Trade Policy and Jobs in Vietnam:
The Unintended Consequences of Trump's Trade War

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Abstract

We use the US-China trade war as an exogenous shock to export opportunities in Vietnam and examine its effect on Vietnam's exports and labor markets. We find that Vietnamese exports to the US were around 40 percent higher in 2020 relative to 2017 in sectors hit by US tariffs on Chinese products. This increase is driven by both new export product varieties and increased exports in existing categories. This expansion in export opportunities led to job creation and increased working hours in affected sectors and firms relative to non-affected ones. It also led to an increase in wages, even more so for women workers.

JEL classification: F14, F16
Key Words: Tariffs, Vietnam, US-China trade war, exports, employment, wages, skills

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1 Introduction

One of the focal points of recent research in international trade has been to study the aggregate and distributional implications of trade policy (Caliendo and Parro, 2022). Understanding the effects of trade policy is of particular importance in developing economies, where exposure to international markets can shape livelihoods through shifts in prices and improvements in labor market opportunities. However, empirically 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. Free Trade Agreements (FTAs), for instance, are the result of negotiations, lobbying by special interest groups and multinationals, and their effects can be anticipated. In this paper, we use the US-China trade war as an exogenous positive shock to export opportunities in Vietnam to estimate the impact of a positive trade shock on labor market adjustments.

Under President Trump's administration, the US imposed punitive tariffs on China between 2018 and 2019 which covered $250 billion of Chinese goods (Amiti et al., 2019), or around 13% of US imports (Fajgelbaum et al., 2019). It also led to by China and the EU on US exports (Fetzer and Schwarz, 2021). As a result, the US became more open to exports from other countries, especially for goods in sectors which were targeted. Since Trump's trade war was targeted at China and not at Vietnam, we argue that this constitutes a natural experiment from the perspective of Vietnam's trade policy. Put differently, we can assume that the timing and the sectoral composition of the tariffs imposed by the US on China provide exogenous variation in Vietnam's export opportunities.

There already exists a nascent body of literature which confirms that the US-China trade war caused US importers to substitute Chinese goods with similar goods from other countries. Fajgelbaum et al. (2019) estimates that many countries increased exports to the US after Trump's tariff hikes, and identify that Vietnam was among the

largest export *winners*. This was aided by the fact that Vietnam already exported many of the targeted products, and exports of these products were worth 10.9% of Vietnam's GDP at the onset of the trade war (Cali, 2018).[1] Bown et al. (2019) also provide product-level evidence that Vietnam is now exporting more to the US in response to the US-China trade war. Against this backdrop, we first revisit the evidence on whether Vietnam indeed benefited from Trump's trade war with China, examining carefully the response at both the intensive and extensive margins. We also improve estimation of the magnitude of the trade diversion by using the latest difference-in-differences methods. We then go one step further to understand the effects of Trump's trade war on domestic labor market outcomes in Vietnam and gender differences therein.[2]

Our empirical analysis is composed of two parts. First, we estimate the degree to which the US diverted their imports from China to Vietnam using a differences-in-differences approach. In the second part of our empirical analysis, we investigate whether the increase in Vietnam's export opportunities had labor market effects also using a difference-in-differences approach. In both aspects of our analysis, we exploit variation in firm (individual) exposure to Trump's tariffs across $\approx$ 400 ISIC 4-digit sectors. For the former, we match Trump's tariffs to the Vietnam Enterprise Survey which covers the universe of registered firms in Vietnam, and which records firms' 4-digit VSIC sector.[3] For the latter, we employ the monthly Vietnam labor Force Survey which contains a nationally representative sample of approximately 68,000 individuals.

We find a significant increase in Vietnamese exports of products in targeted sectors compared to non-targeted sectors to the US. More specifically, the value of Vietnamese exports to the US grew by 40% between 2017 and 2020 as a result of Trump's tariffs on

[1]Notable products in sectors which were targeted include chairs, insulated ignition, shrimp and prawns, travel bags, parts of seats, television cameras, wooden furniture and handbag.

[2]Concurrent work by Nguyen and Lim (2023) and Mayr-Dorn et al. (2023) has also looked at the effect of the US-China trade war on Vietnam. While we focus on employment creation effects across firms and sectors, the former focuses on structural transformation across provinces and the latter on labor market data.

[3]We are able to concord VSIC industry codes with ISIC industry codes following McCaig et al. (2024).

China. We find that this is driven by both increased exports in products which Vietnam were already exporting to the US, and also an increased likelihood of new exports in Trump-affected products. This indicates that the adjustment for Vietnamese exporters to the Trump-induced trade shock occurred at both the intensive and extensive margins.

In terms of labour market effects, we focus on the number of jobs created, as well as working hours, wages and occupation structure for those in targeted sectors. Employment increased in sectors that were affected by Trump's tariffs compared to non-affected sectors, as did the number of hours worked. We find that the number of jobs was as much as 15% higher in 2019-2020 in sectors hit by Trump's tariffs, while individuals worked on average an extra 50 minutes per week as a result of US tariffs on Chinese products.

We also explore heterogeneous treatment effects by gender in order to understand whether women were differently affected compared to men by the trade war. This is because trade can expand female-intensive sectors relatively to male-intensive sectors (or *vice versa*), and which may lead to differential effects across gender (Black and Brainerd, 2004). In Vietnam, although female labor force participation is quite high at 70%, women are still likely to earn lower wages, work longer hours and are less educated (Ha and Francois, 2019). Hence, it is important to analyse whether these new export opportunities in the wake of Trump's trade war contributed to gender convergence or divergence in local labor market outcomes in Vietnam.

We find that while the employment gains were mostly for male workers, female workers enjoyed higher wage gains, indicating that increased trade between Vietnam and US ensuing from the US-China trade war may have helped close Vietnam's gender wage gap. We find no evidence that the expansion in exports to the US led to occupational upgrading. If anything, the skill intensity of production may have decreased in targeted sectors, possibility due to increased production activities.

Our paper contributes to three strands of the literature on trade policy and labor

market outcomes in developing countries. First, it extends a nascent but growing literature on the impacts of the US-China trade war. In contrast to the existing studies that focus on the implications of the trade war on Chinese and US consumers and firms (see Fajgelbaum and Khandelwal (2022) for a review of the literature), our paper provides novel evidence on the unintended consequences of the trade war on workers, and in a third country, Vietnam. While Fajgelbaum et al. (2019) and Mao and Görg (2020) investigate empirically third-country trade effects of the US-China trade war across multiple countries, we focus on one country which allows us to understand how the trade responses translate into labor market effects in greater detail.

Second, our paper contributes to the literature analysing the causal impact of trade on labor market outcomes. Several studies have documented high adjustment costs borne by workers in response to trade liberalisation. For example, Dix-Carneiro and Kovak (2019) find that trade-displaced workers spend years being unemployed following liberalisation in Brazil. These adjustment costs exemplify the distortions that affect the efficient allocation of resources in developing countries (Autor et al., 2019). Many studies have also looked at the effect of FTAs. For example, Gaston and Trefler (1997) documented important job losses in Canada after the Canada-US FTA, Hakobyan and McLaren (2016) showed that US blue-collar wages were also severely affected by the North American Free Trade Agreement (NAFTA). Garin and Silvério (2019) shows how Portuguese firms adjusted wages in response to export demand shocks during the global crisis of 2007-08. In the case of Vietnam, McCaig and Pavcnik (2013) and (McCaig and Pavcnik, 2018) use the US-Vietnam Bilateral Trade Agreement in 2001 as a shock to the Vietnamese exporting sector. They find that greater export opportunities led to increased foreign direct investment (FDI) and formal manufacturing jobs, moving people out of poverty and out of the informal sector. We extend this body of research by estimating the effects of a more recent trade policy shock, and one that did not target Vietnam directly, allowing us to further establish the causal interpretation of the trade policy effects.

