Demystifying Trade Patterns In A Fragmenting World*

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Abstract

So-called "connector" countries have been argued to benefit from the bilateral trade tensions between the United States and China, a salient instance of geoeconomic fragmentation, given their rising share in US imports. This paper draws a distinction between *trade reallocation*—whereby countries increase domestic production to substitute for declining Chinese exports to the United States—and *trade rerouting*—whereby countries serve as a transit point for Chinese exports to the United States with minimal domestic processing. Leveraging granular data on trade and FDI flows and global input-output linkages, and focusing on six Asian countries, we first document that the argued connector role of these countries may reflect their growing domestic markets and the reconfiguration of China's supply chains, in addition to any rerouting of trade flows from China to the United States. We then develop a compact conceptual framework that organizes the trade reallocation and rerouting channels and motivates an asymmetric testing protocol, which we take to the data through a synthetic control approach applied to value-added components of bilateral trade. While the evidence remains elusive for five of the six countries, Vietnam appears to have benefited from trade reallocation, with increased domestic content in its exports to the US in strategic sectors, instead of facilitating significant transshipment of Chinese exports to the US. Such domestic production expansion also helped increase domestic content in Vietnam's exports to the rest of the world, and may be partly attributable to the relocation of production by firms based in China through greenfield FDI. The trade reallocation channel may yield short-term gains, but it leaves countries more deeply embedded in the supply chains at the center of geoeconomic fragmentation, and therefore more exposed to any further intensification of fragmentation.

Keywords: Geoeconomic Fragmentation, Trade Reallocation, Trade Rerouting, Supply Chain Reconfiguration, US–China Trade Tensions, Connector Countries.
JEL Classification:F1, F4, F6

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1 Introduction

Geoeconomics—the use of economic and financial relationships by large economies in pursuit of strategic and foreign-policy objectives—has become a prominent feature of the international economy (Clayton, Maggiori, & Schreger, 2025; Clayton et al., 2024, 2026). The bilateral trade tensions between the United States and China since 2018 are a leading instance of this phenomenon: a large economy introduces bilateral trade measures in relation to another large economy—citing stated concerns including national security, intellectual property, and trade imbalances—with implications for global production and supply chains, and with consequences that propagate through third countries via trade, investment, and financial channels.

These rising barriers to trade, understood as an instance of broader geoeconomic fragmentation, are at the center of an active debate on how bilateral and global trade patterns are being reshaped.[1] Geoeconomic fragmentation is expected to entail economic costs for all countries in the medium to long term, although trade dynamics may differ across countries in the short term. In particular, economies that rely on an export-oriented growth model, are open to global trade and investment, and are deeply integrated into global supply chains may be better placed to adjust to such tensions. So-called "connector" countries—geopolitically nonaligned third economies whose bilateral exposure to both the United States and China places them at the main margin of adjustment—have been argued to have benefited from bridging trade between the two, for example, by increasing exports to the United States as its sourcing from China declined, while at the same time increasing their imports from China (Alfaro and Chor, 2023; Dahlman and Lovely, 2023; Utar et al., 2023; Fajgelbaum et al., 2024; Freund et al., 2024; Gopinath et al., 2025). However, it is not clear (i) whether such connector countries are indeed serving a bridging role, as the increase in imports from China may reflect other factors—including growing domestic markets that firms based in China have tapped into—and (ii) even if such "bridging" effects exist, through which channels they operate.

Against this background, this paper asks how, empirically, the resulting fragmentation pressures have reshaped the trade and FDI flows of these connector countries, and through which channel any observed gains to these countries have been realized. Two possible channels include:

- *Trade reallocation:* connector countries produce more goods domestically to export to the United States—with rising domestic value added—as the US sourcing

[1] See, for example, Aiyar et al., 2023; Alfaro and Chor, 2023; Blanga-Gubbay and Rubínová, 2023; Freund et al., 2024; World Trade Organization, 2023; and Gopinath et al., 2025.

from China declines, potentially while continuing to draw on intermediate inputs imported from China.

- *Trade rerouting:* connector countries serve as a transit point for Chinese exports to the United States with minimal to no domestic value added—in the limiting case through transshipment— especially for products identified as having strategic importance, such as electronics and chemicals.

Distinguishing these channels is important. Both raise connector countries' vulnerability to shocks from a further intensification of fragmentation, including from lower global growth. But trade reallocation can benefit the domestic economy at least in the short term by raising domestic production for exports, whereas trade rerouting involves minimal domestic production activity and may expose the connector country to the risk of additional trade policy measures from trading partners. Throughout the paper, we use the term "benefits" in a narrow sense: trade reallocation scales up *domestic* production, and—to the extent that domestic labor, capital, and intermediate suppliers are drawn into this expansion—can translate into higher employment and wages. We do not claim terms-of-trade gains or the resolution of a specific externality. We further note that the domestic production expansion can be driven primarily by foreign-invested firms operating within the country rather than by domestically owned firms, in which case the gains that reach the wider domestic economy depend on the strength of the linkages between the two sectors: those gains are smaller when domestic firms are poorly integrated into the supply chains of foreign-invested firms, and smaller still when foreign-invested firms repatriate most of their profits to their home economies.

Leveraging granular trade and FDI data as well as a multi-region input-output database, this paper provides a nuanced assessment of changing trade patterns since 2018 by disentangling these two channels, focusing on a sample of six Asian emerging market economies—India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam—which have been argued to have benefited from the US–China trade tensions.

First, we document that the positive correlation between these countries' imports from China and their exports to the United States does not by itself establish a bridging role between the two: the same correlation can be generated by other forces, including the reconfiguration of supply chains by firms based in China and the growing size of the connector countries' domestic markets. On the supply side, several countries—including India, Indonesia, Malaysia, and Vietnam—have seen an increase in their share in Chinese exports, consistent with firms based in China relocating part of their production to these economies, for example, in response to relatively lower unit labor costs, and importing back the resulting intermediate or processed goods. On the demand side, all six Asian

countries have seen an increase in their shares in Chinese abroad-absorbed value added,[2] which points to the role of growing domestic markets in absorbing exports from China. These two forces may jointly account for these countries' rising imports from China, alongside—rather than instead of—any response to the trade tensions. The implication is that there need not be a direct link between rising imports from China and rising exports to the United States.

Second, we propose a conceptual framework to distinguish the two channels through which US tariff measures on imports from China can reshape a connector country's exports to the United States: *trade reallocation*, under which factors of production in the connector country are drawn into expanding production for the United States and the share of *domestic* value added in its exports to the United States rises, and *trade rerouting*, under which Chinese content passes through the connector country with minimal incremental domestic processing and the share of *Chinese* value added in those same exports rises. The framework shows that the two channels leave *opposite* compositional signatures on the pair of value-added shares, so they are in principle separable in the data. We then take this framework to the data. Using a multi-region input-output database, we construct the shares of domestic and Chinese value added in each country's strategic-sector exports to the United States and deploy a synthetic control approach to estimate the post-2018 gap between each share and its counterfactual, with a focus on the *electrical and machinery* and the *petroleum, chemical, and non-metallic mineral products* sectors—the sectors most affected by the US tariff measures on imports from China. A positive gap on the share of domestic value added, combined with a non-positive gap on the share of Chinese value added, *confirms* trade reallocation in the compositional sense. A negative gap on the share of Chinese value added, on its own, *rejects* significant trade rerouting. The two tests are asymmetric: a positive gap on the share of Chinese value added, by itself, cannot confirm rerouting, because the same share pattern can also be generated by a deepening of the country's backward linkages with China, which aggregate value-added data cannot distinguish from rerouting.

Among the six countries of interest, Vietnam alone shows evidence consistent with trade reallocation during 2018–22, and inconsistent with significant trade rerouting. For strategic sectors, the share of domestic value added in Vietnam's exports to the United States rose by about 6 and 7 percentage points above its synthetic counterfactual in 2018 for the *electrical and machinery sector* and the *petroleum, chemical, and non-metallic mineral products sector*, respectively, and by about 10 and 12 percentage points by 2022. This is consistent with Vietnam having expanded domestic production of strategic-sector exports

[2] A country's share in Chinese abroad-absorbed value added is the value added of production in China that is absorbed by this country's domestic final demand, as a share of total value added from production in China that is absorbed abroad by final demand.

and embedded more domestic content in its exports to the United States. At the same time, the share of Chinese value added in those same exports declined significantly, which is inconsistent with trade rerouting of Chinese exports on a significant scale. To address potential confounding factors that affect both strategic and non-strategic sectors—for example, pandemic-related lockdowns that disrupted supply chains, or economy-wide structural reforms that raised productivity—we replicate the analysis for non-strategic manufacturing. The increase in the share of domestic value added in Vietnam's non-strategic manufacturing exports to the United States is more muted and only becomes statistically significant in 2021–22, in contrast to the strategic-sector effects that are statistically significant from 2018 onwards. This contrast between strategic and non-strategic sectors is consistent with the strategic-sector effects being associated with the US–China trade tensions specifically, rather than with broader confounders.

Extending the analysis of domestic value added to Vietnam's exports to the *rest of the world*, we find that Vietnam has raised its domestic content not only in exports to the United States but also globally, though the global effects are somewhat smaller and take longer to become statistically significant. This is consistent with Vietnam having expanded domestic production capacity more broadly, beyond what would be needed to support bilateral exports to the United States alone.

Third, we extend the analysis to FDI by examining the cumulative number of greenfield FDI projects committing capital from firms based in China to Vietnam. Vietnam attracted more such projects in strategic sectors after 2018, which is likely one factor behind the scaling up of its domestic production of strategic-sector exports: firms based in China relocated production—or accelerated a relocation process that had begun earlier in response to rising domestic labor costs—alongside the introduction of US tariff measures.[3]

Taken together, Vietnam appears to have benefited from trade reallocation by expanding its domestic production—supported in part by FDI from firms based in China and by favorable structural characteristics—and has therefore embedded more domestic content in its exports to the United States and to the rest of the world, especially in strategic sectors. The evidence is inconsistent with Vietnam serving as a transit point for rerouting Chinese exports to the United States on a significant scale.

For the other five Asian countries, the empirical picture is less clear. On the share of domestic value added in strategic-sector exports to the United States, Malaysia shows a

[3]This reconfiguration of supply chains through FDI was not exclusive to firms based in China though: FDI inflows to Vietnam from other economies, including the United States, Japan, and Korea, also increased significantly over the same period.

positive but statistically insignificant effect, Thailand shows a negative and statistically significant effect, and India, Indonesia, and the Philippines show negative but statistically insignificant effects. None of the five countries exhibits the positive and statistically significant domestic-value-added gap that would be required to establish reallocation in the compositional sense. On the share of Chinese value added, Malaysia shows a negative but statistically insignificant effect, while the other countries show small positive and statistically significant effects. We do not interpret the latter as evidence of trade rerouting: as we show formally in Section 3, a rising Chinese-value-added share is only a *necessary* signature of rerouting, not a sufficient one, because it can equally be generated by a deepening of the country's backward linkages with China—an expanding domestic production base that sources more intermediate inputs from China.[4] Distinguishing between the two would require more granular micro-level data, such as firm-level supply chain linkages. The rerouting question therefore remains empirically unresolved for the other five countries rather than confirmed.

In sum, this paper provides a nuanced assessment of changing global trade patterns against the backdrop of rising geoeconomic fragmentation by focusing on so-called connector countries, examining the value-added components of trade flows, and distinguishing trade reallocation from trade rerouting within an explicitly asymmetric testing protocol. The connector role of these countries is less clear-cut than often suggested: there is limited evidence that they uniformly serve as bridges between the United States and China. In the case of Vietnam, the connector role maps cleanly onto trade reallocation instead of rerouting, supported in part by inward FDI from firms based in China.

Related Literature. Building on the emerging geoeconomics literature, this paper contributes to several strands of empirical literature.

Conceptually, the paper builds on the emerging geoeconomics literature. The framework of Clayton et al. (2026) models how large economies use trade and financial relationships as instruments of strategic policy; in that framework, "strategic" sectors are defined endogenously as those in which the relevant policy instruments are most consequential and input-output amplification is largest, and such instruments typically bundle trade and financial channels jointly, so that third-country adjustment runs through both margins at once. Clayton et al. (2024) model the dynamics by which economic policy interactions lead to fragmentation between economic groupings and the realignment of nonaligned third countries, which is directly relevant to our question of how connector countries

[4]For example, Foxconn began assembling high-end Apple iPhones in India in 2019 (Reuters, 2018), a pattern of production relocation that mechanically raises the share of Chinese value added in India's exports without constituting rerouting.

adjust to such pressures.[5] Clayton, Dos Santos, et al. (2025) study China's strategy of internationalizing its firms and its currency through state-directed overseas lending and subsidized outward expansion, which is a co-driver of the patterns of Chinese outward FDI to Vietnam that we document and should be read alongside, rather than as subordinate to, the trade-tensions interpretation.

This paper draws a distinction between trade reallocation and trade rerouting in the context of the US–China trade tensions. A large literature has studied the US side of those tensions, documenting near-complete pass-through of US tariffs to US import prices and substantial deadweight losses (Amiti et al., 2019; Amiti et al., 2020; Fajgelbaum et al., 2024), and has analyzed the theoretical reorganization of global supply chains that such tariff wedges induce (Grossman et al., 2024). Our focus is complementary: we take the tariff wedge as given and ask how connector countries adjust to it, using value-added rather than gross trade flows, with a view to understanding whether the observed reconfiguration represents genuine domestic production or pass-through of Chinese content. Other work has studied the reconfiguration of supply chains and the reallocation of global trade more directly (Alfaro and Chor, 2023; Freund et al., 2024). Despite a growing discussion of rerouting, few empirical analyses have disentangled trade rerouting from trade reallocation. Hayakawa and Sudsawasd (2024) study the effects of Thailand's 2019 introduction of a watchlist intended to monitor the rerouting of goods from China to the United States and the European Union. They find that the watchlist did not significantly affect Thailand's imports of watchlisted goods from China, while it was associated with an increase in exports of those goods to the United States and a decrease in exports to the European Union. Iyoha et al. (2025) examine, at the product and firm level, whether trade rerouting through Vietnam increased in the context of the US–China trade tensions. They find that the level of aggregation significantly affects the assessment: a larger share of Vietnam's exports to the United States is identified as subject to rerouting at the product level than at the firm level. These results highlight the challenges of measuring trade rerouting and of distinguishing it from trade reallocation based on aggregate trade patterns. To our knowledge, this paper is the first to distinguish trade rerouting from trade reallocation by examining the value-added components of trade flows.

This paper also contributes to the literature on the emergence of connector countries and, more broadly, situates third-country trade and FDI adjustments within the emerging geoeconomics literature. Several studies have argued for the emergence of connector countries by examining the association between changes in their inward linkages with

[5] A complementary direction—which we do not pursue here—is the text-based measurement strategy of Clayton, Coppola, et al. (2025), who extract signals of geoeconomic pressure from policy statements and news coverage; their series could in principle be used to discipline the timing and intensity of the shocks whose third-country incidence our value-added approach traces.

China—their shares in Chinese exports or outward FDI—and changes in their outward linkages with the United States—their shares in US imports (Alfaro and Chor, 2023; Dahlman and Lovely, 2023; Freund et al., 2024; Utar et al., 2023; Gopinath et al., 2025). We enrich this analysis in two ways: first, by accounting for other forces that can generate the same correlations—in particular, the relocation of production and the reconfiguration of supply chains by firms based in China, alongside connector countries' growing domestic markets—and, second, by identifying *through which channel* the connector role is realized, distinguishing trade reallocation from trade rerouting. Alfaro and Chor (2025) offer a complementary descriptive anatomy of the post-2018 reallocation in US supply-chain trade, focused on product- and country-level composition rather than on the reallocation-versus-rerouting decomposition we pursue; their evidence helps triangulate the scale and nature of the adjustment.

A growing literature also focuses on Vietnam, examining the implications of the US–China trade tensions for its domestic economy, including labor markets (Mayr-Dorn et al., 2023; Rotunno et al., 2024), structural change (Nguyen and Lim, 2023), FDI flows (Xue, 2023), and environmental outcomes (Kahn et al., 2024). The positive associations reported in these papers are consistent with our finding that Vietnam has benefited from trade reallocation rather than rerouting. Relative to that work, our contribution is to provide direct value-added-based evidence that confirms reallocation and simultaneously rejects significant rerouting for Vietnam, and to place Vietnam in cross-country comparison with five other Asian emerging market economies argued to have benefited from the US–China trade tensions, for which we find that reallocation is rejected in the compositional share sense while the rerouting question remains empirically unresolved within value-added data alone.

The paper also relates to the literature on trade-policy-related rerouting. This literature mainly uses trade data at different aggregation levels without examining the value-added components, and much of its evidence is based on correlations. Fisman et al. (2008) find that imports into China through Hong Kong SAR were more likely when the relevant import tariffs were higher, and interpret this indirect trade as partly reflecting tariff avoidance. Stoyanov (2012) present evidence consistent with tariff avoidance by showing that goods with greater preferential treatment under the Canada–US Free Trade Agreement were more likely to be transshipped through the United States to Canada. Rerouting from China to the United States has also been examined in the context of quotas and anti-dumping duties. Rotunno et al. (2013) document a high correlation between African countries' imports from China and their exports to the United States for apparel products for which African countries have duty- and quota-free access to the US market through the African Growth and Opportunity Act (AGOA). Rotunno and

Vézina (2015) show that the US in-bond system of imports has at times been used by firms to avoid applicable trade measures, by declaring exports from China as destined for Mexico but diverting them to the US market while in transit. Liu and Shi (2019) find an increase in the correlation between imports from China and exports to the United States in third countries for products subject to US anti-dumping duties on goods from China. Iyoha et al. (2025) estimate the response of rerouting to the tariff measures introduced during the US–China trade tensions using a difference-in-differences approach with both product- and firm-level data. A common limitation is that examining trade flows without examining their value-added components may overstate the extent of rerouting in the presence of unobserved value-added activities, even within a product code. Our approach uses multi-region input-output linkages to construct value-added measures together with synthetic control counterfactuals, which allows us to estimate the association between the US–China trade tensions and the extent of trade rerouting versus trade reallocation.

The remainder of the paper is organized as follows. Section 2 documents stylized facts on geoeconomic fragmentation and connector countries, including an analysis of other potential factors behind their rising imports from China. Section 3 presents the conceptual framework, the empirical methodology, and the data sources. Section 4 presents the main empirical results, alongside validation analysis. Section 5 concludes.

