The World Bank Economic Review, 2026, **00**(0), 1–18
https://doi.org/10.1093/wber/lhag011
Article

OXFORD

Trade Policy and Jobs in Vietnam: The Unintended Consequences of US–China Tariffs

Lorenzo Rotunno, Sanchari Roy, Anri Sakakibara, and Pierre-Louis Vézina

Lorenzo Rotunno is a senior economist at the International Monetary Fund, USA, on secondment from Aix-Marseille University: his email address is lrotunno@imf.org. Sanchari Roy (corresponding author) is an associate professor at the University of Exeter, UK; her email address is s.roy3@exeter.ac.uk. Anri Sakakibara is a postdoctoral fellow at the Technical University of Munich, Germany; her email address is anri.sakakibara@tum.de. Pierre-Louis Vézina is a professor at King's College London, UK; his email address is pierre-louis.vezina@kcl.ac.uk. The research for this article was financed by a British Academy/Leverhulme Small Research Grant. The authors thank Anthony Senior at King's for all his help. They also thank the editor, three anonymous referees, Richard Baldwin, Jason Garred, Daniele Girardi, Brian McCaig, Sang Hyun Park, Nina Pavcnik, Martin Sommer, and seminar participants at the 2022 Hitotsubashi-Gakushuin workshop, at UCL (SSEES), at the Geneva Trade and Development Workshop (GTDW), at the IMF, Keio University, Nottingham (CITP), at the IEA meeting in Medellin, the CAED conference at Penn State, and at the Patras Applied Micro workshop in Olympia for helpful suggestions. This paper is a substantially revised and updated version of the QPE Working Paper 2023-56 published under the title "Trade Policy and Jobs in Vietnam: The Unintended Consequences of Trump's Trade War." The views expressed in this paper are those of the authors and do not necessarily represent the views of the IMF, its Executive Board, or IMF management. A supplementary online appendix is available with this article at *The World Bank Economic Review* website.

Abstract

This paper uses the US–China tariffs of 2018–2019 as an exogenous shock to export opportunities in Vietnam to identify how trade policy affects job creation. Using a difference-in-differences framework, it first shows that the US tariffs on China increased the range of products exported by Vietnam to the United States in the two years after the tariffs hit. Using firm-level data, it then shows that this expansion in export opportunities led to job creation. Around 5 percent more jobs were created in firms most affected by the US–China tariffs. These effects are driven mostly by formal employment, and are strongest for women in foreign-owned firms.

JEL classification F14, F16

Keywords Vietnam, US–China tariffs, trade policy, exports, employment

1. Introduction

Understanding the effects of trade policy is of particular importance to developing economies, where exposure to international markets can shape livelihoods through labor-market opportunities (Caliendo and Parro 2022). However, identifying the impact of trade policy is challenging as policies affecting openness are typically endogenous, i.e., they often target specific sectors or regions likely to benefit from trade, or are the consequence of export success rather than its cause.

This paper uses the US tariff increases on Chinese goods in 2018–2019 as an exogenous shock to export opportunities in Vietnam to identify the causal effects of trade policy on job creation. The United States imposed tariffs of 15 or 25 percentage points on roughly two-thirds of all Chinese products, which

© The Author(s) 2026. Published by Oxford University Press on behalf of the International Bank for Reconstruction and Development / THE WORLD BANK. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

led to large declines in US imports from China (Amiti, Redding, and Weinstein 2019; Fajgelbaum et al. 2019), substituted with goods from other countries such as Vietnam and Mexico (Alfaro and Chor 2023; Bown 2022; Fajgelbaum et al. 2024; Freund et al. 2024; Gopinath et al. 2025).[1] Since these US tariffs were targeted at China and not at Vietnam, as well as were primarily politically motivated (Lake and Nie 2023; Autor et al. 2023), their timing and product coverage provide exogenous variation in Vietnam's new export opportunities.

This paper first revisits the evidence on whether Vietnam's exports benefited from the US–China tariffs, using the latest difference-in-differences methods. Using product-level data, it compares Vietnam's exports to the United States of products affected by the US–China tariffs with those of other products, before and after the tariffs hit. It shows that these tariffs on Chinese goods led to an expansion of Vietnam's exports to the United States, driven by new export varieties.

The paper then goes one step further and estimates the impact of the US–China tariffs on jobs in Vietnam. Using firm-level data from the Vietnamese Enterprise Survey (VES) covering approximately 30,000 firms between 2014 and 2020, it exploits variation in exposure to the US—China tariffs across firms. It finds that around 5 percent more jobs were created in firms faced with average tariffs above 15 percent, relative to less-exposed firms. Such job creation is driven by formal jobs, and is strongest among foreign-owned firms that pay better. It also shows that firms affected by the US–China tariffs pay higher wages on average, in line with the jobs created being better paid. As in many developing countries, hardly anyone is unemployed in Vietnam (Feng, Lagakos, and Rauch 2023), with an unemployment rate around 2–2.5 percent between 2014 and 2020. Such job creation may thus be thought of as replacing informal, unstable jobs that pay poorly with formal, stable jobs that pay well (Carter and Sedlacek 2019).

The employment effects are found to be higher for women. Among locally owned firms, job creation occurs only for women workers. This is likely due to the existence of a larger available pool of female workers that were easier to draw into manufacturing from other sectors, rather than targeted industries being inherently female intensive, consistent with the sectoral reallocation effects found by Nguyen and Lim (2023). Supporting this interpretation, firms that expanded into affected export varieties exhibit higher growth in female employment, but not in male employment. This finding underscores the importance of incorporating gender perspectives in trade policy (WTO and World Bank 2020; OECD 2021), emphasizing its role in fostering development and advancing female empowerment (Duflo 2012).

This paper contributes to three strands of the literature on trade policy and labor markets in developing countries. First, it extends a growing literature on the spillover effects of the 2018–2019 US–China tariffs on bystander countries, by focusing on employment effects. This paper adds to concurrent work that also examines the effect of the US–China tariffs on employment in Vietnam, including spurring structural transformation across provinces (Nguyen and Lim 2023) and raising jobs and wages in more exposed districts (Mayr-Dorn et al. 2023). The key distinction in this paper is that it instead uses product-level production data to exploit *firm-level* variation in exposure to the US–China tariffs, combined with the most recent difference-in-differences methods, to estimate the causal impacts of these tariffs on job creation in Vietnam.[2] The finding of higher employment in more exposed firms is consistent with the results of these previous papers, and aligns with evidence from other bystander countries such as Mexico, where exports and female employment rose (Utar, Zurita, and Ruiz 2023; Chen, Novy, and Solórzano 2025), and Brazil, where retaliatory tariffs moderately boosted formal jobs (Cavalcanti, Ogeda, and Ornelas 2025). This also aligns with evidence that the US–China tariffs redirected foreign direct investment (FDI), with Vietnam's geographic and industrial proximity to China attracting significant new FDI (Xue 2023; Kahn, Liao, and Zheng 2024). Importantly, the evidence that the US—China tariffs prompted export-driven employment reallocation in Vietnam aligns with recent research showing that the country's export surge reflected genuine production growth and domestic value added in sectors most affected by tariffs, rather

[1] Anecdotal evidence also indicates Vietnam's exports may have risen in response to the US–China trade tariffs. For example, the Financial Times ran the headline "US–China trade war gives Vietnam a winning streak" (https://www.ft.com/content/4bce1f3c-8dda-11e9-a1c1-51bf8f989972), and the New York Times suggested that "Your next iPhone might be made in Vietnam. Thank the Trade War." (https://www.nytimes.com/2019/07/30/technology/trump-trade-war-vietnam.html).

[2] Wu (2024) also uses firm-level data yet exploits variation in exposure to the US–China tariffs across industries to examine the welfare implications of the US–China tariffs in Vietnam when foreign-owned manufacturers repatriate their profits.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

than rerouting of Chinese exports with little value added en route (Schulze and Xin 2025; Iyoha et al. 2024).[3]

Secondly, this paper contributes to the broader literature on the impact of trade policy on labor markets (Dix-Carneiro and Kovak 2019; Hakobyan and McLaren 2016). In the case of Vietnam, McCaig (2011), McCaig and Pavcnik (2018), and McCaig, Pavcnik, and Wong (2022) use the US–Vietnam Bilateral Trade Agreement in 2001 as a shock to the Vietnamese export sector. Greater export opportunities are found to lead to increased FDI and formal manufacturing jobs, moving people out of poverty and out of the informal sector. This paper extends this body of research by looking at a more recent trade policy shock, and one that did not target Vietnam directly, also finding new job creation to be driven by formal jobs, and highest for FDI firms.