Finally, our paper also ties into the literature on trade and gender inequality where the evidence is mixed, especially for emerging economies. Existing studies have shown that trade can improve gender equality by increasing competition between firms and reducing gender-based discrimination (Black and Brainerd, 2004; Ederington et al., 2009; Aguayo-Tellez et al., 2013). Access to foreign export markets can also encourage firms to undertake technological upgrading that favours female workers with comparative advantage in brain-based work (Juhn et al., 2014). Pham and Jinjarak (2023) suggests that integration in global value chains is correlated with higher female employment across small and medium firms in Vietnam, but that this is driven by unskilled workers. By contrast, Berik et al. (2004) and Menon and Rodgers (2009) provide evidence suggesting that greater exposure to trade has increased gender-based discrimination and the wage gap in Taiwan, South Korea, and India. Our paper thus adds to this growing body of evidence on how trade may have differential effect by gender on job opportunities and conditions.

The rest of the paper is organized in two main sections. Section 2 establishes the magnitude of the effect of Trump's tariffs on export creation in Vietnam. Section 3 discusses the labor market implications for Vietnamese workers. Section 4 concludes.

2 Vietnamese exports

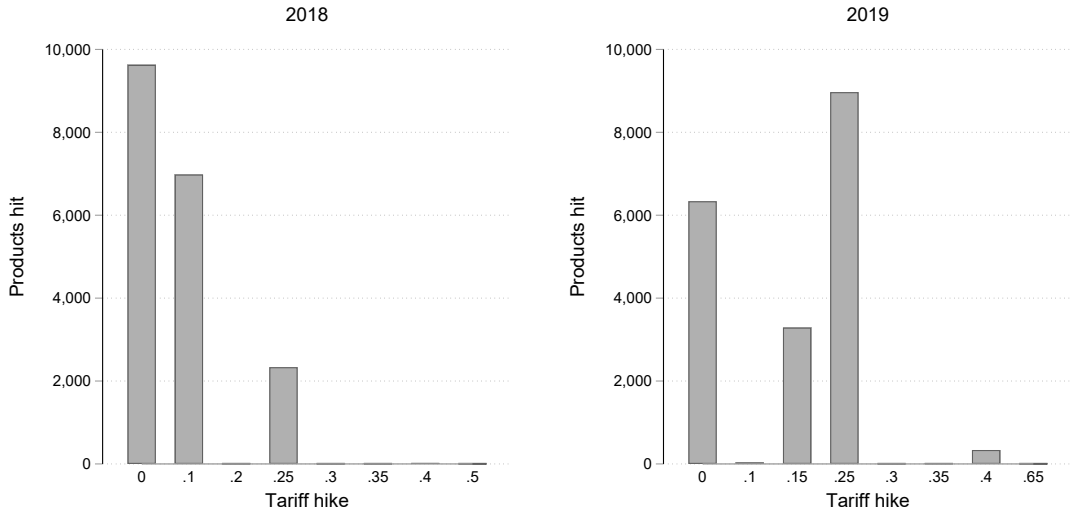
This section examines how the US-China trade war has affected Vietnam's exports to the US. We look at how Vietnam export performance differed across products depending on whether these were hit or not by Trump's tariffs on China. We examine both the intensive and extensive margins of exports – i.e., the increase in export values of existing export products and the introduction, or drop, of export varieties, respectively.

To estimate the impact of the tariff changes resulting from the US-China trade war on Vietnam exports, we use data on US-Vietnam trade flows and US tariffs imposed on China for from 2015 to 2020. Starting our year of analysis from 3 years before the

commencement of the trade war allows us to test for any pre-trends. We use 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 further assess the effects on Vietnam exports to other destinations than the US, we exploit information on the values of imports by other countries from Vietnam at the HS 6-digit level, sourced from UN Comtrade. To gauge the extent to which goods were affected by the trade war, we use data on US tariff hikes in 2018 and 2019 for each 10-digit product from Fajgelbaum et al. (2019).

Figure 1 shows the number of products hit by Trump's tariffs on China in 2018 and 2019. The US tariff hikes on Chinese imported products were pervasive. By 2019, two thirds of the 19,000 product lines were affected by tariff hikes of 15% or 25%.

Figure 1: Distribution of US-China trade war tariff changes

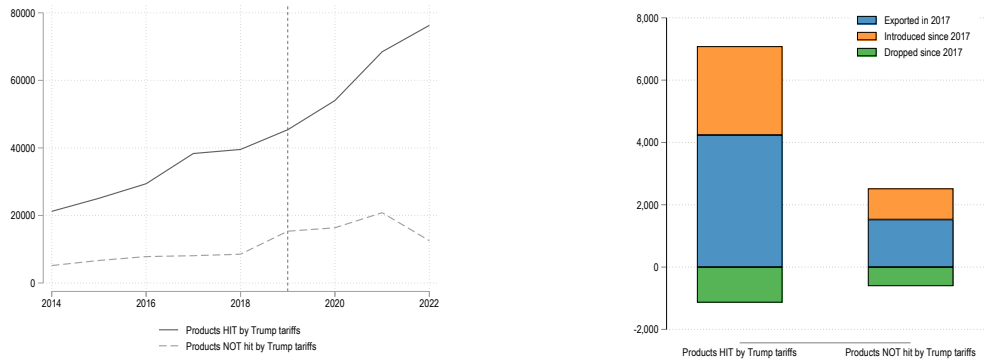


Notes: Products are defined at the 10-digit level of the Harmonized System (HS) classification. Tariff hikes are relative to 2017. Source: Fajgelbaum et al. (2019).

Additionally, Figure 2 shows total US imports from Vietnam between 2014 and 2020 for products that were subject to higher tariffs and products not subject to tariffs in China . While products hit by Trump's tariffs initially account for a much higher share of exports (panel A), we observe an increased divergence after 2019 between prod-

ucts that were hit by the Trump's tariffs compared to those that were not, indicating a possible response to the tariffs. Panel (b) displays the evolution of the extensive margin of US imports of Vietnamese products between 2017 and 2020. Among the ≈ 5,000 products exported by Vietnam to the US in 2020, about 4,000 were of products hit by Trump's tariffs. More than 1,000 of these targeted products were introduced during Trump's trade war, more than twice the number of targeted products dropped. Among the hundreds of products that were not hit by Trump's tariffs, less were introduced than dropped during the trade war. These numbers suggest that Trump's tariffs may have led to increased net product introductions. We investigate this pattern further in the next sub-section.

Figure 2: Total US imports from Vietnam



(a) ($ millions) (b) (# products - 2020)

Notes: Data on US imports from Schott (2008). Product groups based on tariff data from Fajgelbaum et al. (2019).