2 Stylized Facts

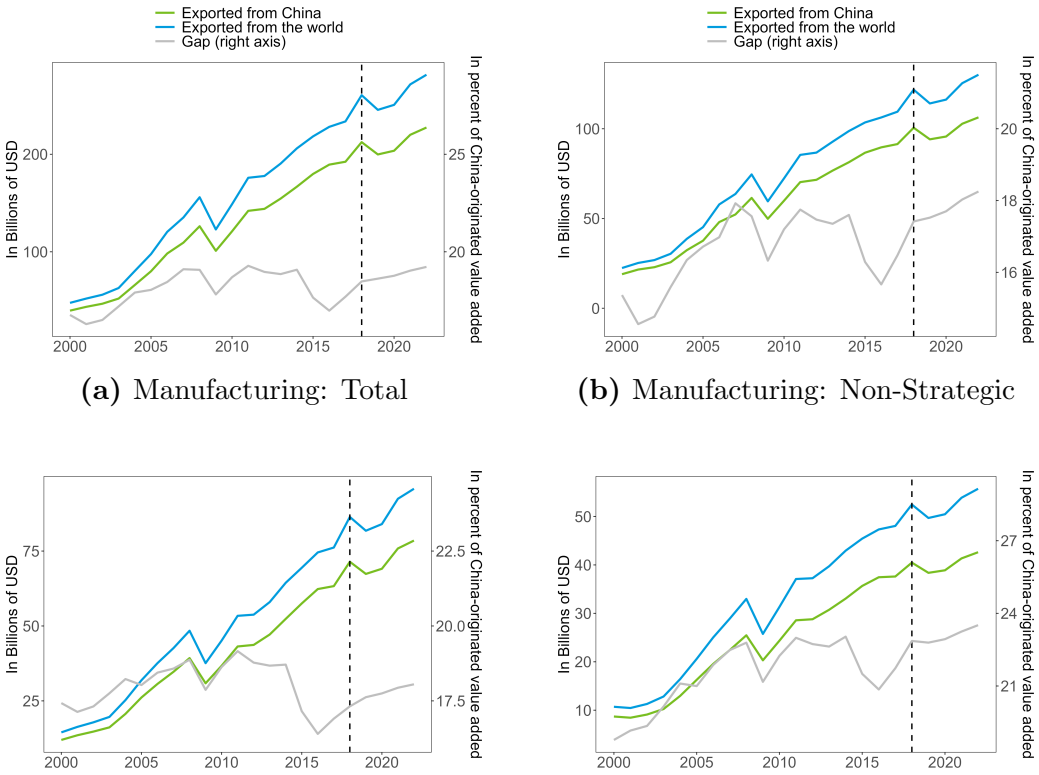
We first document the evolution of Chinese value added in US imports and the extent to which it has been exported through other countries, and then analyze the connector role of the six Asian countries of interest: India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

Chinese value added has increasingly reached the United States through other countries, not only in strategic sectors but also more broadly across manufacturing. Figure 1 plots the Chinese value added in US imports that is exported from the world as a whole (including China itself) versus the value added that is exported directly from China, together with the gap as a share of total Chinese value added in US imports, for the overall manufacturing sector (panel (1a)), non-strategic sectors (panel (1b)), and strategic sectors, including electrical and machinery (panel (1c)) and petroleum, chemical, and non-metallic mineral products (panel (1d)).

Since China's accession to the WTO in 2001, an increasing share of its value added has been exported to the United States through other countries, reflecting China's integration

into global value chains through forward linkages—that is, supplying intermediate goods to other countries for further processing and re-export. The upward trend plateaued after the Global Financial Crisis, declined from 2015, and reached a trough in 2016. Since 2017, the share has risen again, not only in strategic sectors but also in non-strategic sectors and for the overall manufacturing sector.

Figure 1: Value Added Originated in and Exported from China in US Imports



(a) Manufacturing: Total

(b) Manufacturing: Non-Strategic

(c) Manufacturing: Electrical and Machinery

(d) Manufacturing: Petroleum, Chemical and Non-Metallic Mineral Products

Notes: Panel (a)-(d) plot Chinese value added that is exported either from China or other countries (the blue lines) versus Chinese value added that is exported only from China (the orange lines) on the left axis and the gap between the two as a share of the total Chinese value added on the right axis, for the overall manufacturing sector, the non-strategic sectors, and strategic sectors include electrical and machinery and petroleum, chemical, and non-metallic mineral products, respectively. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

This recent upward trend has sometimes been interpreted as evidence of Chinese exports being channeled through other countries to the United States in response to tariff measures on strategic sectors. The broad-based nature of the increase—in strategic as well as non-strategic sectors—suggests, however, that it may also reflect production relocation

and supply chain reconfiguration by firms based in China. For example, as labor costs in China rise and the economy moves up the value chain, firms based in China may produce more upstream products and relocate lower value-added production stages, such as assembly and packaging, to countries with relatively lower unit labor costs.[6]

Moreover, the literature has identified the emergence of connector countries based on the positive correlation between their shares in Chinese exports and in US imports, but the link between these two patterns is not clear-cut. Following Gopinath et al. (2025), Figure 2 first plots the change in a country's share in US imports against the change in its share in Chinese exports, between 2013–17 and 2018–22, for nonaligned economies (panel (2a)).[7] We augment the analysis with two additional plots: the change in a country's share in Chinese imports (panel (2b)) and the change in its share in Chinese abroad-absorbed value added (panel (2c)), each plotted against the change in its share in Chinese exports over the same period. A country's share in Chinese abroad-absorbed value added is the value added produced in China that is absorbed by this country's domestic final demand (consumption and investment), as a share of total value added produced in China absorbed abroad by global final demand. It therefore captures the amount of value added embodied in exports from China that is absorbed within a country's domestic economy, rather than entering the production of subsequent exports, and proxies the size of the country's domestic market for goods produced in China.

Consistent with the existing literature, panel (2a) shows that India, Malaysia, Thailand, and Vietnam have seen both an increase in their share in Chinese exports and an increase in their share in US imports, which has been interpreted as evidence of their roles as connector countries between China and the United States.

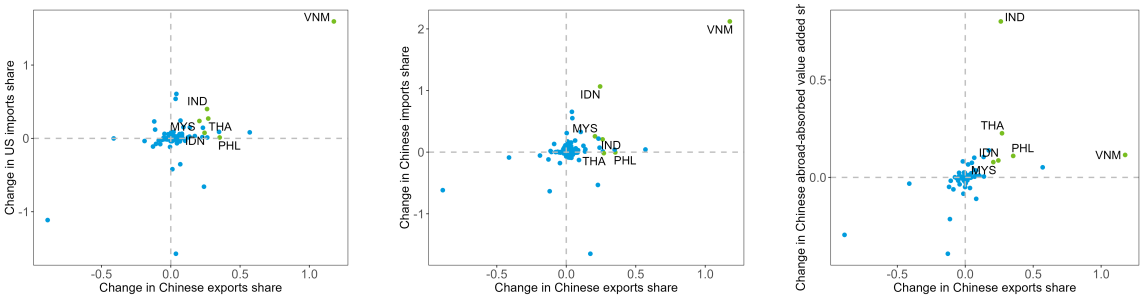
Reading these bilateral correlations as evidence of rerouting abstracts from two other forces: the growing domestic markets of the connector countries themselves, and the reorganization of production abroad by firms based in China, for example, in response to rising domestic costs. Both factors can independently lead to an increase in a country's share in Chinese exports, but such an increase does not necessarily reflect trade rerouting in response to higher US tariffs on Chinese exports.

First, as shown in panel (2b), India, Indonesia, Malaysia, and Vietnam have also seen an increase in their shares in Chinese imports at the same time as their shares in Chinese exports rose. This is consistent with firms based in China relocating part of their production to these economies—for example, in response to relatively lower unit labor

[6]For example, the "Made in China 2025" initiative, launched in 2015, includes objectives to raise the domestic content of core materials.

[7]We follow the definition of country groupings in Gopinath et al. (2025). All six Asian countries of interest in this paper are classified as nonaligned in that grouping.

Figure 2: Change in the Share of Nonaligned Countries in US Imports, Chinese Imports, and Chinese Abroad-Absorbed Value Added versus Change in the Share of Chinese Exports



(a) US Imports versus Chinese Exports

(b) Chinese Imports versus Chinese Exports

(c) Chinese Value Added Absorbed Abroad versus Chinese Exports

Notes: Panels (a)–(c) plot changes in three measures of market shares of nonaligned countries—the share in US imports (panel (a)), the share in Chinese imports (panel (b)), and the share in Chinese abroad-absorbed value added (panel (c))—between 2013–17 and 2018–22, against the change in the share in Chinese exports. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010–15, while the post-2016 trend is kept unchanged.
Sources: BACI Database (Gaulier and Zignago, 2010), the Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

costs[8]—and importing back the processed products. Rising imports from China that reflect such relocation need not be linked to trade rerouting in the context of the US–China trade tensions.

Second, as shown in panel (2c), all six Asian countries have seen an increase in the size of their domestic markets—measured by their shares in Chinese abroad-absorbed value added—at the same time as their shares in Chinese exports rose. This is consistent with the increase in their shares in Chinese exports reflecting growing domestic demand for, and absorption of, exports from China, rather than transit trade. Focusing on strategic sectors yields similar results (see Appendix B).

In sum, despite the increasing share of Chinese value added reaching the United States through other countries, trade-flow correlations alone do not necessarily establish evidence of rerouting. The association between countries' shares in Chinese exports and US imports since 2018 does not necessarily imply a connector role of these countries. Rising imports from China may reflect factors unrelated to the US–China trade tensions and the

[8]For example, Le and Tran-Nam (2018) find that the high level of FDI inflows into Vietnam can be explained largely by its relatively skilled workforce combined with relatively low wages compared to neighboring countries in the region. Luo et al. (2022) study the determinants of Japanese divestment from China and find that higher minimum wages raise the probability of divestment.

resulting trade rerouting, including the relocation of production abroad by China-based firms and growing domestic demand in these economies for Chinese-produced goods.

3 Conceptual Framework, Methodology, and Data

In this section, we first lay out a simple conceptual framework that organizes trade reallocation and trade rerouting as equilibrium responses to geoeconomic fragmentation, and then describe the empirical methodology, the data, and the sample.

3.1 Conceptual Framework

We frame the US–China trade tensions as a specific instance of a broader geoeconomic phenomenon: a large economy introduces bilateral trade measures vis-à-vis another large economy with the stated aim of reorienting global production and financial relationships, with consequences that propagate through the rest of the world economy (Clayton, Maggiori, & Schreger, 2025; Clayton et al., 2026). Clayton et al. (2024) model this kind of strategic interaction and show that the resulting fragmentation can induce endogenous realignment of nonaligned third countries across competing economic groupings. Connector countries, in our usage, are the nonaligned third countries whose bilateral exposure to both economies places them at the main margin along which such realignment occurs. The geoeconomic framework also identifies *strategic sectors*—those most subject to fragmentation pressure—as the locus at which adjustment is most intense, which motivates our focus on electrical and machinery, and petroleum, chemical, and non-metallic mineral products.

Why third countries face adjustment. The economic mechanism by which this adjustment reaches third countries is direct. A tariff imposed by the United States on imports from China raises the landed cost of Chinese-origin goods in the US market relative to goods sourced from elsewhere, creating a wedge in the relative prices faced by US purchasers. Two margins of response follow. On the demand side, US buyers substitute away from Chinese sourcing toward alternative suppliers; the near-complete pass-through of the 2018 tariffs to US import prices documented by Amiti et al. (2019) and Amiti et al. (2020) implies that this substitution margin is quantitatively meaningful rather than muted by Chinese exporters absorbing the tariff through lower factory-gate prices. On the supply side, firms producing in China that wish to preserve access to the US market face a choice between absorbing the tariff and reorganizing production so that

the final export to the United States originates from a jurisdiction outside the tariff's scope. Both responses redirect activity toward third countries. Which third countries absorb this redirected activity is not arbitrary: in a general-equilibrium trade model of the kind developed by Kleinman, Liu, and Redding (2024), the cross-country distribution of the response is governed jointly by pretreatment gravity weights, the structure of input-output linkages, and the elasticities of substitution between differentiated inputs. Third-country responses are therefore predicted to be *asymmetric*: a small number of economies close to the bilateral margin—geographically, via trade costs, or via the composition of their manufacturing base—absorb the bulk of the adjustment, while others are largely unaffected. The pattern we document empirically—with only Vietnam among the six Asian connector countries in our sample showing a statistically significant response—is qualitatively consistent with this class of predictions, though a formal test of the cross-country incidence of the adjustment through structural input-output and factor-supply heterogeneity is beyond the scope of this paper.

Two manifestations of the adjustment. The adjustment absorbed by a connector country can manifest in two economically distinct ways. In the first, which we call *trade reallocation*, real production relocates to the third country: factors of production in a connector country c are drawn into the affected sectors—either through an expansion of domestic firms or through inward FDI that brings new plants—and additional value added is generated in c before the goods are exported to the United States. In the second, which we call *trade rerouting*, Chinese-origin content passes through c with minimal incremental domestic processing—in the limit, as transshipment—so that the economic substance of the transaction remains production in China even though the formal export leaves from a different jurisdiction. The two manifestations differ in their implications for c's domestic factor income and capital stock, for its exposure to downstream trade-remedy actions, and for the real resource cost of the cross-substitution itself: reallocation involves genuine resource use in c, whereas rerouting does not. They are also not mutually exclusive: in equilibrium, the same shock can simultaneously induce some expansion of domestic production and some pass-through of Chinese-origin content, and both margins are jointly determined with other forces, including c's growing domestic market and the broader reorganization of production abroad by firms based in China in response to rising domestic costs, as mentioned earlier. Our contribution is empirical rather than structural: given that a connector country has gained share in US imports, we ask *which of the two manifestations* dominates, and identify the dominant margin from the value-added components of trade.

Value-added decomposition. To make this precise, consider a connector country c and a sector s, and decompose c's gross exports to the United States in year t into three

value-added components:

$$X^{US}_{c,s,t} \;=\; \mathrm{DVA}^{US}_{c,s,t} \;+\; \mathrm{CNVA}^{US}_{c,s,t} \;+\; \mathrm{OFVA}^{US}_{c,s,t}, \tag{1}$$

where $\mathrm{DVA}^{US}_{c,s,t}$ is value added generated by factors located in c and embedded in c's exports to the US, $\mathrm{CNVA}^{US}_{c,s,t}$ is value added originating in China and re-embedded in c's exports to the US via imported intermediates, and $\mathrm{OFVA}^{US}_{c,s,t}$ is value added from the rest of the world embedded in c's exports to the US. Equation (1) is an identity from any multi-region input-output table.[9] The shares of domestic and Chinese value added in c's exports to the United States are

$$s^{DVA}_{c,s,t} \;\equiv\; \frac{\mathrm{DVA}^{US}_{c,s,t}}{X^{US}_{c,s,t}}, \qquad s^{CNVA}_{c,s,t} \;\equiv\; \frac{\mathrm{CNVA}^{US}_{c,s,t}}{X^{US}_{c,s,t}}. \tag{2}$$

Mapping the two manifestations into the shares. Let τ denote a measure of the geoeconomic pressure associated with the US–China bilateral relationship that shifts discretely in 2018 with the introduction of the US tariff measures, and let subscripts 0 and 1 denote the pre-shock state (τ_{pre}) and the post-shock state (τ_{post}), respectively. Suppress the (c, s, t) indices for readability. Any change in c's exports to the United States between the two states can, mechanically, be written as

$$X_1 \;=\; X_0 \;+\; \Delta \;+\; \varepsilon, \tag{3}$$

where $\Delta \geq 0$ is the *incremental* Chinese value added embedded in c's exports to the United States attributable to the shock—that is, Chinese content imported by c and re-exported onward to the United States—and $\varepsilon \geq 0$ is the *incremental* domestic value added in c associated with those same exports. The corresponding decomposition of the post-shock value-added components is $\mathrm{DVA}_1 = \mathrm{DVA}_0 + \varepsilon$, $\mathrm{CNVA}_1 = \mathrm{CNVA}_0 + \Delta$, and $\mathrm{OFVA}_1 = \mathrm{OFVA}_0$, treating the value added originating in the rest of the world as invariant to the bilateral shock; relaxing this assumption does not change the direction of the signed test that follows. The pair (Δ, ε) encodes the two manifestations of the adjustment: pure *rerouting* corresponds to $\Delta > 0$ with ε small, so that new Chinese content passes through without being accompanied by new domestic processing, while pure *reallocation* corresponds to $\varepsilon > 0$ with Δ small, so that c raises its own domestic production without a commensurate flow of new Chinese content. The substantive question is which of Δ and ε dominates.

[9] The decomposition is a customization of the standard value-added trade accounting of Johnson and Noguera (2012) and Koopman et al. (2014), restricted here to splitting foreign value added into a Chinese component (CNVA) and a rest-of-world component (OFVA) so that the two channels of interest—reallocation to c and rerouting from China through c—can be read directly off the decomposition. We retain the "CNVA/OFVA" labels rather than the more standard FVA notation for clarity of exposition.

Substituting the component expressions above into the share definitions (2) and simplifying, the change in each share between the pre-shock and post-shock states is

$$s_1^{DVA} - s_0^{DVA} = \frac{\varepsilon\,(1 - s_0^{DVA}) \;-\; \Delta\, s_0^{DVA}}{X_0 + \Delta + \varepsilon}, \tag{4}$$

$$s_1^{CNVA} - s_0^{CNVA} = \frac{\Delta\,(1 - s_0^{CNVA}) \;-\; \varepsilon\, s_0^{CNVA}}{X_0 + \Delta + \varepsilon}. \tag{5}$$

Because the common denominator is strictly positive, the sign of each change is determined entirely by its numerator. In the polar case of pure rerouting ($\varepsilon \to 0$), (4) and (5) yield $s_1^{DVA} - s_0^{DVA} = -\Delta\, s_0^{DVA}/(X_0 + \Delta) < 0$ and $s_1^{CNVA} - s_0^{CNVA} = \Delta\,(1 - s_0^{CNVA})/(X_0 + \Delta) > 0$: the share of Chinese value added rises and the share of domestic value added falls. In the polar case of pure reallocation ($\Delta \to 0$), they yield $s_1^{DVA} - s_0^{DVA} = \varepsilon\,(1 - s_0^{DVA})/(X_0 + \varepsilon) > 0$ and $s_1^{CNVA} - s_0^{CNVA} = -\,\varepsilon\, s_0^{CNVA}/(X_0 + \varepsilon) < 0$: the share of domestic value added rises and the share of Chinese value added falls. The two manifestations therefore generate *diametrically opposite* signed predictions on the pair (s^{DVA}, s^{CNVA}), which is what makes them empirically separable.

The two channels map into signed share movements *asymmetrically*, and the asymmetry is what the hypothesis tests in the next subsection exploit. For reallocation, the signed share pattern is both *necessary and sufficient*. From the derivation above, the compositional signature of reallocation dominating the shock—incremental domestic processing ε large enough relative to incremental Chinese content Δ to push the DVA share up—holds if and only if the pair of inequalities

$$\text{(Reallocation: necessary and sufficient)} \qquad s_1^{DVA} > s_0^{DVA} \quad \text{and} \quad s_1^{CNVA} \lesssim s_0^{CNVA} \tag{6}$$

is observed, which is equivalent to $\varepsilon/\Delta > s_0^{DVA}/(1 - s_0^{DVA})$ in the framework. We therefore take (6) as the working *characterization* of trade reallocation.

