covering the analysis period from May 2024 to February 2026. The upper panel displays the total real US import value in USD billions. The lower panel displays the average effective tariff rate across all industries and trading partners. The dashed vertical line indicates the treatment date, April 2025, marking the implementation of the tariff measures. The import data is taken from U.S. International Trade Commission (2026a).

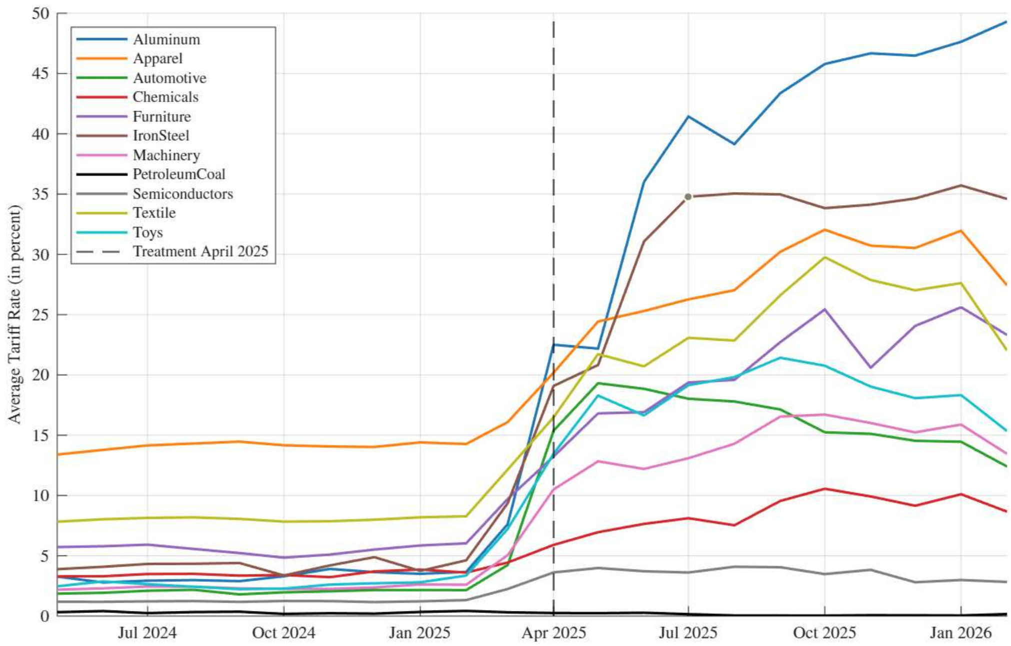
Furthermore, the analysis focuses on the 15 main US trading partners based on imports of 2025, which are reported by the U.S. Census Bureau (2025): Canada, China, France, Germany, India, Ireland, Italy, Japan, Mexico, South Korea, Switzerland, Taiwan, Thailand, United Kingdom (UK), Vietnam. The main trading partners of 2025 are consistent with those of 2024 (U.S. Census Bureau (2024)). This ensures that the selected countries are suitable for the entire analysis period.

The industry selection is based on two different aspects. First, the analysis will focus on the main US import sectors of 2024 which are reported by the U.S. International Trade Commission (2025). Secondly, the list of industries of focus was expanded to include those most affected by US tariff measures in 2025. The Economist tariff tracker by (The Economist (2025)) and a report of Presidential Tariff Actions by the US Congress (Burkhart and Hammond (2026)) were taken as the main sources to identify the most tariff-affected industries. This double approach initially identified ten affected industries for the treatment group. The selection was validated with a visualization of the effective tariff rates of these industries.

Figure 2 plots the average effective tariff rates per industry. It can be observed that all treated industries see a sharp increase in their effective tariff rates beginning in April 2025. This trend confirms that the tariff measures had a broad and immediate effect on these industries. Aluminum stands out with the largest increase, followed by Iron and Steel. The only industry that saw little change in its average effective tariff rate after treatment was Petroleum and Coal, which remained close to zero throughout the analysis period. This gives an early indication for the chosen control industry for the DiD regression which will be further discussed in Subsection 5.2.

Downloading data on industry-country level required a translation of product codes. Following the methodology of the Tariff Tracker by The Economist (2025), the industry categories published by the U.S. Bureau of Economic Analysis (n.d.) (BEA) were used for industry definition. Through a multi-step process, each industry category was translated into a set of eight-digit Harmonized Tariff Schedule (HTS) codes. A detailed description of this translation process is provided in appendix A.1.

Figure 2: Total Average Effective Tariff Rate by Industry



Notes: The figure illustrates the average effective tariff rate for each of the eleven industries. It covers a time span from May 2024 to February 2026. Each colored line represents one industry as indicated in the legend. The dashed line represents the treatment date, April 2025. The data is taken from U.S. International Trade Commission (2026a).

Furthermore, a number of additional data transformations have been executed. For the analysis period and the period of the subsequent placebo analysis as a robustness check, missing data was identified. The missing data points were then filled using the average of the data points before and after them. However, this procedure revealed that Ireland was missing 14 of the 22 observations for the control industry during the analysis period. As more than half of the observations were unavailable and could not be reliably estimated using average values, Ireland was excluded from the analysis. Therefore, the following empirical analysis will focus on 14 rather than 15 main trading partners of the US.

5.2 Identification Strategy

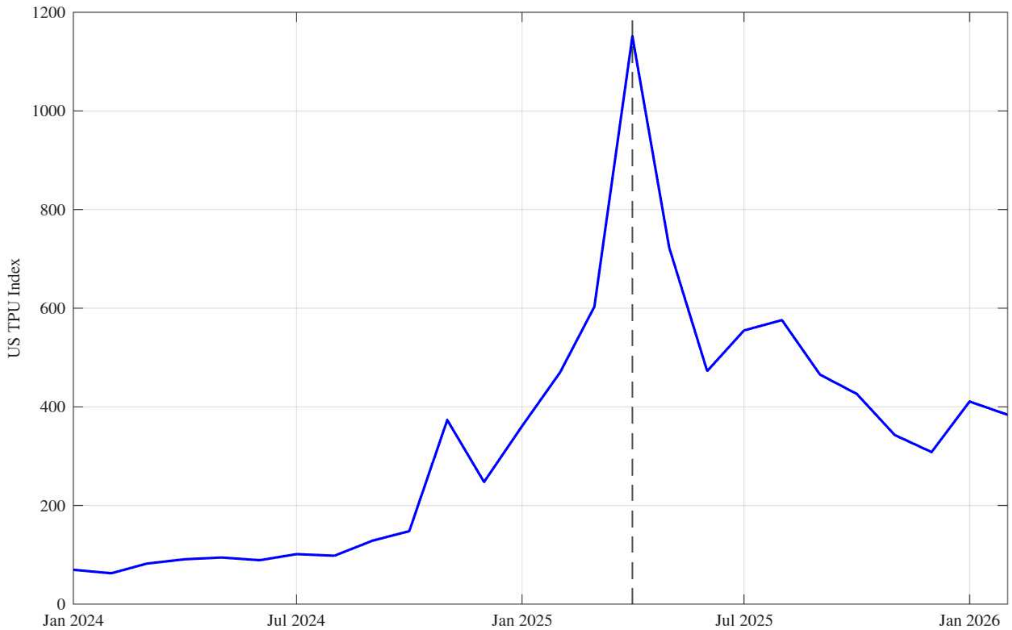
After having described the data and its transformation, this subsection outlines the identification strategy underlying the DiD regression of this thesis. It justifies the choice of April 2025 as treatment date, the exogeneity assumption of the tariff shock, and assesses the validity of the parallel trends assumption, thereby motivating the selection of the control group. Lastly, it explains why the stable unit treatment value and compositional stability assumptions are satisfied.

The treatment date was chosen based on the monthly Trade Policy Uncertainty (TPU) index developed by Caldara et al. (2020). This index measures the macroeconomic effect of a change in trade policy uncertainty on the US economy. Specifically, it counts the number of articles in major US newspapers that discuss policy-related economic uncertainty and also contain one or more references to trade policy. The index equals 100 if one percent of all newspaper articles include trade policy uncertainty. The index does not exist on a global scale. However, since the thesis specifically looks at a change in US trade policy, the index is still considered as a suitable indicator to identify the US tariff shock 2025.

Figure 3 illustrates the TPU index on a timeline. It can be seen, that it peaked sharply at approximately 1,150 in April 2025. At that time the US President, Donald Trump, announced the reciprocal tariff measures as well as the 10% baseline tariff. Therefore, April 2025 is chosen to be the first post-treatment month as it can be justified as the starting point for the tariff measures both in terms of content and data. Since the US tariff measure 2025 is a very recent event, there is not much data available yet. Therefore, the observation period is limited to eleven months before and eleven months after the treatment date, which covers the period from May 2024 to February 2026.

As described in subsection 4.3, the DiD regression model must satisfy several assumptions to

Figure 3: Trade Policy Uncertainty Index



Notes: The figure displays the US Trade Policy Uncertainty (TPU) index by Caldara et al. (2020), covering the time period of January 2024 to February 2026. The dashed vertical line indicates the selected treatment date (April 2025).

ensure consistent results. First, the assumption of exogeneity of the treatment must hold, meaning that the treatment is independent of the outcome variable. While tariff rates were deliberately designed to reduce imports from countries with which the US has a large trade deficit, the timing of the tariff announcement and partial implementation was determined by Executive Order 14257 by the US President (Trump (2025b)). The US President declared the persistent US trade deficit as national emergency and introduced the tariff measures to re-balance bilateral trade relations and restore US manufacturing (Trump (2025b)). These are structural, long-term macroeconomic objectives and are independent of the short-term US import dynamics observed in the analysis period. Therefore, the tariff shock can be plausibly treated as exogenous. Since all 14 trading partners in the sample were affected simultaneously by the tariffs in April 2025, the treatment variation in this DiD framework arises primarily over time rather than across countries. This ensures that the DiD estimator isolates the causal effect of the policy shock.

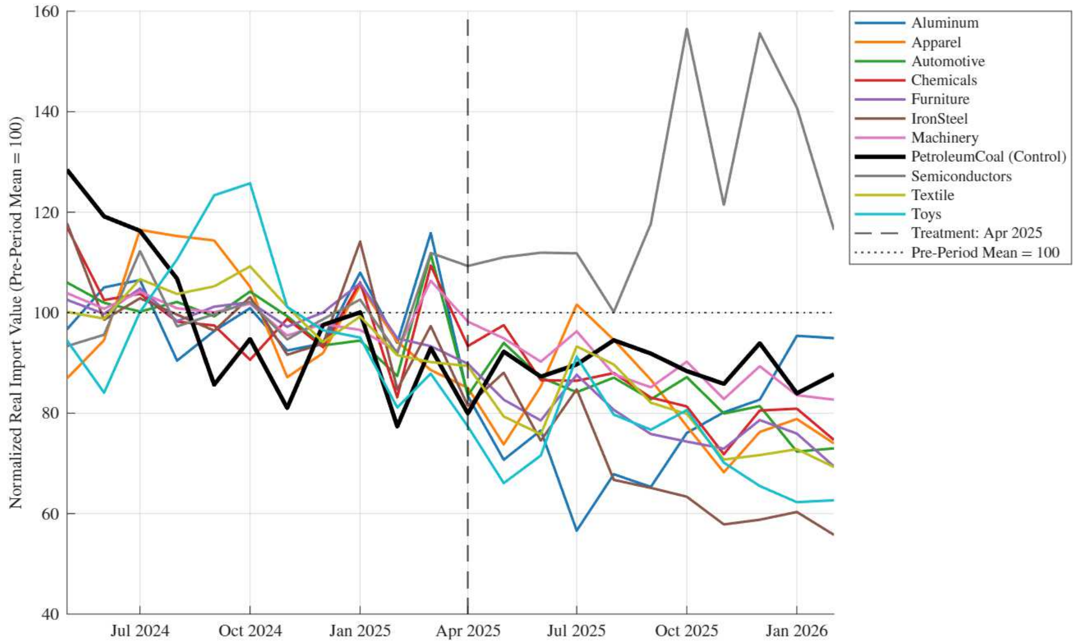
Second, the DiD model needs to satisfy the parallel trends assumption, meaning that treatment and control group need to follow the same trend in the pre-treatment period. Petroleum and Coal and its products were selected as the control group of the DiD regression. The rationale for this selection is supported on conceptual and empirical grounds, based on four complementary approaches: (i) a content-based justification, (ii) a visual assessment of parallel trends, (iii) a formal test of pre-period trends, and (iv) a comparison with an alternative control group.

First, Petroleum and Coal have been exempted from tariffs under Annex II of Executive Order 14257, issued by the US President on 2 April 2025 (Trump (2025b)). According to the Harmonized Tariff Schedule of the United States, this exception was largely maintained throughout the observation period of this analysis (U.S. International Trade Commission (2026b)).

Second, the parallel trends test visualizes normalized real import values for all eleven industries over the analysis period. Real import values were normalized to a pre-period mean to make trends directly comparable across industries. Figure 4 shows the results of the visual parallel trends test. In the pre-treatment period (May 2023 - March 2025) the majority of industries move broadly around the pre-period mean. Furthermore, a systematic divergence between Petroleum and Coal and the treated industries is not visible. This supports the parallel trends assumption. However, in the post-treatment period the import values of Petroleum and Coal remain stable while the treated industries show a visible, broad-based decline in real import values. It has to be noted that semiconductors stands out as clear outlier, showing extreme post-treatment volatility with import values exceeding all other industries.