Finally, this paper ties into the literature on trade and gender. Existing studies have shown that trade can reduce gender-based discrimination (Black and Brainerd 2004; Juhn, Ujhelyi, and Villegas-Sanchez 2013). In the case of Vietnam, Pham and Jinjarak (2023) suggest that integration in global value chains is correlated with higher female employment across small and medium firms in Vietnam, driven by unskilled workers. In contrast, Berik, Rodgers, and Zveglich (2004) and Menon and Rodgers (2009) argue that greater exposure to trade has increased the gender wage gap in Taiwan, South Korea, and India. This paper adds to this literature, showing that new export opportunities in Vietnam created (better) jobs for women in FDI firms as well as in local firms.

The rest of the paper is organized in two main sections. Section 2 establishes the magnitude of the effect of US–China tariffs on export creation in Vietnam. Section 3 discusses job creation for Vietnamese workers. Section 4 concludes.

2. Exports

This section examines how the US tariffs imposed on China during 2018–2019 affected Vietnam's exports to the United States. In particular, it analyzes how Vietnam's export performance differed across products depending on whether or not these were hit by the US tariffs on China.

2.1. Data

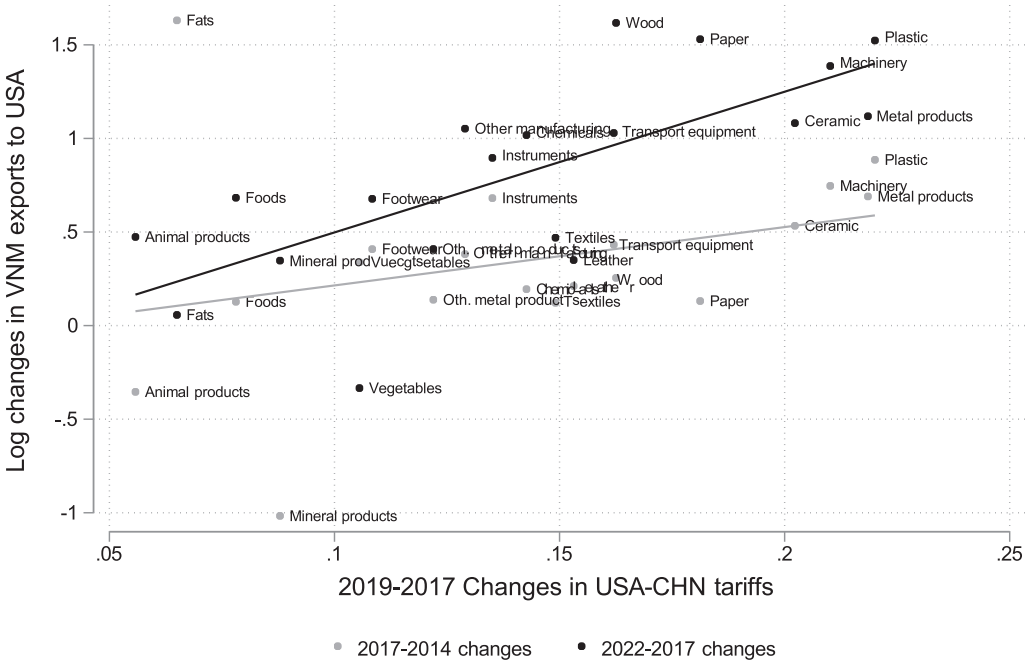
This paper uses data on the value of US imports from Vietnam at the 10-digit level of the Harmonized System (HS) classification from Schott (2008), originally from the US International Trade Commission (USITC). To gauge the extent to which goods were affected by the US–China tariffs, it uses data on US tariffs on China in 2018 and 2019 for each 10-digit product from Fajgelbaum et al. (2019). The US tariffs imposed on Chinese imported products were pervasive. In 2018 about 7,000 product lines out of 19,000 were hit by additional 10 percent tariffs, and about 2,000 were hit with additional tariffs of 25 percent. By 2019, two-thirds of the product lines were affected by additional tariffs of 15 percent or 25 percent. Across broad HS sections, average US tariffs on China's exports were the highest (around 22 percentage points) in the plastic, metals, and machinery industries. Figure 1 shows that after the United States imposed tariffs on China, Vietnam's exports to the United States grew faster in sectors where US tariff increases were higher.

Figure 2 shows that after the US–China tariffs were imposed, US imports of tariff-hit products grew much faster than imports of other products from Vietnam, both in dollars and as shares of total US imports. Vietnam's share of US imports in tariff-hit products almost doubled between 2017 and 2022, increasing three times faster than it did during 2014–2017, before the US–China tariffs increased. In other products, Vietnam's share of US imports went up from around 1 percent to 2 percent of US imports from 2017 to 2020, before decreasing to around 1.4 percent in 2022. Net product introductions contributed to this differential increase—of the 7,000 tariff-hit products imported from Vietnam, around 40 percent were introduced during 2019–2022. This pattern is investigated further in the next subsection.

[3] IMF (2024) highlights how Vietnamese authorities have enhanced monitoring to avoid serving as a connector country to reroute Chinese goods to the United States to circumvent the tariffs.

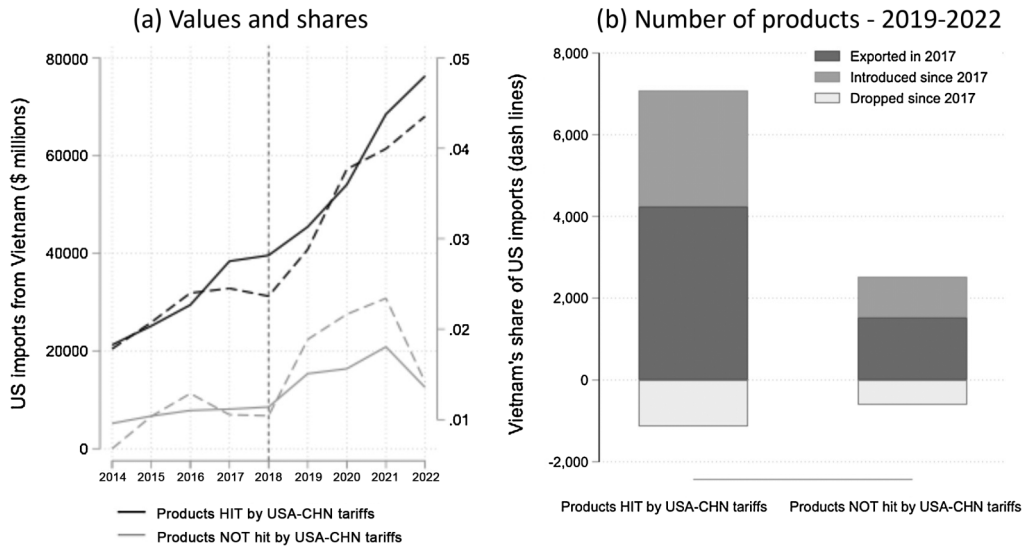
Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Figure 1 Changes in US–China tariffs and Vietnam's exports to the United States across sectors



Source: Data on US imports are from Schott (2008). Tariff data are from Fajgelbaum et al. (2019).
Note: Averages of 2019–2017 changes in US tariff on Chinese products and log differences in Vietnam exports to United States during 2017–2014 and 2022–2017 by HS section.

Figure 2 Trends in US imports from Vietnam



Source: Data on US imports are from Schott (2008). Product groups based on tariff data from Fajgelbaum et al. (2019).
Note: The left panel shows the total value in dollars of US imports of tariff-hit products from Vietnam, and that of US imports of other products from Vietnam, as well as shares of total US imports. The right panel shows the churn in the number of products exported from Vietnam to the US, among products hit by US tariffs on China and among other products.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Table 1 Summary statistics for variables used in the trade analysis

	Obs	Mean	25th perc.	75th perc.	Min	Max
$\ln(X_{pt})$	40,160	12.117	9.85	14.29	5.53	21.90
$1(X_{pt} > 0)$	127,647	0.315	0.00	1.00	0.00	1.00
$\Delta t_{pt}^{\text{USA,CHN}}$	18,982	0.15	0.00	0.25	0.00	0.65
$1(\Delta t_{pt}^{\text{USA,CHN}} > 0)$	18,982	0.666	0.00	1.00	0.00	1.00

Source: The trade data are from Schott (2008) and the tariff data are from Fajgelbaum et al. (2019).
Note: Summary statistics for variables used in the difference-in-differences model (1). For the tariff variables, each observation corresponds to an HS 10-digit tariff line.