For rerouting, the signed share pattern is only *necessary*. Pure rerouting—new Chinese content passing through c with minimal incremental domestic processing—implies that

$$\text{(Rerouting: necessary only)} \qquad s_1^{CNVA} > s_0^{CNVA} \quad \text{and} \quad s_1^{DVA} \lesssim s_0^{DVA}, \tag{7}$$

but the converse does not hold. The same share pattern in (7) can also be generated by a deepening of c's *backward linkages* with China—specifically, by a genuinely expanding domestic production base in c that sources more intermediate inputs from China, raising CNVA proportionally more than it raises DVA and producing the same compositional signature as rerouting. In terms of the shock decomposition (3), a backward-linkage scenario

has $\varepsilon > 0$ together with a large Δ driven not by pass-through of finished Chinese goods but by upstream Chinese-sourced inputs embedded in genuinely domestic production. The share inequalities in (7) are therefore not a characterization of rerouting: they are the empirical signature that rerouting *must* leave, but that signature is observationally equivalent to a second, economically distinct, mechanism. Consequently, the data can identify reallocation in both directions through (6), but can only *reject* rerouting when (7) *fails*—an observation of (7) cannot, on its own, *confirm* rerouting. This asymmetry shapes the tests we take to the data in Section 4.

Three observations about this framework are worth stating explicitly.

First, (6) and (7) are *empirical* objects, not welfare objects, and do not map one-for-one onto classical Vinerian trade diversion (Viner, 1950). Trade reallocation in our sense involves both trade *creation* (new production in c substituting for foregone Chinese exports to the United States) and potential trade *diversion* (sourcing from a higher-cost supplier than the pre-tariff Chinese one), and its net welfare effect depends on the relative magnitudes of the two. Trade rerouting, by contrast, is closer to pure diversion with limited real resource reallocation, and may additionally absorb resources in duplicated logistics and coordination along a longer supply chain. The welfare arithmetic is further constrained by what is already known about the incidence of the 2018 tariffs: Amiti et al. (2019) and Amiti et al. (2020) document near-complete pass-through of those tariffs to US import prices, so that much of the tariff burden falls on US purchasers. Any DVA response in a connector country under this wedge is, mechanically, in part a transfer through the tariff wedge from US consumer surplus rather than a pure efficiency gain, and the share-based estimand (6) is silent on the split. A full welfare evaluation of either channel therefore requires a structural quantitative model that ties the estimated share movements to real-income changes under standard trade elasticities, along the lines of Arkolakis et al. (2012), Caliendo and Parro (2015), Clayton et al. (2024), Kleinman, Liu, and Redding (2024), or Kleinman, Liu, Redding, and Yogo (2024), which we leave to future work.

Second, the framework of Clayton et al. (2026) emphasizes that geoeconomic pressure typically bundles trade and financial relationships jointly, so that the adjustment of third countries is simultaneously a trade-flow and a capital-flow response. Kleinman, Liu, Redding, and Yogo (2024) formalize this by extending the framework to incorporate capital accumulation and show that third-country responses to trade-cost shocks run through both trade *and* investment margins. This motivates our decision in Section 4 to examine greenfield FDI inflows alongside value-added trade, and underlies the interpretation that Vietnam's domestic value-added response is partly mediated by capital relocating through FDI from firms based in China, rather than by trade flows alone.

Third, "strategic" sectors are defined here operationally rather than structurally. In the theoretical framework of Clayton et al. (2026), strategic sectors are defined *endogenously* as those in which the relevant policy instruments are most consequential and where input-output amplification of a bilateral restriction is largest, jointly determined by technologies, substitution possibilities, and the structure of global production networks. Our empirical implementation instead follows the operational list of strategic sectors in the IMF *2023 April World Economic Outlook (WEO)*, which we map to Eora's 26-sector classification as electrical and machinery, and petroleum, chemical, and non-metallic mineral products. The WEO list is a coarse proxy: it is driven by ex-post observed US tariff and export-control coverage together with judgment about technological criticality, rather than by a structural computation. Because the WEO list is plausibly *broader* than the theoretically endogenous set—it includes activities where geoeconomic pressure is present but not necessarily most intense—the effects we estimate are likely a lower bound on the effects that would obtain for the narrower set of sectors where pressure is most concentrated. A tighter sector definition is a natural direction for future work, and one we would expect to sharpen, rather than overturn, the Vietnam findings below.

3.2 Methodology

Equation (6) characterizes reallocation and equation (7) is the necessary share signature of rerouting; together they define the empirical target of the methodology that follows. For any connector country c and sector s, the object of interest is the difference between the post-2018 shares $s^{DVA}_{c,s,t}$ and $s^{CNVA}_{c,s,t}$ actually observed under τ_{post} and the counterfactual shares that would have obtained under the pre-shock state τ_{pre}. Only the first quantity is observed, so the empirical challenge is to construct a credible estimate of the second.

This subsection implements this estimate via the synthetic control method of Abadie et al. (2010): for each treated country-sector, we construct a counterfactual trajectory as a weighted average of donor-country trajectories, with weights chosen by matching on pretreatment values of the outcome and a set of covariates. The identifying assumption is that, conditional on the pretreatment match, the donor-weighted trajectory is an unbiased estimate of the treated unit's trajectory absent the shock—equivalently, that the donor pool spans the time-varying factors that drive each country's value-added shares in a world in which the US–China tariff measures had not been introduced. This assumption is most credible when donor units are (i) far enough from the US–China bilateral margin that second-round general-equilibrium linkages through global gravity do not materially contaminate their post-2018 trajectories, and (ii) numerous and heterogeneous enough as a pool to span the relevant unobservables. Section 4 returns to both concerns directly,

through placebo inference and through robustness checks on the composition of the donor pool.

The synthetic control method is well suited to this setting for several reasons. First, the unit of analysis is a small number of large, structurally distinct economies treated by a single discrete shock—the 2018 escalation of US–China trade tensions—which is precisely the comparative-case configuration for which the method was originally developed by Abadie and Gardeazabal (2003).[10] Second, no single donor country provides a credible counterfactual for a connector economy that is simultaneously embedded in Chinese supply chains on the input side and in the US market on the output side; a convex combination of donor countries whose weights are chosen to match pretreatment outcomes and covariates is a more disciplined alternative than an arbitrary average, and it does so without extrapolating outside the donor pool's support. Third, the method is transparent about the counterfactual it constructs—the donor weights are reported, the pretreatment fit is visualized directly, and the post-treatment gap has a clear interpretation as the difference between the treated unit and its weighted synthetic twin—which guards against the specification-search and parallel-trends concerns that difference-in-differences designs can mask in short panels with a handful of treated units (Bertrand et al., 2004).

The two channels characterized in equations (6)–(7) translate into two share-based tests, but the asymmetry established in the previous subsection—(6) is necessary and sufficient for reallocation, whereas (7) is necessary but not sufficient for rerouting—determines the direction in which each test is informative. Throughout, let

$$\widehat{s}^{DVA}_{c,s,t} \qquad \text{and} \qquad \widehat{s}^{CNVA}_{c,s,t}$$

denote the synthetic control counterfactual estimates of $s^{DVA}_{c,s,t}(\tau_{\text{pre}})$ and $s^{CNVA}_{c,s,t}(\tau_{\text{pre}})$, respectively, constructed from the donor pool.

> ***Hypothesis I (Reallocation).*** *The US–China trade tensions are associated with a statistically significant* ***increase*** *in the share of domestic value added in connector country c's strategic-sector exports to the United States, together with a non-positive gap on the share of Chinese value added:*
>
> $$s^{DVA}_{c,s,t} - \widehat{s}^{DVA}_{c,s,t} > 0 \quad \text{and} \quad s^{CNVA}_{c,s,t} - \widehat{s}^{CNVA}_{c,s,t} \lesssim 0, \qquad t \geq 2018. \tag{8}$$

Because (6) is both necessary and sufficient for reallocation in the framework, Hy-

[10] It is then formalized by Abadie et al. (2010) in their evaluation of California's tobacco control program, extended by Abadie et al. (2015) to the country-level study of German reunification, and systematically reviewed by Abadie (2021).

pothesis I is a *two-sided* test. A positive and statistically significant gap on s^{DVA} combined with a non-positive gap on s^{CNVA} *confirms* the reallocation channel: the country has expanded domestic production of strategic-sector exports and embedded more domestic content in those exports after 2018. A null or negative gap on s^{DVA} rejects reallocation in the share sense (though it does not rule out a level expansion of domestic production that preserves the pre-shock composition).

Hypothesis II (Rerouting). *The US–China trade tensions are associated with a statistically significant* ***increase*** *in the share of Chinese value added in connector country c's strategic-sector exports to the United States:*

$$s^{CNVA}_{c,s,t} \; - \; \widehat{s}^{CNVA}_{c,s,t} \; > \; 0, \qquad t \geq 2018. \tag{9}$$

Because (7) is only necessary but not sufficient for rerouting, Hypothesis II is a *one-sided* test: the data can *reject* rerouting through it, but cannot *confirm* it. A *negative* and statistically significant gap on s^{CNVA}—the negation of (9)—rejects rerouting, because the share of Chinese value added in the country's exports to the United States is *lower* than its synthetic counterfactual, which is inconsistent with any positive pass-through of Chinese content.[11] A *positive* and statistically significant gap on s^{CNVA}, by contrast, cannot confirm rerouting: as the previous subsection emphasized, the same share pattern can be produced by a deepening of c's backward linkages with China, in which a genuinely expanding domestic production base in c sources more intermediates from China, raising CNVA proportionally more than DVA without any rerouting of finished goods. Distinguishing rerouting from backward linkages when (9) is observed requires auxiliary evidence—on FDI inflows, on the composition of imported intermediates, and on firm-level production decisions—which we leave to future work using more granular data.

Read jointly, the two tests deliver an asymmetric protocol. Hypothesis I is two-sided: observing (8) confirms reallocation, and failing to observe it rejects reallocation in the share sense. Hypothesis II is one-sided: observing the *opposite* of (9)—a negative s^{CNVA} gap—rejects rerouting, but observing (9) itself leaves the rerouting question open and must be read in light of the backward-linkage alternative. A country exhibiting a positive s^{DVA} gap together with a negative s^{CNVA} gap therefore confirms reallocation and simultaneously rejects rerouting. A country exhibiting the reverse pattern rejects reallocation and is consistent with either rerouting or deeper backward linkages, a distinction

[11] A special case of trade rerouting could involve mislabeling the origin or value-added composition of a product. Input-output tables would not capture such practices. We therefore caveat that our analysis assumes that input-output tables provide an accurate measurement of the value added embodied in exports.

that value-added data alone cannot resolve. A country whose gaps are insignificant on both margins is inconclusive on both channels, with the null itself informative about its position relative to the main margin of adjustment predicted by Kleinman, Liu, and Redding (2024).

We set the treatment period as the years from 2018 onwards and focus on India, Indonesia, Malaysia, Thailand, the Philippines, and Vietnam, a group of Asian countries that have been argued to have benefited from the US–China trade tensions and from geoeconomic fragmentation more generally. The donor pool excludes these countries, as well as China and the United States. In Section 4, we examine whether other frequently mentioned connector countries, such as Mexico and Poland, receive large weights in the construction of synthetic counterfactuals, thereby validating the underlying assumption mentioned earlier.

We follow the IMF *2023 April World Economic Outlook* to map strategic sectors to the 26 sectors in the multi-region input-output database, which include (i) electrical and machinery, and (ii) petroleum, chemical and non-metallic mineral products.[12] Matching characteristics in the synthetic control approach include the value-added measures from 2010 to 2017, to capture the pretreatment trend; nominal GDP in US dollars at purchasing power parity in 2010 and 2015, to capture the size of the economy; and exports of goods as a share of GDP in 2010 and 2015, to capture the level of trade openness.[13]

To evaluate the statistical significance of our estimates, we use placebo tests, following Abadie and Gardeazabal (2003), Bertrand et al. (2004), and Abadie et al. (2010). For each country of interest, we run placebo studies by applying the synthetic control method to all other countries (excluding China, the United States, and the other countries of interest in this paper). If the placebo studies generate gaps of similar magnitude to the one estimated for the country of interest, this would suggest that there is no significant evidence to support the trade reallocation hypothesis or to reject the trade rerouting hypothesis in the context of the US–China trade tensions. If, on the other hand, the placebo studies show that the gaps estimated for the country are unusually large (when positive) or small (when negative) relative to the gaps for all other countries—for example, in the top or bottom decile of the distribution—this would suggest that there is significant evidence to support trade reallocation or to reject trade rerouting in the context of the US–China trade tensions. A 10^{th}–90^{th} percentile range is constructed based on the distribution of estimated effects across all countries, excluding those with a mean squared prediction

[12] Given the aggregate sector definitions in the multi-region input-output database, precise mapping with the strategic sectors identified in the International Monetary Fund (2023) which uses SEC 3 definitions and subsectors of ISIC code 20 is not possible.

[13] Both nominal GDP in US dollars at purchasing power parity and exports of goods as a share of GDP are from the *IMF World Economic Outlook Database*.

error (MSPE) during the pretreatment period of more than five times the MSPE of the country in question—that is, the placebo test distribution. An estimated effect is statistically significant at the 90 percent confidence level if it lies outside this 10^{th}–90^{th} percentile range.

3.3 Data

We use the Eora26 Global Supply Chain database, which consists of a multi-region input-output table (MRIO) model covering 189 countries and 26 sectors and spanning the period from 1990 to 2022 (see Appendix A for details on the sample).[14] Leveraging this database, we construct value-added measures that enable us to examine the value-added components of country-sector pairs' exports as described above. An important measurement caveat is that value added in multi-region input-output tables is allocated by the *residence* of the producing establishment rather than by the *ultimate ownership* of the firm that controls it. A manufacturing subsidiary located in Vietnam but ultimately owned by a parent based in China contributes to "Vietnamese DVA" in Eora regardless of where its profits, management, and technology ultimately reside. As Coppola et al. (2021) document at length in the context of cross-border portfolio positions, the gap between residence-based and ultimate-ownership-based measurement can be quantitatively large once firms organize production through intermediary jurisdictions and holding structures. This matters for the interpretation of our Vietnam result: the trade-reallocation effect we estimate should be read as a *production-location* effect rather than as a *national-ownership* effect, and part of the estimated DVA response could reflect a reorganization of production owned by parents based in China under Vietnamese residence—a pattern closer to FDI-enabled reallocation than to a "pure" expansion of production by domestically owned firms. We return to this point when discussing the FDI evidence in Section 4.

We also use the Orbis Cross-Border Investment database from Bureau van Dijk to examine the dynamics of greenfield FDI projects, such as a company setting up or expanding a physical presence in a foreign market. This database provides project-level information, including sourcing country, destination country, project industry, date of announcement, current status, and committed capital expenditure. Because the database lacks information on the disbursement of committed capital, we examine the cumulative number of projects *announced* between 2003 and 2022 in strategic sectors and non-strategic manufacturing sectors. We focus only on projects whose latest status is either completed or announced.

[14] Other input-output databases, such as the ADB MRIO and the OECD TiVA, are also commonly used. We use the Eora database as it covers a particularly large set of countries, which allows for a larger pool from which to draw in constructing the synthetic counterfactual.

4 Empirical Results

In this section, we first present the empirical results that test the hypotheses of trade reallocation and trade rerouting, and then zoom in on specific country cases by augmenting the trade analysis with FDI data.

4.1 Testing the reallocation hypothesis

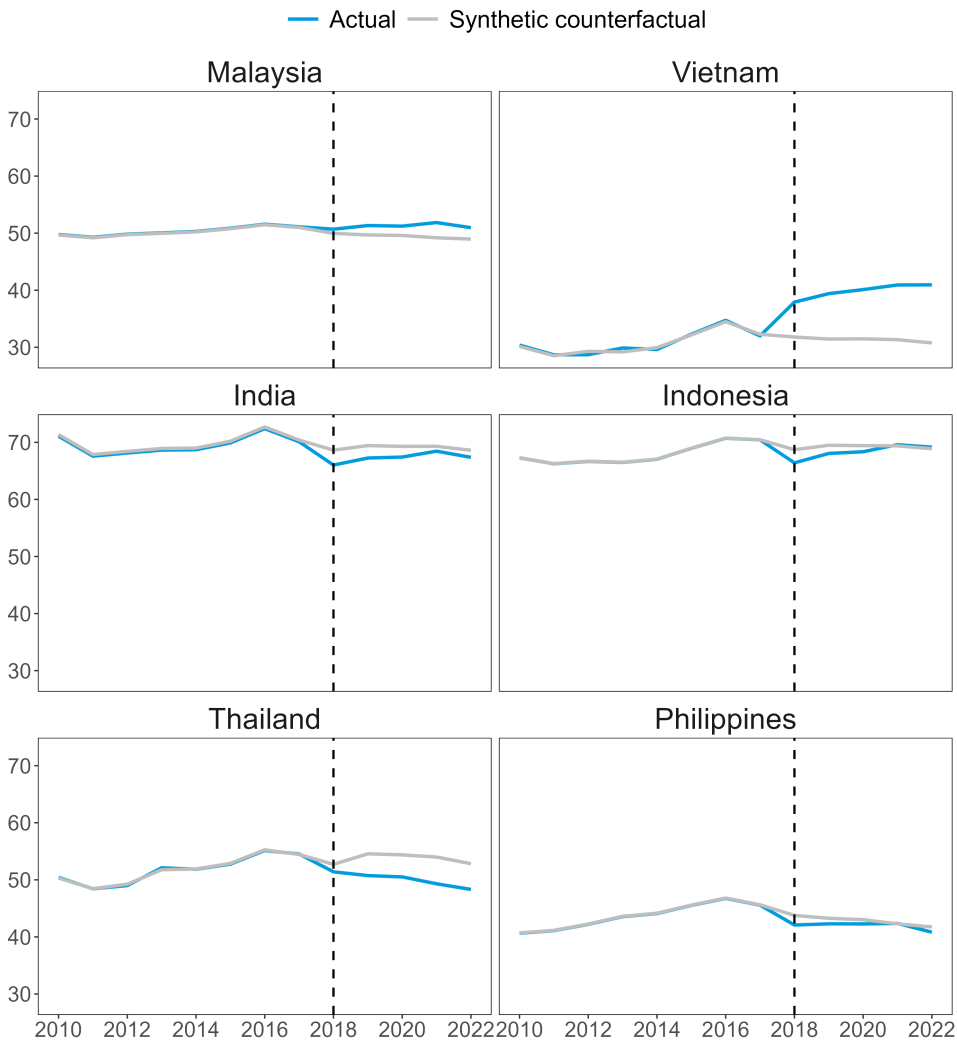
To test Hypothesis I (Reallocation), we examine the share of domestic value added in each country's exports to the United States relative to its synthetic counterfactual. Because Hypothesis I is a two-sided test requiring *both* a positive gap on the DVA share *and* a non-positive gap on the CNVA share, this subsection delivers only the first leg of the test—a positive DVA gap is a necessary but not yet sufficient condition for confirming reallocation, and the full conclusion is reached only after bringing in the CNVA results in the next subsection.