The third approach to support the control group selection, the pre-period trend test, investigates based on a OLS trend regression whether each treated industry follows a similar trend to Petroleum

Figure 4: Visual Parallel Trends Test with Petroleum and Coal as Control Industry



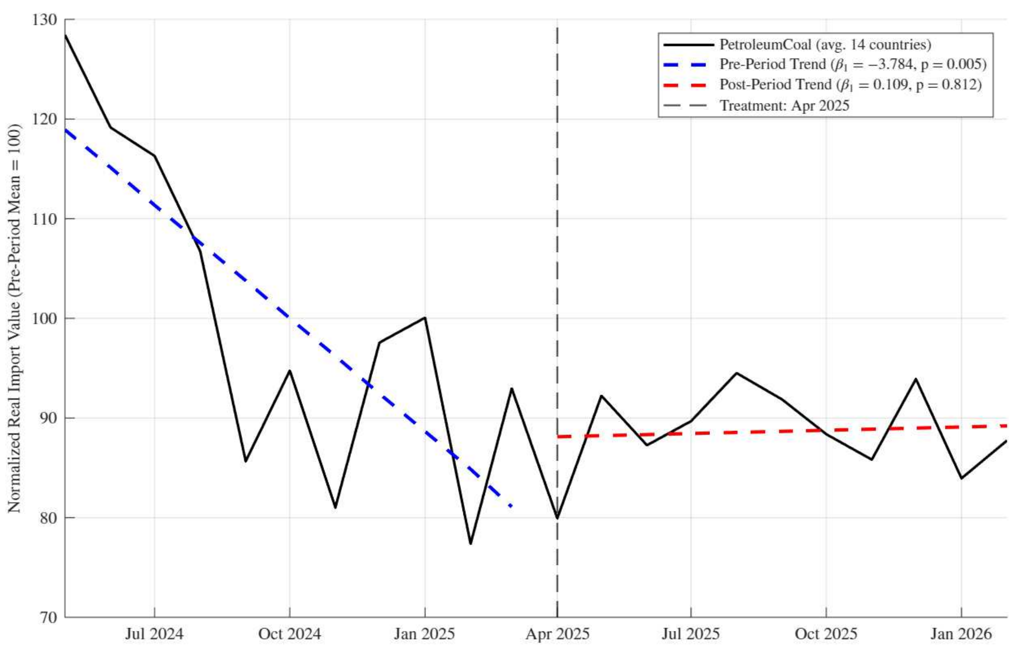
Notes: The figure displays the visual parallel trends test for all eleven industries from May 2024 to February 2026. Each colored line represents the normalized real import value of one industry as indicated in the legend. Petroleum and Coal, serving as control group, is highlighted with the black line. The dashed vertical line indicates the treatment date, April 2025. The respective import values per industry was taken from U.S. International Trade Commission (2026a).

and Coal in the time period of focus. Table A.3 in the appendix shows the test results with further details to the calculation of this analysis. The slope coefficient of Petroleum and Coal is equal to $\beta_1 = -3.78$, reflecting a declining pre-period trend. Among all ten industries, eight show broadly consistent pre-period trends with Petroleum and Coal. Specifically, these eight industries display declining trend directions, with slopes ranging from $\beta_1 = -1.28$ (Iron and Steel) to $\beta_1 = -0.50$ (Machinery). While these deviations show differences in the magnitude of the decline, all eight industries move in the same direction as the control group. This again indicates that the parallel trends assumption holds for these industries.

However, Aluminum and Semiconductors stand out with positive slope coefficients equal to $\beta_1 = 0.54$ and $\beta_1 = 0.43$ respectively. Thus, both industries show a rising pre-period trend in contrast to Petroleum and Coal. The large trend deviations combined with the visual outlier trend of Semiconductors, undermine the exclusion of both industries, Aluminum and Semiconductors, from the regression analysis. Hence, the analysis will include eight industries for the treatment group.

Additionally, to further validate that Petroleum and Coal follows an independent trajectory after April 2025, a separate trend regression was conducted for the pre- and post-treatment period. More details on the analysis can be found in appendix A.3. Figure 5 shows the result of the trend regression. Although import values of Petroleum and Coal gradually decrease before April 2025, only a statistically insignificant, slightly increasing trend can be observed in the post-treatment period. This insignificant result further supports its validity as a control group.

Figure 5: Petroleum and Coal Trend Regression for the Pre- and Post-treatment Period



Notes: The figure displays the trend analysis of the Petroleum and Coal control group. The black line represents the normalized real import values. The trend lines are estimated separately for the pre- and post-period using OLS regressions of the form $\text{Value}_r = \beta_0 + \beta_1 \cdot t + \varepsilon$. The blue dashed line indicates the pre-period trend and the red dashed line indicates the post-period trend. The dashed vertical line marks the treatment date, April 2025.

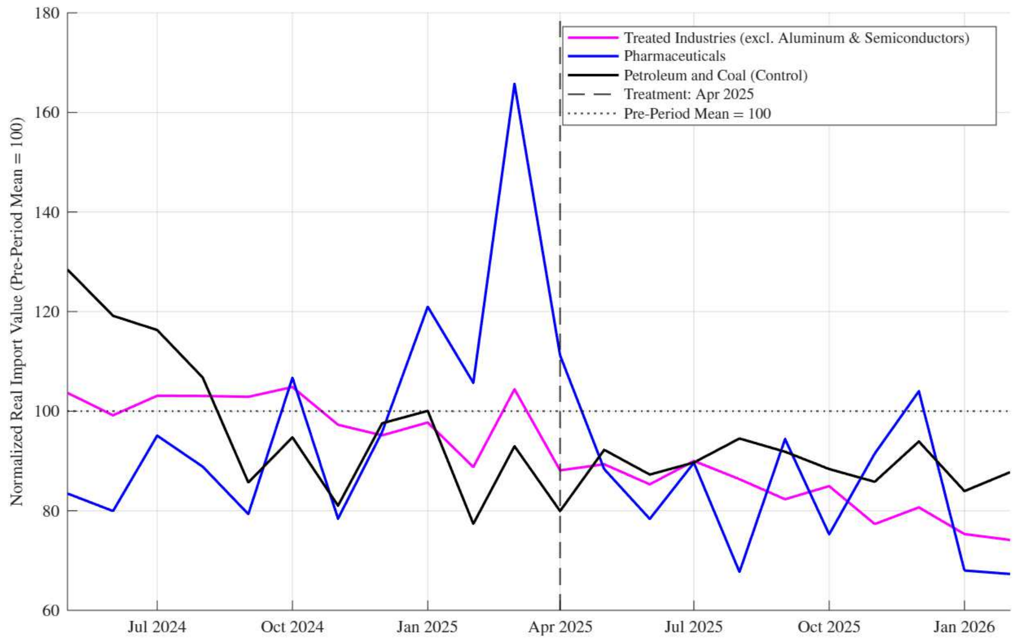
Lastly, the Petroleum and Coal industry was compared with Pharmaceuticals as an alternative control group. This comparison was included because Pharmaceuticals was, like Petroleum and Coal, initially excluded from the tariffs in Annex II of Executive Order 14257 (Trump (2025b)). As shown in Figure 6, Pharmaceuticals see a strong pre-period volatility, diverging substantially from both the treated industries and Petroleum and Coal, during the pre-treatment period. Most notably, Pharmaceuticals show a pronounced anticipation spike in March 2025, reaching nearly 165% of the pre-period mean. This movement is likely driven by importers' anticipation behavior. This extreme pre-period deviation clearly violates the parallel trends assumption, which is why Pharmaceuticals is not a valid control group for the DiD regression. In contrast, the import values of Petroleum and Coal develop broadly in line with the treated industries in the pre-treatment period. The comparison further validates Petroleum and Coal as the more appropriate control group for the DiD regression.

Taken together, the formal exemption of Petroleum and Coal from the US tariff measures 2025, the visual parallel trends test confirming broadly consistent pre-period dynamics between Petroleum and Coal and the treated industries and its insignificant post-period trend collectively justify its selection as the control industry for the following DiD regression.

Besides the exogeneity of the treatment and the parallel trends assumption, subsection 4.3 describes two additional prerequisites that the DiD model must fulfill.

The stable unit treatment assumption requires that the tariff measures imposed on the treated industries do not spill over to the control group. Petroleum and Control was explicitly exempted from the tariff measures throughout the analysis period. This rules out any direct effect of the tariffs on the control group. In addition, there is no plausible economic mechanism that explains how tariffs on consumer or manufactured goods would affect the imports of energy products. Furthermore, the statistically insignificant post-period trend of Petroleum and Coal provides empirical support for

Figure 6: Aggregated Import Values: Treated Industries vs. Pharmaceuticals vs. Petroleum and Coal



Notes: The figure displays the normalized real import values for three groups from May 2024 to February 2026: the eight treated industries excluding Semiconductors and Aluminum (magenta line), Pharmaceuticals (blue line), and Petroleum and Coal serving as the control group (black line). All series are aggregated across 14 countries and normalized to their respective pre-period means of 100. The dashed vertical line represents the treatment date, April 2025. The data is taken from U.S. International Trade Commission (2026a).

the absence of spillover effects.

Lastly, the compositional stability has to be satisfied in the DiD regression. The treatment group consists of the same eight treated industries throughout the 22-month period of analysis. Petroleum and Coal remains the control group without any change in composition. Since the industry classification is based on fixed HTS codes that do not change due to the tariff measures themselves, neither the control group nor the treatment group see any compositional change driven by the treatment. This further ensures the causal relationship between the observed results and the US tariff measures 2025.

5.3 Country Level DiD Regression

Import tariffs are theoretically expected to reduce bilateral trade between the tariff-imposing and tariff-targeted country (Krugman, Obstfeld, and Melitz (2022)). Since tariffs increase the relative costs of imports, this would then incentivize importers to either substitute them with domestic products or with products from lower-tariffed third countries (Boer and Rieth (2024), Viner (2014)). To quantify the effects of the tariffs introduced by the US towards their main trading partners in 2025, a country-level DiD regression with monthly real US import values was implemented. The application of the DiD framework and the regression results are discussed in this subsection.

5.3.1 Difference-in-Differences Application

The purpose of the following empirical analysis is to examine whether and how the US tariff measures 2025 change real US import values at the country-level. The DiD framework has been proven in the literature to be a valid method to quantify the effect of policy changes. Moreover, it has already been applied to research questions similar to the one of this thesis. For example, Yang, Lau, and Bahri (2025) and Jiang et al. (2023) employ DiD models to estimate the causal impact of the US-China trade war 2018 on Chinese exports to the US by comparing tariff-affected with tariff-unaffected trade flows over time. Similarly, Cigna et al. (2020) use a DiD estimator to measure the effect of trade diversion of the US tariffs in 2018.

The DiD configuration of this empirical analysis is summarized in Table 1. Most of it was already derived in subsection 5.2. Specifically, to study the research question of this thesis, separate DiD regressions are implemented per country with each 198 observations (9 industries $\times$ 22 months). Thus, the outcome variable will show the average effect over all treated industries for the respective country c.

The DiD regression model is estimated separately for each country c = 1, . . . , 14 as follows:

$$\log(Y_{it}) = \beta_0 + \beta_1 \cdot (Post_t \times Treated_i) + \gamma_i + \varepsilon_{it} \quad (4)$$

where the dependent variable is the log-transformed real import value of industry i in month t. $Post_t \times Treated_i$ is the interaction term of the two dummy variables for time and treatment. Thus, it it is equal to one for treated industries after April 2025 and zero in any other case. β_1 is the DiD coefficient of interest, capturing the average percentage change in real US import values across all eight treated industries after April 2025 relative to Petroleum and Coal. γ_i represents industry-fixed effects absorbing time-invariant differences in import levels across industries. Lastly, ε_{it} represents the error term. Time fixed effects are excluded from the regression because the April 2025 tariff shock represents a global shock affecting all treated industries simultaneously. Including time fixed effects would remove the temporal variation that the DiD estimator relies on to identify the treatment effect.

Table 1: DiD Configuration of the Empirical Analysis

Parameter	**Description**
Period	22 Months from May 2024 to February 2026
Treatment Event	April 2025: 10% base Tariff + reciprocal tariff Announcement
Treatment Group	Eight Industries: Apparel, Automotive (incl. Automobiles & Automotive Parts), Chemicals, Furniture, (Products of) Iron & Steel, Machinery, Textile, Toys (incl. Sports Equipment & Office Supplies) - excl. Semiconductors (incl. other Electronic Components), (Products of) Aluminum
Control Group	(Products of) Petroleum and Coal
Countries	14 Main Trading Partners: Canada, China, France, Germany, India, Italy, Japan, Mexico, South Korea, Switzerland, Taiwan, Thailand, United Kingdom, Vietnam - excl. Ireland due to missing data
Unit of the Analysis	One Regression per Country c
Panel per Regression	9 Industries $\times$ 22 Months = 198 Observations

Notes: The table provides a detailed description of the configuration of the DiD framework used in the empirical analysis.

The dependent variable is transformed by taking the natural logarithm. This log-transformation allows the DiD coefficient β_1 to be interpreted as the percentage change in real import values after April 2025 relative to the control group of Petroleum and Coal. Specifically, with the following conversion the percentage change can be recovered from the DiD coefficient β_1:

$$Pct\_Change = (e^{\beta_1} - 1) \times 100 \tag{5}$$

Pct_Change is the main indicator to decide whether the respective country can be classified as a winner or loser of the US tariff measures 2025 regarding the average change in real import values relative to Petroleum and Coal. Furthermore, log-transforming the dependent variable linearizes exponential growth. Since most macroeconomic variables tend to grow exponentially, taking the logarithm makes the relationship linear, and thus standard regressions fit better.

Given the DiD framework, inference is based on cluster-robust standard errors. Following Arellano (1987) the cluster-robust variance is calculated as follows:

$$\hat{V}_{cluster} = (X'X)^{-1} \left(\sum_{g=1}^{G} X_g' \hat{u}_g \hat{u}_g' X_g \right) (X'X)^{-1} \tag{6}$$

where the clusters are indexed by $g = 1, \ldots, G$. X_g further denotes the regressors for cluster g, and $\hat{u}_g$ are corresponding residuals in cluster g. The cluster-robust standard errors are obtained as the square root of the elements on the diagonal of $\hat{V}_{cluster}$.