2.2. Empirical strategy and results

The exports analysis uses a standard difference-in-differences model. The treatment is defined at the product level as being targeted by increases in US tariffs on China. The treatment period starts in 2018 or 2019, when the tariffs were implemented, and extends until 2022.[4] Annual data from 2014 to 2022 are used, and the latest developments in the estimation of dynamic event-study specifications with staggered treatment and heterogeneous effects across cohorts are taken into account (Sun and Abraham 2021; Callaway and Sant'Anna 2021; Dube et al. 2023).[5] The following event-study regression is estimated:

$$X_{pt} = \sum_{j=-5}^{-2} \beta_j D_{pt}^j + \sum_{j=0}^{4} \beta_j D_{pt}^j + \mu_p + \lambda_t + \epsilon_{pt}, \quad (1)$$

where X_{pt} are Vietnam's exports of product p to the United States in year t. The D_{pt} terms are dummies for leads and lags of the treatment (i.e., being hit by the US–China tariffs)—e.g., D_{pt}^{-4} is a dummy equal to 1 if the product is hit by a tariff 4 years later. The terms μ_p and λ_t are product and year fixed effects, and ϵ_{pt} is the error term. It thus exploit differences across products p (targeted vs. non-targeted) and differences across years t (before vs. after the implementation of the tariffs). When looking at the effects on new export varieties (the extensive margin), the variable X_{pt} is a dummy variable indicating whether Vietnam exports the product p (defined at the HS 10-digit level) to the United States in year t. To estimate the impact on the intensive margin of exporting, X_{pt} is the log of export values. The summary statistics of the data used in this specification are in table 1.

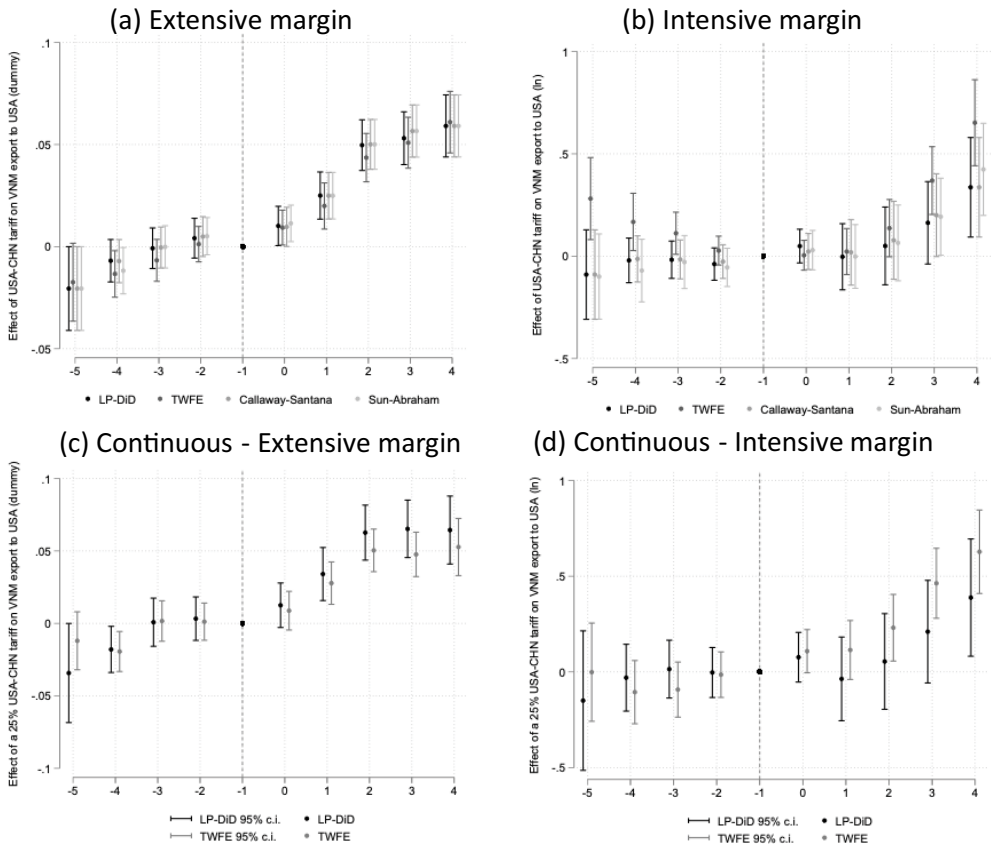
The results of the event-study specification (1) are illustrated in fig. 3. The point estimates show the treatment effects in the year of the treatment (at time zero, which corresponds to 2018 or 2019) as well as in the following years. This captures the difference-in-differences in exports compared to the pretreatment year (-1, which corresponds to 2017 or 2018). Positive and significant effects are found whether exports are measured in logs or using a dummy, and similar effects are found across different estimators. Moreover, the size of the impact increases over time. Two years after the tariffs hit, the export probability increased by around 5 percentage points more than for non-hit products. This is equivalent to one-sixth of the average probability of exporting a product from Vietnam to the United States over 2014–2022 (see

[4] Since this was a period of increased trade policy volatility, one may worry that other trade policy changes occurring at the same time and correlated with the US–China tariffs may also have affected Vietnamese exports to the United States. First, a key point to note is that the United States at that time raised tariffs sharply on China but not on other partners, with the exception of tariffs on machinery and metals (Fajgelbaum et al. 2021). Vietnam was barely directly affected by US tariffs during this period. Wu (2024) shows that in 2017–2019, manufacturers were exposed to only a 0.3 percent increase in tariffs on Vietnamese exports, and these tariffs were mostly in the basic metals sector due to the steel and aluminum tariffs. Hence, these are not a confounding treatment to the US–China tariffs that we study. China's retaliation tariffs on the United States are not expected to have created a change for Vietnam's export opportunities in the United States. As for Chinese tariffs on Vietnam, trade was mostly free during our sample period. Thus, we focus on the US tariffs on China in our regressions.

[5] The recent literature on difference-in-differences models with two-way (unit and time) fixed effects has shown that OLS estimates can be biased when effects are heterogeneous across units and over time, and treatment is staggered (see deChaisemartin and D'Haultfoeuille (2022) and Roth et al. (2023) for surveys of the literature). In this setting, there are two treatment groups: products targeted by US–China tariffs for the first time in 2018, and products targeted for the first time in 2019. Different estimators correct the TWFE one for biases and interpretation issues.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Figure 3 The effect of US–China tariffs on Vietnam's exports



Source: Data on US imports at the 10-digit level are from Schott (2008). Data on tariffs are from Fajgelbaum et al. (2019).
Note: The dots show difference-in-differences estimates of equation (1) and measure the effect of the US–China tariffs on Vietnam's exports to the United States across years and products. The right-hand side variable is a treatment dummy indicating whether a product has been targeted by the US tariffs on China. The LP-DiD is the local projection approach of Dube et al. (2023).

table 1 for summary statistics). In contrast, the estimated pretreatment effects suggest statistically insignificant differences in trends between treated and control products in the years before the US–China tariffs were introduced. Similar effects are found when the effect of tariffs as a continuous variable is estimated, using both two-way fixed effects (TWFE) and the local projection approach of Dube et al. (2023). Figure S2.1 in the supplementary online appendix shows that results are also robust to randomization inference.

The results at the intensive margin appear 3–4 years after the treatment (or earlier when using TWFE), and suggest that among products that were previously exported, those that were hit by the US–China tariffs grew by around 30 percent more than non-targeted products. These results are robust across estimators as well as when using a continuous treatment. Triple difference-in-differences models, comparing Vietnam's exports to the United States not only across products but also with that of other countries, are also estimated. Supplementary online appendix S1 discusses the specification and results in detail. Vietnam is the country whose extensive margin of exports to the United States was most affected by US tariffs on Chinese products. Other countries that have seen large export growth in treated products include Malaysia, Thailand, Poland, and Turkey, confirming the results of Fajgelbaum et al. (2024). The next section examines whether the export creation effect of the US–China tariffs translated into job creation in Vietnam.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

3. Jobs

This section explores the effect of US–China tariffs on jobs in Vietnam. A possible concern is that the export creation was simply due to Chinese firms rerouting their exports, repackaging or relabeling products, which would not lead to new production capacity and jobs in Vietnam (Iyoha et al. 2024). The aim here is to understand whether these new export opportunities translated into employment gains, and if so, whether jobs created were formal or informal and whether they were driven by FDI or local firms. In addition, gender differences in the labor-market response to these new export opportunities are examined.

3.1. Data

The impact of the US–China tariffs on job creation in Vietnam is examined using firm-level data from the VES, collected by the General Statistics Office (GSO) of Vietnam, which allows us to examine whether firms most affected by these tariffs increased employment. The VES is a yearly census covering all firms with at least 10 workers within which, for a sample of around 30,000 manufacturing firms, it also provides data on product-level production (Doan 2019), which allows us to define tariff hits and thus treatment at the firm level, based on pretreatment production.[6,7] The data are from 2014 to 2020 (inclusive), covering four years before the occurrence of the first tariff hike and two years after. The VES data also include information on employment by gender, on jobs covered by social security (formal jobs), and on firm ownership that allows to look at the role of FDI (foreign-owned or participated) firms.