For the electrical and machinery sector, as shown in Figure 3, Malaysia and Vietnam have seen higher shares of domestic value added in their exports to the United States after the onset of the US–China trade tensions than their synthetic counterfactuals. In particular, the synthetic counterfactual suggests that Malaysia's share of domestic value added would have declined since 2018 in the absence of the US–China trade tensions, whereas the actual share has been relatively stable. Vietnam has seen its share of domestic value added rise since 2018 to above 40 percent, while the counterfactual shows a gradual decline. By contrast, all other countries of interest—India, Indonesia, the Philippines, and Thailand—have exhibited lower shares of domestic value added than their synthetic counterfactuals.

Figure 4 shows the estimated effect on the share of domestic value added in the countries' electrical and machinery exports to the United States—calculated as the gap between actual values and synthetic counterfactuals—together with the 10^{th}–90^{th} percentile range of the placebo test distribution. The results show that, while both Malaysia and Vietnam display positive effects, only Vietnam shows statistically significant effects since 2018. Specifically, Vietnam's share of domestic value added rose by about 6 percentage points in 2018 relative to the counterfactual, cumulating to more than 10 percentage points by 2022. For the other countries that show negative effects, none are statistically significant at the 90 percent confidence level, except for Thailand.

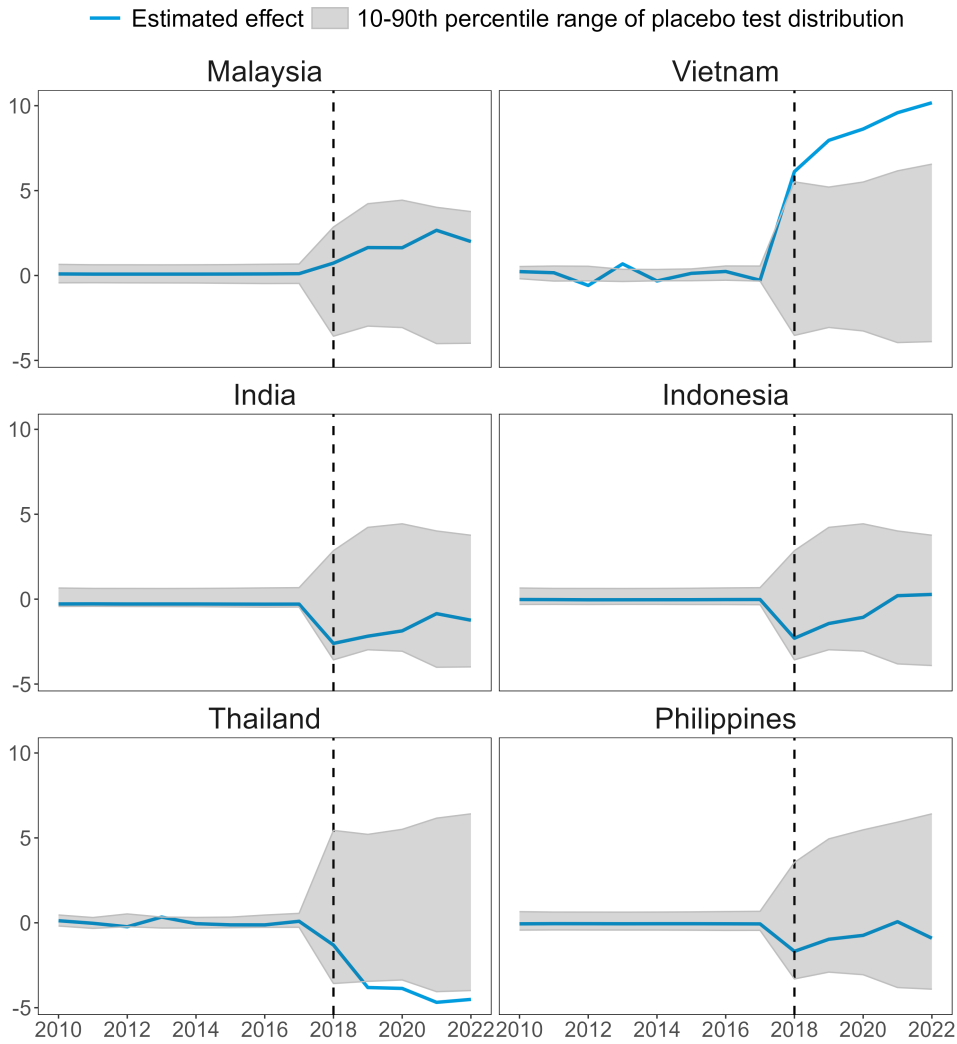
For petroleum, chemical, and non-metallic mineral products, similar results hold: Malaysia

Figure 3: Share of Domestic Value Added in the Country's Exports to the US, Electrical and Machinery
(In Percent)



Notes: For each country, the figure plots the actual (the blue lines) and the synthetic counterfactual (the grey lines) share of domestic value added in the country's exports to the US, for electrical and machinery sector. The synthetic counterfactuals are constructed based on a weighted average of the share of domestic value added in other countries' exports to the US for the same sector, excluding the six countries of interest in this paper. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 4: Estimated Effect on the Share of Domestic Value Added in the Country's Exports to the US,
Electrical and Machinery
(In Percentage Points)



Notes: For each country, the figure plots the estimated effect on the share of domestic value added in the country's exports to the US, for electrical and machinery sector (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

and Vietnam have seen positive effects on the domestic content of their exports to the United States, with higher shares of domestic value added than their synthetic counterfactuals, but the positive effects are statistically significant only for Vietnam. Vietnam's share of domestic value added rose by about 7 percentage points in 2018 relative to the counterfactual, cumulating to almost 12 percentage points by 2022. By contrast, all other countries in the sample display negative but statistically insignificant effects on the domestic content of their exports to the United States (see Appendix C for details).

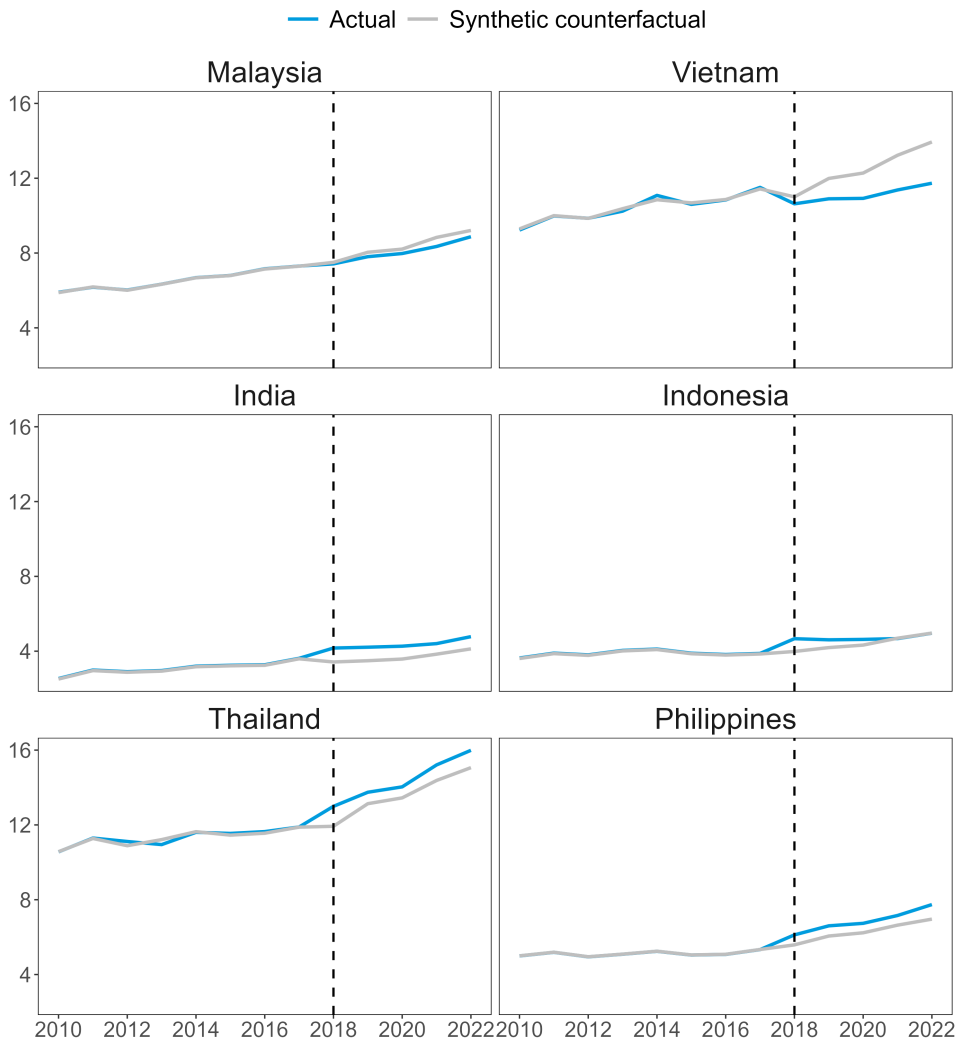
For strategic sectors—both electrical and machinery, and petroleum, chemical, and non-metallic mineral products—Vietnam is the only country in the sample that displays a positive and statistically significant effect on the domestic content of its exports to the United States, and therefore the only country that satisfies the first leg of the two-sided reallocation test. Whether the second leg—a non-positive gap on the share of Chinese value added, which jointly with the positive DVA gap would *confirm* reallocation and simultaneously *reject* significant rerouting—also holds is the subject of the next subsection. None of the other five countries satisfies the first leg: Malaysia shows a positive but statistically insignificant effect, Thailand a negative and statistically significant effect, and India, Indonesia, and the Philippines negative and statistically insignificant effects. Hypothesis I is therefore already rejected in the share sense for the five non-Vietnam countries before the CNVA results are brought in.

4.2 Testing the rerouting hypothesis

We now test Hypothesis II (Rerouting) by examining the share of Chinese value added in each country's strategic-sector exports to the United States relative to its synthetic counterfactual. Because Hypothesis II is a one-sided test, the interpretive logic is asymmetric. A *negative* and statistically significant CNVA gap *rejects* significant rerouting: the share of Chinese value added is lower than would obtain absent the shock, which is inconsistent with any positive pass-through of Chinese content. Combined with a positive DVA gap from the previous subsection, a negative CNVA gap also completes the second leg of the two-sided reallocation test and therefore *confirms* Hypothesis I. A *positive* and statistically significant CNVA gap, by contrast, cannot *confirm* rerouting: as established in Section 3, the same share pattern can be produced by a deepening of the country's backward linkages with China—that is, by a genuinely expanding domestic production base that sources more intermediate inputs from China, raising the CNVA share without any pass-through of finished goods.

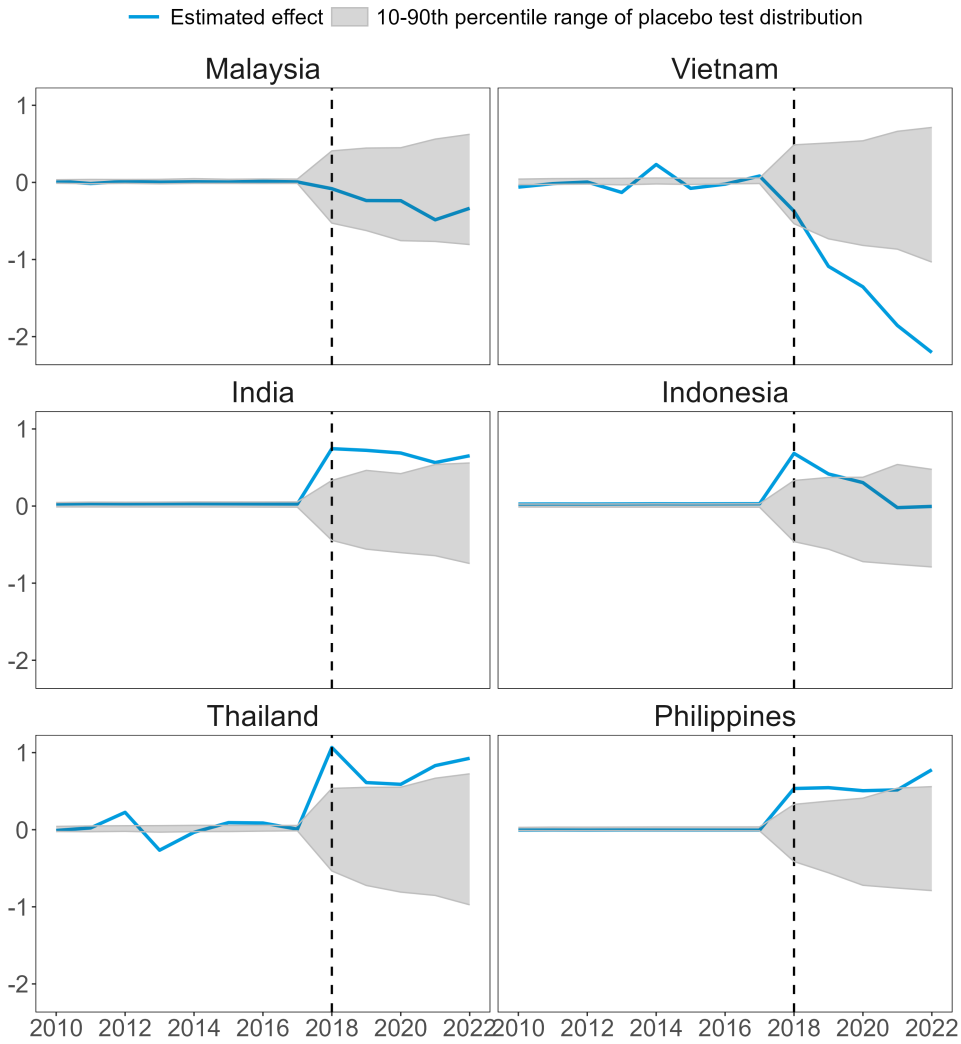
For the electrical and machinery sector, as shown in Figure 5, Malaysia and Vietnam

Figure 5: Share of Chinese Value Added in the Country's Exports to the US, Electrical and Machinery
(In Percent)



Notes: For each country, the figure plots the actual (the blue lines) and the synthetic counterfactual (the grey lines) share of Chinese value added in the country's exports to the US, for electrical and machinery sector. The synthetic counterfactuals are constructed based on a weighted average of the share of Chinese value added in other countries' exports to the US for the same sector, excluding the six countries of interest in this paper. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 6: Estimated Effect on the Share of Chinese Value Added in the Country's Exports to the US,
Electrical and Machinery
(In Percentage Points)



Notes: For each country, the figure plots the estimated effect on the share of Chinese value added in the country's exports to the US, for electrical and machinery sector (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

have seen lower shares of Chinese value added in their exports to the United States since 2018 than their synthetic counterfactuals. By contrast, India, Indonesia, Thailand, and the Philippines have seen higher shares of Chinese value added in their exports to the United States. Looking at the estimated effects and their statistical significance, as shown in Figure 6, Malaysia and Vietnam display negative effects on the share of Chinese value added in their exports to the United States, with those for Vietnam statistically significant at the 90 percent confidence level from 2019 onwards. For other countries that show positive effects, the effects are statistically significant in India, Thailand, and the Philippines over 2018–22, and in Indonesia only over 2018–19. Similar results are found for petroleum, chemical, and non-metallic mineral products: Vietnam shows a negative and statistically significant effect on the share of Chinese value added in its exports to the United States, while the other countries (except India) show negative but statistically insignificant effects (see Appendix D for details).

These results *reject* significant trade rerouting through Vietnam: the negative and statistically significant gap on Vietnam's CNVA share is inconsistent with any positive pass-through of Chinese content. Combined with the positive and statistically significant DVA gap established in the previous subsection, the compositional signature jointly satisfies the two-sided test of Hypothesis I and therefore *confirms* trade reallocation for Vietnam. Vietnam is the only country in the sample for which the two legs of the reallocation test line up, and simultaneously the only country for which rerouting is rejected.

For the other four countries with positive CNVA gaps—India, Thailand, and the Philippines for both sectors, and Indonesia for 2018–19 in the electrical and machinery sector—Hypothesis II is not rejected, but the positive gaps themselves cannot *confirm* rerouting. As the framework makes clear, the same share pattern is equally consistent with a deepening of backward linkages with China, in which an expanding domestic production base sources more intermediate inputs from China—for example, the relocation of assembly and packaging stages that source inputs from China while enabling final exports to the United States, as illustrated by Foxconn's commencement of high-end Apple iPhone assembly in India in 2019 (Reuters, 2018). Distinguishing rerouting from backward linkages in these cases cannot be done from aggregate value-added data alone; it requires auxiliary evidence on FDI inflows and on the composition of imported intermediates, which we leave to future work using more granular data. Malaysia shows a negative but statistically insignificant CNVA gap, which also leaves the rerouting test inconclusive on statistical-significance grounds.

Taken together with the DVA results from the previous subsection, the value-added evidence is conclusive only for Vietnam: reallocation is confirmed and significant rerouting is rejected. For the other five countries, reallocation has already been rejected in the compo-

sitional share sense at the first-leg stage, and the rerouting question remains empirically unresolved pending auxiliary evidence that can distinguish rerouting from a deepening of backward linkages with China.

The fact that only Vietnam in the sample confirms reallocation is a substantive finding in its own right. It tempers the broader claim that "connector countries" as a class have benefited uniformly from the US–China fragmentation: on a value-added basis, the class is more heterogeneous than aggregate trade flows suggest. In the language of Kleinman, Liu, and Redding (2024), this is precisely the *asymmetric third-country adjustment* that the framework predicts once input-output structure and factor supplies are allowed to differ across countries. Interpreted through the lens of Clayton et al. (2026) and Clayton et al. (2024), the pattern also suggests that being a nonaligned economy with rising bilateral exposure to both the United States and China is not sufficient to translate fragmentation pressure into domestic production gains. What distinguishes Vietnam is most likely a combination of structural characteristics and policy features that make it a credible destination for relocated production, which we discuss in the next subsection.

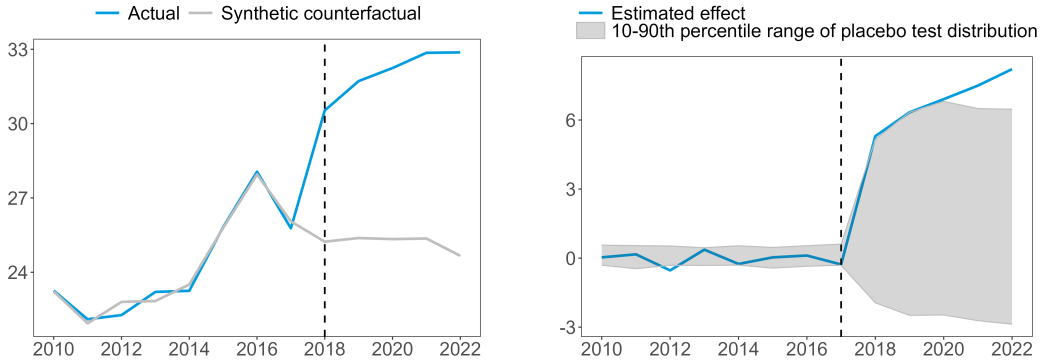
4.3 The Case of Vietnam

The results above suggest that Vietnam has benefited from trade reallocation in the context of the US–China trade tensions, which has supported its domestic production and raised the domestic content of its strategic-sector exports to the United States. Zooming in on Vietnam, we further examine (i) whether the gains extend to Vietnam's exports to the rest of the world, and (ii) whether part of the scale-up in domestic production is linked to the relocation of production by firms based in China through FDI. The motivation for pairing the trade-side evidence with a direct look at FDI is both conceptual and empirical. The framework of Clayton et al. (2026) treats trade and financial linkages as jointly bundled margins through which third countries adjust to geoeconomic pressure. Complementary work reinforces the financial-channel side of this adjustment: Clayton, Dos Santos, et al. (2025) show how China projects financial power abroad through state-directed overseas lending and subsidized outward expansion of its firms, shaping the supply of Chinese outward FDI independently of any given bilateral tariff shock. Taken together, these contributions imply that cross-border capital relocation is a first-order dimension of third-country adjustment, complementary to and potentially underlying the real-side reallocation captured by value-added trade.