In the DiD framework, observations are typically assumed to be cluster dependent within each group and independent across groups. Thus, clustered standard errors allow for within-cluster correlation, but independence across clusters, and heteroskedasticity. Hansen (2025) describes that the vast majority of applications report standard errors clustered at the level of treatment. In the case of this analysis, standard errors will thus be clustered at the industry-level. The downside of applying this approach to this analysis is that it will lead only to eight clusters. Angrist and Pischke (2009) note that if the number of clusters is too small, the standard errors tend to be small as well. Therefore, the standard errors in this analysis have to be interpreted with caution.

5.3.2 Empirical Results

Table 2 reports the regression results per country for equation 4. As described in the previous section, the log-transformed real import values are regressed on a post-treatment interaction term for each country separately, while controlling for industry-fixed effects. The estimated coefficient β_1 measures the average change in real US import values across treated industries after April 2025 relative to the control group of Petroleum and Coal. The table puts the results in order from the highest to the lowest average change in real import values.

Table 2: DiD Results by Country: Winners and Losers of the April 2025 Tariff Measures

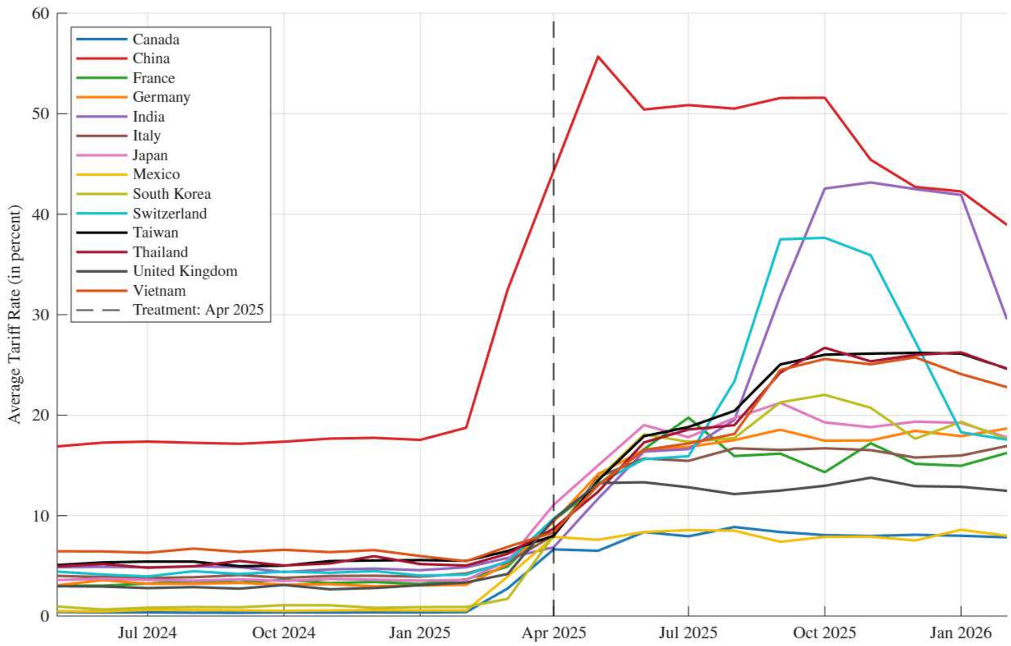
Country	β_1	**Standard Error**	**P-value**	**Pct. Change (%)**
Vietnam	0.113	0.101	0.297	+11.97
Thailand	0.054	0.058	0.379	+5.56
United Kingdom	-0.076	0.084	0.396	-7.28
Taiwan	-0.080*	0.037	0.062	-7.71
Japan	-0.081*	0.044	0.099	-7.81
France	-0.098**	0.035	0.024	-9.30
Germany	-0.125*	0.063	0.082	-11.77
Italy	-0.154**	0.061	0.034	-14.29
Mexico	-0.156*	0.072	0.064	-14.41
South Korea	-0.157***	0.035	0.002	-14.50
India	-0.204	0.184	0.301	-18.44
Switzerland	-0.222***	0.054	0.003	-19.94
Canada	-0.233***	0.062	0.006	-20.78
China	-0.456***	0.048	0.000	-36.62

Notes: The table reports the results from equation 4. The dependent variable is the log-transformed real import value at the industry level. β_1 is the estimated DiD coefficient capturing the average change in log-transformed real import values across all eight treated industries after April 2025 relative to Petroleum and Coal. The table additionally displays the percentage change derived from the estimated DiD coefficient. The DiD method is estimated separately for each country over the analysis period May 2024 to February 2026. Significance levels are indicated by asterisks: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Comparing the results of all countries, it can be seen that the magnitude of the average percentage change in real import values varies strongly, from $+11.97\%$ for Vietnam to -36.62% for China. This highlights that the effects of US tariff measures on its main trading partners are estimated to be heterogeneous. Moreover, China stands out as a clear negative outlier. In the DiD estimation, China experiences significantly higher import losses than any other country, with losses 15.84%

higher than those of the next best performer, Canada.

Figure 7: Average Tariff Rate per Country across eight Treated Industries

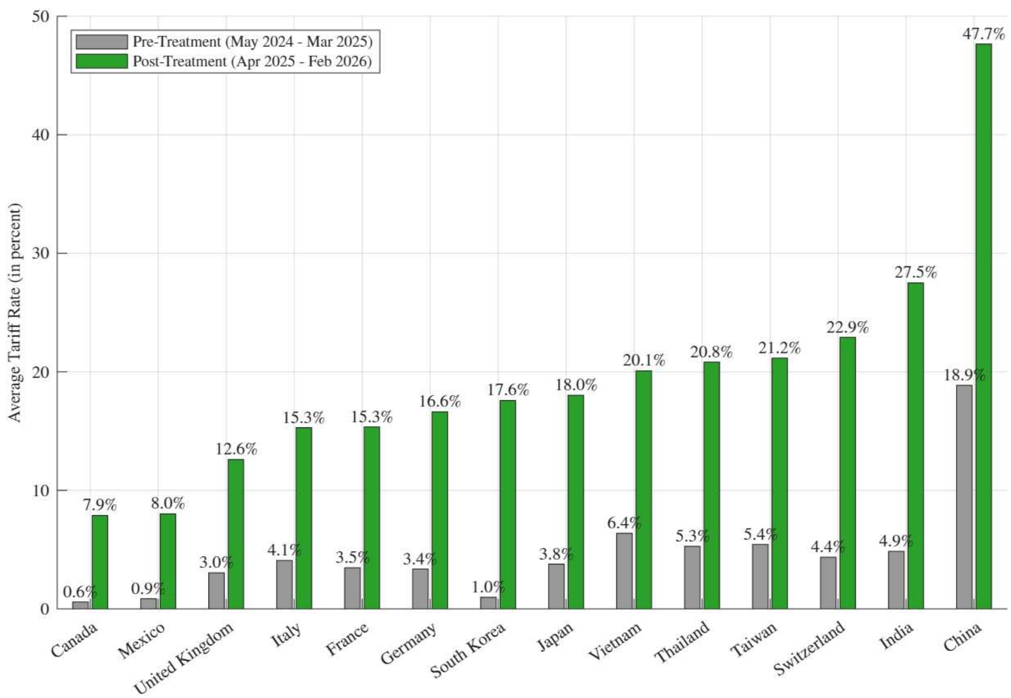


Notes: The figure shows the monthly average effective tariff rate (in percent) per country across the eight treated industries from May 2024 to February 2026. Each colored line represents one country as indicated in the legend. The dashed vertical line marks the treatment date, April 2025. The data is taken from U.S. International Trade Commission (2026a).

The countries of focus can be classified in two main groups based on the DiD estimation: winners ($\beta_1 > 0$) and losers ($\beta_1 < 0$) of the US tariff measures 2025. The DiD method estimates that in twelve out of 14 tariff-affected countries real import values declined after April 2025 compared to the control group. For the majority of the group with declining import values, ten countries in total, the negative impact is statistically significant. These results broadly confirm the standard theoretical expectation, as outlined in Krugman, Obstfeld, and Melitz (2022), that tariffs reduce bilateral trade flows. However, two countries, namely Vietnam and Thailand, see statistically insignificant positive effects and thus can be identified as winners. This suggests that the transmission mechanism of tariffs is more complex in reality.

Figures 7 and 8 will serve as additional empirical evidence for the following interpretation of the DiD results. Figure 7 represents the development of the average effective tariff rate per country across the eight treated industries during the analysis period. Furthermore, Figure 8 compares the average effective pre- and post-treatment tariff rates per country, from May 2024 to March 2025 and April 2025 to February 2026, respectively.

Figure 8: Average Tariff Rate per Country: Pre- vs. Post-Treatment



Notes: The figure compares the average effective tariff rate (in percent) per country of the pre-treatment period (May 2024 - March 2025, gray bars) with the average tariff rate of the post-treatment period (April 2025 - February 2026, green bars). The data is taken from U.S. International Trade Commission (2026a).

In the following, the two identified groups, specifically winners and losers of the US tariff measures 2025, will be looked at in more detail.

5.3.2.1 Winners of US Tariff Measures

As already mentioned, the DiD regression results only estimate two countries to benefit from the

US tariff measures in 2025 in terms of the average percentage change in real US import values: Vietnam and Thailand. The results of both countries can be taken from Table 2.

Vietnam's DiD coefficient $\beta_1 = 0.113$ translates into an increase of 11.97% in real US import values from Vietnam across all eight treated industries after April 2025 relative to the control group. However, based on the p-value of $p = 0.297$ the result is statistically insignificant at all conventional significance levels. As shown in Figure 8, Vietnam faces an average effective tariff rate of 20.1% in the post-treatment period. Compared to its neighboring country China, which has an average tariff rate of 47.7%, Vietnamese goods are exposed to less than half the tariff rate that Chinese goods are exposed to under the US tariff measures 2025. A trade agreement was set up between Vietnam and the US, which came into effect on 26 October 2025. The trade agreement set the reciprocal tariff rate for all Vietnamese goods at 20% (The White House (2025c)). This is what explains the significant difference between the average effective tariff rates of Vietnam and China.

These results seem to be consistent with the trade diversion logic of Viner (2014). As US tariffs significantly increased import costs from high-tariffed countries like China, US importers are incentivized to shift their demand towards lower-tariffed countries like Vietnam. However, taking into account the size of both economies and the results of the DiD, it can be assumed that the increase in Vietnamese trade (Pct Change = $+11.97\%$) does not completely substitute the decline in US imports from China (Pct Change = -36.62%). This may be the case because Vietnamese imports are only imperfect substitutes for Chinese goods due to its different country of origin as stated by Armington (1969) in his substitution concept. Nevertheless, previous studies have shown that Vietnamese goods are sufficiently similar to Chinese products in industries such as apparel, textiles and electronics (Choi and Nguyen (2023)). This is because Vietnam already was competing with China in these industries before the 2025 tariff shock. Furthermore, the result of the DiD estimation is consistent with the literature on the US-China trade war 2018, where Vietnam was already identified as one of the main beneficiaries of trade diversion away from China (Nicita (2019)).

However, the identified positive trade diversion effect for Vietnam should be interpreted with caution. As identified by Iyoha et al. (2025), a share of Vietnamese export growth to the US during the US-China trade war 2018 represented rerouting rather than actual value-added production. This can be connected with the rising Chinese FDI and export share to Vietnam found by Gopinath, Gourinchas, et al. (2025).

With these empirical results in mind, a different interpretation of the positive import effect for Vietnam can be put forward. The observed increase in real US import values from Vietnam of 11.97% may partially reflect rerouted trade flows from China instead of trade diversion. A descriptive rerouting analysis presented in section 7 provides further evidence on this possible explanation.

The second winner of the US tariff measures according to the DiD regression is Thailand. The DiD coefficient for Thailand is estimated to be $\beta_1 = 0.054$. With a p-value of $p = 0.379$ this result is also statistically insignificant. However, after converting into a percentage change, the estimated coefficient equals an increase of 5.56% in real US import values from Thailand after April 2025. In the post-treatment period Thai goods in the treated industries were exposed to an average effective tariff rate of 20.8%, similar to the one of Vietnam. This is a result of a bilateral agreement, concluded on the same day as the one with Vietnam. The US and Thailand among others agreed to reduce the reciprocal tariff rate exposed to Thai goods to 19% (The White House (2025b)). Although the average effect tariff rates of both countries are similar in the post-treatment period, Thailand only experiences half of Vietnam's positive import effect.

The positive effect aligns with the concept of trade diversion by Viner (2014) and findings of previous studies. For example, Fajgelbaum, Goldberg, Kennedy, Khandelwal, and Taglioni (2024) identify Thailand as one of the main beneficiaries of trade diversion during the US-China trade war 2018. However, in contrast to Vietnam, there is no clear evidence yet of Thailand as rerouting hub for Chinese goods. This may explain why Thailand's positive effect is only half that of Vietnam's, even though the average tariff rates were similar during the post-treatment period.

Although both countries' DiD coefficients are statistically insignificant at all conventional significance levels, their direction and, especially for Vietnam, their magnitude stand out compared to the predominantly negative results observed across other US trading partners. While there are various reasons for high standard errors, for example estimation uncertainty or limited within-group variation, they can also be a result of high month-to-month or cross-industry volatility of the import values in the treated industries. One possible explanation for the high volatility is that exporters faced capacity constraints, limiting their ability to immediately absorb redirected demand. Another possible explanation lies in the disruptive nature of rerouting dynamics for Vietnam.

In summary, among the 14 countries analyzed, Vietnam and Thailand are the only countries showing positive DiD coefficients after April 2025. Based on the theory of Viner (2014), it can be suggested that both countries gained from trade diversion. The findings also align with previous empirical findings on the 2018 US-China trade war. The literature on the first trade shock in 2018 identified both countries as the main beneficiaries of trade diversion away from China. However, the validity of both estimates is undermined by their limited statistical precision due to their high p-values. This prevents a definitive causal conclusion within the scope of this analysis.

5.3.2.2 Losers of US Tariff Measures

The next section focuses on the countries that are estimated to experience a decline in real US import values relative to Petroleum and Coal after April 2025. In this case, the standard trade theory of Krugman, Obstfeld, and Melitz (2022) suggests that tariffs had a negative effect on trade quantity for these countries.