2.1 Empirical Strategy and Results

Our empirical setting is that of a standard difference-in-differences model. The treatment is defined at the product level, and is characterised by being hit by increases in US tariffs on Chinese imports. The treatment period starts in 2018 or 2019, when Trump's tariffs were implemented, and extends until 2020. We use annual data from 2015 to 2020. We also take into account the latest developments in the estimation

of dynamic event-study specification with staggered treatment and potential heterogeneous effects across cohorts (Sun and Abraham, 2021; Callaway and Sant'Anna, 2021; Borusyak et al., 2021; De Chaisemartin and d'Haultfoeuille, 2020). We estimate the following event-study regression:

$$(1) \quad X_{pt} = \sum_{j=-5}^{-2} \beta_j D_{pt}^{j} + \sum_{j=0}^{2} \beta_j D_{pt}^{j} + \pi_p + \lambda_t + \varepsilon_{pt}$$

where X_{pt} are Vietnam exports of product p to the US in year t. The D_{pt} terms are dummies for leads and lags of the treatment (i.e., being hit by Trump's 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 π_p and λ_t are product and year fixed effects, and ϵ_{pt} is the error term. We thus exploit differences across products p (targeted vs. non-targeted) and differences across years t (before vs. after Trump's trade war). We look at the effects on the value of US imports from Vietnam by adopting an inverse hyperbolic sine transformation that keeps both zero and positive trade flows in the estimation sample, as well as on the intensive margin of exports, by taking logs of positive trade flows for products that were exported by Vietnam to the US. We also look at the effects on the extensive margin by using a dummy variable indicating whether Vietnam exports the product p (defined at the HS-10 digit level) to the US in year t. Standard errors are clustered at the product level.

The results of the event study specification in equation (1) are illustrated in Figure 3. The blue bars 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 pre-treatment year (-1). We find positive and significant effects whether we measure exports using the asinh transformation, taking logs, or using an indicator dummy. Notably, we also find that the value of exports to the US of targeted products increase over time. The red bars are placebo

treatment effects, showing the year-on-year difference-in-differences in pre-treatment years.

Identification of the export effects in the difference-in-difference model given by equation (1) relies on the assumption that Vietnam export growth rate after the Trump tariff hikes – i.e. between 2017 and 2020 – would have been the same as in the pre-treatment period absent the increase in tariffs on Chinese products by the US. We do detect pre-treatment effects as can be seen in Figure 4 where Vietnam exports of targeted products may have been increasing slightly faster in pre-treatment years. However, the difference between treated and non-treated products are considerably smaller in the pre-treatment years.

These results are confirmed when we assess the magnitude of the average treatment effect on the treated (ATT, computed as the average across the post-treatment effects in Figure 3). The TWFE estimates reported in column (1) of Table 1 imply that Vietnam exports to the US increased $\approx 47\%$ more for targeted products, and that the probability of exporting increased by ≈ 2.6 percentage point.[4] These effects are slightly larger when we use alternative estimators to the TWFE pursuant to Sun and Abraham (2021) (S&A), Callaway and Sant'Anna (2021) (C&S), Borusyak et al. (2021) (BJS), and De Chaisemartin and d'Haultfoeuille (2020) (DC&DH) as can be seen from Table 1.

In the next section we examine whether the export creation effect of US tariffs on Chinese imports translated into job creation and other labor market outcomes in Vietnam.

[4]To compute the effect on export values from the top panel ('asinh'-transformed outcome variable), we take the exponent of the estimated coefficient in column (1), like in a standard log specification. This approach is approximately correct with large enough values of the outcome variable (the average value of US imports from Vietnam between 2015 and 2020 is 3.9 millions US$.

Table 1: The effect of Trump's tariffs on Vietnam exports - Diff-in-diff estimates

	TWFE	S&A	C&S	BJS	DC&DH
	(1)	(3)	(3)	(4)	(5)
			asinh(X)		
w/o controls	0.387	0.424	0.415	0.470	0.415
	(0.052)	(0.055)	(0.054)	(0.050)	(0.052)
w/. controls	0.367	0.401	0.409	0.462	0.398
	(0.052)	(0.055)	(0.054)	(0.051)	(0.054)
			ln(X)		
w/o controls	0.238	0.090	0.106	0.166	0.106
	(0.057)	(0.072)	(0.069)	(0.066)	(0.065)
w/. controls	0.250	0.096	0.098	0.189	0.122
	(0.058)	(0.072)	(0.069)	(0.065)	(0.066)
			Export dummy		
w/o controls	0.026	0.030	0.029	0.031	0.029
	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)
w/. controls	0.024	0.028	0.028	0.030	0.027
	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)

Note: Panel estimates with product and year fixed effects. Standard errors in parenthesis are clustered at the 8-digit level. Exports are in inverse-hyperbolic sines (asinh), logs (ln), or as dummies (export dummy). Control variables are dummies for tariff increases by the US on Vietnam and on the rest of the world during the trade war period (2018-2020). Dynamic two-way fixed effects (TWFE), Sun and Abraham (2021) (S&A), Callaway and Sant'Anna (2021) (C&S), Borusyak et al. (2021) (BJS) and De Chaisemartin and d'Haultfoeuille (2020) (DC&DH).

3 Labor Market Outcomes

In this section, we explore the labour market effects of the trade diversion from China to Vietnam which we documented above. Aside from the policy implications of understanding the impact of trade on labour market outcomes in emerging economies, a possible concern about the results in the above section is that the export expansion merely due to Chinese firms rerouting their exports via Vietnam. Should this be the case, trade diversion from the US to Vietnam would not lead to employment gains. Hence, our aim is to understand whether increased trade between the US and Vietnam of targeted products translated into higher employment, wages, and occupational

changes. In addition, we examine gender differences in the labor market response to these new export opportunities.

3.1 Data

In order to examine the impact of the tariff hikes on job creation, hours worked, wages, and occupational upgrading across industries in Vietnam, we use monthly data from the Vietnamese Labor Force Survey (LFS), containing a nationally representative sample of approximately 68,000 individuals for each survey wave. We use data from the LFS from 2015 to 2020 (inclusive), covering 3 years before the occurrence of the first tariff hike and 2 years after. The LFS contains individual-level details about workers including their gender, wages, industry of employment ($\approx$ 400 ISIC 4-digit), weekly hours worked, and occupation ($\approx$ 390 ISCO 4-digit occupations across 10 major groups). ISCO occupations can be matched to 4 skill levels using the International labor Organization classification (Table A.3 in the Appendix).

Figure 5 shows the distribution of male and female workers across major sectors in 2017 and 2020. A large share of both men and women worked in manufacturing as well as agriculture in 2017 and in 2020, the main two sectors hit by Trump's tariffs. While agriculture has more male workers than female, manufacturing has more female workers. In 2020, 15% of workers were women working in manufacturing. In 2017, close to 14% of workers were men working in construction. However, the share in both of these sectors shrank significantly in 2020, possibly due to the Covid-19 pandemic.

Table A.4 in the Appendix reports summary statistics for the main tariff and labor market variables used in the empirical analysis for the years 2017 (i.e., before the US started increasing tariffs on Chinese products) and 2019, and for men and women separately. By 2019, around one third of the industries were treated (i.e., at least one product within the industry was hit by Trump's tariffs), and on average 17 percent of tariff lines within an industry were hit by US tariff increases on China. Men work 45.85

hours per week on average, 2 hours more than women. Men and women have similar average skill levels around 2.3, which corresponds to production occupations such as machine operators or sales workers (see Table A.3).