4.3.1 Effect on domestic content exported to the world

Did Vietnam expand domestic production for exports not only to the United States, but also to the rest of the world? If so, the gains in the context of the US–China trade tensions would extend beyond bilateral reallocation between China and the United States. We address this by applying the same analysis of the share of domestic value added to Vietnam's *total* exports to the world.

Figure 7: Share of Domestic Value Added in Vietnam's Exports to the World, Electrical and Machinery
(In Percent)



(a) Trend **(b)** Estimated Effect

Notes: Panel (a) plot the actual (the blue line) and the synthetic counterfactual (the grey line) share of domestic value added in Vietnam's exports to the world, and Panel (b) plots the estimated effect (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study, for electrical and machinery sector. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 7 shows the actual and synthetic counterfactual trends (panel (7a)) and the estimated effect (panel (7b)) for the electrical and machinery sector. Vietnam's share of domestic value added in its electrical and machinery exports to the world rose by about 5 percentage points in 2018 and 8 percentage points by 2022. These effects are somewhat smaller than those on Vietnam's electrical and machinery exports to the United States (about 6 and 10 percentage points in 2018 and 2022, respectively), but they remain statistically significant at the 90 percent level, although close to the 90^{th}-percentile threshold during 2018–20. This is consistent with Vietnam having raised the domestic content of its exports both to the United States and to the rest of the world; otherwise the aggregate

effects would be smaller, given that exports to the rest of the world account for about 70 percent of Vietnam's total exports.

That the domestic-content gains extend to exports to the rest of the world, rather than being confined to the US destination where the tariff wedge opens, is informative about the underlying channel: rerouting is a bilateral arbitrage whose return is tied to the US tariff differential and would concentrate the measured effect on exports to the United States, whereas a genuine expansion of Vietnam's domestic production base raises domestic value added in shipments to *all* destinations. The presence of a comparable-magnitude effect on Vietnam's exports to the rest of the world is therefore consistent with trade reallocation rather than rerouting, reinforcing the conclusion of Section 4 that Hypothesis I holds for Vietnam.

4.3.2 The FDI Channel

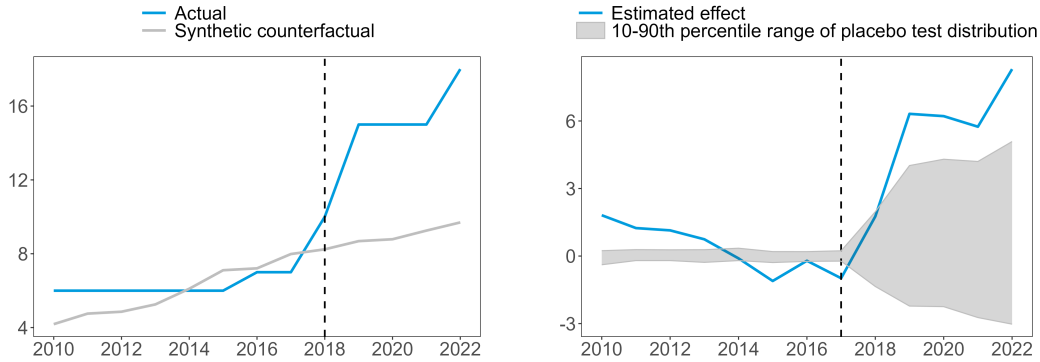
To examine whether part of the scale-up in domestic production in Vietnam is linked to the relocation of production by firms based in China, we replicate the synthetic control analysis for the cumulative number of greenfield FDI projects committing capital from firms based in China to Vietnam since 2003, the first year for which data in the Orbis Cross-Border Investment Database are available. The database also reports the value of committed capital, but it does not contain information on the disbursement status or schedule, so we use the number of projects.

Figure 8 shows the actual and synthetic counterfactual trends (panel (8a)) and the estimated effect (panel (8b)) for the electrical and machinery sector. Vietnam shows a positive and statistically significant effect on FDI inflows from firms based in China since 2019: cumulatively, it has about six more greenfield FDI projects than its synthetic counterfactual by 2019, and about eight more by 2022. The pre-2018 trend is not perfectly matched, likely due to the lumpy nature of greenfield FDI project counts—during 2010–17 there are projects only in 2016 for Vietnam—but the average match over 2010–17 is reasonable, with a mean squared prediction error around 1, providing some support for the validity of the estimated effect.

Combining the results on the share of domestic value added and on the number of greenfield FDI projects, part of the increase in Vietnam's domestic production—and thus in the domestic content of its exports to the United States and to the rest of the world—may reflect the relocation of production to Vietnam through greenfield FDI by firms based in China. These FDI projects do not only produce goods in Vietnam for export to the United States: they also expand Vietnam's domestic production capacity more broadly,

enabling Vietnam to export more domestic content to the rest of the world as well. This finding is consistent with firm-level evidence in Graziano et al. (2024), who exploit the 2018–19 US tariff measures as a quasi-experiment on multinational firms' location choices and document that MNEs have adjusted the extensive margin of multinational production in response, reinforcing the interpretation that the trade-side reallocation we estimate is at least partly mediated by a cross-border capital-relocation margin.

Figure 8: Cumulative Number of Greenfield FDI Projects that Commit Chinese Capital to Vietnam
Electrical and Machinery



(a) Trend (Actual versus Synthetic Counterfactual)

(b) Estimated Effect

Notes: Panel (a) plot the actual (the blue line) and the synthetic counterfactual (the grey line) of the cumulative number of greenfield FDI projects that commit Chinese capital to Vietnam for electrical and machinery sector since 2003. The synthetic counterfactuals are constructed based on a weighted average of the cumulative number of greenfield FDI projects that commit Chinese capital to other countries for the same sector since 2003, excluding Vietnam. Dashed vertical indicates the year 2018 when the US-China trade tensions started. Panel (b) plots the estimated effect on the cumulative number of greenfield FDI projects that commit Chinese capital to Vietnam for electrical and machinery sector since 2003 (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of Vietnam.
Sources: The Orbis Cross-border Investment Database and authors' calculations.

US tariff measures on imports from China may also have induced firms operating in China but ultimately owned by parents based outside China to relocate production to economies with competitive production costs, such as Vietnam. Because the data lack information on ultimate ownership, the estimated effects on FDI may include both firms based in China and firms operating in China but owned by parents based elsewhere. The reconfiguration of supply chains through FDI is not exclusive to firms based in China: FDI inflows to Vietnam from other economies, including the United States, Japan, and Korea, also increased significantly over the same period. The analysis covers only greenfield FDI, but additional FDI inflows into existing businesses for capacity expansion and mergers and acquisitions would further underscore Vietnam's attractiveness to foreign investors,

alongside its relatively high educational attainment and labor quality.

Two measurement caveats qualify how this estimate should be read, and they push in opposite directions. The first concerns attribution to the US–China trade tensions specifically. The estimated post-2018 increase in greenfield FDI from firms based in China into Vietnam should not be read as driven exclusively by the US–China trade tensions: Clayton, Dos Santos, et al. (2025) document that China has been pursuing a broader strategy of internationalizing its firms and its currency, centered on state-directed overseas lending and subsidized outward expansion of Chinese firms, which predates and runs alongside the US–China tariff episode and generates incentives for outward FDI to neighboring economies independently of bilateral tariff shocks. The effect we estimate therefore combines two forces that cannot be separated without firm-level information on the strategic motivation of the parent: (i) a trade-tensions shock that raises the return to producing *outside* China for the US market, and (ii) an intensification of a pre-existing Chinese outward-investment strategy. The synthetic control design absorbs slow-moving components of that strategy through the pretreatment match, but any acceleration around 2018—for example, related to domestic industrial policy—is folded into the estimated effect. Along the *attribution* margin, the estimated magnitude should therefore be interpreted as an upper bound on the component of the FDI response attributable to the trade tensions alone, with zero as the lower bound if the full observed acceleration is attributed to the internationalization strategy.

The second caveat, complementary to the residence-versus-ultimate-ownership issue flagged in Section 3 for the trade data, concerns *measurement of the origin*, holding attribution fixed. The Orbis Cross-Border Investment database assigns each FDI project to the *immediate* counterparty rather than to the ultimate parent. A firm based in China that invests in Vietnam through a holding company located in Hong Kong SAR, Singapore, or the British Virgin Islands is recorded as FDI from Hong Kong SAR, Singapore, or the British Virgin Islands, respectively, rather than from China. Coppola et al. (2021) show that this kind of intermediary routing systematically biases bilateral capital-flow statistics, often by large amounts, with the direction of the bias being to under-report positions from economies—including China—whose firms rely heavily on offshore financial centers. Along the *origin-measurement* margin, therefore, the estimated increase in greenfield FDI from firms based in China into Vietnam should be read as a lower bound on the true ultimate-ownership-based response, which only strengthens the qualitative interpretation that production relocation by firms ultimately based in China is one of the factors at play. The two bounds are not contradictory: the first bounds how much of the measured response is attributable to the trade tensions as opposed to the broader internationalization strategy, while the second bounds how much of the true ultimate-Chinese

response is captured by the measured one.

Taken together, these channels differ from trade rerouting, under which Vietnam would simply serve as a transit point for exports from China to the United States with minimal to no domestic value added.[15] Trade reallocation through FDI instead supports Vietnam's domestic production, enabling it to export more domestic content to the world. Whether this translates into broad-based gains for the domestic economy depends on the strength of spillovers from foreign-invested firms to domestically owned firms—through employment and wages, technological diffusion, and the integration of domestic suppliers into global value chains (Ahn et al., 2026). In the Vietnamese context, these spillovers are plausibly limited by the weak integration between the foreign-invested and domestically owned sectors, a pattern sometimes described as a "dual economy": the reallocation gains we identify might accrue disproportionately to the foreign-invested sector, and their transmission to the wider domestic economy is not automatic.

What factors explain Vietnam's distinctive response relative to the other Asian emerging market economies in our sample? Several country characteristics could account for trade and FDI reallocation toward one connector country rather than another, including the size of domestic markets, unit labor costs, openness to global trade and investment, and the depth of financial markets. A precise identification of these characteristics is beyond the scope of this paper, but Vietnam in particular stands out as a candidate connector country owing to its sustained structural transformation: early FDI reforms in the 1980s, accession to the World Trade Organization in 2007, further structural reforms (including in labor markets and state-owned enterprises), FDI incentives in the 2010s, and a number of free trade agreements. These reforms have been underpinned by a young population, relatively high educational outcomes and female labor force participation, macroeconomic stability, and geographic proximity to China—which also reduces transportation costs. Together, they made Vietnam a favorable destination for FDI in Southeast Asia well before the US–China trade tensions and have continued to do so since.

4.4 Discussion of Threats to Identification

A first threat to identification stems from confounding factors that affect strategic and non-strategic sectors alike—for example, COVID-19 lockdowns that disrupted supply chains and production capacity, or economy-wide structural reforms that raised produc-

[15] A small number of cases of Chinese outward FDI have been the subject of US trade-remedy proceedings (for example, in the solar industry), in which third-country processing was found to involve minimal additional value added relative to imports from China. Such findings have applied to isolated cases rather than constituting evidence of broad-based trade rerouting, and the resulting remedies have been firm-specific rather than applying to all exporters of the affected product.

tivity. To address this, we replicate the analysis for non-strategic manufacturing; as reported in Appendix C, the effects for Vietnam's non-strategic exports are markedly smaller and, for most of the post-treatment period, not statistically significant, in contrast with the positive and statistically significant effects on strategic sectors throughout 2018–22. The same strategic-versus-non-strategic contrast holds for the FDI evidence, where the positive and statistically significant effects are observed only in strategic sectors (see Appendix G). Two features of the research design mitigate COVID-specific concerns in particular: the pandemic spans only the later half of the post-treatment period, so the bulk of the significant evidence is already present in the unaffected years 2018–19, and the pandemic was a global shock with lockdowns occurring simultaneously in many countries, so pandemic-related supply-chain reconfiguration affects the synthetic control group symmetrically and leaves the relative distribution of value added broadly unaffected.

A second concern is that the US–China trade tensions could affect the countries used in the donor pool, calling into question the validity of including some of them in the synthetic control group. The trade tensions did not reshape every country's trade relationships or supply chain configurations equally (Gopinath et al., 2025). Nevertheless, Appendix E presents the top countries—with the largest weights that add up to 70 percent—used in constructing the synthetic counterfactual for each country in the sample. The country lists suggest that other frequently mentioned connector countries, such as Mexico and Poland, do not receive large weights in the synthetic counterfactuals. All countries except the six Asian countries in the sample, China, and the United States are also included when constructing the 10^{th}–90^{th} percentile range of the placebo distribution. The estimated effect on Vietnam remains statistically significant in this expanded donor pool, even though it includes other countries that may themselves have been affected by US tariff measures and may have seen positive effects on the share of domestic value added in their exports to the United States.

A third concern is that other structural factors—for example, relative changes in unit labor costs or productivity growth—could drive changes in domestic or Chinese value added in gross exports around the time of the US–China trade tensions and, in principle, confound the interpretation of the share-level tests. In practice, the value-added shares are slow-moving, and because the pretreatment matching characteristics include the dynamics of the variable of interest over nearly a decade alongside the size of the economy and of exports, slow-moving structural factors of this kind are largely absorbed into the synthetic counterfactuals. Some structural drivers in both the sample and the donor-pool countries also long preceded the US–China trade tensions, as part of a slower transformation toward manufacturing and services—again, components that the pretreatment match is designed to handle.

A fourth concern is that our empirical exercise treats the trade and financial channels *asymmetrically*, which bears on the scope of what the identified effect captures. The conceptual framework of Section 3, following Clayton et al. (2026), identifies trade and financial relationships as jointly shaping third-country adjustment to geoeconomic fragmentation. On the trade side, we use a full multi-region value-added decomposition and a synthetic control design with placebo inference and extensive appendix robustness. On the financial side, we use only the cumulative *count* of greenfield FDI projects from firms based in China to Vietnam, and do not use committed-capital values (because the database lacks disbursement status), the currency denomination of the underlying investment, cross-border bank claims or portfolio debt positions, or ultimate-ownership-based reallocations of FDI origins. As Maggiori et al. (2020) and Coppola et al. (2021) emphasize, the currency and ownership structure of cross-border capital positions are not neutral: they shape who bears risk, who captures rents, and through which balance sheets shocks are transmitted. A further financial-channel mechanism that our FDI-count measure does not capture is the state-directed overseas lending and subsidized outward expansion of Chinese firms emphasized by Clayton, Dos Santos, et al. (2025), which shapes the composition and timing of Chinese outward FDI independently of the tariff-driven trade wedge. Two implications follow for the interpretation of our results. First, our Vietnam-specific FDI evidence should be read as a partial—rather than a complete—characterization of the financial-channel response, and, for the reasons discussed in Section 4 on intermediary routing through offshore financial centers, as a *lower bound* on the true ultimate-ownership-based response. Second, cross-country inference on the financial channel is constrained by the same asymmetry: a null result on the trade side need not imply a null on the financial side, and the silence of the other five countries in our sample is most naturally read as silence on the trade-composition margin alone. A fuller treatment—combining committed-value FDI flows, cross-border bank exposures, and ultimate-ownership adjustments—is beyond the scope of this paper but is an important direction for future work.

5 Conclusion

This paper characterizes how a specific instance of geoeconomic fragmentation—the US–China trade tensions since 2018—propagates through third countries via two distinct equilibrium margins, trade reallocation and trade rerouting, and identifies which margin is operative empirically. Drawing on data on trade and FDI flows and input-output linkages for six Asian connector countries, the paper makes two main points.

First, the connector role—typically inferred from inward linkages with China through imports and outward linkages with the United States through exports—does not by itself establish a bridging role between the United States and China. So-called connector countries' increasing share in Chinese exports can also reflect the relocation of production abroad and the reconfiguration of supply chains by firms based in China, together with these economies' own growing domestic markets.

Second, examining the value-added content of bilateral trade, and applying an asymmetric testing protocol through synthetic control approach, this paper finds that Vietnam is the only country in the sample for which reallocation is confirmed and rerouting is simultaneously rejected during 2018–22. Vietnam's domestic production of strategic-sector exports to the United States has scaled up, as reflected in a higher share of domestic value added in those exports. The share of Chinese value added in the same exports has declined, which is inconsistent with any significant pass-through of Chinese content through Vietnam to the United States. Positive effects on domestic value added are also found in Vietnam's strategic-sector exports to the rest of the world, and Vietnam has seen an increase in committed inward FDI from firms based in China in strategic sectors over the same period. Taken together, the evidence is consistent with Vietnam having benefited from trade reallocation, as US sourcing shifts away from China and supply chains reorient toward Vietnam, while firms based in China expand production in Vietnam through FDI—likely both in response to US tariff measures and to take advantage of relatively lower unit labor costs. For the other five Asian countries, the empirical picture is less clear. Trade reallocation is rejected in the compositional sense—none of them exhibits a positive and statistically significant domestic-value-added gap—while rerouting remains empirically unresolved, because their positive Chinese-value-added gaps are equally consistent with a deepening of backward linkages with China, and the distinction between the two cannot be drawn from aggregate value-added data alone.

We use "benefits" in the narrow sense of domestic income and production effects, not as a formal welfare measure; classical terms-of-trade gains and losses from trade diversion would require a structural model beyond the scope of this paper. Even in this narrow sense—and as discussed in Section 4 in the context of Vietnam's "dual economy"—the gains to the wider domestic economy depend on the transmission of activity from foreign-invested firms to domestically owned firms through employment, wages, technological diffusion, and integration into global value chains. Studies on the US–China trade tensions in 2018–19 find positive labor market effects in Vietnamese districts more exposed to the relevant tariff measures (Mayr-Dorn et al., 2023; Rotunno et al., 2024), consistent with at least some transmission having occurred.