Focusing on the DiD results in Table 2 and the average tariff rates per country in Figure 8, together, this category exhibits significant heterogeneity in both tariff exposure and import responses across countries. Based on these differences, three distinct subgroups were identified. The first subgroup consists of countries facing extraordinarily high average post-treatment tariff rates and some of the largest import declines in the sample. The second subgroup comprises countries that paradoxically show low average post-treatment tariff rates but severe import declines. The third subgroup includes countries facing moderate average post-treatment tariff rate increases with heterogeneous import responses.

China, Switzerland, India

According to Viner (2014), high tariffs lead to higher import prices, making exporters less competitive and reducing import demand in the tariff-imposing country. The theory can be applied to the first subgroup. The countries in this group face explicitly high average tariff rates over the post-period and simultaneously experience some of the largest losses of the sample in terms of real US import values. This group consists of China, India, and Switzerland. Among the countries analyzed, these countries face the highest average tariff rates in the treated industries after April 2025.

China is identified as the strongest loser within the DiD analysis. The DiD coefficient is equal to $\beta_1 = -0.456$. The estimated p-value is $p = 0.000$ and hence, the coefficient is statistically significant at a significance level of $\alpha = 0.01$. The result suggests that real US import values from China in the treated industries decreased sharply by 36.62% after April 2025 compared to the control group. Supporting evidence suggests that the main driver of this strong decline are the bilateral tariffs imposed on Chinese goods from the US. Figure 7 illustrates that China's average effective tariff rate showed a significant increase already in March 2025, before reaching its peak in May 2025 at roughly 55%. After that, the average effective tariff rate remained at a constant level of 50%. It only began to decline gradually in October 2025. However, throughout the post-treatment period, the average effective tariff rate on Chinese goods is much higher compared to other countries. Comparing pre- and post-treatment period, the average effective tariff rate on Chinese goods in the treated industries more than doubled, increasing from 18.9% to 47.7% (see Figure 8).

These results are consistent with the literature that illustrates that the combined US tariff rate on Chinese products reached a peak of 145% in 2025 (Baldwin (2026)). Moreover, China was one of the few countries that retaliated with counter-tariffs of up to 125% on US goods (Weng (2025)). This further adds to trade uncertainty between the two countries and probably accelerates bilateral trade destruction. It is important to mention that the decoupling from China had already begun before April 2025. Alfaro and Chor (2025) document a gradual decline of China's US import share from 21% in 2017 to 13% at the end of 2024 driven by persistent tariffs from the first Trump Administration and broader supply chain reallocation patterns. Given the results of the DiD regression, the US tariff measures 2025 strongly accelerated this decoupling trend.

The magnitude of the decline in US import values from China is in line with the trade diversion logic of Viner (2014). The strong increase and peak of the average effective tariff rate on Chinese goods, made Chinese exporters substantially less competitive in the US market. US importers were incentivized to shift towards domestic production or imports from lower-tariffed countries. Looking again at the DiD results in Table 2, it is likely that imports were reallocated to Vietnam in particular, given that it shows a sharp increase in US import values in the same period. Compared to the trade war 2018, where Cigna et al. (2020) found no significant short-term trade diversion effect away from China, the global scope of the 2025 US tariffs appears to have generated a stronger, more immediate response.

The DiD coefficient of the second country in this subgroup, Switzerland, is estimated to be equal to $\beta_1 = -0.222$. Similar to China, the coefficient of Switzerland is also statistically significant at a significance level of $\alpha = 0.01$ ($p = 0.003$). This coefficient converts to a significant decrease in real US import values of 19.94% after April 2025. The main driver is likely to be the high US tariff rate on imports from Switzerland, which reached an average of 22.9% in the post-treatment period. Figure 8 illustrates that the average effective tariff rate increased by more than 18% compared to its pre-treatment average of 4.4%. Looking at Figure 7, it can be observed that Switzerland was one of the few countries that did not immediately agree on bilateral tariff reductions with the US. Therefore, the tariff rate on Swiss goods sharply increased within two months by around 21%, reaching 37% in September 2025. This illustrates the point in time at which the tariff pause, which had been announced in April shortly after the tariff announcement, had come to an end.

The ongoing tariff uncertainty due to a missing trade agreement with the US most likely amplified the negative effect on real US import values. This is consistent with Handley and Limão (2017), who show that trade policy uncertainty independently suppresses trade even beyond the direct price effect of tariffs.

The last country in this group is India. The DiD coefficient of India is estimated to be equal to

$\beta_1 = -0.204$. However, since the p-value is equal to $p = 0.301$, the coefficient is statistically insignificant at all conventional significance levels. Hence, India is the only country in this subgroup with statistically insignificant results. Nevertheless, the direction and magnitude of its coefficient as well as India's average post-period tariff rate are consistent with the subgroup's pattern of high tariff rates driving large import declines. This justifies a brief discussion of the underlying explanation.

The estimated DiD coefficient suggests that India experienced a sharp decrease in real US import values by 18.44% after April 2025 compared to Petroleum and Coal. This is directly attributable to the extraordinary high US tariff rates imposed on Indian goods. Figure 8 displays that, after China, India had the second-highest average post-period tariff rate in the treated industries with 27.5%. As can be seen in Figure 7, its effective tariff rate gradually increased after April 2025, reaching approximately 19% in August 2025. Afterwards, the tariff rate nearly doubled within two months to around 42% in October 2025. This increase can be explained by the additional tariff of 25% that was imposed on India as a sanction for purchasing Russian oil and which came into effect on 27 August 2025 (Bown (2026)). Only in February 2026, the tariff rate on Indian products decreased sharply again to around 30% following a bilateral trade agreement between the US and India (Bown (2026)). The absence of such an agreement throughout most of the post-treatment months meant that India bore the full tariff burden. Consistent with Viner (2014), the high tariff rate on Indian goods was sufficient to make Indian exports to the US less competitive.

The estimated decline in real US import values of India stands in partial contrast to Gopinath and Neiman (2026), who identify India as one of the primary beneficiary of trade diversion away from China. They find that, next to Vietnam, India gained a significant share of US imports in 2025. They explain this finding by the fact that Indian exports are a good substitute for Chinese exports to the US. However, it is important to note that Gopinath and Neiman (2026) analyze aggregate US import shares across all products, while this thesis focuses on a selected set of eight tariff-affected industries. The negative result for India in this analysis may therefore reflect industry-specific dynamics that differ from the aggregate pattern.

Taken together, the results for China, Switzerland, and India suggest that the primary driver of the high estimated US import declines from these countries are the high effective tariff rates. As already described by Viner (2014), US importers faced higher costs when importing from these countries after April 2025. This in turn may have led to the estimated decline in US import values from these countries. However, the empirical analysis does not provide any conclusions on whether these import declines were replaced by lower-tariffed alternatives or simply reflect a decline in US import demand.

USMCA Partners: Canada and Mexico

In the following, the second subgroup of countries with estimated declines in US import values after April 2025 is examined. In contrast to the first subgroup, the transmission mechanism is assumed to be different. Higher tariff rates alone do not fully explain the observed import declines in these countries. Similar to the first subgroup, countries see a statistically significant decrease in real import values after April 2025 and simultaneously an increase in the average tariff rate. However, the magnitude of these tariff increases is considerably lower. This suggests that additional transmission mechanisms, namely supply chain disruptions and trade policy uncertainty, play a more dominant role in driving negative import responses.

The described pattern is the most visible for Canada. The DiD regression estimated the coefficient for Canada to be equal to $\beta_1 = -0.233$. This estimate has a p-value of $p = 0.006$ and hence, is statistically significant at a significance level of $\alpha = 0.01$. When converted to a percentage change, the estimated DiD coefficient equals a decline in real US import values of 20.78% after April 2025 compared to the control industry. Compared to the analyzed countries, Canada shows the lowest average tariff rate in the post-period with 7.9% (see Figure 8). Figure 7 illustrates that although the average tariff rate of Canada already moderately increased from March 2025 onward, it did not increase much after April 2025. Furthermore, after April 2025 the average effective tariff rate remained broadly at a constant level. This moderate increase may be attributable to the USMCA exemptions mentioned by Gopinath and Neiman (2026). These exemptions were increasingly used as a loophole to circumvent the tariff rate of initially 25% in March 2025 and then 35% in August 2025 on non-USMCA conform goods from Canada (Bown (2026)).

A similar but statistically less significant result is observed for Mexico. The DiD coefficient of Mexico is estimated to be equal to $\beta_1 = -0.156$. The coefficient is statistically significant at a significance level of $\alpha = 0.1$ ($p = 0.064$). This result is equal to a decline in US import values of 14.41%. Similar to Canada, Mexico faced a comparably low average tariff rate of 8.0% in the treated industries during the post-treatment period. However, the impact on real US import values from Mexico is estimated to be substantial. Figure 7 displays that its monthly average tariff rate in the treated industries remained stable without any significant increase throughout the post-treatment period. The low tariff rate can also be explained by the usage of the USMCA exemption to avoid the 25% tariff on Mexican goods already imposed in March 2025 (Bown (2026)).

The paradox of comparably low average tariff rates with strong negative import responses in both countries requires a closer examination of the underlying tariff structure and supply chain linkages. Canada and Mexico are not only US trading partners, but part of a deeply integrated North American supply chain due to the USMCA (formerly North American Free Trade Agreement (NAFTA)) (H. Zhao (2025)). This integration is particularly pronounced in the automotive sector

(Dziczek et al. (2017)). According to Yi (2003), these vertically integrated supply chains can amplify the effect of a tariff increase on trade flows. Even a small tariff increase can lead to a disproportionate reduction in trade between vertically integrated supply chain partners because tariffs compound as intermediate goods cross borders multiple times.

For this reason, the USMCA exemption was introduced to protect these vertically integrated supply chains. However, the exemptions do not apply, for example, to the automotive industry. The tariff rate of 25% was strictly imposed on the non-US content of automobiles and automotive parts in the end of March 2025, fundamentally altering the tariff cascading dynamic (Trump (2025a)). The newly added Canadian or Mexican value is taxed with every border crossing, rapidly eroding the profit margins and competitive advantage of USMCA cross-border manufacturing (Trump (2025a)). In addition to these tariff measures, the Trump Administration introduced a subsidy for the final assembly of automobiles in the US (Trump (2025a)). Together, these two policies may partly explain the sharp drop in real import values.

The difference in the magnitude of import declines between Canada and Mexico can be explained with their respective response to the US tariff measures. While Mexico decided not to retaliate, Canada reacted early by imposing counter-tariffs on US goods (Bown (2026)). These measures were implemented in stages over three months, starting in February 2025 in response to the initial US tariffs on Chinese, Mexican, and Canadian goods, and concluding in early April 2025 following the broader reciprocal tariff announcement (Bown (2026)). Consistent with Handley and Limão (2017), this further added to trade policy uncertainty and may have further suppressed bilateral trade flows. The severity of the impact is consistent with the early literature on US tariff measures 2025. H. Zhao (2025) estimates a short-term decrease in the gross domestic product (GDP) of 1.45% for Canada.

South Korea, Germany, France, United Kingdom, Japan, Italy and Taiwan

The remaining seven countries are South Korea, Germany, France, the UK, Japan, Italy, and Taiwan. All countries experienced a moderate increase in the average tariff rate after April 2025 of between 9.6pp and 16.6pp. This places them between the two extremes of the first two subgroups.

The majority of these countries have close to perfect linear expose-response relationships. This is specifically the case for South Korea, Germany, France, and the UK. The stronger the relative tariff shock, the more severe the decline in real US import values. With the exception of the UK, all countries show statistically significant import declines with varying degrees of significance.

Among these four countries, South Korea has the lowest average tariff rate in the pre-period at 1.0% and the highest in the post-period at 17.6% (see Figure 8). Facing the strongest increase in the average tariff rate among these four countries, South Korea is estimated to have experienced the largest decline in US import values after April 2025. The DiD coefficient is equal to $\beta_1 = -0.157$ and corresponds to a decline in real US imports of 14.50%. This result is statistically significant at a significance level of $\alpha = 0.01$ ($p = 0.002$).

Germany experiences the second-strongest increase in the average effective tariff rate after April 2025. Its tariff rate increased from 3.4% in the pre-period to 16.6% in the post-period. The DiD regression estimates the coefficient to be equal to $\beta_1 = -0.125$. This corresponds to an estimated decline in real US import values of 11.77%. This result is statistically significant at a significance level of $\alpha = 0.1$ ($p = 0.082$).

Similarly to Germany, France has a pre-period average tariff rate of 3.5% which increased to 15.3% in the post-period. Since the increase in the average tariff rate is smaller, the DiD regression estimates the negative effect on real US import values after April 2025 to be smaller compared to the countries before. The DiD estimate of $\beta_1 = -0.098$ converts to a decrease in real US import values of 9.30%. Based on the p-value of $p = 0.024$, this estimate is statistically significant at a significance level of $\alpha = 0.05$.

Finally, the UK fits perfectly in this logic, even though it sees a statistically insignificant DiD estimate at all conventional significance levels ($\beta_1 = -0.076, p-value = 0.396$). With the lowest increase in the average tariff rate, from a pre-period rate of 3.0% to a post-period rate of 12.6%, it simultaneously records the lowest decline in real US import values of 7.28%.

These four countries demonstrate linear expose-response relationships, which then perfectly identifies the increase in tariff rates as the main driver of their respective import declines. In line with Viner (2014), a tariff increase in these countries led to higher import costs that exporters could hardly absorb entirely by reducing their margins. Consequently, prices increased for US importers, reducing import demand from these countries. However, the decline in US import values of these countries is proportionally smaller compared to their average effective tariff rates. This suggests that the import response is moderated by the imperfect substitutability of goods from these countries. As Armington (1969) describes, importers do not immediately and completely change their demand in response to higher tariff costs. This is due to the fact that products cannot easily be replaced by domestic production or third country alternatives in the short-term.