3.2 Empirical Strategy and Results

Our identification strategy in this section relies on comparing changes in the number of jobs, hours worked, hourly wages, and occupational skills, in industries exposed to the exogenous trade policy shock relative to industries that were not exposed. We use an event-study specification similar to that in the first part of the paper (see eq (1)):

$$(2) \quad Y_{imt} = \sum_{j=-5}^{-2} \beta_j D_{imt}^j + \sum_{j=0}^{2} \beta_j D_{imt}^j + \delta_{im} + \lambda_t + \varepsilon_{imt}$$

where Y_{imt} captures labor market outcomes including the total number of jobs, or hourly wages, hours worked, and skills averaged across individuals working in industry i, month m and year t. δ_{im} and λ_t are industry-month and year fixed effects, j are the numbers of included yearly leads and lags of the event indicator of an industry being hit by Trump's tariffs, D_{imt}, which takes the value of 1 if sector i had at least 1 product that was hit in month m in year t. We thus exploit differences across industries i (targeted vs non-targeted) and differences across years t (before vs. after being hit by Trump's tariffs).[5] The inclusion of industry-month fixed effects allows us to look at year-on-year changes in labor market outcomes in every industry for every month of the year. The monthly data allows us to take into account that different industries were hit by tariffs in different months in 2018 and 2019 (see Figure A.1 in the Appendix). Standard errors are clustered at the industry level. In addition,

[5] Because of this empirical definition, a few service industries (17 out of 329) are classified as treated. Out of the 233 goods industries (agriculture, mining and manufacturing sectors), 169 were hit by US tariffs on China.

we explore heterogeneous treatment effects by gender in order to understand whether women and men were affected differently by the tariff shock. For this we use industry-month panels for both men and women.

As in our trade analysis, we estimate equation (2) with a standard TWFE estimator – the industry-month and year fixed effects, and test for the robustness of our labor market outcome results to the latest developments in the difference-in-difference estimators.

The estimates from equation (2) are shown in Figure 6. Starting first with the number of job created, the number of workers in targeted sectors increased by as much as 15% more in industries affected by the US-China trade war. This would point towards the fact that firms in targeted sectors expanded to meet increased demand from Vietnamese manufacturers. The finding that the number of workers in targeted sectors grew provides evidence that Chinese firms did not merely pass through their products *via* Vietnam, but that the export expansion recorded in the above section were genuine.

Tuning to the intensive margin, weekly working hours also increased by 20% (4.5 hours) in the year after the trade war was declare. However, hourly wages did not increase faster for workers in targeted sectors and would point towards any income gains as being driven by working longer hours. The effect on average skill levels across industries is slightly negative, but are not statistically significant. Taken together, the results in Figure 6 provide justification that Chinese goods did not merely pass through Vietnam, but that the US trade war did indeed create a positive trade shock which is manifest in the labour market in terms of number of jobs and hours worked. The results are robust to using new DiD methods as shown in Figures A.3, A.4, A.5, and A.6 in the Appendix.

Table 2 reports the ATT across the post-treatment coefficients from equation (2) under the TWFE and alternative estimators. For each labor market outcome and

estimator, it also shows the results of a specification where we add controls for the industry being hit by US tariffs on Vietnam and ROW (countries other than China and Vietnam). The results suggest that employment increased by $\approx 15\%$ more in industries hit by Trump's tariffs, which corresponds to around 1,000 extra jobs in each treated industry starting from the average employment in the sample. In this specification, we find no statistically significant effect on average on hours worked, hourly wages, nor on average skill levels (no occupational upgrading). The results are consistent across the different estimators, and are robust to controlling for changes in US tariffs on goods coming from Vietnam and other countries.

Since Trump's trade war may have led to differential gendered effects, we implement equation (2) by gender. Figure 7 presents the results of Figure 6 by male and female workers where results on the left are for male workers, and the right are for female workers. First, we find export expansion predominantly absorbed male rather than female labour with the estimate being twice as large for male workers than female workers. However, we also note positive effects for female workers as the DiD estimator for the number of female workers is positive and statistically significant at the 5 percent level 2 years after the implementation of the tariff hikes.

On the other hand, hours worked and hourly wages for female workers grew faster for female workers in targeted sectors compared to male workers in targeted sectors. In fact, the DiD estimate for wages for male workers becomes negative in year $t+2$ whereas it remains positive for female workers (although the estimate is smaller than in $t+1$). Likewise, the increase in hours worked by female workers is twice that of male workers in targeted sectors. Finally, we find no effect on average occupational skills for either male or female workers. Thus, these results are consistent with the literature which documents that greater export opportunities improve the labour market opportunities of women relative to men on the intensive margin but not on the extensive margin (Ederington et al., 2009).

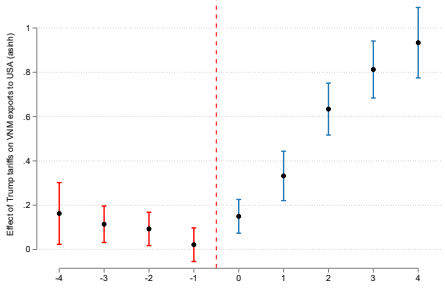
4 Conclusion

In this paper, we examine how the US-China trade war found an unintended beneficiary – Vietnam. We show that the US-China trade war caused significant increases in Vietnam exports to the US in products impacted by Trump's tariffs. In addition, products were more likely to be introduced and existing products were less likely to exit in Trump-affected sectors, confirming the creation of new export opportunities for Vietnam.

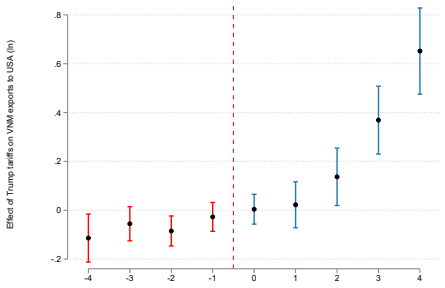
We also show that new export opportunities arising from Trump's trade war affected Vietnam's labor market. Employment in industries that were targeted by Trump increased, as did the number of hours worked and wages. However, we find that the expansion in export to the US did not entail occupational upgrading in Vietnam, possibly due to the fact that the jobs created were predominantly in low-skilled sectors.

In assessing the differential effects of export expansion on male and female workers, we find that Trump's tariffs created jobs mostly for male workers. However, we find that the mean wages of workers in Trump-affected sectors increased more for female workers. Vietnam faces large gender inequality. Women are not only more likely to live below the poverty line, they also earn lower wages, work longer hours, and are less educated. These new export opportunities created in Vietnam's manufacturing sector in the wake of the Trump trade wars may have helped reduce the gender wage gap in the affected sectors.

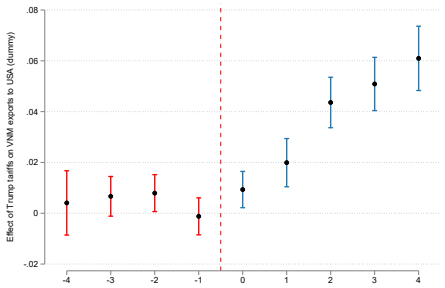
Figure 3: The effect of Trump's tariffs on Vietnam's exports