3.2. Empirical strategy and results

To estimate the Vietnamese job creation effect of the US–China tariffs, the previous event-study specification (1) is followed but it now exploits differences in employment across firms i (treated vs. non-treated). Consistent with the trade specification, firms' exposure to US–China tariffs is based on product-level tariffs. As almost all firms with product-level data produce at least one product targeted by US–China tariffs, treated firms are defined as those with an average firm-level tariff hike above 15 percent, based on 2014–2017 production and on 2018 and 2019 tariffs. The 15 percent threshold is the average tariff hike across products (see table 1). Using a 25 percent threshold or a continuous tariff treatment lead to similar results. The sample consists of firms that existed in any year between 2014 and 2017 (to define the treatment) and in 2019, resulting in a quasi-balanced panel of around 22,000 treated firms and 10,000 control firms (new entrants are considered in a different specification).[8] The specification takes the following form:

$$Y_{it} = \sum_{j=-5}^{-2} \beta_j D_{it}^j + \sum_{j=0}^{2} \beta_j D_{it}^j + \mu_i + \lambda_t + \epsilon_{it}, \tag{2}$$

where Y_{it} captures employment (in logs) in firm i and year t, μ_i and λ_t are firm and year fixed effects, j are the numbers of included yearly leads and lags of the event indicator of a firm being affected by the US–China tariffs, and D_{it} takes the value of 1 in posttreatment years if firm i was hit by a production-weighted tariff above 15 percent. Again, as the US tariffs hit China in 2018 and 2019, the treatment is staggered, with two cohorts. The treatment year can be 2018 or 2019, and thus the year after treatment can correspond to 2019 or 2020. Finally, ϵ_{it} is the error term clustered at the firm level. The analysis exploits differences across firms i (targeted vs. non-targeted) and differences across years t (before vs. after being hit by the tariffs).

[6] Utar, Zurita, and Ruiz (2023) adopt a similar empirical approach to measure exposure of Mexican firms to US–China tariffs.
[7] To match tariff data with product-level production, the GSO concordance table between Vietnam's product-level classification at the 8-digit level, MASP, which extends on Vietnam's Standard Industry Classification (VSIC), and HS2007 6-digit codes, is used.
[8] The main findings are robust to using (a) a balanced panel of firms with employment data for all seven years from 2014 to 2020 (16,500 treated firms, 6,700 control firms) and (b) a random selection of 10,000 out of the 22,000 treated firms.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

As in the trade analysis, equation (2) is estimated with a standard TWFE estimator and alternative difference-in-differences estimation methods (Sun and Abraham 2021; Callaway and Sant'Anna 2021; Dube et al. 2023).

Results in the top-left panel of fig. 4 show that, two years after treatment (i.e., corresponding to 2020 for the firms hit in 2018), jobs grew by around 5 percent more in firms affected by the US–China tariffs. This is robust across estimators as well as to using a continuous measure of treatment (the production-weighted average tariffs at the firm level, panel b). Panel b of fig. S2.1 in the supplementary online appendix shows that this result is also robust to randomization inference. When we look at employment across genders, we find the effect to be mostly on women's jobs. Specifically, employment for women increased by around 8 percent more in treated firms two years after treatment (panels e and f in fig. 4). For men, the effects are noisy and less robust. Taken together, these results suggest that the tariffs imposed by the United States on China created jobs in Vietnam, especially for women.

The next part examines whether these aggregate employment gains differ by job type and firm ownership.

3.2.1.1. Formal vs. informal

Figure 5 shows that the job creation is driven by formal jobs. It shows positive and significant effects on the number of formal jobs across estimators and treatment measures, and no significant effect on informal jobs.

3.2.1.2. FDI vs. local

Figure 6 looks at job creation effects across FDI and local firms, since FDI firms offer mostly formal jobs and pay higher wages, in order to check if this job creation is driven by FDI as was the case following the US-Vietnam trade agreement in 2001 (McCaig, Pavcnik, and Wong 2022). Large and significant employment effects are found across both genders among FDI firms, which also suggests that the US–China tariffs led to the creation of high-quality jobs in Vietnam. One can thus think of such job creation as replacing informal, unstable jobs that pay poorly with formal, stable jobs that pay well.[9]

Beyond employment implications, wage adjustments provide another channel through which export shocks may affect worker welfare.

3.2.1.3. Wages

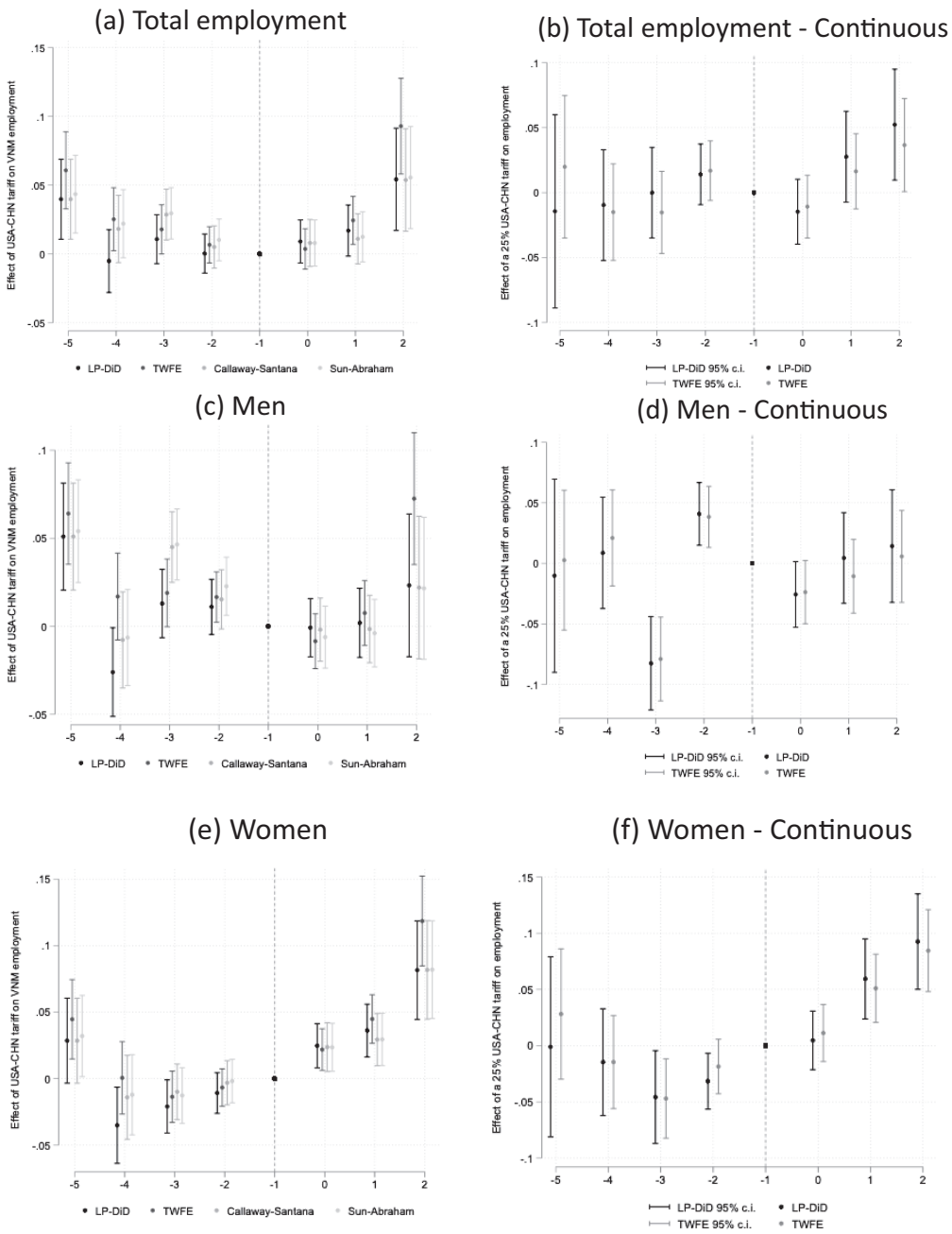
While the estimated effect on formal jobs among FDI firms speaks to the quality of the jobs created in Vietnam, one may also be interested in analyzing the effect on wages to understand if treated firms increased wages more. As shown in fig. 7, there is no evidence that export opportunities led to increases in the average wages of all workers (the firm-level data do not allow us to look at wages of men and women workers separately). However, the next section shows that these new jobs created were in high-paying firms. Specifically, firms that were affected by the US–China tariffs pay higher wages on average, both before and after the tariff hits (fig. 8 and table 2). FDI firms, which saw the biggest increase in formal jobs, also pay higher wages in Vietnam (supplementary online appendix table S3.1), consistent with existing empirical evidence (Lipsey and Sjöholm 2004; Setzler and Tintelnot 2021). Furthermore, the absence of an average wage increase among treated firms may mask underlying gender heterogeneity. Evidence using labor-force-survey data suggests that women's wages did increase in industries most affected by the US–China tariffs (Mayr-Dorn et al. 2023; Nguyen and Lim 2023). Taken together, this suggests that the new export opportunities created in Vietnam due to the US–China tariffs also led to wage gains, especially for women.[10]

[9] It is important to note that the difference-in-difference estimates do not tell us about aggregate employment growth in Vietnam, nor about the relative employment performance of different sectors of the economy. Rather, they compare the relative performance of manufacturing firms impacted differentially by the US–China tariffs, in a period affected by the COVID pandemic.