The differences in results between the four countries can be partially explained by the timing and content of the bilateral trade agreements they have concluded. An early bilateral agreement protected key UK export areas from the full tariff burden. On 8 May 2025, shortly after the tariff announcement, the US and the UK agreed on the Economic Prosperity Deal (Government of the United Kingdom (2025)). Crucially, this agreement includes an annual import quota of 100,000 vehicles at a tariff rate of only 10% instead of 25% tariff applied globally to automobiles and automotive parts. Moreover, the initial reciprocal tariff imposed on the UK was comparably low with 10%, which further contributed to rather modest US import declines compared to other US trading partners (Government of the United Kingdom (2025)).

The EU reached a trade agreement on 28 July 2025, which reduced the tariff rate to 15% for most of its exports to the US, including automobiles and automotive parts (The White House (2025e)). However, 50% tariff on European steel, copper, and aluminum remained. The reduction of the average tariff rate after July 2025 is especially observable for France in Figure 7.

Lastly, the trade agreement between South Korea and the US only went into effect on 14 November 2025 (The White House (2025a)). The deal included a reduction of the reciprocal tariff rate imposed on South Korean goods to 15%. This imposed trade deal is visible in the declining average tariff rate of South Korea after November 2025, shown in Figure 7.

The sequential timing of these bilateral trade agreements reinforces the observed expose-response logic across the four countries. The earlier and more comprehensive the tariff relief, the smaller is the decline in real US import values after April 2025. Beyond direct tariff relief, Handley and Limão (2017) state that bilateral trade agreements also reduce trade policy uncertainty. Exporters can plan shipments and investments according to a clear and constant tariff schedule.

Three countries fall outside of this logic, namely Japan, Taiwan, and Italy. These remaining countries are estimated to experience heterogeneous tariff rates and import responses. Thus, no common pattern can be identified.

Japan's DiD coefficient is estimated to be equal to $\beta_1 = -0.081$. With a p-value of $p = 0.099$, it is statistically significant at a significance level of $\alpha = 0.1$. The DiD coefficient corresponds to a decline in real import values of 7.81% after April 2025 compared to the control group. Its average tariff rate across the treated industries increased from 3.8% in the pre-period to 18.0% in the post-period. Although the tariff rate is rather high compared to the other countries analyzed, Japan only experiences a moderate decrease in real US import values in the country comparison. This can be partially explained by its success in early bilateral negotiations. Japan and the US agreed to reduce the reciprocal tariff imposed on Japan from 25% to 15% already by mid-June (The White House (2025d)).

The DiD regression of Taiwan results in an estimate of $\beta_1 = -0.080$ and a p-value of $p = 0.062$. Thus, the result is statistically significant at a significance level of $\alpha = 0.1$. The DiD estimate implies a decline in real US import values in the treated industries of 7.71% after April 2025 compared to the control group. Although Taiwan faces a higher average tariff rate of 21.2% in the post-period compared to Japan, its import response is slightly more positive. The comparably low impact may be due to the sectorial composition of the DiD regression data. According to Crotty (2024), Taiwan is highly specialized in semiconductor manufacturing. In 2022 around 40% of its total exports were electronic integrated circuits and parts thereof, broadly known as the chip or semiconductor industry (Crotty (2024)). As Semiconductors are excluded from the baseline model, Taiwan's DiD estimate captures only a fraction of its tariff-exposed trade. This potentially underestimates the true import response. This limitation is addressed in a robustness check presented in subsection 5.4, where Semiconductors are included in the treatment group.

Lastly, as only one of the 14 countries, it is estimated that Italy experiences an almost complete pass-through of tariffs to import values. With an average post-period tariff rate in the treated industries of 15.3%, the DiD estimate implies a decline in real import values of 14.29% ($\beta_1 = -0.154$). Since the p-value is equal to $p = 0.034$, the result is statistically significant at a significance level of $\alpha = 0.05$.

The results of the twelve countries, which experience a decline in real US import values, reveal two broad transmission mechanisms. The primary mechanism is the direct tariff effect, consistent with Viner (2014). Higher import costs erode exporters' competitiveness and reduce or shift US import demand. The secondary mechanism represents indirect effects beyond the direct tariff rate, including trade policy uncertainty (Handley and Limão (2017)), bilateral agreements that selectively moderated tariff exposure and vertical specialization combined with supply chain disruptions (Yi (2003)). All of these factors shape the magnitude of country-specific responses together with, but independently from the direct tariff burden.

In summary, the empirical results of this DiD analysis reveal that the US tariff measures 2025 triggered a highly heterogeneous response among the 14 countries. While Vietnam and Thailand are estimated to have gained from trade diversion, the most countries experienced significant declines in imports likely to be driven by the two transmission mechanisms described previously. These findings imply that the impact of the US tariff measures cannot be evaluated by tariff rates alone but is fundamentally influenced by pre-existing supply chain structures, bilateral diplomatic relations and the broader uncertainty surrounding future trade policy trajectories.

5.4 Robustness Checks

To assess the robustness of the results of the DiD regression, four robustness checks were performed. Each robustness check and its result are described in more detail in the next section.

First, the DiD regression is estimated in levels with real import values in USD. The purpose of this robustness check is to test whether the results of the main analysis are sensitive to the functional form of the regression. Thereby, the sensitivity of the results to the variable specification is evaluated. Similar to the baseline model, the estimation of the DiD model is based on 198 data points covering the time span from May 2024 to February 2026. The treatment and control group stay unchanged. The only modification is that the previous log-transformation of the dependent variable is omitted, thus the outcome of $beta_1$ is in real import values. The results of the level regression by country are presented in the appendix in Table B.5.

Since the coefficient is not directly comparable to the main regression, the focus lies on the direction and significance of the estimates. The sign of the estimated impacts on US imports remains unchanged across all 14 countries. In line with the main DiD results, positive effects are observed only for Vietnam and Thailand. China is estimated to have the largest decline in US import values following the US tariff measures 2025. However, some DiD estimates lose statistical significance. From ten significant countries in the baseline DiD regression, only three countries reach significant levels in the level regression. Specifically, China ($p-value = 0.008$), Canada ($p-value = 0.033$) and France ($p - value = 0.067$) have statistically significant DiD estimates at the respective significant levels of $\alpha = 0.01$, $\alpha = 0.05$ and $\alpha = 0.1$. Furthermore, Canada's and France's statistical significance weakens by one conventional significant level.

These results do not contradict the main results but reflect an expected consequence of the change in the setup of the DiD regression. Compared to the log-level model, real import values in levels exhibit substantially higher variance across industries due to differences in baseline import values. Furthermore, the level regression does not compress the leverage of large outliers which further increases the residual variance and inflates standard errors. This highlights why the dependent variable in the main regression was log-transformed.

As a second robustness check, a placebo time analysis is performed. It tests whether the results are driven by the Trump Administration's tariff measures 2025 or whether the effects also occur during a different time period without a trade policy shock. Hence, a period without any major macroeconomic shock and any change in trade policy is needed for the placebo period. Moreover, a stable oil price development during this period is of major importance to ensure that the control group, Petroleum and Coal, follows a stable trend. Furthermore, the placebo period should cover the same months to ensure that the two periods are comparable and to avoid any seasonal effects.

Taking this into account, April 2013 is identified as a fake treatment date with a pre-treatment period from May 2012 to March 2013 and a post-treatment period from April 2013 to February 2014. This period was completely under the Obama Administration and no far-reaching additional tariffs were introduced (Office of the United States Trade Representative (2015)). Moreover, Figure B.11 in the appendix illustrates that the global price of brent crude remained stable between $100-115$ USD/barrel during this period (International Monetary Fund (2026)). These conditions qualify the period as cleanest available placebo period in the data.

The placebo time analysis serves as an additional test of the parallel trends assumption. If the placebo DiD coefficients are statistically insignificant, this provides evidence that the treated and control groups follow parallel trends in the absence of an actual policy shock.

Apart from the modified time period, there are no other changes compared to the baseline model. The resulting DiD coefficients in this placebo regression are expected to be insignificant in order to conclude that the main results of the baseline model are specific to April 2025. The results of the placebo regression per country are reported in Table B.6 in the appendix.

Among the 14 countries analyzed, three see a statistically significant coefficient in the placebo period: China ($\beta_1 = 0.035$, $p-value = 0.058$), Mexico ($\beta_1 = 0.052$, $p-value = 0.007$) and Vietnam ($\beta_1 = 0.111$, $p-value = 0.069$). Compared to the main regression, the sign of the DiD coefficients of China and Mexico changes, and both countries then exhibit positive estimates in the placebo regression. These may reflect cyclical upward trends in imports during the placebo period, which are potentially related to stable global trade conditions under the Obama Administration. It supports that the negative effects observed for China and Mexico in the main analysis are not driven by pre-existing trends and strengthens the causal attribution of the main results to the April 2025 US tariff measures.

For Vietnam, however, the DiD coefficient is positive and of similar magnitude to the main results. This may reflect a consistently strong export growth during both periods, likely driven by ongoing integration into global supply chains. Having this in mind, the Vietnam's DiD coefficient of the baseline model needs to be interpreted with caution. It cannot completely be ruled out that the observed positive import response of Vietnam captures a pre-existing trend rather than a pure tariff-driven trade diversion gain.

Nevertheless, the majority, eleven out of 14 countries, demonstrate insignificant results in the placebo analysis, which generally supports the validity of the DiD assumptions regarding the treatment causality and the parallel trends.

Due to differing parallel trends compared to the control industry in the pre-treatment period, Aluminum and Semiconductors were excluded from the baseline model. The last two robustness checks now test whether the decision of excluding these industries is driving the results of the main regression. Therefore, the last two robustness checks separately include Aluminum and Semiconductors as treated industries again.

The third robustness check first includes Aluminum. Hence, the number of treated industries increases from eight to nine. The estimation of the DiD model is now based on 220 data points, since it includes ten industries in total and still covers the same time period from May 2024 to February 2026 (22 months). No additional modifications were made to the baseline model. The same is done for the fourth robustness check only with the inclusion of Semiconductors instead of Aluminum.

The results of the DiD regression including Aluminum in the treated industries as well as a comparison table with the main DiD results are displayed in Table B.7 and B.8 in the appendix.

All coefficients of the 14 countries are estimated to have the same sign as in the baseline DiD regression. The most countries, specifically ten out of 14, demonstrate stable estimates with a difference under 3pp compared to the baseline model. Vietnam and Thailand remain the only countries that are estimated to experience an increase in US import values. The robustness check still results in China being the country with the biggest decline in US import values. Moreover, with a p-value of $p = 0.000$, the result is still statistically significant at a significance level of $\alpha = 0.01$.

The countries reporting insignificant results in the baseline model remain statistically insignificant in the robustness check. Overall, these findings support the robustness of the main results when including Aluminum in the treated industries.

The strongest deviation from the baseline model is observed for Switzerland. The estimated impact on real US import values increases compared to the baseline model by 14.91pp. The DiD coefficient changes from statistically significant at a significance level of $\alpha = 0.01$ when excluding Aluminum ($p - value = 0.003$) to statistically insignificant at all conventional significance levels when including Aluminum ($p - value = 0.781$) in the model setup. These differences in the results may be due to uncontrolled market fluctuations that overshadowed the actual effect.

Taken together, the results of this robustness check confirm that the main findings are not highly sensitive to the exclusion of Aluminum. The exclusion of Aluminum from the baseline model can be further justified given the distorting effect in the estimate of Switzerland.

The results of the DiD regression including Semiconductors as treated industry are presented in Table B.9 and B.10 in the appendix.

The inclusion of Semiconductors is estimated to have a positive impact on the results for almost every country, except for China. The negative impact of the tariff measures on the real US import values from China increases slightly by 0.22pp when including Semiconductors in the model set up. Thus, the inclusion of the semiconductor industry mitigated the impact on US import values for the majority of trading partners. These results suggest industry-specific tariff exemptions in the post-treatment period. Therefore, the exclusion of Semiconductors in the baseline model, which aims to include most tariff-affected industries, is justified by these results.

However, the key results are robust. China remains the country with the strongest decline in real US import values. Vietnam and Thailand remain the only countries with increases in US imports after April 2025. The sign of the impact is equal to the results of the baseline DiD regression for all 14 trading partners. Furthermore, the change in magnitude compared to the baseline model is modest, remaining under 3pp for ten out of 14 countries. The biggest deviations are observable for Vietnam ($+3.75$pp), Thailand ($+4.43$pp), Taiwan ($+3.26$pp), and South Korea ($+3.57$pp). This can be attributed to the high importance of the semiconductor industry in these countries. According to World Semiconductor Trade Statistics (WSTS) (2025), Asia Pacific makes up more than 50% of the global semiconductor market size, with countries like South Korea and Taiwan being among the biggest producers.

Overall, the results of the robustness check confirm that the main findings are not sensitive to the exclusion of Semiconductors. The observed deviations are concentrated in countries with a high exposure to semiconductor trade. This further validates its exclusion from the baseline regression.

In summary, the robustness checks reinforce the validity and causal interpretation of the baseline model results. Changing the model setup and the analyzed time period confirmed that the import declines observed for most of the US trading partners are fundamentally driven by the April 2025 tariff shock rather than by pre-existing trends. Furthermore, integrating previously excluded industries like Aluminum and Semiconductors left the core results unchanged. Simultaneously, it provided evidence that their exclusion in the main regression model was methodologically justified to isolate the true policy effect from industry-specific distortions.

6 Limitations

Section 5 presented the data, the identification strategy and the applied DiD framework with its results and interpretation. The empirical findings provide evidence for a heterogeneous tariff-driven import response among major US trading partners. However, the empirical application is subject to the following limitations that should be kept in mind when interpreting the results.

It must be noted that this study only includes a short post-treatment period of eleven months. Therefore, only the short-term impacts of the US tariff measures 2025 can be estimated. Trade flows can only react immediately to a certain extent, for example, due to ongoing supplier contracts that cannot be changed in the short-term. However, supply chain restructuring may only materialize in the medium- to long-term. This is beyond the scope of this thesis.