(a) asinh



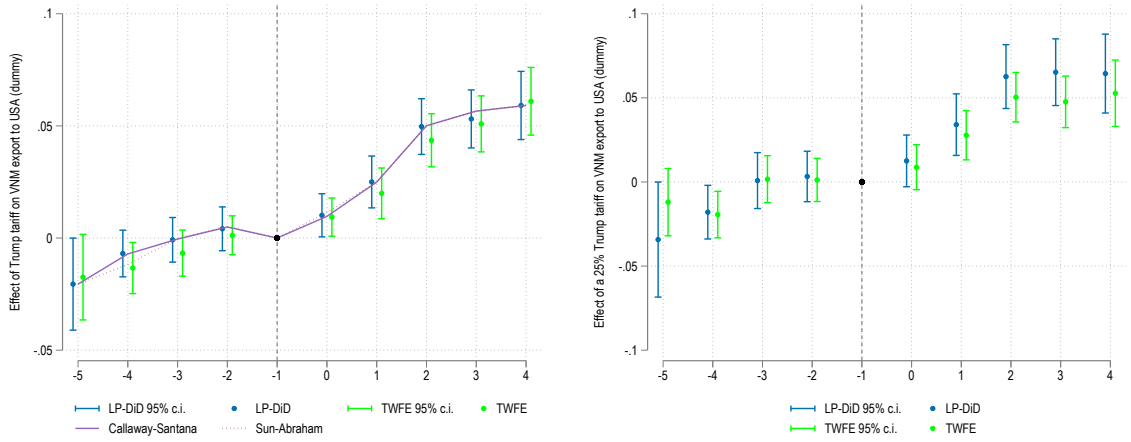
(b) ln



(c) dummy

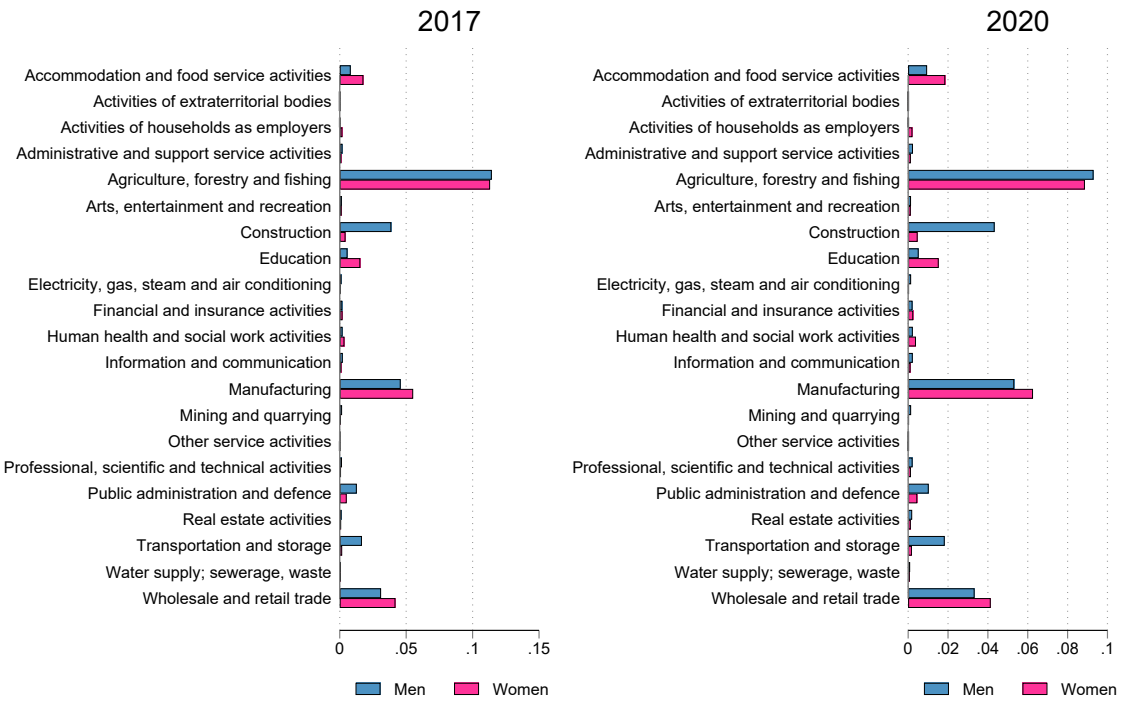
Notes: The dots show TWFE diff-in-diff estimates of the effect of tariff hikes on Vietnam exports to the US across years and products. Red bars are c.i. for pre-treatment placebos, showing the year-on-year effects. Blue bars are for treatment effects relative to the year before treatment. Data on US imports at the 10 digit level from Schott (2008). Data on tariff hikes from Fajgelbaum et al. (2019).

Figure 4: The effect of Trump's tariffs on Vietnam's exports



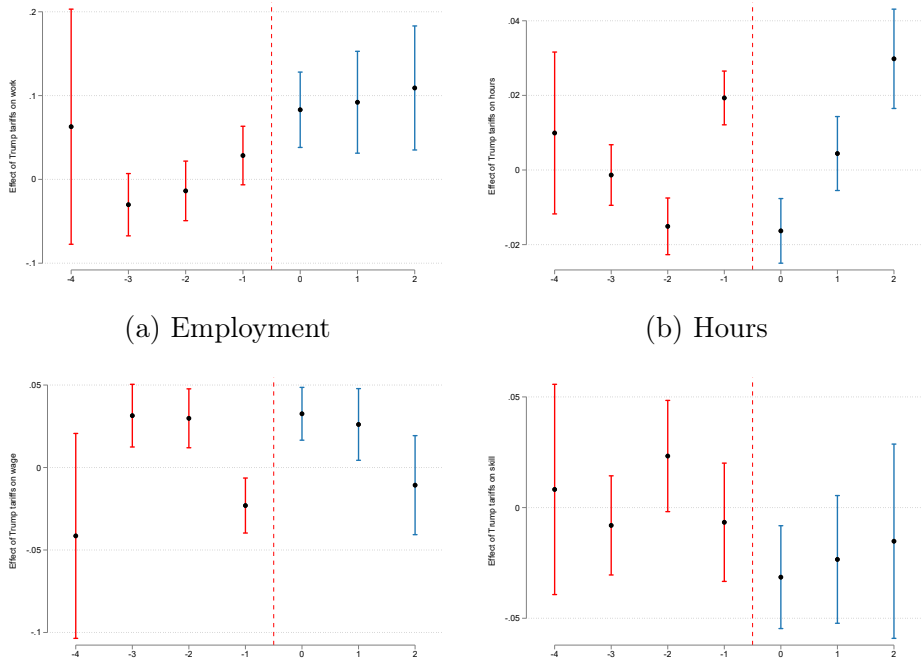
Note: Right-hand side is continuous treatment (tariff). LP-DiD is the local projection approach of Dube et al (2023). The dots show TWFE diff-in-diff estimates of the effect of tariff hikes on Vietnam exports to the US across years and products. Red bars are c.i. for pre-treatment placebos, showing the year-on-year effects. Blue bars are for treatment effects relative to the year before treatment. Data on US imports at the 10 digit level from Schott (2008). Data on tariff hikes from Fajgelbaum et al. (2019).

Figure 5: Share of workers across sectors



Notes: Data are from Vietnam's Labor Force Survey. The sectors are ISIC (Rev. 4) major level headings.