A separate question is the real resource cost of cross-substitution itself. Both rerouting

and reallocation absorb real resources that would not be required under the pre-tariff allocation: duplicated fixed costs of production capacity in the connector country, additional transportation and coordination costs along longer supply chains, and the opportunity cost of capital redirected into activities whose comparative-advantage rationale depends on the tariff wedge rather than on underlying fundamentals. For trade reallocation these costs may be partly offset by the domestic production gains we document; for pure rerouting they are largely deadweight losses. Quantifying these costs—for example, within a structural quantitative trade model along the lines of Arkolakis et al. (2012), Caliendo and Parro (2015), and Kleinman, Liu, and Redding (2024)—is a natural direction for future work and would complement the reduced-form evidence presented here. Such a model would also allow the share-based estimands of Section 3 to be mapped into real-income changes given trade elasticities and the tariff incidence documented by Amiti et al. (2019) and Amiti et al. (2020), providing a common benchmark against which to compare the Vietnam reallocation magnitudes to those obtained in other third-country adjustment episodes. A closely related gap, discussed at greater length in Section 4 as the fourth threat to identification, is that our empirical treatment of the financial-channel margin is intentionally limited to greenfield FDI project counts. Because the framework of Clayton et al. (2026) treats trade and financial channels as jointly bundled, a fuller characterization of how the US–China fragmentation has reshaped connector-country capital flows—combining committed-capital values, currency denomination, cross-border bank positions, and ultimate-ownership adjustments of the kind emphasized by Coppola et al. (2021) and Maggiori et al. (2020)—remains an important open question.

Fragmentation also clouds connector countries' medium-term prospects. In the short term and in relative terms, nonaligned economies that maintain open trade relationships with all countries may incur smaller losses from geoeconomic fragmentation (Aiyar et al., 2023; Bolhuis et al., 2023; Cerdeiro et al., 2021; Góes and Bekkers, 2022). But such countries—typically those with an export-oriented growth strategy and deep integration into global supply chains—are also more vulnerable to adverse shocks from a further intensification of fragmentation, including disruptive movements in commodity prices, unexpected changes in trade policies, and a decline in external demand from weaker global growth. A complementary channel emphasized by Kleinman et al. (2025) is that *uncertainty* about future fragmentation—independent of whether further trade measures are ultimately introduced—can itself reshape trade and investment patterns by raising the option value of waiting and by redirecting durable capital toward less-exposed destinations. Clayton, Coppola, et al. (2025) offer a directly measured counterpart to this *expectational* component by using large language models to extract signals of expressed geoeconomic pressure from textual corpora; their measures could in principle be combined with the value-added-based approach we take here to inform the timing and intensity of

third-country adjustment. Because connector countries' recent gains are concentrated in export- and FDI-oriented activities linked to global supply chains, they are plausibly among the most sensitive to such uncertainty: the same features that made them attractive when fragmentation pressures were narrowly bilateral could make their investment positions more fragile if the perceived scope of fragmentation widens.

Our findings leave open how the trade-reallocation channel maps onto geoeconomic *exposure*, not only onto domestic production. In the framework of Clayton et al. (2026) and Clayton et al. (2024), a country's exposure to fragmentation pressures is a function of how central it is to the supply chains subject to such pressures. From this perspective, Vietnam's reallocation of production into the strategic sectors covered by US tariff measures—rather than merely passing Chinese goods through—is ambiguous. On one hand, Vietnam's rising domestic content suggests that it has become a more consequential node in US-oriented supply chains in the post-2018 period, which may strengthen its position. On the other hand, the concentration of its new capacity in the very sectors identified as strategic makes Vietnam *more* exposed to future trade policy actions: further changes in US trade policy in the electrical and machinery or petrochemical segments would now have larger effects on the Vietnamese economy than in 2017. The fact that Vietnam's response is concentrated in strategic sectors and is muted or absent in non-strategic manufacturing is itself consistent with the prediction that third-country adjustment is concentrated where fragmentation pressures are most intense. By the same logic, the null response in the other five countries suggests either that their supply chain structures do not place them on the main margin of fragmentation pressures, or that their structural conditions—geographic proximity to China, prior FDI reforms, openness, labor-market scale—are not sufficiently strong to credibly absorb relocated production. We see these as first-order questions for future work in this literature.

Data Availability

Data and replication codes are available on OneDrive.

Acknowledgement

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Appendices

Appendix A Country and Sector Sample

The appendix presents the sample of country in Table 1 and the 26 sectors in the Eora Global Supply Chain database in Table 2.

Table 1: Sample of Country by Income Group

Advanced Economies	Emerging Market and Middle-Income Economies	Low Income Developing Countries
Andorra	Aruba	Afghanistan
Australia	Angola	Burundi
Austria	Albania	Benin
Belgium	United Arab Emirates	Burkina Faso
Canada	Argentina	Bangladesh
Switzerland	Armenia	Bhutan
Cyprus	Antigua and Barbuda	Central African Republic
Czech Republic	Azerbaijan	Côte d'Ivoire
Germany	Bulgaria	Cameroon
Denmark	Bahrain	Democratic Republic of the Congo
Spain	Bahamas, The	Congo, Republic of
Estonia	Bosnia and Herzegovina	Djibouti
Finland	Belarus	Eritrea
France	Belize	Ethiopia
United Kingdom	Bolivia	Ghana
Greece	Brazil	Guinea
Hong Kong SAR	Barbados	Gambia, The
Ireland	Brunei Darussalam	Honduras
Iceland	Botswana	Haiti
Israel	Chile	Kenya
Italy	China	Kyrgyz Republic
Japan	Colombia	Cambodia
Korea	Cabo Verde	Lao P.D.R.
Lithuania	Costa Rica	Liberia
Luxembourg	Dominican Republic	Lesotho
Latvia	Algeria	Moldova
Macao SAR	Ecuador	Madagascar
Malta	Egypt	Mali
Netherlands	Fiji	Myanmar
Norway	Gabon	Mozambique
New Zealand	Georgia	Mauritania
Portugal	Guatemala	Malawi
Singapore	Guyana	Niger
San Marino	Croatia	Nigeria
Slovak Republic	Hungary	Nicaragua
Slovenia	Indonesia	Nepal
Sweden	India	Papua New Guinea
Taiwan Province of China	Iran	Rwanda
	Iraq	Senegal
	Jamaica	Sierra Leone
	Jordan	Somalia
	Kazakhstan	São Tomé and Príncipe
	Kuwait	Chad

	Lebanon	Togo
	Libya	Tajikistan
	Sri Lanka	Tanzania
	Morocco	Uganda
	Maldives	Uzbekistan
	Mexico	Vietnam
	North Macedonia	Yemen
	Montenegro, Rep. of	Zambia
	Mongolia	Zimbabwe
	Mauritius	
	Malaysia	
	Namibia	
	Oman	
	Pakistan	
	Panama	
	Peru	
	Philippines	
	Poland	
	Paraguay	
	Qatar	
	Romania	
	Russia	
	Saudi Arabia	
	El Salvador	
	Serbia	
	Suriname	
	Eswatini	
	Seychelles	
	Syria	
	Thailand	
	Turkmenistan	
	Trinidad and Tobago	
	Tunisia	
	Turkey	
	Ukraine	
	Uruguay	
	Venezuela	
	Vanuatu	
	Samoa	
	South Africa	

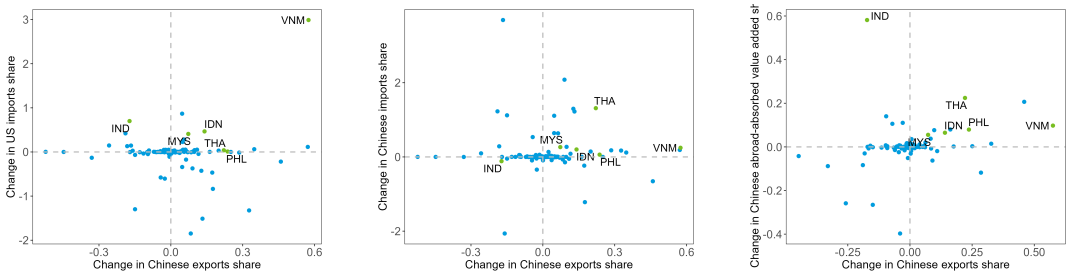
Table 2: Sectors in the Eora Global Supply Chain Database

Sector
Agriculture
Fishing
Mining and Quarrying
Food and Beverages
Textiles and Wearing Apparel
Wood and Paper
Petroleum, Chemical and Non-Metallic Mineral Products
Metal Products
Electrical and Machinery
Transport Equipment
Other Manufacturing
Recycling
Electricity, Gas and Water
Construction
Maintenance and Repair
Wholesale Trade
Retail Trade
Hotels and Restaurants
Transport
Post and Telecommunications
Financial Intermediation and Business Activities
Public Administration
Education, Health and Other Services
Private Households
Others
Re-export and Re-import

Appendix B Additional Stylized Facts

This appendix presents additional stylized facts on the association between change in a country's share in the US imports, in Chinese imports, in Chinese abroad-absorbed value added, and change in a country's share in Chinese exports, for strategic sectors including (i) electrical and machinery (Figure 9) and (ii) petroleum, chemical and non-metallic mineral products (Figure 10).

Figure 9: Change in the Share in US Imports, Chinese Imports, and Chinese Abroad-Absorbed Value Added versus Change in the Share of Chinese Exports Electrical and Machinery



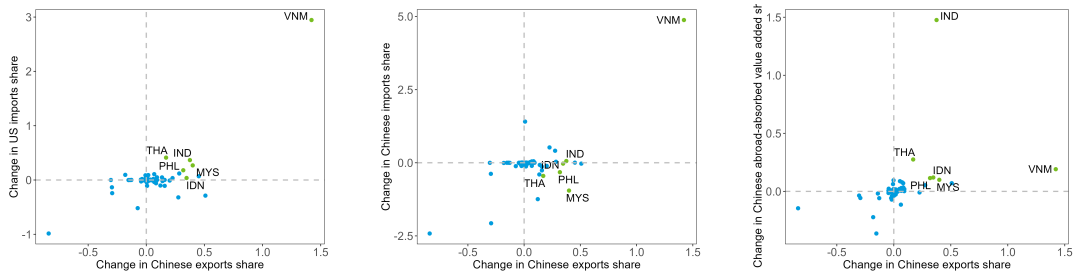
(a) US Imports versus Chinese Exports

(b) Chinese Imports versus Chinese Exports

(c) Chinese Value Added Absorbed Abroad versus Chinese Exports

Notes: Panel (a)-(c) plot changes in three measures of market shares, including the share in US imports (panel (a)), the share in Chinese imports (panel (b)), and the share in Chinese abroad-absorbed value added (panel (c)), between 2013-17 and 2018-22, against change in the share in Chinese exports, for nonaligned countries. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: BACI Database (Gaulier and Zignago, 2010), The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 10: Change in the Share in US Imports, Chinese Imports, and Chinese Abroad-Absorbed Value Added versus Change in the Share of Chinese Exports Petroleum, Chemical and Non-Metallic Mineral Products



(a) US Imports versus Chinese Exports

(b) Chinese Imports versus Chinese Exports

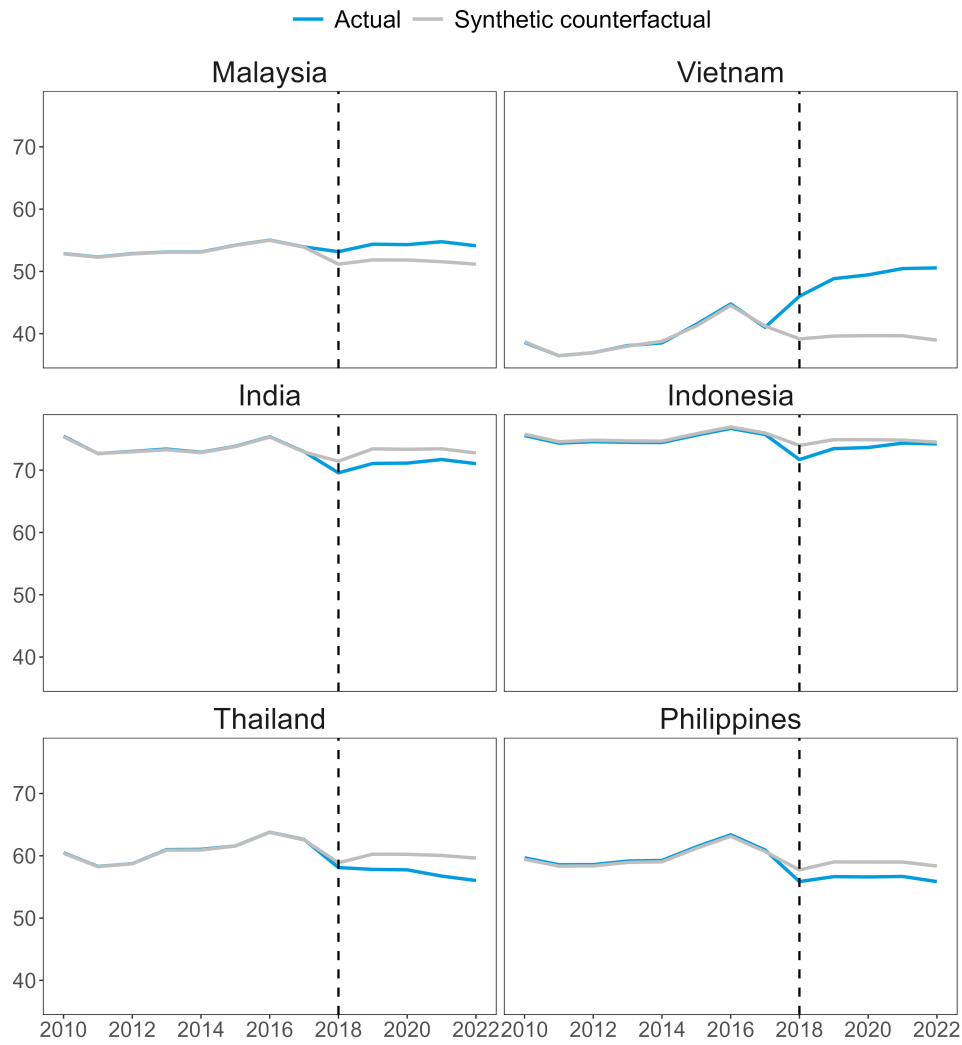
(c) Chinese Abroad-Absorbed Value Added versus Chinese Exports

Notes: Panel (a)-(c) plot changes in three measures of market shares, including the share in US imports (panel (a)), the share in Chinese imports (panel (b)), and the share in Chinese abroad-absorbed value added (panel (c)), between 2013-17 and 2018-22, against change in the share in Chinese exports, for nonaligned countries. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: BACI Database (Gaulier and Zignago, 2010), The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Appendix C Additional Empirical Results on the Share of Domestic Value Added in Exports

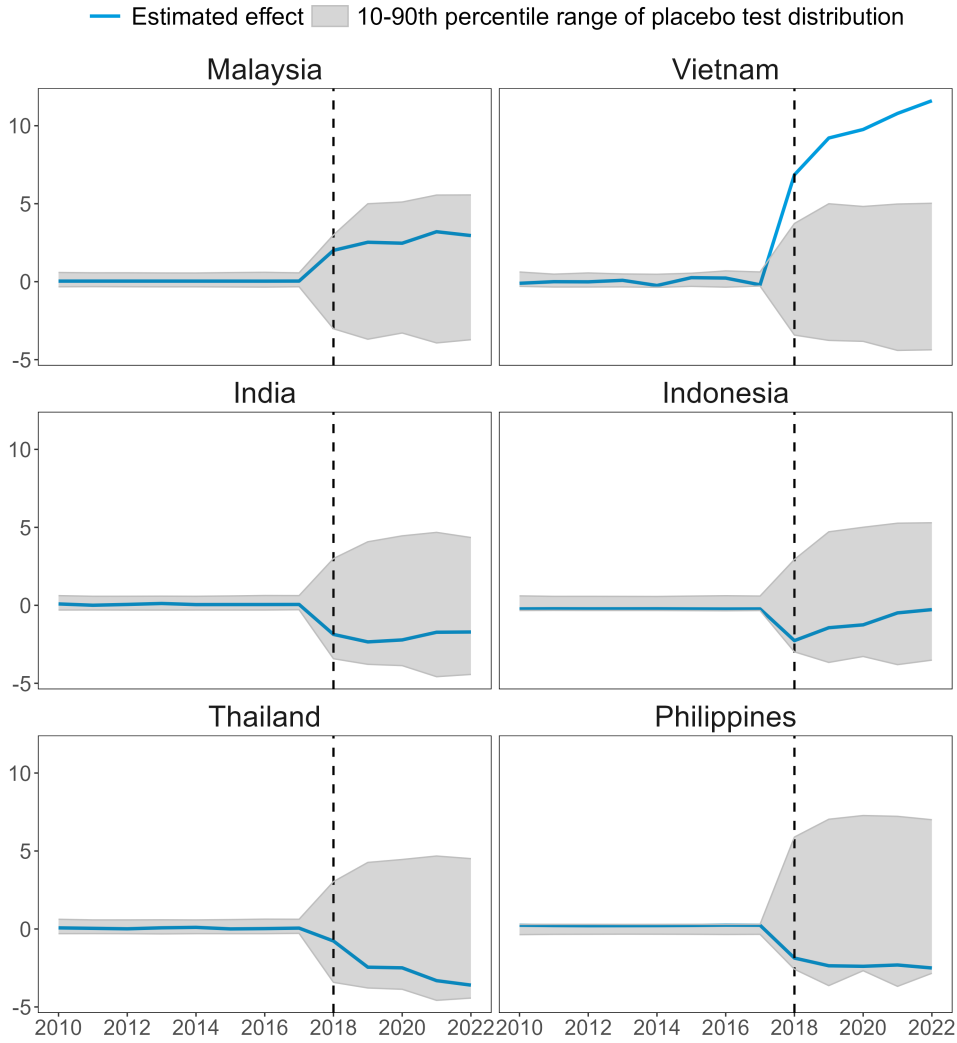
The appendix presents empirical results for petroleum, chemical and non-metallic mineral products, and non-strategic manufacturing products, including (i) the dynamics - both the actual values and the synthetic counterfactuals - of the share of domestic value added in a country's exports to the US, and (ii) the estimated effects.