Another data-wise limitation exists with respect to the industry code translation, specifically for the placebo analysis, which was implemented as a robustness check. For the placebo regression, data from May 2012 to February 2014 was extracted from the USITC Dataweb. However, the HTS codes used per industry changed over time to adapt to newly evolved industries and trade practices. Although these revisions have been incorporated into the data construction, residual inconsistencies in industry-level data between placebo and main analysis periods cannot be completely eliminated.

Beyond these data-specific constraints, there are additional limitations related to the application of the DiD methodology. First, the vulnerability of the control group to idiosyncratic shocks must be considered. Specifically, using a single industry as the control group makes the identification strategy more vulnerable to sector-specific disturbances than if a broader control group were used. In particular, Petroleum and Coal may follow a systematically different trend compared to the treated industries due to the oil price volatility. Despite conducting several tests to ensure compliance with the parallel trends assumption, this structural limitation remains. In addition, the trend regression of Petroleum and Coal revealed that the industry shows an insignificant but slightly upward trend in the post-period. This must be taken into account when interpreting the DiD coefficient.

Furthermore, this study does not cover industry-specific heterogeneity. The DiD coefficient measures the average change in log-transformed real import values across all eight treated industries after April 2025 relative to Petroleum and Coal. The estimate is not weighted by the import values of the industries per country but by the number of treated industries. Specifically, this means that a 10% decrease in import values of the automotive sector has the same impact on the DiD coefficient like a 10% decrease of the apparel sector. The estimation does not consider how substantial the import values, and therefore the importance of the industries, are for each country. The DiD coefficient may be underestimated for highly specialized countries whose export strategy relies on one or two industries.

Regarding the interpretation of the results, the following content constraints should be taken into account. An anticipation behavior of US importers, as described in section 3.1, may have led to a short-term import increase before April 2025. The DiD methodology compares the change from the pre-treatment to the post-treatment period for both the treatment and control group. If pre-treatment dynamics in some treated industries are not representative of a period without macroeconomic shocks, this may distort the estimation results.

Moreover, the analysis does not distinguish between a genuine demand change and a trade diversion effect. The observed changes in bilateral imports can either be attributed to a contraction in overall US import demand or to a reallocation to lower-tariffed countries. Both effects would be observed equivalently in the DiD framework.

Although the findings of this thesis provide empirical evidence on the short-term impact of the US tariff measures 2025 on bilateral real US import flows, the limitations outlined in this section should be considered when analyzing the results. The short analysis period and the constraint of the control group on industry-level, for example, limit the strength of the causal interpretation. Future research with a longer analysis period is needed to fully assess the medium- and long-term impact of the US tariff measures 2025 on global trade flows.

7 Descriptive Rerouting Analysis

Section 5 described the empirical analysis implemented in this thesis. Its results showed significant declines in real US import values from most of its trading partners after April 2025. However, the US import values from two of the selected countries were estimated to increase in the post-period despite them being exposed to higher tariff rates than in the pre-period. Besides the possible trade diversion explanation, this observed pattern suggests that trade flows might have been partially rerouted through third countries rather than simply suppressed. Countries whose goods were relatively more exposed to the tariff measures than goods from third countries would have a financial incentive to reroute trade flows.

As described in section 2, rerouting occurs when goods are shipped from their country of origin through a third country to their final destination (Le Roux and Spital (2026)). Previous literature studied the rerouting phenomena during the US-China trade war in 2018. Iyoha et al. (2025), for example, find evidence for Vietnam serving as intermediary country for a part of the tariff-affected Chinese goods that were shipped to the US. Their argument is based on cultural and geographical proximity, as well as similar economic and political institutions, which make Vietnam a suitable destination for transshipped goods from China.

The empirical results of the DiD regression show that China is estimated to experience the largest reduction in US import values while Vietnam records the largest increase. Furthermore, during the post-treatment period, Vietnamese goods were subject to a tariff rate that was half that imposed on Chinese goods entering the US. In light of previous research, these results raise the question whether the observed increase in US imports from Vietnam represents genuine value addition or if it is partly attributable to transshipped Chinese goods.

This section conducts a descriptive analysis to provide indicative evidence for the following hypothesis: If Chinese exporters, in response to the increased tariff exposure 2025, redirected goods destined for the US market through Vietnam, Vietnam's imports from China and exports to the US should both increase by the same amount after April 2025.

Iyoha et al. (2025) describe one method to examine possible rerouting behavior. Specifically, they compare the increase in exports from a tariff-targeted country to a respective third country and the simultaneous increase of exports from this third country to the tariff-imposing country.

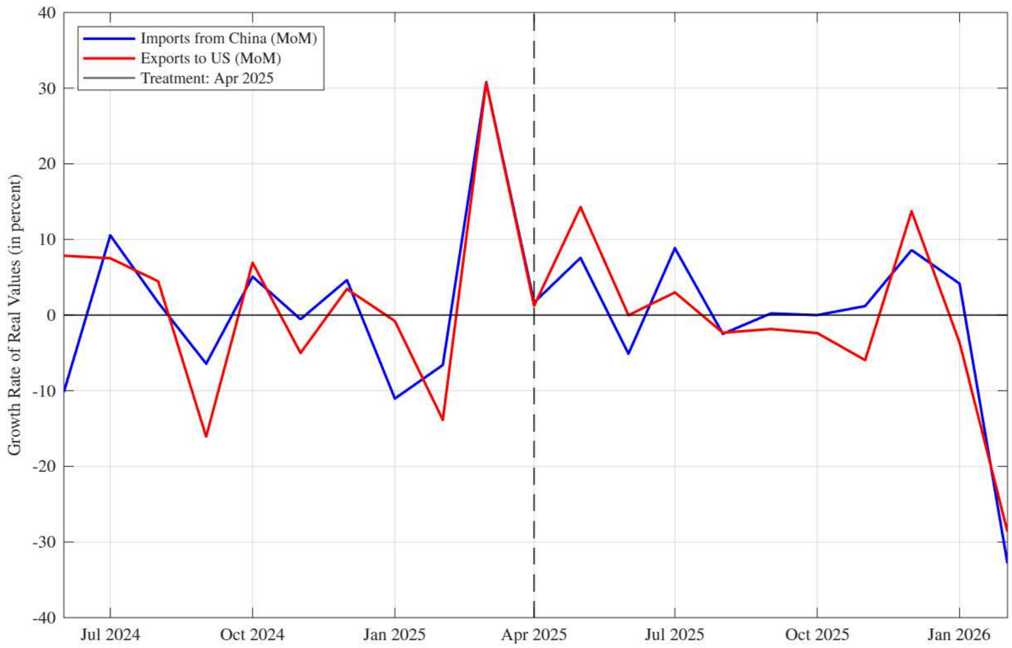
This section compares monthly Vietnamese import data from China with export data to the US. To avoid discrepancies arising from data extraction from different sources, data is extracted from a single source only: the National Statistics Office of Vietnam (2026). This ensures the two trade flow series are comparable. The data cover the analysis period from May 2024 to February 2026. As HTS-code level data is unavailable, the descriptive analysis relies on total Vietnamese import and export values in USD. While this limits direct comparability with the industry-based findings of the main analysis, the aggregate trade data is considered adequate for providing indicative evidence of potential rerouting activity. As in the main analysis of this thesis, nominal values were transformed into real values, accounting for inflation. As the data is reported in USD, the US CPI for all Urban Consumers of the U.S. Bureau of Labor Statistics (2026) is used to deflate the values. For simplicity, the CPI was indexed to January $2010 = 100$, as in the main analysis. In addition to comparing total Vietnamese export and import data, this section also compares their respective monthly growth rates.

Figure 9 compares the monthly growth rates of Vietnam's real import values from China with the monthly growth rates of real export values to the US during the analysis period. In general, it can be seen that the two curves exhibit a similar development. The most pronounced simultaneous increase of the two series occurs in March 2025, when both growth rates increase to around 30%. This is immediately before the implementation of the US tariff measures in April 2025. Hence, this increase can be attributed to anticipation behavior. After April 2025 both Vietnam's imports from China and exports to the US again follow the same monthly growth trends. After April 2025, both growth rates seem to be more positive than before with less negative outliers.

Additionally, monthly real values of Vietnam's imports from China and exports to the US have been plotted in Figure C.12 in the appendix. This additional visualization broadly confirms the observed parallel movement. Furthermore, it illustrates that imports from China are consistently higher than exports to the US throughout the analysis period. Both plots provide indicative evidence for the rerouting hypothesis, as they show that Vietnam's imports from China and exports to the US are structurally linked.

Additional evidence is provided by Figure 10. The figure compares the pre- and post-period means of Vietnam's real imports from China and exports to the US. The pre-period is defined to

Figure 9: Vietnam's Monthly Growth Rates of Imports from China and Exports to US

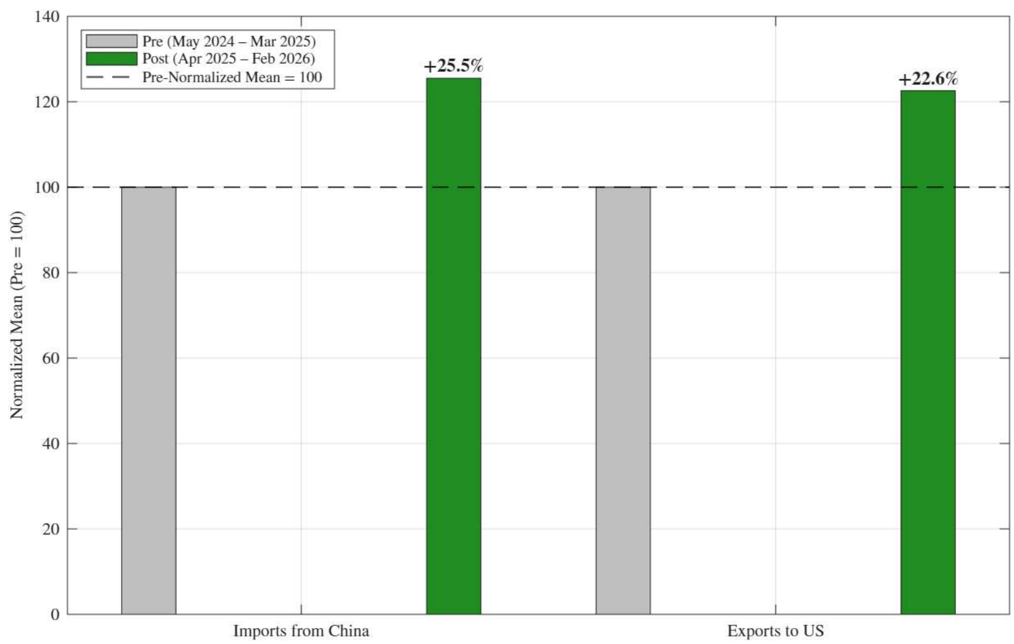


Notes: The figure illustrates the month-on-month growth rates (in percent) of Vietnam's imports from China (blue line) and its exports to the US (red line). It covers a time period from May 2024 to February 2026. The dashed vertical line indicates the treatment date of the main DiD analysis, April 2025. The data is taken from National Statistics Office of Vietnam (2026).

cover the time period from May 2024 to March 2025, while the post-period covers the time period from April 2025 to February 2026. Furthermore, the mean of the pre-period is normalized to 100 and is then compared to the post-period mean of the respective trade flow. It can be seen that following the implementation of the US tariffs in April 2025, Vietnam's real imports from China increased on average by 25.5% relative to the pre-period, while real exports to the US increased by 22.6%. The similar and substantially large magnitude of both increases further supports the rerouting hypothesis that goods imported from China are subsequently exported to the US market. Growth of this magnitude would require an independent demand increase in Vietnam's domestic economy. However, no evident explanation for such an demand increase was found in the same period.

These findings can be connected to the results of the main analysis. While Chinese exports to the US decreased after April 2025, Vietnam's exports to the US as well as its imports from China increased simultaneously in comparable magnitude. These three concurrent observations combined imply that Vietnam's export growth to the US cannot be fully explained by value addition, but may be partially attributed to transshipped goods from China.

Figure 10: Pre/Post Mean Comparison of Vietnam's Imports from China and Exports to US



Notes: The figure illustrates the change in the average value of Vietnam's imports from China and its exports to the US between the pre-period (May 2024 - March 2025) and the post-period (April 2025 - February 2026). Both series are normalized to a pre-period mean of 100. The data is taken from National Statistics Office of Vietnam (2026).

Although this descriptive analysis finds indicative evidence supporting the rerouting pattern, the following limitations should be acknowledged when interpreting the results.

First, the descriptive nature of the analysis does not allow for causal conclusion. The observed parallel development of both trade flows is consistent with a rerouting hypothesis, but does not empirically prove it. Second, since data is not available at the product level, a direct comparison of the main DiD results and the aggregate results of this rerouting analysis is limited. Lastly, this analysis only provides indicative evidence for transshipment through Vietnam. However, according to the results of the main DiD regression, Thailand also benefited from trade diversion after the implementation of the US tariff measures in April 2025.

In summary, the descriptive evidence provided in this section is consistent with the rerouting hypothesis that the US import increase from Vietnam after April 2025 can be partially attributed to transshipped Chinese goods rather than pure value addition. Although no causal conclusion can be drawn, the parallel development of Vietnam's imports from China and exports to the US, combined with a simultaneous decrease in US imports from China, provides indicative evidence of a rerouting pattern in response to the US tariff measures 2025. However, future research examining HTS product-level data on potential rerouting destinations is needed to fully assess the extent of trade rerouting in response to the US tariff measures 2025.

8 Conclusion

The purpose of this thesis was to examine whether and how the US tariff measures in 2025 impacted bilateral trade flows with its main trading partners in the short-term. In this regard, a DiD regression was applied to monthly real US import values per country. The data is disaggregated at the country-industry level, including 14 countries and nine industries. The DiD results are equal to the average change of real US import values across eight tariff-affected industries (in percent) after April 2025 compared to the unaffected control industry.

The findings of this thesis suggest that the US tariff measures 2025 had a statistically significant short-term effect on bilateral US trade flows with the majority of its main trading partners. However, the results show heterogeneous effects across countries in terms of their direction, magnitude, and significance.