Figure 6: The effect of Trump's tariffs on Vietnam's labor markets



(a) Employment (b) Hours

(c) Wages (d) Skills

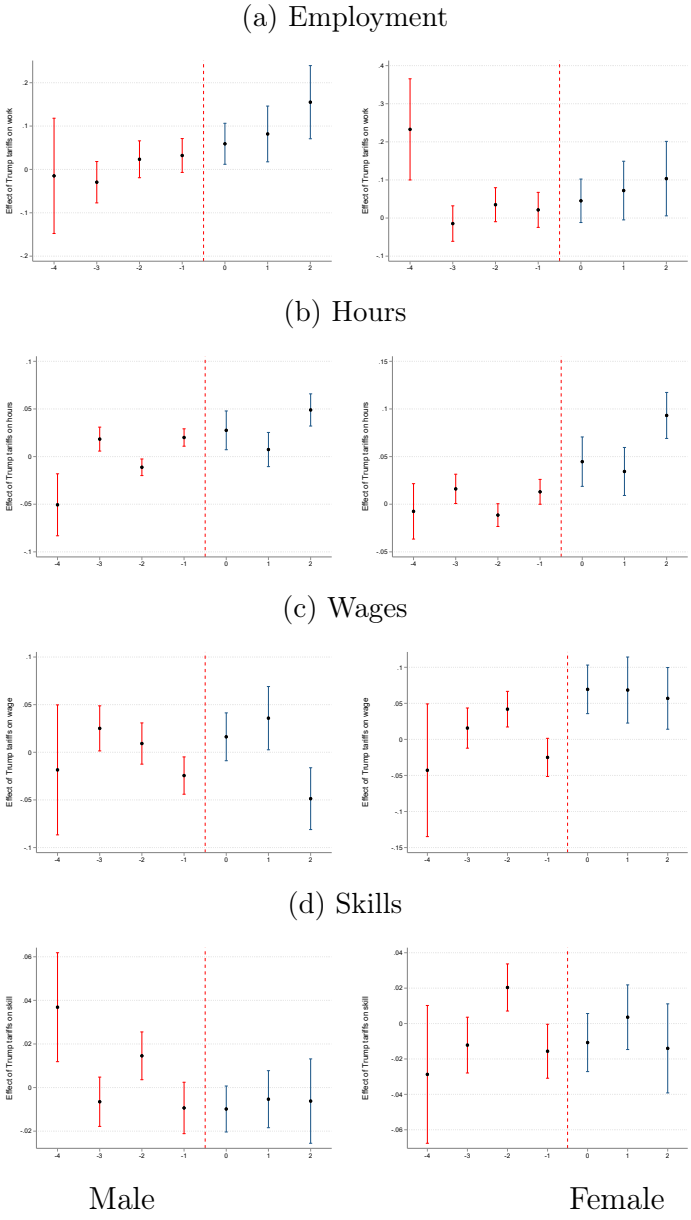
Notes: The dots show TWFE diff-in-diff estimates of the effect of tariff hikes on jobs, hours worked, wages, and skills across years and sectors. Blue bars are c.i. for treatment effects relative to the year before treatment. Red bars are c.i. for pre-treatment placebos, showing the year-on-year effects. Data on labor markets are from Vietnam's LFS. Data on tariff hikes from Fajgelbaum et al. (2019).

Table 2: The effect of Trump's tariffs on Vietnam's labor market to the US

	(1) TWFE	(2) S&A	(3) C&S	(4) BJS	(5) DC&DH
			Workers		
w/o controls	0.141	0.127	0.121	0.131	0.120
	(0.049)	(0.055)	(0.054)	(0.046)	(0.047)
w/. control	0.133	0.116	0.121	0.131	0.120
	(0.050)	(0.054)	(0.054)	(0.046)	(0.047)
			Hours		
w/o controls	0.055	0.054	0.055	0.049	0.041
	(0.027)	(0.028)	(0.027)	(0.027)	(0.028)
w/. control	0.053	0.048	0.055	0.049	0.002
	(0.030)	(0.031)	(0.027	(0.027)	(0.028)
			Wages		
w/o controls	0.030	0.032	0.041	0.045	0.041
	(0.024)	(0.025)	(0.024)	(0.024)	(0.023
w/. control	0.034	0.032	0.041	0.045	0.041
	(0.026)	(0.026)	(0.024)	(0.024)	(0.023)
			Skills		
w/o controls	-0.006	-0.004	-0.002	-0.009	-0.003
	(0.007)	(0.008)	(0.007)	(0.006)	(0.007)
w/. control	-0.005	-0.005	-0.002	-0.009	-0.003
	(0.008)	(0.008)	(0.007)	(0.006)	(0.007)

Note: Diff-in-diff estimates of the effect of Trump tariff on Vietnam's labor market. All regressions include industry-month and year fixed effects. Standard errors in parenthesis are clustered by sector. Workers is the log number of workers in a sector. Hours (weekly), wages (per weekly hours), and skills are in log. Control variables are dummies equal to 1 for sectors with products hit by US tariffs on Vietnam and on the rest of the world. The columns are for dynamic two-way fixed effects (TWFE), Sun and Abraham (2021) (S&A), Callaway and Sant'Anna (2021) (C&S), Borusyak et al. (2021) (BJS) and De Chaisemartin and d'Haultfoeuille (2020) (DC&DH).

Figure 7: The effect of Trump's tariffs on labor markets, by gender



Notes: The dots show TWFE diff-in-diff estimates of the effect of tariff hikes on jobs, hours worked, wages, and skills across years and sectors. Blue bars are c.i. for treatment effects relative to the year before treatment. Red bars are c.i. for pre-treatment placebos, showing the year-on-year effects. Data on labor markets are from Vietnam's LFS. Data on tariff hikes from Fajgelbaum et al. (2019).

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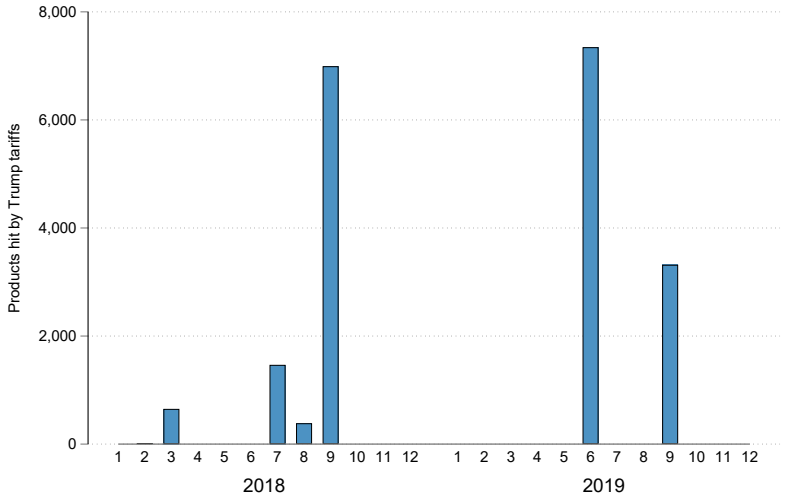
A.1 Descriptive statistics

Figure A.1: US-China trade war tariff hikes by month in 2018 and 2019



Notes: The numbers 1 to 12 are for months from Jan to Dec. Tariff hikes are relative to 2017. The hikes in June 2019 are additional hikes (from .10 to .25) on products hit in 2018. The hikes in September 2019 are on additional product lines. Source: Fajgelbaum et al. (2021)

Table A.1: Summary statistics for variables used in the trade analysis

	Obs	Mean	25th perc.	75th perc.	Min	Max
$\text{asinh}(X_p)$	104524	3.819	0.00	9.61	0.00	23.77
$\ln(X_p)$	31450	12.001	9.76	14.14	5.53	23.08
$1(X_p > 0)$	104524	0.301	0.00	1.00	0.00	1.00
$\Delta_{2019} \text{asinh}(X_p)$	17336	0.507	0.00	0.00	-19.49	19.17
$\Delta_{2020} \text{asinh}(X_p)$	17207	0.744	0.00	0.06	-19.49	20.35
$\Delta_{2019} \ln(X_p)$	4325	0.469	-0.31	1.15	-8.48	9.16
$\Delta_{2020} \ln(X_p)$	4305	0.661	-0.34	1.52	-7.57	10.48
$1(Entry_{2019})$	12204	0.115	0.00	0.00	0.00	1.00
$1(Exit_{2019})$	5132	0.157	0.00	0.00	0.00	1.00
$1(Entry_{2020})$	12097	0.136	0.00	0.00	0.00	1.00
$1(Exit_{2020})$	5110	0.158	0.00	0.00	0.00	1.00
$\Delta\tau_p^{USA,CHN}$	18982	0.152	0.00	0.25	0.00	0.65
$\Delta\tau_p^{USA,VNM}$	18982	0.002	0.00	0.00	0.00	0.50
$\Delta\tau_p^{USA,ROW}$	18982	0.001	0.00	0.00	0.00	0.16
$1(\Delta t^{USA,CHN} > 0)$	18982	0.666	0.00	1.00	0.00	1.00
$1(\Delta t^{USA,VNM} > 0)$	18982	0.009	0.00	0.00	0.00	1.00
$1(\Delta t^{USA,ROW} > 0)$	18982	0.054	0.00	0.00	0.00	1.00