Figure 11: Share of Domestic Value Added in the Country's Exports to the US, Petroleum, Chemical and Non-Metallic Mineral Products
(In Percent)



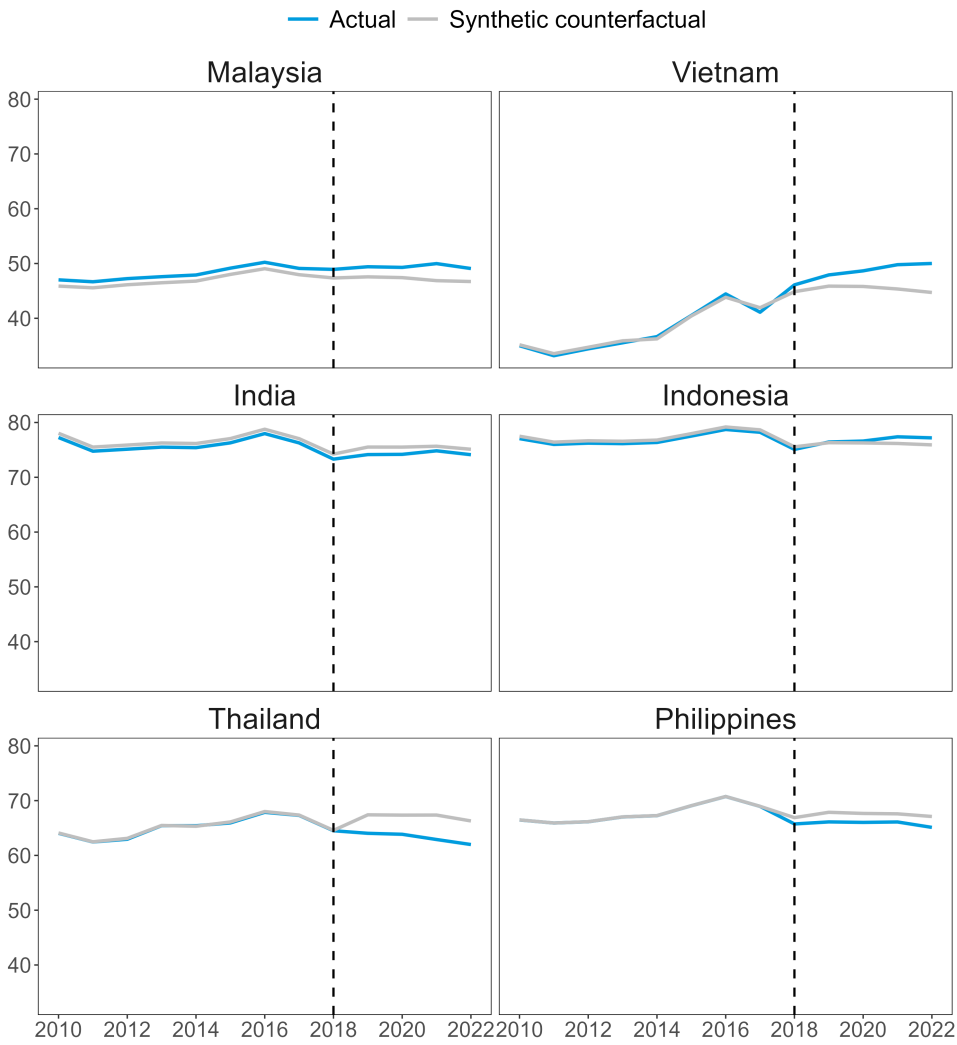
Notes: For each country, the figure plots the actual (the blue lines) and the synthetic counterfactual (the grey lines) share of domestic value added in the country's exports to the US, for petroleum, chemical and non-metallic mineral products sector. The synthetic counterfactuals are constructed based on a weighted average of the share of domestic value added in other countries' exports to the US for the same sector, excluding the six countries of interest in this paper. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 12: Estimated Effect on the Share of Domestic Value Added in the Country's Exports to the US,
Petroleum, Chemical and Non-Metallic Mineral Products
(In Percentage Points)



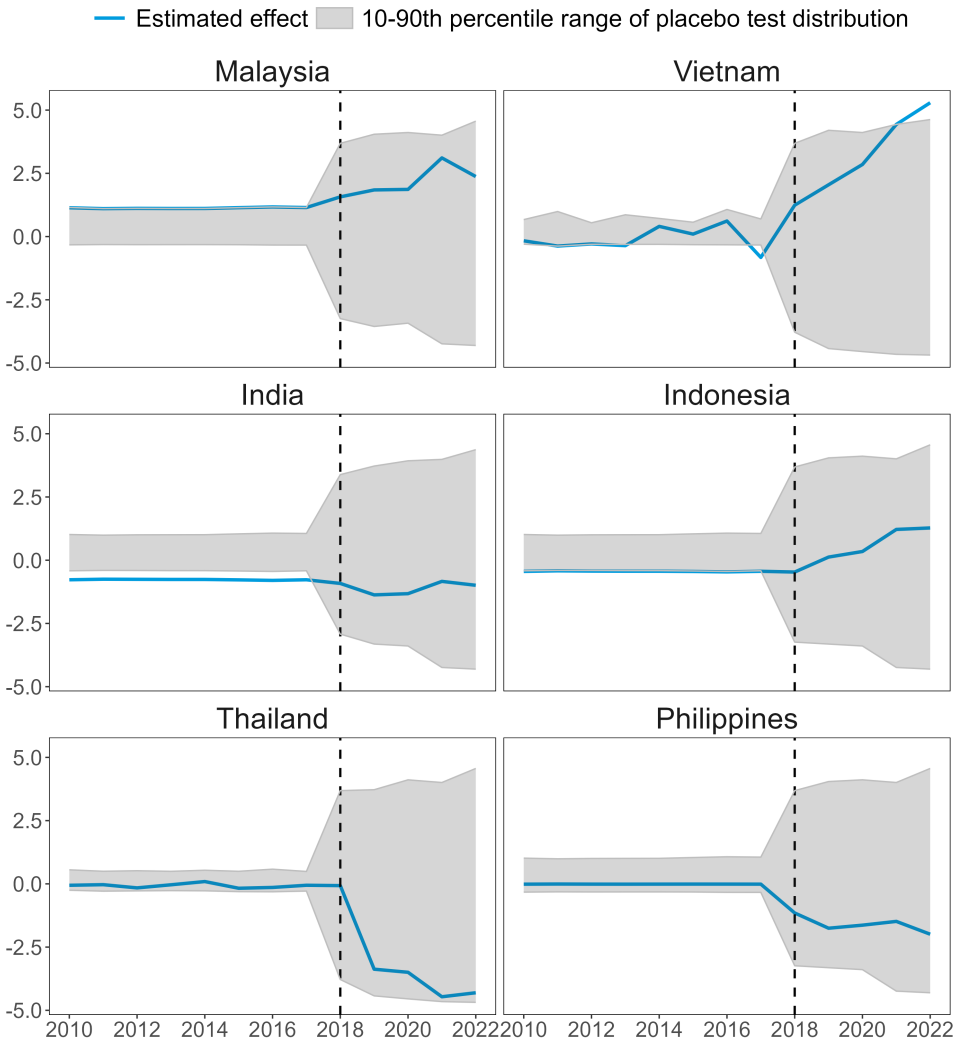
Notes: For each country, the figure plots the estimated effect on the share of domestic value added in the country's exports to the US, for petroleum, chemical and non-metallic mineral products sector (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study. ashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 13: Share of Domestic Value Added in the Country's Exports to the US, Non-Strategic Manufacturing Products
(In Percent)



Notes: For each country, the figure plots the actual (the blue lines) and the synthetic counterfactual (the grey lines) share of domestic value added in the country's exports to the US, for non-strategic manufacturing sectors. The synthetic counterfactuals are constructed based on a weighted average of the share of domestic value added in other countries' exports to the US for the same sector, excluding the six countries of interest in this paper. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 14: Estimated Effect on the Share of Domestic Value Added in the Country's Exports to the US,
Non-Strategic Manufacturing Products
(In Percentage Points)

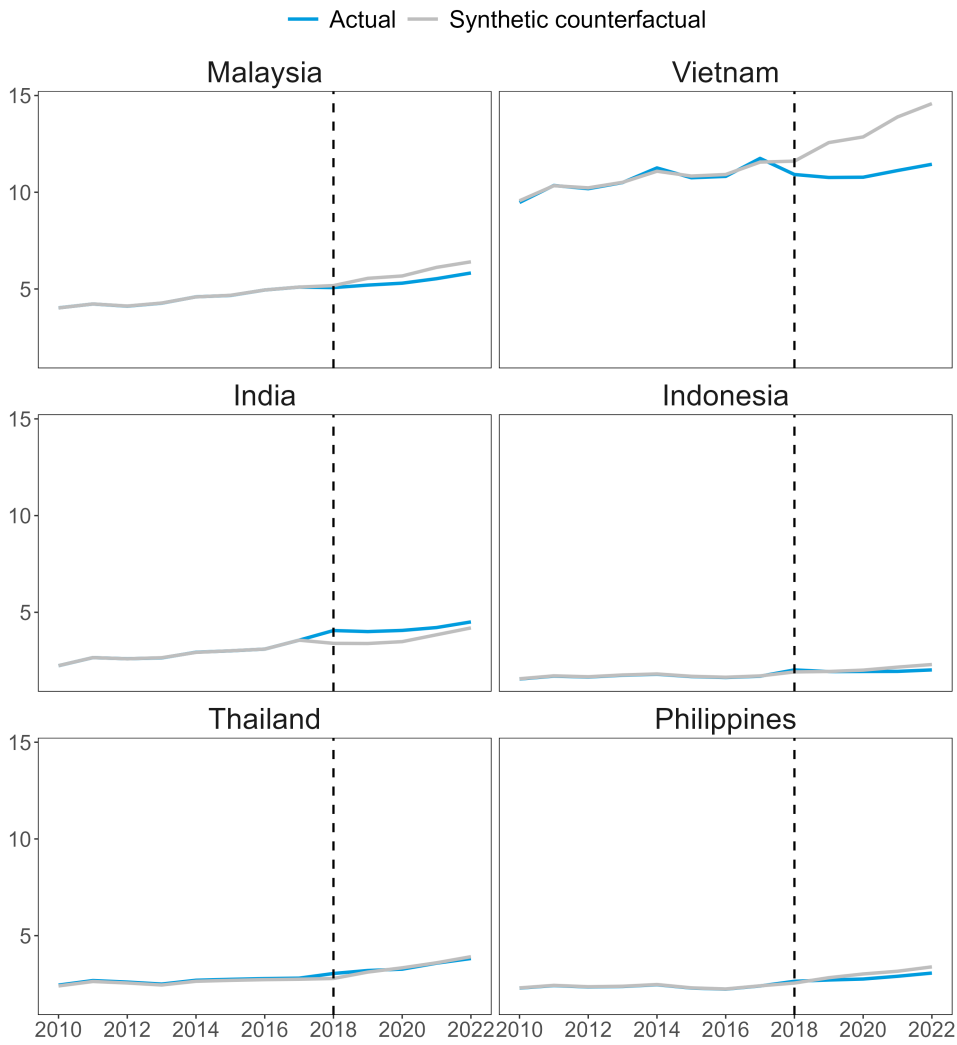


Notes: For each country, the figure plots the estimated effect on the share of domestic value added in the country's exports to the US, for non-strategic manufacturing sectors (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study. ashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Appendix D Additional Empirical Results on the Share of Chinese Value Added in Exports

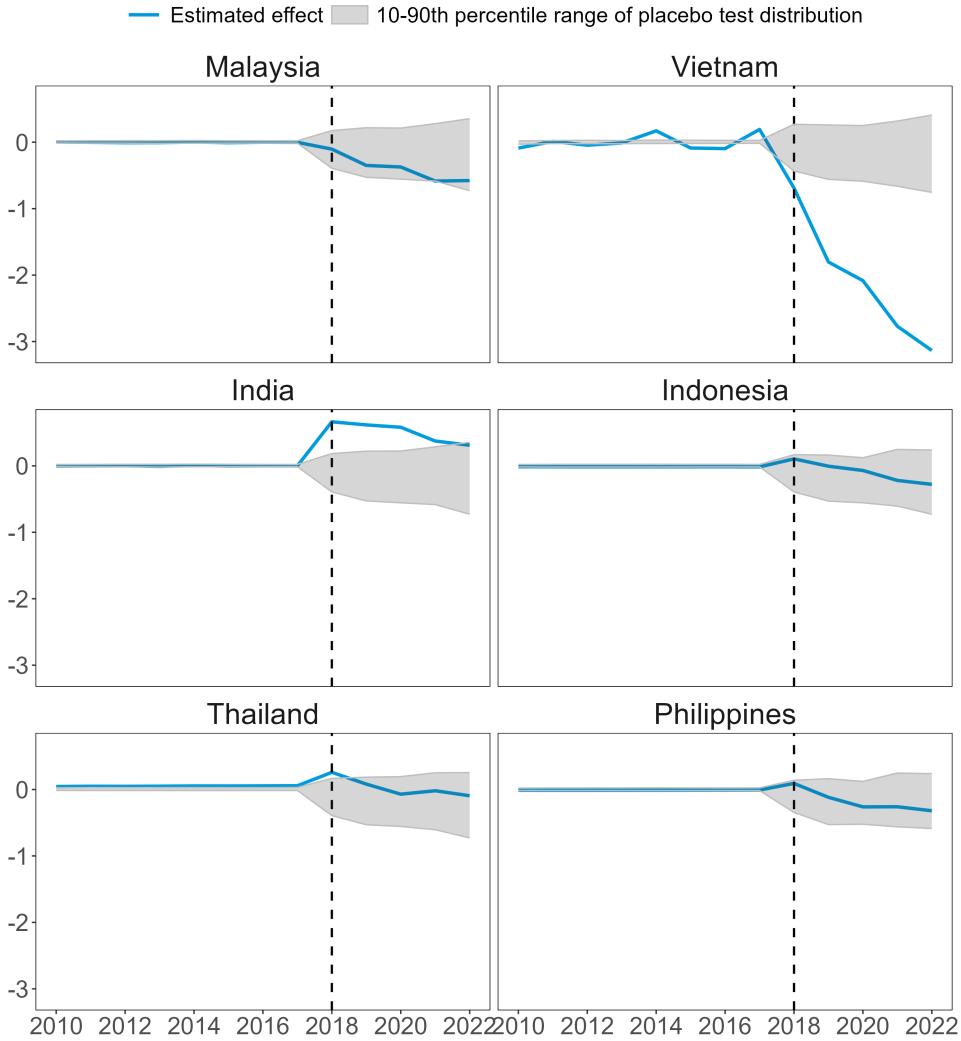
The appendix presents empirical results for petroleum, chemical and non-metallic mineral products, and non-strategic manufacturing products, including (i) the dynamics - both the actual values and the synthetic counterfactuals - of the share of Chinese value added in a country's exports to the US, and (ii) the estimated effects.

Figure 15: Share of Chinese Value Added in the Country's Exports to the US, Petroleum, Chemical and Non-Metallic Mineral Products
(In Percent)



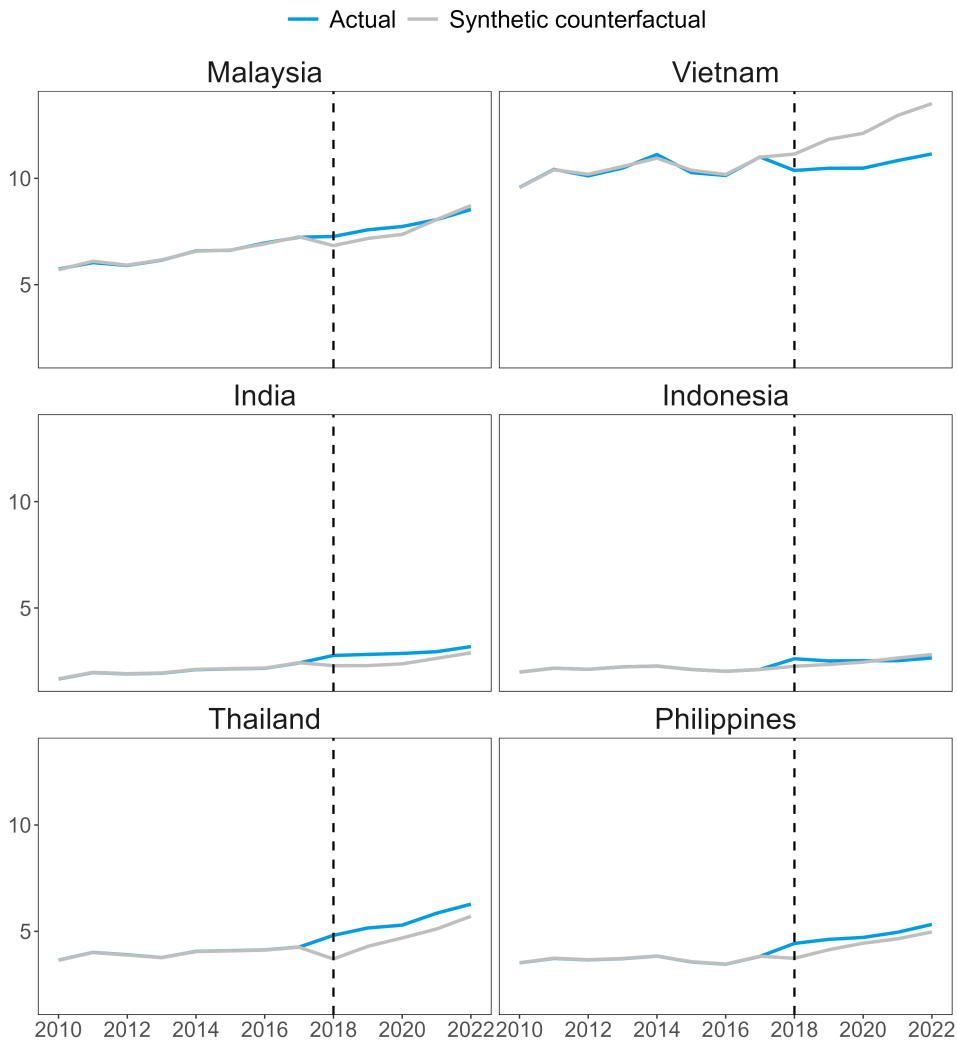
Notes: For each country, the figure plots the actual (the blue lines) and the synthetic counterfactual (the grey lines) share of Chinese value added in the country's exports to the US, for petroleum, chemical and non-metallic mineral products sector. The synthetic counterfactuals are constructed based on a weighted average of the share of Chinese value added in other countries' exports to the US for the same sector, excluding the six countries of interest in this paper. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 16: Estimated Effect on the Share of Chinese Value Added in the Country's Exports to the US,
Petroleum, Chemical and Non-Metallic Mineral Products
(In Percentage Points)



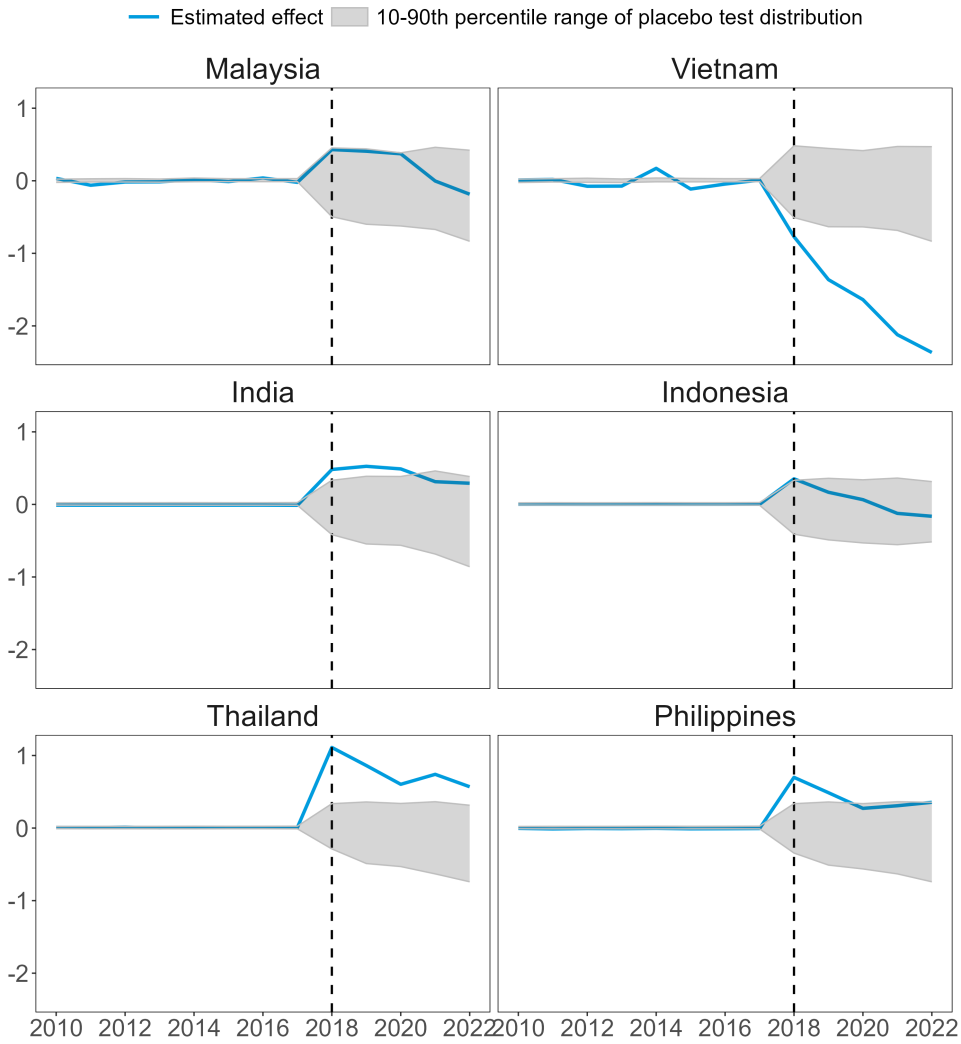
Notes: For each country, the figure plots the estimated effect on the share of domestic value added in the country's exports to the US, for petroleum, chemical and non-metallic mineral products sectors (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study. ashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 17: Share of Chinese Value Added in the Country's Exports to the US, Non-Strategic Manufacturing Products
(In Percent)



Notes: For each country, the figure plots the actual (the blue lines) and the synthetic counterfactual (the grey lines) share of Chinese value added in the country's exports to the US, for non-strategic manufacturing sector. The synthetic counterfactuals are constructed based on a weighted average of the share of Chinese value added in other countries' exports to the US for the same sector, excluding the six countries of interest in this paper. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 18: Estimated Effect on the Share of Chinese Value Added in the Country's Exports to the US,
Non-Strategic Manufacturing Products
(In Percentage Points)



Notes: For each country, the figure plots the estimated effect on the share of domestic value added in the country's exports to the US, for non-strategic manufacturing sectors (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study. ashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Appendix E List of Countries Used in Constructing Synthetic Counterfactuals

The appendix presents the list of countries used in constructing the synthetic counterfactuals for the share of domestic value added (Table 3 - 5) and for the share of Chinese value added (Table 6 - 8), with the largest weights that add up to 70 percent.