Of the 14 countries analyzed, twelve countries observe average US import declines after April 2025. Ten trading partners show statistically significant negative results, which broadly confirms the standard theoretical expectation that tariffs reduce bilateral trade flows. These negative import responses are mainly driven by country-specific tariff rates. However, the magnitude of import declines varies broadly from 7.28% for the UK to 36.62% for China. This difference suggests that beyond the direct price effect of tariffs, other factors, like trade policy uncertainty, supply chain structures, and bilateral diplomatic relations, may have shaped country-specific trade responses.

Despite the largely negative import responses, two countries were identified as beneficiaries of the US tariffs: real US import values from Vietnam and Thailand are estimated to increase after April 2025, although the effects are not statistically significant. These positive import responses can be explained with trade diversion, suggesting that diverted trade from higher-tariffed countries has offset the direct price effect of tariffs for both countries.

In addition, a descriptive rerouting analysis was conducted to further interpret the results of the main analysis. The analysis focused on Vietnam's imports from China and its exports to the US. The findings show that both trade variables developed in parallel after April 2025. Specifically, they see substantial increases of more than 20% in real values compared to the pre-treatment period. Combined with the simultaneous and substantial decrease in US imports from China observed in the main analysis, these findings support the rerouting hypothesis. They provide indicative evidence suggesting that some Chinese goods may have been partially rerouted through Vietnam to circumvent the substantial increase in US tariffs on imports from China.

When comparing the empirical findings of this thesis with literature on the US-China trade war 2018 several similarities and differences can be identified. First, China being the most significant loser is consistent with the findings of Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2020) and Nicita (2019). Both document substantial declines in US imports from China following the 2018 tariff measures. The positive impacts observed for Vietnam and Thailand speak against the finding of Cigna et al. (2020) who did not find any evidence for short-term trade diversion. However, in the medium-term Vietnam was identified as beneficiary of trade diversion following the US-China trade war 2018 by Nicita (2019) and Fajgelbaum, Goldberg, Kennedy, Khandelwal, and Taglioni (2024). Furthermore, the indicative rerouting pattern identified for Vietnam aligns with the findings of Iyoha et al. (2025). They show that a part of Vietnam's export growth is attributable to transshipped goods from China during the trade war 2018. Nevertheless, it should be noted that the global scope and large scale of the US tariff measures in 2025 are substantially different from those in 2018. This restricts the direct comparability of the findings from the two tariff periods.

Although the findings provide meaningful causal evidence on the short-term impact of the US tariff rates 2025 on bilateral trade flows, these are partially limited by the short post-treatment period of only eleven months. The effects of tariffs may take time to materialize as supply chain structures cannot react immediately due to existing contracts. This suggests that the medium- and long-term impacts may differ from those predicted by this thesis. Future research should therefore extend the analysis period to account for the effects of supply chain adjustments. In addition, the findings of the rerouting analysis are purely descriptive and do not allow a causal conclusion. Therefore, future research should adopt a causal identification strategy to examine rerouted trade flows in response to the US tariff measures 2025.

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A Data used in the Analysis

A.1 Industry Code Translation

The empirical analysis of this thesis uses industry-level data per country. For this reason a classification of industries was necessary to extract the data sample from the USITC Dataweb. Since the Tariff Tracker by the The Economist (2025) was, among others, used to select the most-tariff-affected industries, this thesis follows its underlying methodology for industry classification.

First, the Industry and Commodity Codes by the U.S. Bureau of Economic Analysis (n.d.) were used to classify the industry categories of this thesis. These codes are divided into five different levels, whereof the ”underlying summary” level distinguishes 138 industry groups. This level is used in this thesis. With the help of the Concordance Table of the U.S. Bureau of Economic Analysis (n.d.) these industry groups were then translated to a set of North American Industry Classification System (NAICS) codes per industry. Since these codes are not globally applicable, the NAICS codes were further converted into eight-digit Harmonized Tariff Schedule (HTS) codes using the Commodity Translation Tool of the USITC. As a result, each industry consists of a set of eight-digit level HTS codes.

To account for code reporting changes made during the download period starting in 2010, the new codes were added to the code pool for the respective industries. The resulting set of codes per industry was then checked for code duplications. For Petroleum and Coal another check with Annex II of Executive Order 14257, covering tariff exemptions, was conducted to ensure that the control group only includes tariff-exempted eight-digit HTS codes. Lastly, taking the imports for consumption trade flows as classified in the USITC Dataweb, monthly nominal import values per industry disaggregated by country were extracted.

A.2 Parallel Trend Assumption: Pre-period Trend Analysis

As part of section 5.2, the parallel trends assumption of the DiD framework is examined. The DiD method requires the treated industries to follow a similar trend to the control industry before the treatment. Besides the visualization of the normalized real import values for each industry, a pre-period trend analysis was conducted to validate the parallel trends assumption.

The pre-period trend analysis examines if the selected industries follow the same trend of Petroleum and Coal (control industry) in the pre-treatment period, from May 2024 to March 2025. Monthly real import values of each industry are averaged across the 14 selected countries and normalized to a pre-period mean of 100. The normalization ensures that the absolute import values of different industries are comparable. With a simple OLS regression the monthly trend of each industry in the pre-treatment period is estimated. The linear OLS-regression formula, that was implemented, can be written as follows:

$$Value_t = \beta_0 + \beta_1 \times t + \epsilon_t \tag{7}$$

where $t = 1, 2, \ldots, 11$ equals the monthly observations in the pre-treatment period (May 2024 - March 2025). $Value_t$ represents the normalized average real import value of one industry across all 14 countries at time t. The coefficient of interest β_1 measures the monthly trend of the respective industry.

As a second step the β_1 of Petroleum and Coal (here:β_1^{Control}) is taken as a reference coefficient. For each of the ten industries i the deviation from this reference coefficient is calculated as follows:

$$\Delta\beta_1^i = \left|\beta_1^i - \beta_1^{\text{Control}}\right| \tag{8}$$

A large deviation indicates that industry i shows a fundamentally different pre-period trend compared to the control industry. This would violate the parallel trends assumption and justify an exclusion from the DiD baseline model.

The results of the pre-period trend analysis are presented in Table A.3. For each industry, the coefficient β_1 resulting from the OLS regression and the deviation from the coefficient of Petroleum and Coal $\Delta\beta_1^i$ is displayed. Based on these results, Aluminum and Semiconductors were excluded from the main DiD analysis since both industries show the largest pre-period trend deviations from the control group. Furthermore, both industries exhibit a different trend behavior than the control group. While Petroleum and Coal declines in the pre-period, the import values of Aluminum and Semiconductors increase.

Table A.3: Pre-Period Trend Analysis: Industry Trend Coefficients vs. Petroleum and Coal

Industry	β_1	**Absolute Difference vs. Control**
Petroleum and Coal (Control)	-3.784	—
Aluminum	0.536	4.320
Apparel	-0.908	2.876
Automotive	-0.586	3.198
Chemicals	-1.069	2.715
Furniture	-0.572	3.212
Iron and Steel	-1.275	2.509
Machinery	-0.500	3.284
Semiconductors	0.425	4.209
Textile	-1.131	2.653
Toys	-1.005	2.779

Notes: The table reports the pre-period trend coefficient β_1 estimated from an OLS regression of the normalized real import value for each industry over the pre-treatment period May 2024 to March 2025, averaged across all 14 countries. The absolute difference measures the deviation of each industry's trend from the Petroleum and Coal control group. The data is taken from U.S. International Trade Commission (2026a).

A.3 Petroleum and Coal Trend Analysis

In section 5.2 a separate trend analysis of the control industry, Petroleum and Coal, was conducted. In addition to the pre-period trend test in A.2, the purpose of this analysis is to check whether Petroleum and Coal follows an independent, from the tariffs unaffected trend after April 2025. Monthly real import values of Petroleum and Coal are averaged across all 14 selected countries and normalized to a pre-period mean of 100. This normalization was retained from the pre-period trend analysis, which was conducted before. With two separate OLS regressions, the trend of Petroleum and Coal before (May 2024 - March 2025) and after the treatment (April 2025 - February 2026) is estimated. The formula is written as follows:

$$Value_t = \beta_0 + \beta_1 \times t + \epsilon_t \tag{9}$$

where $t = 1, 2, \ldots, 11$ equals the monthly observations in the pre-treatment period (May 2024 - March 2025) and $t = 12, 13, \ldots, 22$ represents the monthly observations in the post-treatment period (April 2025 - February 2026). $Value_t$ is the normalized average real import value of Petroleum and Coal across all 14 countries at month t. The coefficient of interest β_1 measures the monthly trend of the Petroleum and Coal.

Table A.4: Petroleum and Coal Trend Regression: Pre- and Post-Treatment Period

Period	β_1	**Standard Error**	**P-value**
Pre-Period (May 2024 – Mar 2025)	-3.784 ***	1.041	0.005
Post-Period (Apr 2025 – Feb 2026)	0.109	0.442	0.812

Notes: The table reports the trend coefficient β_1 estimated from separate OLS regressions of the normalized real import value of Petroleum and Coal averaged across all 14 countries over the pre- and post-treatment period. The pre-treament period is defined as May 2024 to March 2025 and the post-treatment period is defined as April 2025 to February 2026. The data is taken from U.S. International Trade Commission (2026a). Significance levels are indicated by asterisks: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

The results of the regressions are shown in Table A.3. The pre-period shows a statistically significant negative trend, which equals the result of the pre-period trend test for Petroleum and Coal in A.3. In the post-period, Petroleum and Coal sees a statistically insignificant trend close to zero. This indicates that it does not exhibit a systematic trend after the tariff implementation and further validates the selection of the control group.

B Robustness of the DiD Regression

This section presents the results of the four robustness checks. To validate the results of section 5.3.2, the following four robustness checks were concluded. First, a DiD regression in levels was implemented to test the sensitivity of the results to variable specification. Thus, the dependent variable is not log-transformed but represents real import values in USD per country in levels. Besides the dependent variable, the baseline model was not further modified. The results are expected to be less significant, since level regressions typically show higher variance in absolute values, which inflates standard errors compared to the log specification.

Second, a placebo regression was carried out for two purposes. On the one hand, it tests whether the results are specifically driven by the US tariff measures 2025. On the other hand, it serves as additional support for the parallel trends assumption. It checks whether the treated and control industry would follow the same trend in absence of the treatment. For both purposes, the results are expected to be insignificant. For that, a placebo period without major macroeconomic shocks and with a stable oil price was identified. Beyond the analysis period, the baseline model was not adjusted further.

A third and fourth robustness check were performed by including the initially excluded industries of Aluminum and Semiconductors. Both robustness checks test whether the results are driven by the exclusion of these two industries. Therefore, ten industries were included in the DiD model instead of the initial nine. In combination with 22 months of the analysis period, this leads to 220 observations per country. Other than the industry composition, no further modifications were conducted compared to the baseline model. The reported results for these two robustness checks additionally include a comparison with the main results, as especially the direction and magnitude of the coefficient changes are of primary interest alongside the significance levels.

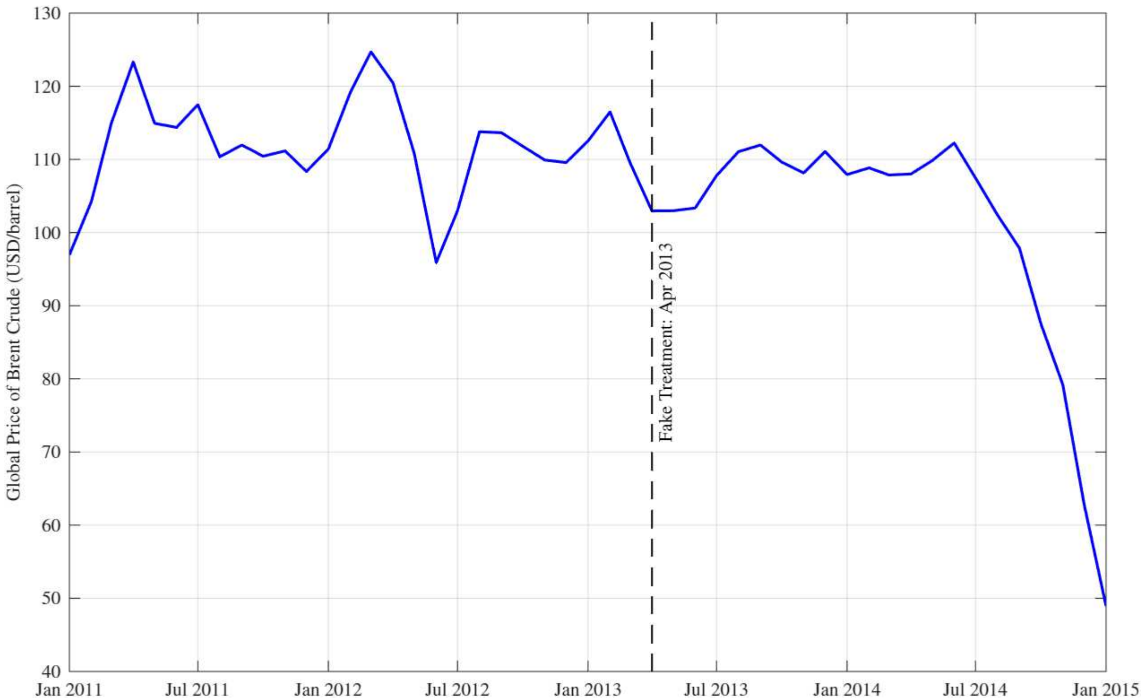
Table B.5 shows the results of the DiD regression in levels by country. In contrast to the main results, the DiD coefficient β_1 captures the average change in absolute real US import values across all eight treated industries after April 2025 relative to Petroleum and Coal. It is expressed in million USD.