[10] This is also corroborated in specifications that use Vietnamese Labor Force Survey data on gender-disaggregated wages by industry.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

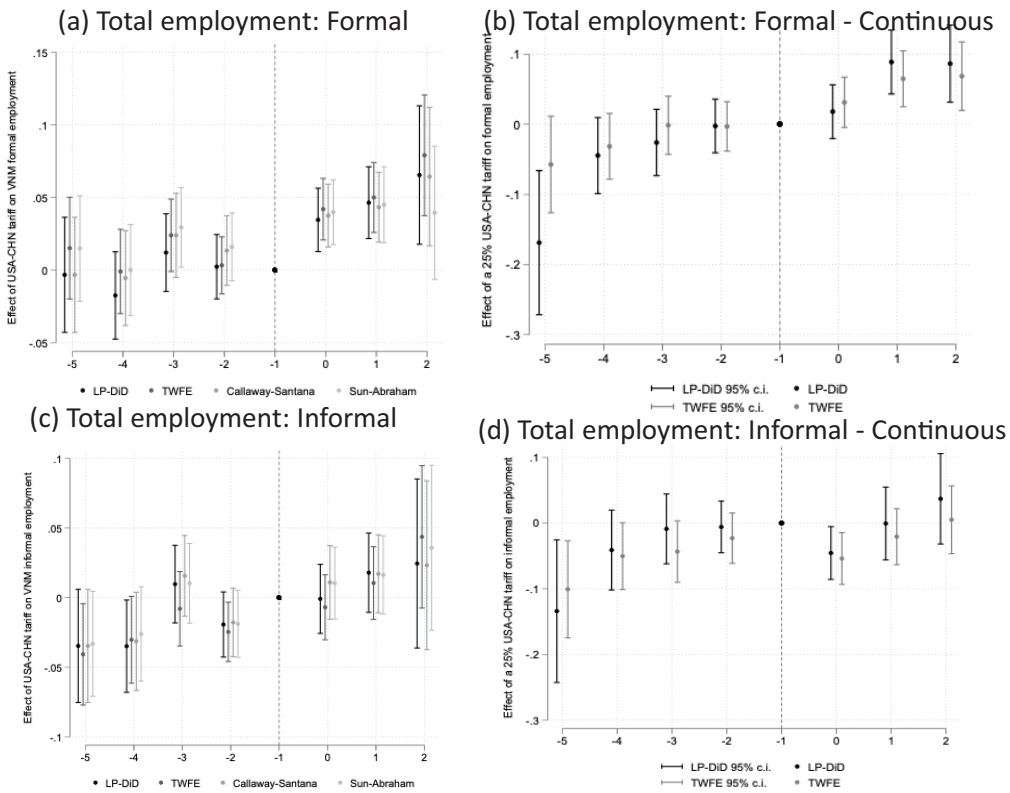
Figure 4 The effect of US–China tariffs on jobs across firms



Source: Data on firms are from Vietnam's VES. Data on tariffs are from Fajgelbaum et al. (2019).
Note: The dots show difference-in-differences estimates of the effect of US–China tariffs on jobs (equation (2)). The right-hand side variable is continuous treatment (tariff). The LP-DiD is the local projection approach of Dube et al. (2023).

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Figure 5 The effect of US–China tariffs: Formal vs. informal jobs



Source: Data on firms are from Vietnam's VES. Data on tariffs are from Fajgelbaum et al. (2019).
Note: The dots show difference-in-differences estimates of the effect of US–China tariffs on jobs (equation (2)). The right-hand side variable is continuous treatment (tariff). The LP-DiD is the local projection approach of Dube et al. (2023). Formal jobs are defined as those with social security contributions.

3.3. Discussion: Understanding the heterogeneous job creation effects

The results indicate that the relative growth of treated firms is particularly strong in terms of female employment. This effect is not due to treated firms being more female intensive. If anything, firms facing higher increases in US–China tariffs were *less* female intensive than less exposed firms (see top left panel in fig. 8).

Instead, this may be attributed to the greater availability and lower relative wages of female workers,[11] which likely enabled firms to expand female hiring in response to these new export opportunities.

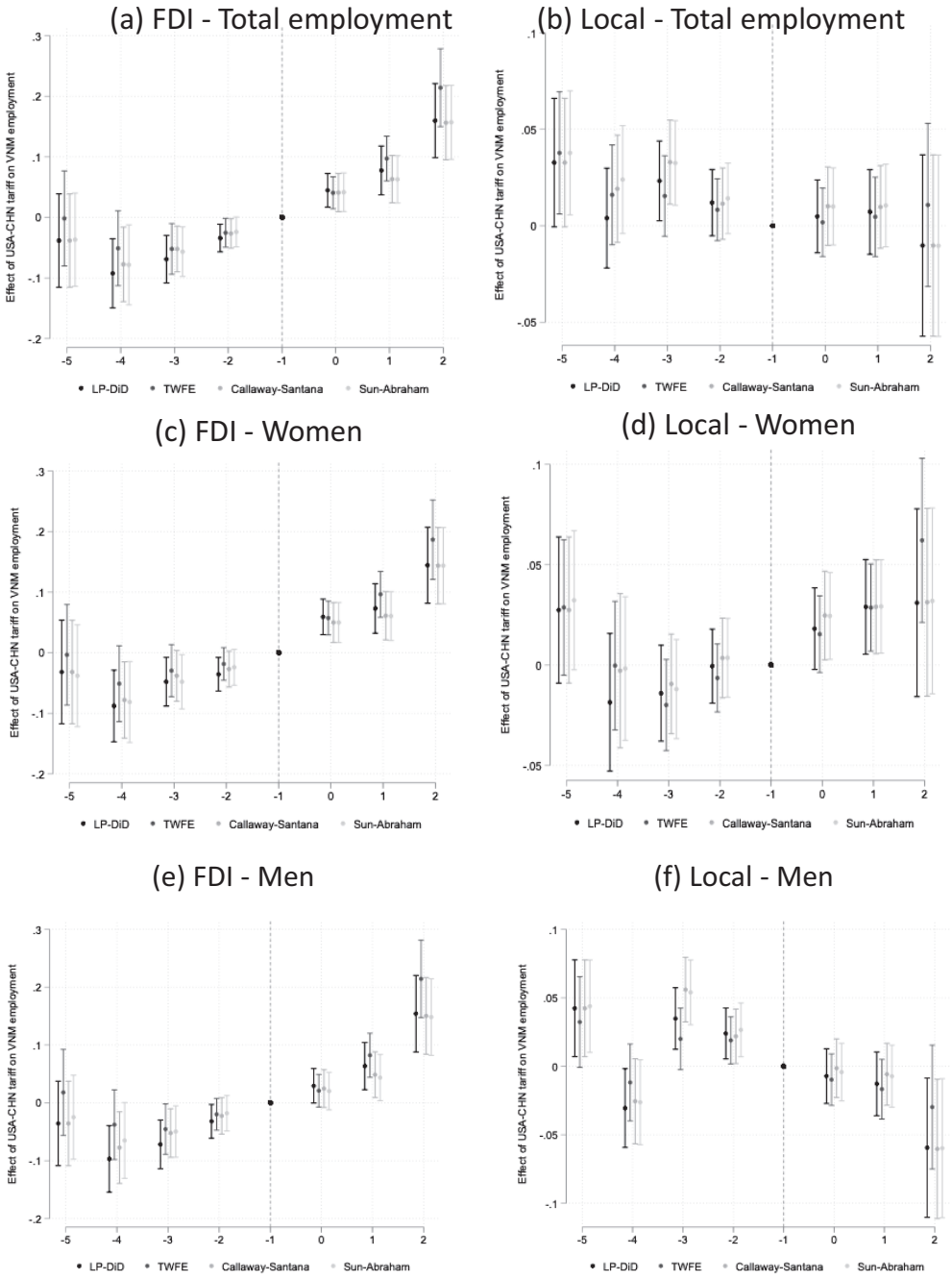
These patterns align with existing evidence that the US–China tariffs reduced female employment informality (Mayr-Dorn et al. 2023) and accelerated the shift of women from agriculture to manufacturing.[12]

[11] The 2020 Vietnamese Labor Force Survey Report (General Statistics Office of Vietnam 2020) notes that on average, women earn around 11 percent less than men in Vietnam, and that this gender pay gap exists across all occupations and sectors. The GSO also notes that in 2020, labor underutilization of female workers was at 5.5 percent, higher than that of male workers at 4.6 percent (General Statistics Office 2021).