Note: Each observation corresponds to a HS-10 digit tariff line. $\Delta_t \text{asinh}(X_p)$ are differences in *asinh* of US imports from Vietnam between 2019 and 2017 (for $t = 2019$) and between 2020 and 2017 (for $t = 2020$). $\Delta_t \ln(X_p)$ are differences in the ln of US imports from Vietnam between 2019 and 2017 (for $t = 2019$) and between 2020 and 2017 (for $t = 2020$). $1(Entry_t)$ is a dummy equal to 1 for products that were exported in t and not in 2017 (with $t = \{2019, 2020\}$), and zero for products that were not exported in t and 2017. $1(Exit_t)$ is a dummy equal to 1 for products that were not exported in t and were exported in 2017 (with $t = \{2019, 2020\}$), and zero for products that were exported in t and 2017. $\Delta\tau_p^{USA,o}$ is the change in the tariff imposed by the US on products from $o = \{CHN, VNM, ROW\}$ between 2018 and the end of 2019 as a result of the US-China trade war. $1(\Delta\tau^{USA,o} > 0)$ are dummies for the existence of increases in US tariffs to products from $o = \{CHN, VNM, ROW\}$. The trade data is from Schott (2008) and the tariff data from Fajgelbaum et al. (2019).

Table A.2: Summary statistics for variables used in the labor market analysis

	Men					Women				
	N	mean	sd	min	max	N	mean	sd	min	max
					2017					
Tariff on China = 1	379	0	0	0	0	353	0	0	0	0
Avg tariff on China	379	0	0	0	0	353	0	0	0	0
Share of tariff lines hit	379	0	0	0	0	353	0	0	0	0
Workers	355	6.818	1.462	3.134	12.50	326	6.458	1.501	2.590	11.57
Hours	379	3.836	0.138	3.211	4.248	353	3.785	0.178	2.824	4.431
Wage	379	8.721	0.466	4.568	10.44	345	8.379	0.597	5.725	10.30
Skill level	366	0.819	0.282	0	1.386	339	0.814	0.333	0	1.386
					2019					
Tariff on China = 1	378	0.386	0.488	0	1	339	0.369	0.483	0	1
Avg tariff on China	378	0.0231	0.0405	0	0.208	339	0.0203	0.0372	0	0.194
Share of tariff lines hit	378	0.175	0.272	0	1	339	0.161	0.259	0	1
Workers	360	6.753	1.548	2.800	12.49	316	6.493	1.561	2.549	11.82
Hours	378	3.826	0.160	2.708	4.248	339	3.780	0.170	2.773	4.094
Wage	377	8.804	0.429	6.486	10.17	334	8.469	0.629	5.225	10.60
Skill level	364	0.800	0.280	0	1.386	325	0.796	0.324	0	1.386

Note: Summary statistics for variables used in the labor market section. Workers, hours, wages, and skill levels are in logs. The tariff data is from Fajgelbaum et al. (2019) and the labor market data is from Vietnam's labor force sruvey (LFS).

Table A.3: Skill level of ISCO-major groups according to the 2012 ILO classification

ISCO-major group		Skill level
1	Managers[1]	3 & 4
2	Professionals	4
3	Technicians and Associate Professionals	3
4	Clerical Support Workers	2
5	Services and Sales Workers	2
6	Skilled Agricultural / Forestry / Fishery Workers	2
7	Craft and Related Trades Workers	2
8	Plant and Machine Operators and Assemblers	2
9	Elementary Occupations	1

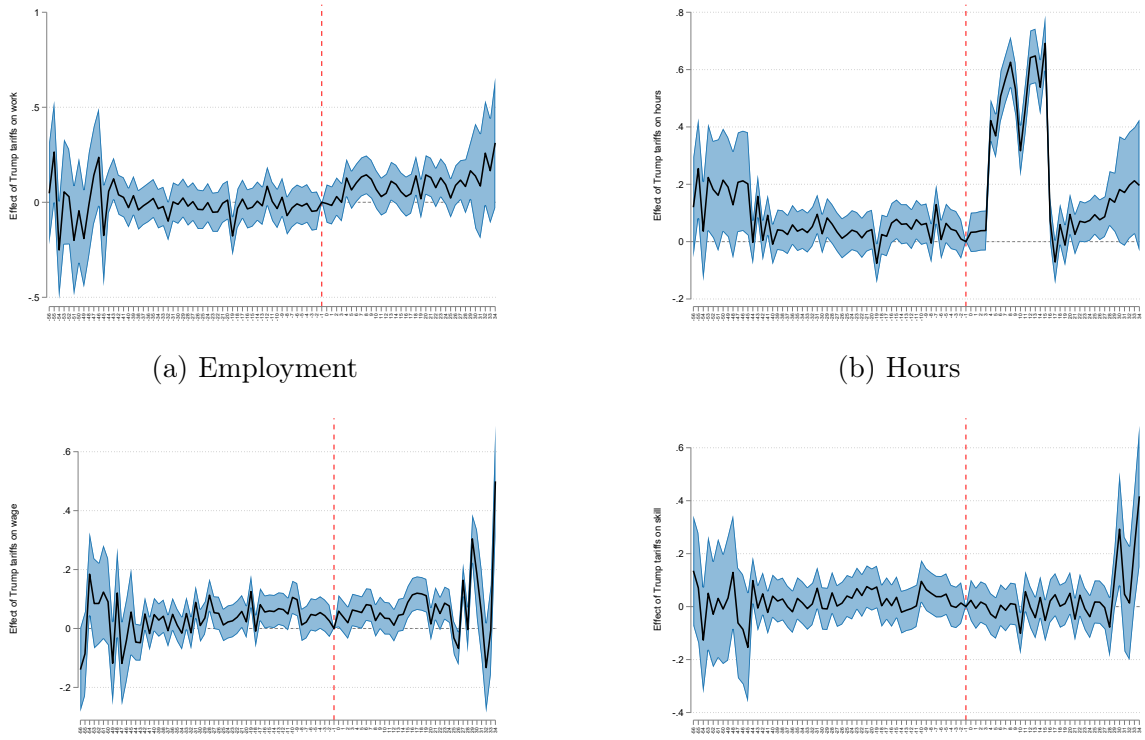
[1] Managers who are in submajor group 14 (Hospitality, Retail and Other Services) are Skill Level 3. Skill level 1 consist of workers who perform routine physical tasks which requires no formal education. Skill level 2 correspond to medium-low-skilled workers who complete physical and socio-cognitive work and have a secondary education or vocation-specific education. Skill level 3 workers complete technical and complex work and have 1-3 years of higher education. Finally, Skill level 4 workers are high-skilled workers whose job is to problem-solve or undertake creative thinking.