Table B.5: Robustness Check 1: Results of the Level DiD Regression by Country

Country	β_1 **(Mio. USD)**	**Standard Error (Mio. USD)**	**P-value**
Vietnam	49.81	38.13	0.228
Thailand	7.61	13.65	0.592
Taiwan	-2.77	6.76	0.692
Switzerland	-7.10	4.94	0.189
France	-10.74^{*}	5.06	0.067
Italy	-21.70	12.48	0.120
United Kingdom	-43.54	37.91	0.284
India	-76.05	66.36	0.285
South Korea	-98.11	60.32	0.143
Japan	-98.81	69.81	0.195
Germany	-127.62	87.46	0.183
Canada	-164.71^{**}	64.19	0.033
Mexico	-207.85	140.86	0.178
China	-469.66^{***}	134.84	0.008

Notes: The table displays the results of the DiD regression in levels estimated separately for each country over the time period between May 2024 to February 2026. The dependent variable represents the absolute real import value in USD without log-transformation. Each regression includes nine industries $\times$ 22 months = 198 observations and controls for industry fixed effects. β_1 captures the average change in real import values in millions of USD across all eight treated industries after April 2025 relative to Petroleum and Coal. Results are sorted from highest to lowest by by the estimated percentage change. Significance levels are indicated by asterisks: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Figure B.11: Monthly Global Brent Crude Price in Placebo Period



Notes: The figure shows the monthly global brent crude price taken from the International Monetary Fund (2026). It covers the time period from January 2011 to January 2015. The dashed line indicates the fake treatment event, April 2013, used for the placebo analysis.

As described in subsection 5.4, a placebo time analysis is conducted as a second robustness check. For this, a period with a stable oil price is necessary due to the control group of Petroleum and Coal. The price of global brent crude taken from the International Monetary Fund (IMF) was chosen as an indicator because it is determined by the largest crude oil exporters. Thus, it covers the majority of the global oil market (International Monetary Fund (2026)). Figure B.11 shows the monthly global price of brent crude between 2011 and 2014. It can be seen that the price remained stable between May 2012 to February 2014 at 100-115 USD/barrel. Only one exemption can be observed in June 2012, when the oil price dropped below 100 USD/barrel. Since this period covers the same number of months as the baseline analysis, this time period was chosen as the analysis period. Only after the placebo period, in mid-2014, the global price of brent crude drops sharply.

Table B.6 reports the results of the placebo regression for the analysis period from May 2012 to February 2014. The DiD coefficient β_1 captures the average change in log-transformed real import values across all eight treated industries after April 2013 relative to Petroleum and Coal.

Table B.6: Robustness Check 2: Results of the Placebo DiD Regression by Country (May 2012 - February 2014)

Country	β_1	**Standard Error**	**P-value**	**Pct. Change (%)**
Vietnam	0.111^{*}	0.053	0.069	+11.73
South Korea	0.061	0.048	0.245	+6.27
Mexico	0.052^{***}	0.014	0.007	+5.33
France	0.044	0.038	0.276	+4.50
Germany	0.042	0.033	0.242	+4.25
China	0.035^{*}	0.016	0.058	+3.60
Italy	0.027	0.072	0.716	+2.75
India	0.018	0.038	0.648	+1.81
Switzerland	0.014	0.038	0.727	+1.39
Taiwan	-0.010	0.014	0.476	-1.02
Thailand	-0.010	0.048	0.833	-1.04
Canada	-0.026	0.018	0.191	-2.54
United Kingdom	-0.048	0.042	0.282	-4.71
Japan	-0.073	0.040	0.107	-7.04

Notes: The table displays the results of the placebo time test. The test was estimated separately for each country over a placebo period of May 2012 to February 2026, with a fake treatment date of April 2013. The dependent variable is the log-transformed real US import value at the industry-month level. Each regression includes nine industries $\times$ 22 months = 198 observations and controls for industry fixed effects. β_1 is the estimated placebo DiD coefficient. Results are sorted from highest to lowest by the estimated percentage change. Significance levels are indicated by asterisks: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table B.7 displays the results of the DiD regression including Aluminum as an additional treated industry. The DiD coefficient β_1 measures the average change in log-transformed real US import values across nine, instead of eight, treated industries after April 2025 relative to Petroleum and Coal.

Table B.7: Robustness Check 3: Results of the DiD Regression including Aluminum by Country

Country	β_1	**Standard Error**	**P-value**	**Pct. Change (%)**
Vietnam	0.115	0.090	0.231	+12.18
Thailand	0.054	0.051	0.324	+5.51
Switzerland	-0.052	0.180	0.781	-5.03
Japan	-0.054	0.048	0.291	-5.21
United Kingdom	-0.070	0.075	0.375	-6.74
France	-0.076*	0.038	0.079	-7.28
Germany	-0.089	0.067	0.213	-8.55
Taiwan	-0.117**	0.049	0.042	-11.01
South Korea	-0.123**	0.046	0.026	-11.57
Italy	-0.135**	0.057	0.042	-12.61
India	-0.161	0.169	0.365	-14.87
Mexico	-0.181**	0.069	0.028	-16.59
Canada	-0.259***	0.061	0.002	-22.80
China	-0.437***	0.046	0.000	-35.42

Notes: The table reports the results of the third robustness check, which repeats the main DiD regression but includes Aluminum as an additional treated industry. This results in ten industries $\times$ 22 months = 220 observations per country regression. The dependent variable is the log-transformed real US import value at the industry-month level. β_1 is the estimated DiD coefficient. Results are sorted from highest to lowest by the estimated percentage change. Significance levels are indicated by asterisks: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table B.8 compares the results of the baseline DiD regression with those of the third robustness check, which includes Aluminum as additional treated industry. The last column reports the difference in the percentage change between the two specifications per country, expressed in percentage points. Aluminum is abbreviated as ”AL”.

Table B.8: Robustness Check 3: DiD Regression Results excluding vs. including Aluminum by Country

Country	**Pct. Change excl. AL**	**P-value excl. AL**	**Pct. Change incl. AL**	**P-value incl. AL**	**Difference in pp**
Vietnam	+11.97	0.297	+12.18	0.231	+0.21
Thailand	+5.56	0.379	+5.51	0.324	−0.05
United Kingdom	−7.28	0.396	−6.74	0.375	+0.54
Taiwan	-7.71^{*}	0.062	-11.01^{**}	0.042	−3.29
Japan	-7.81^{*}	0.099	−5.21	0.291	+2.60
France	-9.30^{**}	0.024	-7.28^{*}	0.079	+2.01
Germany	-11.77^{*}	0.082	−8.55	0.213	+3.22
Italy	-14.29^{**}	0.034	-12.61^{**}	0.042	+1.68
Mexico	-14.41^{*}	0.064	-16.59^{**}	0.028	−2.18
South Korea	-14.50^{***}	0.002	-11.57^{**}	0.026	+2.93
India	−18.44	0.301	−14.87	0.365	+3.57
Switzerland	-19.94^{***}	0.003	−5.03	0.781	+14.91
Canada	-20.78^{***}	0.006	-22.80^{***}	0.002	−2.03
China	-36.62^{***}	0.000	-35.42^{***}	0.000	+1.21

Notes: The table compares the results of the baseline DiD regression (excluding Aluminum, eight treated industries) with the third robustness check (including Aluminum, nine treated industries) for each country. The column ”Difference” reports the change in percentage points (pp) when Aluminum is included. Results are sorted from highest to lowest by the estimated percentage change (excl. AL). Significance levels are indicated by asterisks: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table B.9 shows the results of the DiD regression including Semiconductors as an additional treated industry. The DiD coefficient β_1 measures the average change in log-transformed real import values across nine, instead of eight, treated industries after April 2025 relative to Petroleum and Coal.

Table B.9: Robustness Check 4: Results of the DiD Regression including Semiconductors by Country

Country	β_1	**Standard Error**	**P-value**	**Pct. Change (%)**
Vietnam	0.146	0.096	0.161	+15.72
Thailand	0.095	0.066	0.184	+9.99
Taiwan	-0.046	0.048	0.368	-4.46
United Kingdom	-0.065	0.075	0.412	-6.27
France	-0.068	0.043	0.150	-6.57
Japan	-0.074*	0.039	0.093	-7.12
South Korea	-0.116*	0.052	0.053	-10.92
Germany	-0.116*	0.056	0.069	-11.00
Mexico	-0.130*	0.069	0.094	-12.17
Italy	-0.147**	0.054	0.024	-13.64
India	-0.169	0.167	0.337	-15.54
Switzerland	-0.208***	0.050	0.002	-18.78
Canada	-0.218***	0.057	0.004	-19.61
China	-0.459***	0.042	0.000	-36.84

Notes: The table reports the results of the fourth robustness check, which repeats the baseline DiD regression but includes Semiconductors as an additional treated industry. This results in ten industries $\times$ 22 months = 220 observations per country regression. The dependent variable is the log-transformed real import value at the industry-month level. β_1 is the estimated DiD coefficient. Results are sorted from highest to lowest by the estimated percentage change. Significance levels are indicated by asterisks: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table B.10 compares the results of the baseline DiD regression with those of the fourth robustness check, which includes Semiconductors as additional treated industry. The last column reports the difference in percentage change between the two specifications per country, expressed in percentage points. Semiconductors is abbreviated as "SC".

Table B.10: Robustness Check 4: DiD Regression Results excluding vs. including Semiconductors by Country

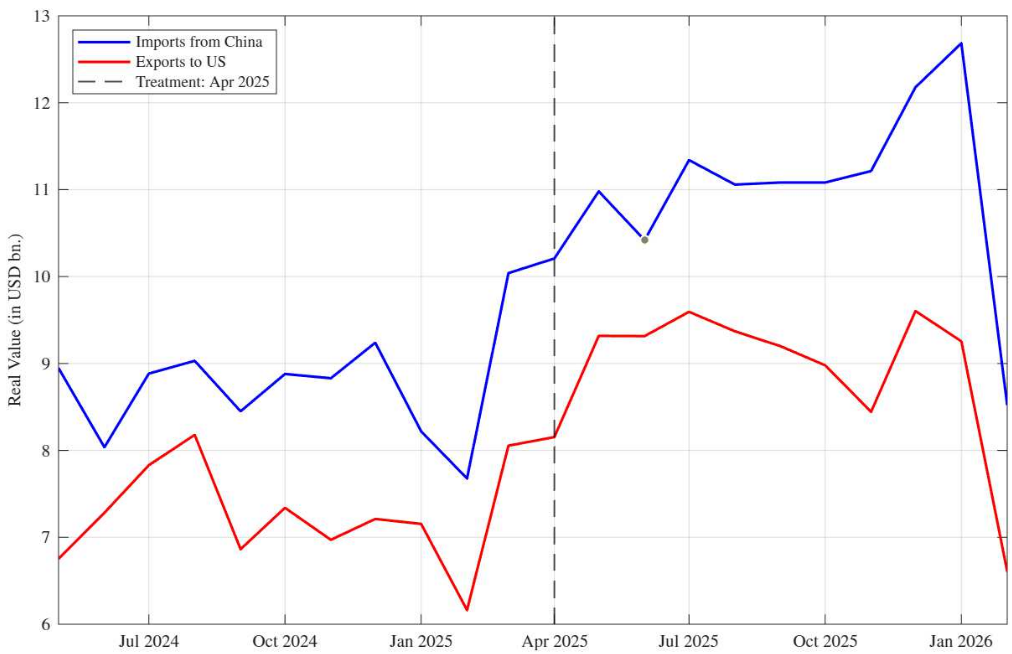
Country	**Pct. Change excl. SC**	**P-value excl. SC**	**Pct. Change incl. SC**	**P-value incl. SC**	**Difference in pp**
Vietnam	+11.97	0.297	+15.72	0.161	+3.75
Thailand	+5.56	0.379	+9.99	0.184	+4.43
United Kingdom	−7.28	0.396	−6.27	0.412	+1.01
Taiwan	−7.71*	0.062	−4.46	0.368	+3.26
Japan	−7.81*	0.099	−7.12*	0.093	+0.69
France	−9.30**	0.024	−6.57	0.150	+2.73
Germany	−11.77*	0.082	−11.00*	0.069	+0.77
Italy	−14.29**	0.034	−13.64**	0.024	+0.65
Mexico	−14.41*	0.064	−12.17*	0.094	+2.25
South Korea	−14.50***	0.002	−10.92*	0.053	+3.57
India	−18.44	0.301	−15.54	0.337	+2.89
Switzerland	−19.94***	0.003	−18.78***	0.002	+1.16
Canada	−20.78***	0.006	−19.61***	0.004	+1.16
China	−36.62***	0.000	−36.84***	0.000	−0.22

Notes: The table compares the results of the baseline DiD regression (excluding Semiconductors, eight treated industries) with the fourth robustness check (including Semiconductors, nine treated industries) for each country. The column "Difference" reports the change in percentage points (pp) when Semiconductors is included. Results are sorted from highest to lowest by the estimated percentage change (excl. SC). Significance levels are indicated by asterisks: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

C Rerouting Analysis

A descriptive rerouting analysis was conducted in section 7. The analysis examined whether the increase in US imports from Vietnam in the baseline model could be partially attributed, to Chinese goods destined for the US that were transshipped through Vietnam. Figure C.12 shows Vietnam's monthly real import values from China and real export values to the US during the analysis period. The parallel development of both series provides further support for the rerouting hypothesis.

Figure C.12: Monthly Real Values of Vietnam's Imports from China and Exports to US



Notes: The figure illustrates the monthly real values of Vietnam's imports from China (blue line) and its exports to the US (red line). It covers a time period from May 2024 to February 2026. The dashed vertical line indicates the treatment date of the baseline DiD analysis, April 2025. The data is taken from National Statistics Office of Vietnam (2026).

I hereby declare under oath that I have written this thesis independently, have used no other resources or sources than those cited, have identified all statements taken verbatim or in substance from other works as such, and that the work has not been the subject of another examination procedure, either in its entirety or in substantial parts, and that I have not previously published the work, either in its entirety or in substantial parts, and that the copy submitted in electronic form corresponds to the bound copies submitted.

Pavia, 14. June 2026

L. Körner

[Lilly Emma Körner]