[12] From 2010 to 2019, women's agricultural employment share dropped by 15.3 percentage point, compared to a 13.1 drop for men, while women's employment share in industry increased by 8.2 percentage points, and men's by 7.7 (Barcucci, Cole, and Gammarano 2021). Nguyen and Lim (2023) also suggests that the US–China tariffs increased reallocation from informal agriculture to formal manufacturing.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

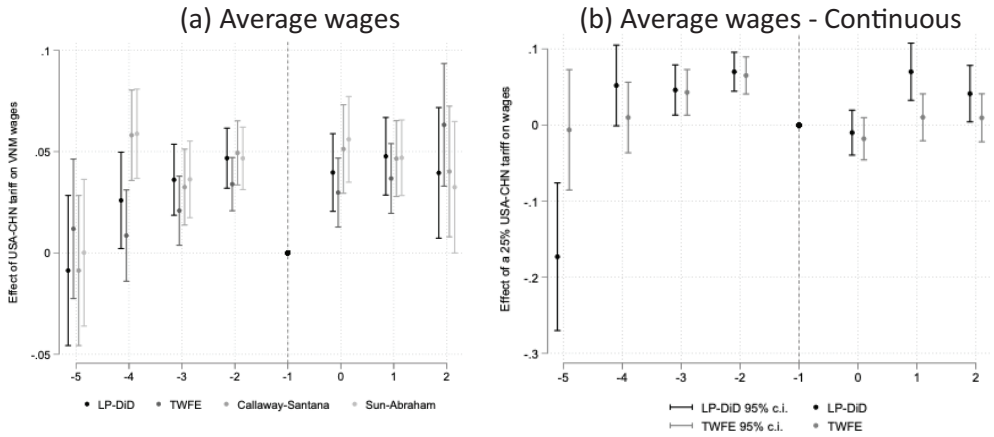
Figure 6 The effect of US–China tariffs on jobs: FDI vs. local firms



Source: Data on firms are from Vietnam's VES. Data on tariffs are from Fajgelbaum et al. (2019).
Note: The dots show difference-in-differences estimates of the effect of US–China tariffs on jobs (equation (2)). The LP-DiD is the local projection approach of Dube et al. (2023).

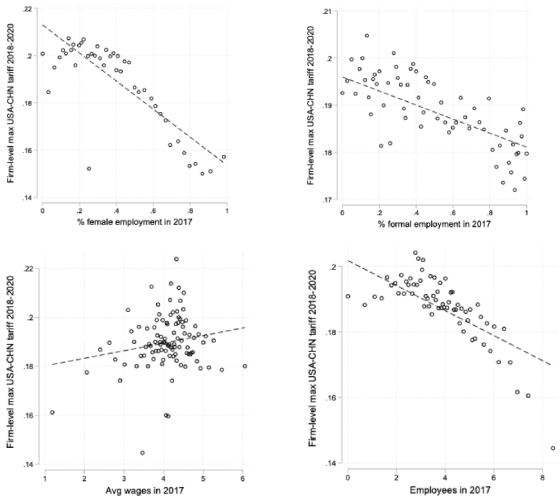
Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Figure 7 The effect of US–China tariffs on Vietnam's hourly wages



Source: Data on wages are from Vietnam's VES. Data on tariffs are from Fajgelbaum et al. (2019).
Note: The dots show difference-in-differences estimates of equation (2) and measure the effect of US–China tariffs on jobs across firms and years. The LP-DiD is the local projection approach of Dube et al. (2023).

Figure 8 Firms exposure to US–China tariffs and firm attributes in 2017



Source: Tariff data are from Fajgelbaum et al. (2019). Firm-level data are from the VES.
Note: The scatter plots show the relationship between different firm attributes and exposure to US–China tariffs. Each dot denotes an equally sized bin (100 in total).

The US–China tariffs created mostly formal jobs in Vietnam, and these effects are strongest among FDI firms. This is in line with the jobs created being formal, stable jobs that pay well. This is not because treated firms have higher levels of formality to begin with. Instead, treated firms have a lower share of formal workers on average, in part due to the fact that they are smaller (see top and bottom right panels in fig. 8). Figure 8 also shows that treated firms pay higher wages on average (bottom left panel). This is confirmed in table 2, which shows the results of regressions across firms in 2017, 2019, and 2020. The left-hand-side variable is the firm's average wage level (in logs) and our variable of interest is whether the firm produces goods that were affected by the US tariffs on China (weighted tariff at the firm level, or a dummy indicating a tariff above 15 percent). It shows that firms affected by the US–China tariffs

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Table 2 Wage levels and US–China tariffs across firms in 2017, 2019, 2020

	(2017)		(2019)		(2020)	
	(1) Wages (ln)	(2) Wages (ln)	(3) Wages (ln)	(4) Wages (ln)	(5) Wages (ln)	(6) Wages (ln)
Max tariff USA–CHN	0.243***	0.380***	0.157**	0.192**	0.237***	0.314***
	(0.052)	(0.053)	(0.077)	(0.082)	(0.054)	(0.056)
Employment (ln)	–	0.051***	–	0.018***	–	0.035***
		(0.002)		(0.003)		(0.003)
Constant	4.033***	3.911***	4.246***	4.209***	4.178***	4.104***
	(0.011)	(0.013)	(0.016)	(0.020)	(0.011)	(0.014)
N	32,077	30,365	30,102	28,100	32,768	30,430
R^2	0.18	0.19	0.13	0.13	0.18	0.19
Tariff USA–CHN > 15%	0.050***	0.087***	0.058***	0.067***	0.050***	0.071***
	(0.008)	(0.009)	(0.012)	(0.012)	(0.009)	(0.009)
Employment (ln)	–	0.053***	–	0.021***	–	0.037***
		(0.003)		(0.003)		(0.003)
Constant	4.044***	3.917***	4.235***	4.193***	4.187***	4.110***
	(0.007)	(0.010)	(0.010)	(0.014)	(0.008)	(0.011)
N	32,077	30,365	30,102	28,100	32,768	30,430
R^2	0.18	0.20	0.13	0.13	0.18	0.19

Source: Data on wages are from Vietnam's VES.
Note: The table shows the results of regressions across firms in 2017, 2019, and 2020. The left-hand side variable is the natural log of firm's average wage level. In some specifications we control for the number of employees (ln), while our variable of interest is whether the firms produce products affected by the US tariffs on China (weighted tariff at the firm level, or a dummy indicating a tariff above 15 percent). Robust standard errors in parenthesis. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

pay higher wages. This is true both before and after the tariff hits, and is not due to different firm sizes. In 2020, treated firms pay wages that are 7 percent higher on average. The creation of formal jobs in higher-paying firms thus suggests that these new jobs were high-quality ones that replaced lower-paid, informal, and unstable jobs. It is important to note here that 2020 is the year of the COVID pandemic shock, and formal employment in Vietnam went down by 21.1 thousand people in 2020 compared to 2019 (General Statistics Office 2021). The results suggest that treated firms, i.e., those that gained most in terms of export opportunities from the US–China tariffs, did better in terms of employment growth in 2020, relative to other firms and compared to 2017. The results do not inform us about labor dynamics in postpandemic years.