Table 3: List of Top Countries Used in Constructing the Synthetic Counterfactual for the Share of Domestic Value Added, Electrical and Machinery

Rank	Indonesia	India	Malaysia	Philippines	Thailand	Vietnam
1	United Arab Emirates	Suriname	Guyana	Seychelles	Singapore	Luxembourg
2	Burundi	Yemen	Myanmar	Guyana	Maldives	Hungary
3	Côte d'Ivoire	Uzbekistan	Singapore	Hong Kong SAR	Seychelles	
4	Brunei Darussalam	Myanmar		Singapore		
5	Bahrain	Serbia				
6	Benin					
7	New Zealand					
8	Bulgaria					
9	Peru					
10	Bolivia					
11	Brazil					
12	Oman					
13	Trinidad and Tobago					
14	Pakistan					
15	Central African Republic					
16	Chad					
17	Russia					
18	Norway					
19	Cameroon					
20	Angola					
21	South Africa					
22	Mozambique					
23	Qatar					
24	Iran					
25	Egypt					
26	Algeria					
27	Kuwait					
28	Nepal					
29	United Kingdom					
30	Ecuador					
31	Australia					
32	Mauritius					
33	Congo, Republic of					
34	Belarus					
35	Malawi					
36	Tanzania					
37	Colombia					
38	Switzerland					
39	Panama					
40	Myanmar					

Notes: Each column lists the countries used in constructing the synthetic counterfactual for each country in the sample, with the largest weights that add up to 70 percent.
Sources: authors' calculations.

Table 4: List of Top Countries Used in Constructing the Synthetic Counterfactual for the Share of Domestic Value Added, Petroleum, Chemical and Non-Metallic Mineral Products

Rank	Indonesia	India	Malaysia	Philippines	Thailand	Vietnam
1	Panama	Serbia	Hungary	Austria	Seychelles	Seychelles
2	South Africa	Myanmar	Angola	Togo	Korea	Lithuania
3	New Zealand		Hong Kong SAR	United Arab Emirates		Luxembourg
4	Singapore		Netherlands	Mauritania		
5	Hungary		Ireland	Armenia		
6	Oman		Norway	Haiti		
7	Taiwan Province of China		Mozambique	Montenegro, Rep. of		
8	Spain		Sweden	Zambia		
9	Mozambique		Switzerland	Senegal		
10	Norway		Luxembourg	Romania		
11	Congo, Republic of		Myanmar	Djibouti		
12	Tunisia		Malawi	Argentina		
13	Kuwait		Congo, Republic of	Cambodia		
14	Tanzania		Belarus	Madagascar		
15	Belarus		Lithuania	Germany		
16	Malawi		Guyana	Tunisia		
17	Luxembourg		Singapore	Ecuador		
18	Switzerland		Taiwan Province of China	Denmark		
19	Myanmar			Nepal		
20	Pakistan			Bulgaria		
21				Ghana		
22				Mexico		
23				Poland		
24				Kenya		
25				Tanzania		
26				Iceland		
27				Nigeria		
28				Cyprus		
29				Mauritius		
30				Switzerland		
31				Croatia		
32				Egypt		
33				Gambia, The		
34				Cabo Verde		
35				Portugal		
36				Panama		
37				Democratic Rep. of Congo		
38				Seychelles		
39				Bahamas, The		
40				Belarus		
41				Luxembourg		
42				Guyana		
43				United Kingdom		
44				Uzbekistan		

Notes: Each column lists the countries used in constructing the synthetic counterfactual for each country in the sample, with the largest weights that add up to 70 percent.
Sources: authors' calculations.

Table 5: List of Top Countries Used in Constructing the Synthetic Counterfactual for the Share of Domestic Value Added, Non-Strategic Manufacturing Products

Rank	Indonesia	India	Malaysia	Philippines	Thailand	Vietnam
1	Nigeria	Pakistan	Korea	Haiti	Maldives	Luxembourg
2	Myanmar	Morocco	Singapore	Switzerland	Seychelles	Montenegro, Rep. of
3		Myanmar		Macao SAR		
4				Belarus		
5				United Kingdom		
6				Guyana		
7				Pakistan		
8				Seychelles		
9				Egypt		

Notes: Each column lists the countries used in constructing the synthetic counterfactual for each country in the sample, with the largest weights that add up to 70 percent.
Sources: authors' calculations.

Table 6: List of Top Countries Used in Constructing the Synthetic Counterfactual for the Share of Chinese Value Added, Electrical and Machinery

Rank	Indonesia	India	Malaysia	Philippines	Thailand	Vietnam
1	Nigeria	Lesotho	Germany	Moldova	Moldova	Hong Kong SAR
2	Belarus	Kyrgyz Republic	Singapore	Egypt	Yemen	Djibouti
3	Congo, Republic of			Hong Kong SAR	Hong Kong SAR	
4	Cambodia			Belarus		
5	Iran					
6	Panama					

Notes: Each column lists the countries used in constructing the synthetic counterfactual for each country in the sample, with the largest weights that add up to 70 percent.
Sources: authors' calculations.

Table 7: List of Top Countries Used in Constructing the Synthetic Counterfactual for the Share of Chinese Value Added, Petroleum, Chemical and Non-Metallic Mineral Products

Rank	Indonesia	India	Malaysia	Philippines	Thailand	Vietnam
1	Central African Republic	Ghana	Belarus	Cyprus	Seychelles	Hong Kong SAR
2	Mozambique	Lesotho	United Arab Emirates	Macao SAR	Germany	Djibouti
3	Belarus	Djibouti	Germany	Uzbekistan		
4	Myanmar			Nepal		
5	Russia			Nigeria		
6	Chad			Belarus		
7	Macao SAR					
8	Tajikistan					
9	Cambodia					
10	Panama					
11	Botswana					
12	Nepal					
13	Nigeria					
14	Malawi					

Notes: Each column lists the countries used in constructing the synthetic counterfactual for each country in the sample, with the largest weights that add up to 70 percent.
Sources: authors' calculations.

Table 8: List of Top Countries Used in Constructing the Synthetic Counterfactual for the Share of Chinese Value Added, Non-Strategic Manufacturing Products

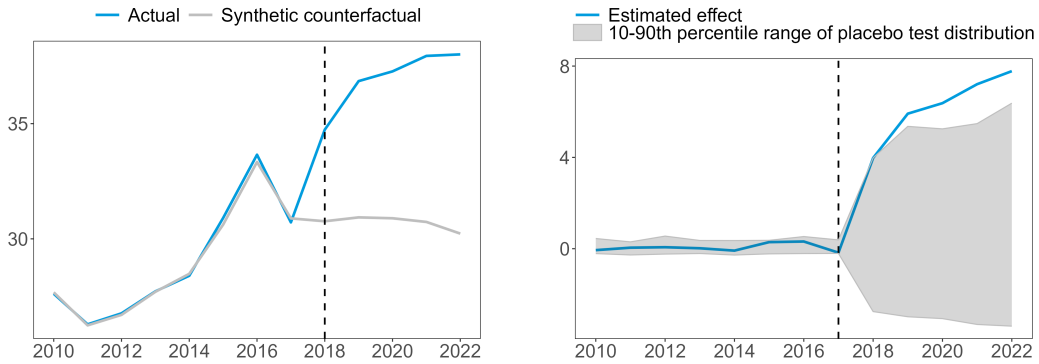
Rank	Indonesia	India	Malaysia	Philippines	Thailand	Vietnam
1	Angola	Pakistan	Mauritius	Belarus	United Arab Emirates	Hong Kong SAR
2	Switzerland	Czech Republic		Egypt	Seychelles	Mongolia
3	Georgia	Suriname			Djibouti	
4	Guatemala	Jamaica				
5	Brazil	Mauritius				
6	Qatar	Ghana				
7	Mozambique	Lesotho				
8	Myanmar	Germany				
9	Oman	Yemen				
10	Croatia	Madagascar				
11	Panama	Guyana				
12	Congo, Republic of	Uzbekistan				
13	Botswana	Djibouti				
14	Macao SAR	Morocco				
15	Chad	Serbia				
16	Iran	Montenegro, Rep. of				
17	Namibia					
18	Tanzania					
19	Belarus					
20	Nigeria					

Notes: Each column lists the countries used in constructing the synthetic counterfactual for each country in the sample, with the largest weights that add up to 70 percent.
Sources: authors' calculations.

Appendix F Additional Empirical Results on the Share of Domestic Value Added in Vietnam's Exports to the World

The appendix presents empirical results for petroleum, chemical and non-metallic mineral products, and non-strategic manufacturing products, including (i) the dynamics - both the actual values and the synthetic counterfactuals - of the share of domestic value added in Vietnam's exports to the world, and (ii) the estimated effects.

Figure 19: Share of Domestic Value Added in Vietnam's Exports to the World, Petroleum, Chemical and Non-Metallic Mineral Products
(In Percent)

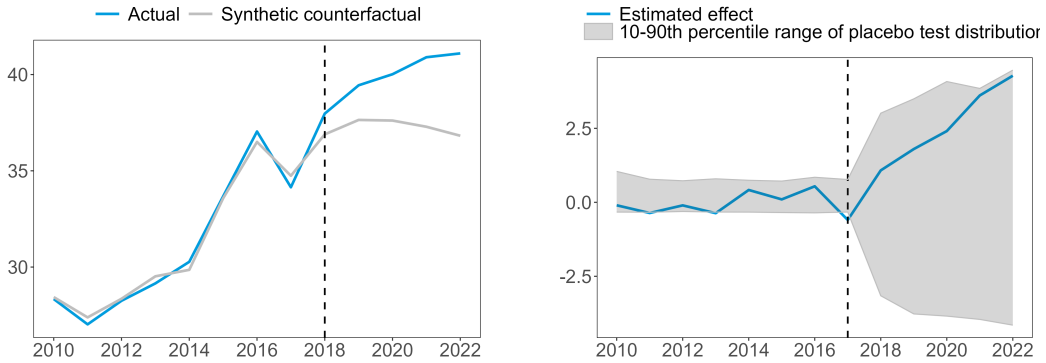


(a) Trend (Actual versus Synthetic Counterfactual)

(b) Estimated Effect

Notes: Panel (a) plot the actual (the blue line) and the synthetic counterfactual (the grey line) share of domestic value added in Vietnam's exports to the world, and Panel (b) plots the estimated effect on the share of domestic value added in Vietnam's exports to the world (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study, for petroleum, chemical and non-metallic mineral products. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Figure 20: Share of Domestic Value Added in Vietnam's Exports to the World, Non-Strategic Manufacturing Products
(In Percent)



(a) Trend (Actual versus Synthetic Counterfactual)

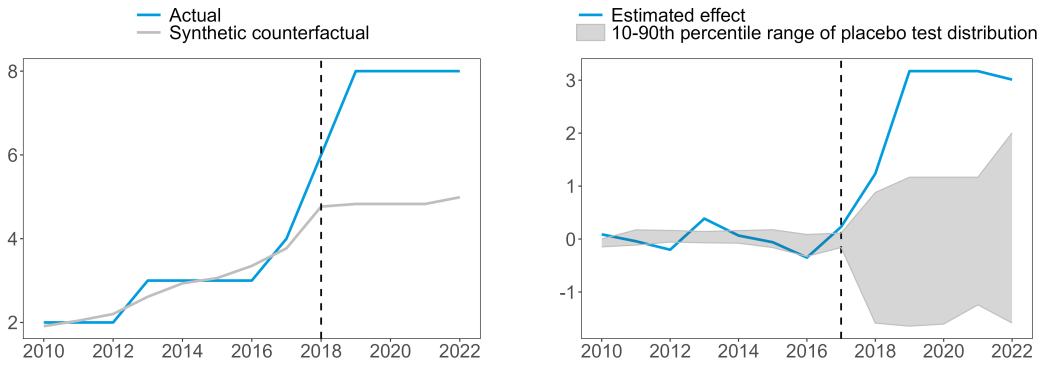
(b) Estimated Effect

Notes: Panel (a) plot the actual (the blue line) and the synthetic counterfactual (the grey line) share of domestic value added in Vietnam's exports to the world, and Panel (b) plots the estimated effect on the share of domestic value added in Vietnam's exports to the world (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of the country in study, for non-strategic manufacturing products. Dashed vertical indicates the year 2018 when the US-China trade tensions started. To account for a visible seam between 2015 and 2016 data in the Eora Global Supply Chain Database due to a structural break in the database methodology (see Eora Global Supply Chain Database (2024)), value added measures from 2016 onwards are adjusted so that the adjusted 2016 value is equal to the linearly-extrapolated value based on data during 2010 and 2015 while the post-2016 trend is kept unchanged.
Sources: The Eora Global Supply Chain Database (Lenzen et al., 2012, Lenzen et al., 2013), Aslam et al. (2017), and authors' calculations.

Appendix G Additional Empirical Results on the Number of Greenfield FDI Projects

The appendix presents empirical results for petroleum, chemical and non-metallic mineral products, and non-strategic manufacturing products, including (i) the dynamics - both the actual values and the synthetic counterfactuals - of the cumulative number of greenfield FDI projects that commit Chinese capital in Vietnam, and (ii) the estimated effects.

Figure 21: Cumulative Number of Greenfield FDI Projects that Commit Chinese Capital to Vietnam
Petroleum, Chemical and Non-Metallic Mineral Products

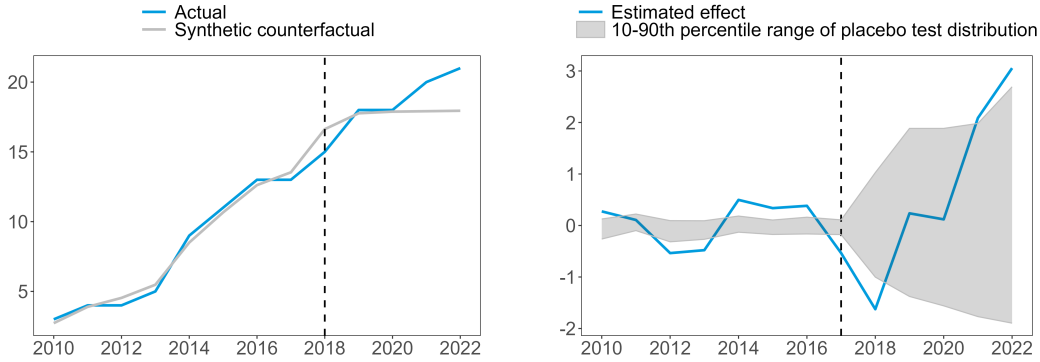


(a) Trend (Actual versus Synthetic Counterfactual)

(b) Estimated Effect

Notes: Panel (a) plot the actual (the blue line) and the synthetic counterfactual (the grey line) of the cumulative number of greenfield FDI projects that commit Chinese capital to Vietnam for petroleum, chemical and non-metallic mineral product sector since 2003. The synthetic counterfactuals are constructed based on a weighted average of the cumulative number of greenfield FDI projects that commit Chinese capital to other countries for the same sector since 2003, excluding Vietnam. Dashed vertical indicates the year 2018 when the US-China trade tensions started. Panel (b) plots the estimated effect on the cumulative number of greenfield FDI projects that commit Chinese capital to Vietnam for electrical and machinery sector since 2003 (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of Vietnam.
Sources: The Orbis Cross-border Investment Database and authors' calculations.

Figure 22: Cumulative Number of Greenfield FDI Projects that Commit Chinese Capital to Vietnam
Non-Strategic Manufacturing Sector



(a) Trend (Actual versus Synthetic Counterfactual)

(b) Estimated Effect

Notes: Panel (a) plot the actual (the blue line) and the synthetic counterfactual (the grey line) of the cumulative number of greenfield FDI projects that commit Chinese capital to Vietnam for non-strategic manufacturing sector since 2003. The synthetic counterfactuals are constructed based on a weighted average of the cumulative number of greenfield FDI projects that commit Chinese capital to other countries for the same sector since 2003, excluding Vietnam. Dashed vertical indicates the year 2018 when the US-China trade tensions started. Panel (b) plots the estimated effect on the cumulative number of greenfield FDI projects that commit Chinese capital to Vietnam for electrical and machinery sector since 2003 (the blue lines) and the $10^{th} - 90^{th}$ percentile range of the placebo test distribution excluding countries that have pretreatment (before 2018) mean squared prediction error (MSPE) of more than five times the MSPE of Vietnam.
Sources: The Orbis Cross-border Investment Database and authors' calculations.