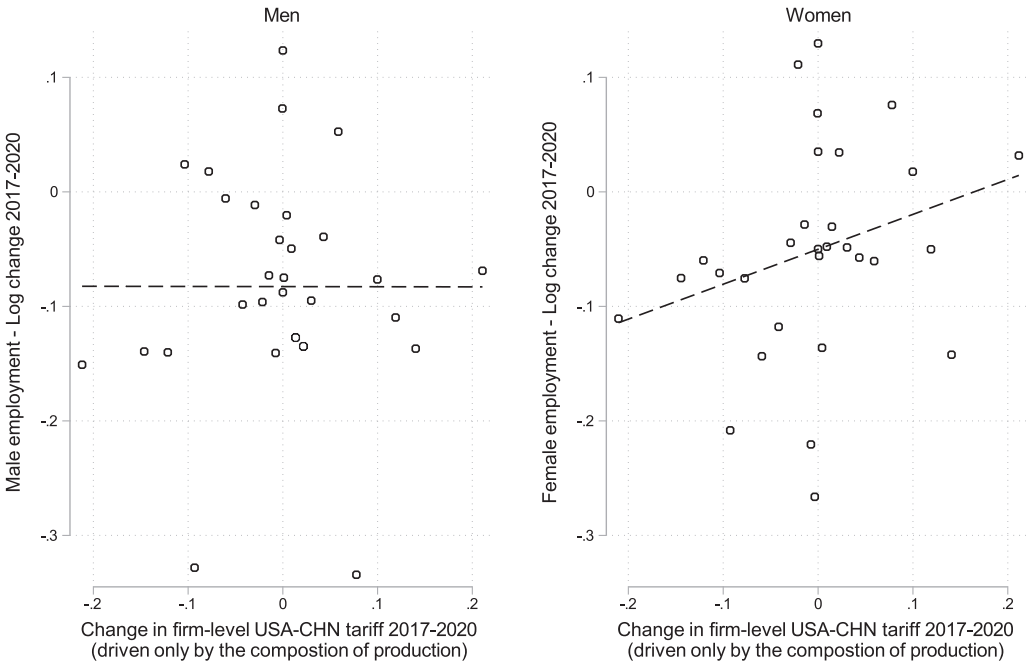
So far, the analysis has focused on existing producers. The next section now examines whether similar dynamics appear along the extensive margin, through new product lines or firm entry.

3.4. Extensive margins: Product introduction and firm entry

A limitation of the approach above, which relies on pretreatment production to define treated firms, is that it does not capture job creation that takes place in firms that did not produce any targeted products in 2014–2017, but introduced those during the period of the US–China tariffs. These are considered as part of the control group in the previous regression, but could be considered as the extensive margin of the treatment effect. To include these firms in the treatment group and examine whether firms that shifted their production towards products hit by the US–China tariffs created more jobs than other firms, this section uses a weighted average of US–China tariffs at the firm level that varies over time only via the composition of production from 2017 to 2020. For each firm and year, time-varying

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Figure 9 The effect of US–China tariffs on jobs across firms



Source: Data on firms are from Vietnam's VES. Data on tariffs are from Fajgelbaum et al. (2019).
Note: The scatter plots show the relationship between employment growth and changes in the composition of production towards tariff-hit products across firms.

production values by product are used as weights when averaging US–China tariffs fixed at their 2019 values.

Figure 9 shows that firms that switched to producing more of the goods hit by US–China tariffs saw greater female employment growth. This is strikingly different for male employment, which did not evolve differentially across the different groups of firms. This is in line with our previous result that the US–China tariffs created more jobs for women in Vietnam. The magnitude of this effect is estimated by regressing firm-level employment on time-varying, production-weighted firm-level US–China tariffs, and their interaction with a posttreatment dummy over 2018–2020. The results in table 3 show that total employment increased with production exposure to higher US–China tariffs, but only in posttreatment years. This effect is largely driven by increases in female workers. An increase in average firm-level tariff of 0.15—which is equivalent to switching all production from non-targeted products to products hit by a 15 percent tariff—is associated with a 2.5 percent increase in female employment.

A similar approach is followed to examine whether the US–China tariffs also led to firm entry in treated products. It is examined whether new firms in 2018, 2019, or 2020 are more likely to produce products hit by the US–China tariffs compared to preexisting firms (fig. 10). We compare the share of firms with a weighted average tariff above 15 percent, focusing again on only the composition of production over time by using 2019 US–China tariffs. It is found that new entrants in 2018 were much more likely to produce more targeted products, compared to both entrants and preexisting firms in previous years. The share of entrants producing goods with a weighted average tariff of 15 percent or above increased by around 10 percentage points from 2017 to 2018. This is in line with new export opportunities driving market entry and possibly extra job creation. It is also observed that the share of preexisting firms with tariffs above 15 percent increased in 2018 and remained high in 2019 and 2020. This suggests that existing firms adapted to the new export opportunities created by the US–China tariffs.

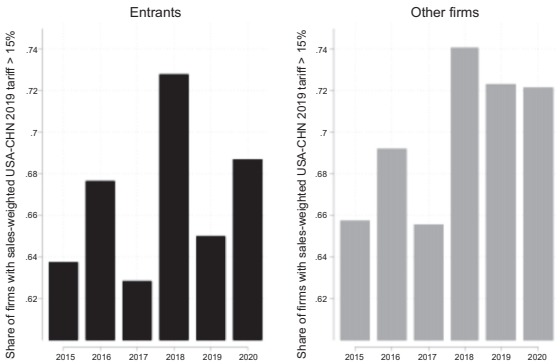
Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Table 3 The effect of shifting production towards tariff-hit products on jobs

	(1) Workers	(2) Male workers	(3) Female workers
Product-weighted firm-level USA–CHN tariff (β_1)	0.038	0.088	−0.024
	(0.083)	(0.090)	(0.089)
× post-treatment dummy (β_2)	0.148**	0.008	0.192***
	(0.059)	(0.064)	(0.064)
$\beta_1 + \beta_2$	0.186**	0.096	0.169*
	(0.085)	(0.092)	(0.091)
N	92,142	91,386	89,283
R^2	0.94	0.92	0.94

Source: Data on wages are from Vietnam's VES.
Note: The table shows the effects of shifting production towards products hit by US–China tariffs on the number of workers during 2014–2020. The left-hand side variable is the log of workers. All regressions include firm and year fixed effects. Robust standard errors clustered by firm in parenthesis.$*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Figure 10 Firm-level US–China tariffs: Entrants vs. other firms



Source: Firm-level data are from the VES. Tariff data are from Fajgelbaum et al. (2019).
Note: The bars show the share of firms which produce products affected by US–China tariffs above 15 percent. The weighted average tariffs at the firm level are calculated using the 2019 (maximum) US–China tariffs, so the differences across years come only from the composition of production.

4. Conclusion

This paper examines how the increase in US–China tariffs in 2018–2019 on numerous Chinese products had unintended bystander consequences on Vietnam. It shows that the US–China tariffs caused significant increases in Vietnam's exports to the United States in products directly affected by the tariffs. These new export opportunities translated into higher employment in Vietnamese firms most exposed to the tariffs. Job creation was higher among women, suggesting that this export-led expansion in Vietnam's manufacturing sector in the wake of the US–China tariffs may have helped reduce gender inequalities in Vietnam.[13] The tariffs led to the creation of high-quality jobs: employment gains were driven by formal jobs, largely within FDI firms that on average pay higher wages than other firms.

The empirical analysis, while highlighting the positive trade and labor-market effects of the 2018–2019 US–China tariffs on Vietnam, remains silent on the possible effects in the long run. Model simulations find that the persistence and deepening of geoeconomic fragmentation between major

[13] In Vietnam, although female labor-force participation is quite high at 70 percent, women are still more likely to be unemployed, earn lower wages, work longer hours, and be less educated than men (General Statistics Office of Vietnam 2020; Ha and Francois 2019).

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

economies can have substantial negative trade and welfare effects on third countries, including emerging economies like Vietnam (Bolhuis, Chen, and Kett 2023).

Data availability statement

All trade and tariff data are available in our online supplementary material. The Vietnamese firm data underlying this article were provided by the General Statistics Office of Vietnam (GSO) under license and cannot be shared publicly. To obtain this data, interested researchers may email the GSO at banbientap@nso.gov.vn.

References

Alfaro, L., and D. Chor 2023. "Global Supply Chains: The Looming 'Great Reallocation'." NBER Working Paper 31661.

Amiti, M., S. J. Redding, and D. E Weinstein. 2019. "The Impact of the 2018 Tariffs on Prices and Welfare." *Journal of Economic Perspectives* 33(4): 187–210.

Autor, D., A. Beck, D. Dorn, and G Hanson. 2023. "Help for the Heartland? The Employment and Electoral Effects of the Trump Tariffs in the United States." CEPR Discussion Paper 18202.

Barcucci, V., W. Cole, and R Gammarano. 2021. "Gender and the Labour Market in Viet Nam: An Analysis Based on the Labour Force Survey." ILO Research brief. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40asia/%40ro-bangkok/%40ilo-hanoi/documents/publication/wcms_774434.pdf. Date accessed October 2024.

Berik, G., Y. v. d. M. Rodgers, and J. E Zveglich. 2004. "International Trade and Gender Wage Discrimination: Evidence from East Asia." *Review of Development Economics* 8(2): 237–54.

Black, S. E., and E. Brainerd 2004. "Importing Equality? The Impact of Globalization on Gender Discrimination." *ILR Review* 57(4): 540–59.

Bolhuis, M. A., M. J. Chen, and B. R Kett. 2023. "Fragmentation in Global Trade: Accounting for Commodities." IMF Working Paper No. WP/23/73.

Bown, C. P. 2022. "Four Years into the Trade War, Are the US and China Decoupling?" *Peterson Institute for International Economics*. https://www.piie.com/blogs/realtime-economics/four-years-trade-war-are-us-and-china-decoupling. Date accessed September 2022.

Caliendo, L., and F Parro. 2022. "Chapter 4 - Trade policy." *Volume 5 of Handbook of International Economics*, Elsevier, pp. 219–95.

Callaway, B., and P. H Sant'Anna. 2021. "Difference-in-Differences with Multiple Time Periods." *Journal of Econometrics* 225(2): 200–30.

Carter, P., and P Sedlacek. 2019. "How Job Creation Fits into the Broader Development Challenge." CDC Research Paper 005. https://assets.cdcgroup.com/wp-content/uploads/2019/09/25143804/How-job-creation-fits-into-the-broader-development-challenge.pdf.

Cavalcanti, T., P. M. Ogeda, and E Ornelas. 2025. "The US-China Trade War Creates Jobs (Elsewhere)." CESifo Working Paper Series 11839.

Chen, N., D. Novy, and D Solórzano. 2025. "Trade Diversion and Labor Market Outcomes." CESifo Working Paper Series 11941.

DeChaisemartin, C., and X D'Haultfoeuille. 2022. "Two-Way Fixed Effects and Differences-in-Differences with Heterogeneous Treatment Effects: A Survey." *Econometrics Journal* 26(3): C1–C30.

Dix-Carneiro, R., and B. K Kovak. 2019. "Margins of Labor Market Adjustment to Trade." *Journal of International Economics* 117: 125–42.Special Issue: Trade Labor and Markets.

Doan, H. T. T. 2019. "Multi-Product Firms, Tariff Liberalization, and Product Churning in Vietnamese Manufacturing." ADBI Working Paper 918.

Dube, A., D. Girardi, O. Jorda, and A Taylor. 2023. "A Local Projections Approach to Difference-in-Differences." NBER Working Paper 31184.

Duflo, E. 2012. "Women Empowerment and Economic Development." *Journal of Economic Literature* 50(4): 1051–79.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Fajgelbaum, P. D., P. K. Goldberg, P. J. Kennedy, and A. K Khandelwal. 2019. "The Return to Protectionism." *Quarterly Journal of Economics* 135(1): 1–55.
Fajgelbaum, P., P. Goldberg, P. Kennedy, A. Khandelwal, and D Taglioni. 2024. "The US-China Trade War and Global Reallocations." *American Economic Review: Insights* 6(2): 295–312.
Fajgelbaum, P., P. K. Goldberg, P. J. Kennedy, A. Khandelwal, and D. Taglioni 2021. "The US-China Trade War and Global Reallocations." NBER Working Papers 29562.
Feng, Y., D. Lagakos, and J. E Rauch. 2023, 09. "Unemployment and Development." *Economic Journal* 134(658): 614–47.
Freund, C., A. Mattoo, A. Mulabdic, and M Ruta. 2024. "Is US Trade Policy Reshaping Global Supply Chains?" *Journal of International Economics* 152: 104011.
General Statistics Office. 2021. "COVID-19 Impacts on Labour and Employment Situation in Quarter IV of 2020." Government Report, Ministry of Planning and Investment, Viet Nam. https://www.nso.gov.vn/en/data-and-statistics/2021/01/covid-19-impacts-on-labour-and-employment-situation-in-quarter-iv-of-2020/. Date accessed October 2024.
General Statistics Office of Vietnam. 2020. "Report on Labor Force Survey 2020." Government Report, General Statistics Office of Vietnam. https://www.gso.gov.vn/wp-content/uploads/2022/02/Bao-cao-lao-dong-viec-lam-2020_tieng-Anh.pdf.
Gopinath, G., P.-O. Gourinchas, A. F. Presbitero, and P Topalova. 2025. "Changing Global Linkages: A New Cold War?" *Journal of International Economics* 153: 104042.
Ha, T., and M Francois. 2019. "Advancing Gender Equality in Vietnam: A Crucial Balancing Act." Technical report, McKinsey and Company. https://www.mckinsey.com/vn/our-insights/advancing-gender-equality-in-vietnam-a-crucial-balancing-act. Date accessed October 2024.
Hakobyan, S., and J McLaren. 2016. "Looking for Local Labor Market Effects of NAFTA." *Review of Economics and Statistics* 98(4): 728–41.
IMF. 2024. Vietnam: 2024 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Vietnam. IMF Staff Country Reports. https://www.imf.org/en/publications/cr/issues/2024/09/27/vietnam-2024-article-iv-consultation-press-release-staff-report-and-statement-by-the-555679.
Iyoha, E., E. Malesky, J. Wen, S.-J. Wu, and B Feng. 2024. "Exports in Disguise? Trade Rerouting during the US-China Trade War." Working Paper 24-072, Harvard Business School.
Juhn, C., G. Ujhelyi, and C Villegas-Sanchez. 2013. "Trade Liberalization and Gender Inequality." *American Economic Review* 103(3): 269–73.
Kahn, M. E., W.-C. Liao, and S Zheng. 2024. "How the US-China Trade War Accelerated Urban Economic Growth and Environmental Progress in Northern Vietnam." NBER Working Paper 33126.
Lake, J., and J. Nie 2023. "The 2020 US Presidential Election and Trump's Wars on Trade and Health Insurance." *European Journal of Political Economy* 78: 102338.
Lipsey, R., and F Sjöholm. 2004. "Foreign Direct Investment, Education and Wages in Indonesian Manufacturing." *Journal of Development Economics* 73(1): 415–22.
Mayr-Dorn, K., G. Narciso, D. A. Dang, and H Phan. 2023. "Trade Diversion and Labor Market Adjustment: Vietnam and the US-China Trade War." Trinity Economics Papers No. 0923.
McCaig, B. 2011. "Exporting Out of Poverty: Provincial Poverty in Vietnam and U.S. Market Access." *Journal of International Economics* 85(1): 102–13.
McCaig, B., and N Pavcnik. 2018. "Export Markets and Labor Allocation in a Low-Income Country." *American Economic Review* 108(7): 1899–941.
McCaig, B., N. Pavcnik, and W. F Wong. 2022. "FDI Inflows and Domestic Firms: Adjustments to New Export Opportunities." NBER Working Paper 30729.
Menon, N., and Y. V. d. M Rodgers. 2009. "International Trade and the Gender Wage Gap: New Evidence from India's Manufacturing Sector." *World Development* 37(5): 965–81.
Nguyen, A., and S Lim. 2023. "Structural Transformation in the Era of Trade Protectionism." Available at SSRN: https://ssrn.com/abstract=4426955 or http://dx.doi.org/10.2139/ssrn.4426955.
OECD. 2021. "Trade and Gender." OECD Trade Policy Brief. https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/04/trade-and-gender_2b3ae0d0/d34b1247-en.pdf.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026

Pham, L. T., and Y Jinjarak. 2023. "Global Value Chains and Female Employment: The Evidence from Vietnam." *World Economy* 46(3): 726–57.
Roth, J., P. H. Sant'Anna, A. Bilinski, and J Poe. 2023. "What's Trending in Difference-in-Differences? A Synthesis of the Recent Econometrics Literature." *Journal of Econometrics* 235(2): 2218–44.
K Schott, P. 2008. "The Relative Sophistication of Chinese Exports." *Economic Policy* 23(53): 6–49.
Schulze, T., and W Xin. 2025. "Demystifying Trade Patterns in a Fragmenting World." IMF Working Paper No. 2025/129.
Setzler, B., and F Tintelnot. 2021. "The Effects of Foreign Multinationals on Workers and Firms in the United States." *Quarterly Journal of Economics* 136(3): 1943–91.
Sun, L., and S Abraham. 2021. "Estimating Dynamic Treatment Effects in Event Studies with Heterogeneous Treatment Effects." *Journal of Econometrics* 225(2): 175–99.
Utar, H., A. C. Zurita, and L. T Ruiz. 2023. "The US-China Trade War and Relocation of Global Value Chains to Mexico." CESifo Working Paper Series 10638.
WTO and World Bank. 2020. "*Women and Trade: The Role of Trade in Promoting Women's Equality*." https://doi.org/10.1596/978-1-4648-1541-6.
Wu, S.-J. 2024. "Foreign Profit Shifting and the Welfare Responses to the US–China Trade War: Evidence from Manufacturers in Vietnam." Working Paper, Duke University.
Xue, S. 2023. "Trade Wars with FDI Diversion." Working Paper, Princeton University.

Downloaded from academic.oup.com/wber/advance-article/doi/10.1093/wber/lhag011/8711791 by guest on 18 August 2026