Table A.4: Summary statistics for variables used in the labor market analysis

	Men					Women				
	N	mean	sd	min	max	N	mean	sd	min	max
					2017					
Tariff on China = 1	379	0	0	0	0	353	0	0	0	0
Avg tariff on China	379	0	0	0	0	353	0	0	0	0
Share of tariff lines hit	379	0	0	0	0	353	0	0	0	0
Workers	355	6.818	1.462	3.134	12.50	326	6.458	1.501	2.590	11.57
Hours	379	3.836	0.138	3.211	4.248	353	3.785	0.178	2.824	4.431
Wage	379	8.721	0.466	4.568	10.44	345	8.379	0.597	5.725	10.30
Skill level	366	0.819	0.282	0	1.386	339	0.814	0.333	0	1.386
					2019					
Tariff on China = 1	378	0.386	0.488	0	1	339	0.369	0.483	0	1
Avg tariff on China	378	0.0231	0.0405	0	0.208	339	0.0203	0.0372	0	0.194
Share of tariff lines hit	378	0.175	0.272	0	1	339	0.161	0.259	0	1
Workers	360	6.753	1.548	2.800	12.49	316	6.493	1.561	2.549	11.82
Hours	378	3.826	0.160	2.708	4.248	339	3.780	0.170	2.773	4.094
Wage	377	8.804	0.429	6.486	10.17	334	8.469	0.629	5.225	10.60
Skill level	364	0.800	0.280	0	1.386	325	0.796	0.324	0	1.386

Note: Summary statistics for variables used in the labor market section. Workers, hours, wages, and skill levels are in logs. The tariff data is from Fajgelbaum et al. (2019) and the labor market data is from Vietnam's labor force sruvey (LFS).

Figure A.2: The effect of Trump tariffs on Vietnam's labor markets - Month on month effects



(a) Employment

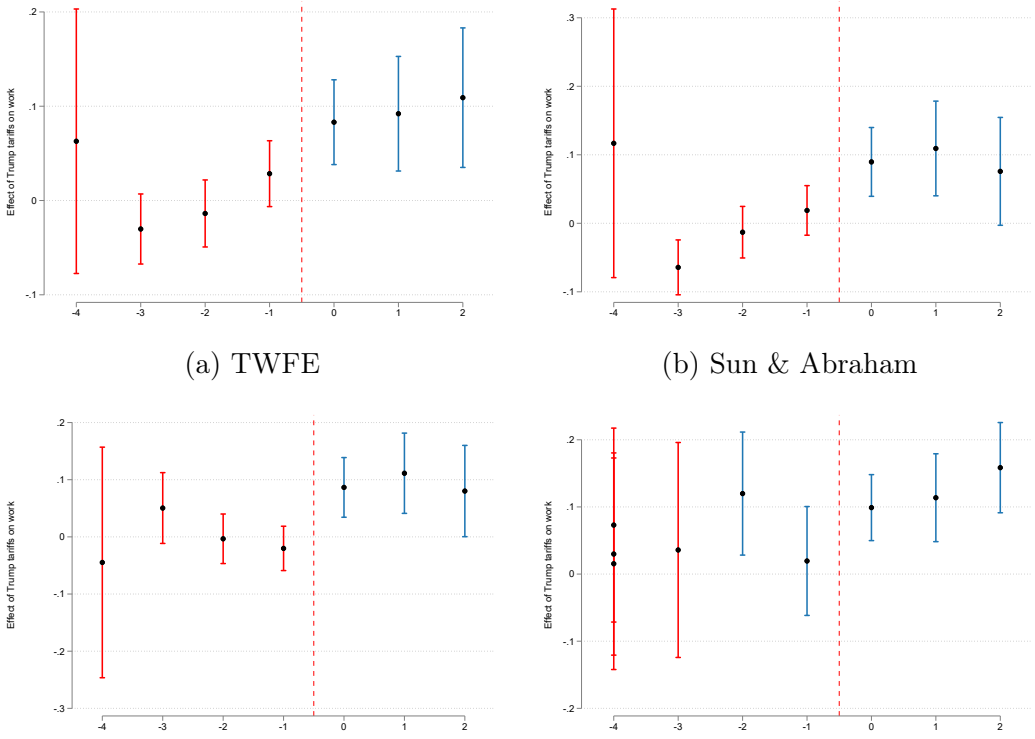
(b) Hours

(c) Wages

(d) Skills

Notes: The solid line shows the TWFE diff-in-diff estimates of the effect of tariff hikes on jobs, hours worked, wages, and skills across months and sectors. The shaded area shows the 90 percent confidence interval. We take the year before the first month when the tariff hits as the benchmark and look at how different the differences between treated and untreated sectors are in each of the following months. Data on labor markets are from Vietnam's LFS. Data on tariff hikes from Fajgelbaum et al. (2021).

Figure A.3: The effect of Trump tariffs on employment



(a) TWFE

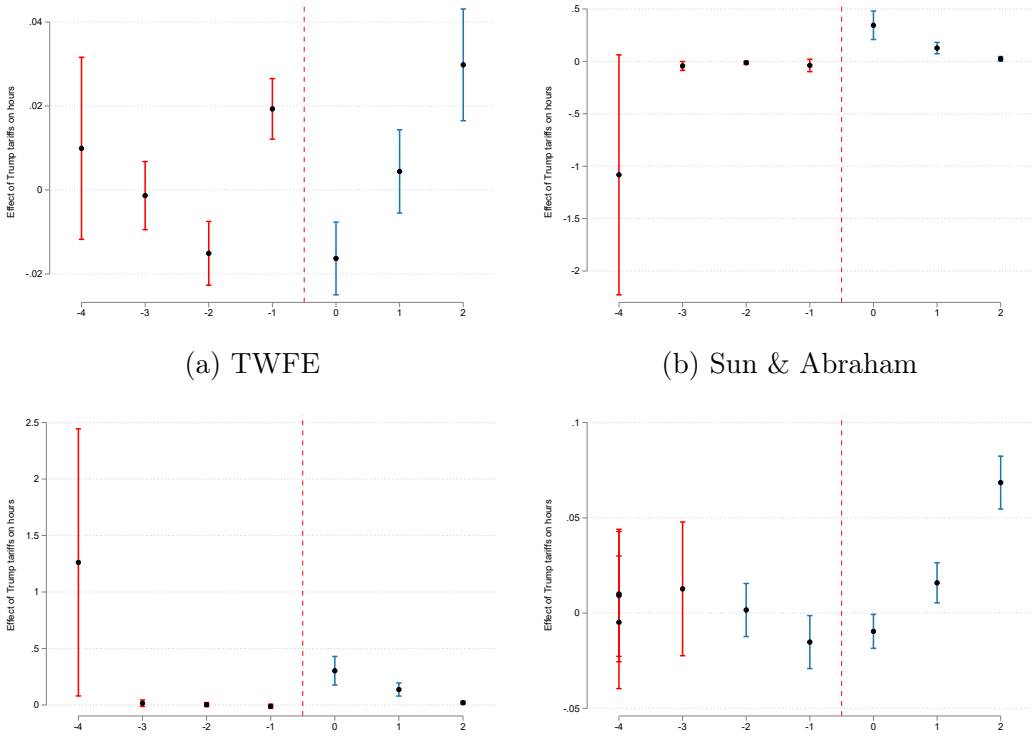
(b) Sun & Abraham

(c) Callaway & Sant'Anna

(d) Borusyak et al.

Notes: The dots show diff-in-diff estimates of the effect of tariff hikes on jobs across years and sectors. Blue bars are c.i. for treatment effects relative to the year before treatment, or the avg pre-treatment period in the case of Borusyak et al. Red bars are c.i. for pre-treatment placebos, showing the year-on-year effects. Data on labor markets are from Vietnam's LFS. Data on tariff hikes from Fajgelbaum et al. (2021).

Figure A.4: The effect of Trump tariffs on working hours



(a) TWFE

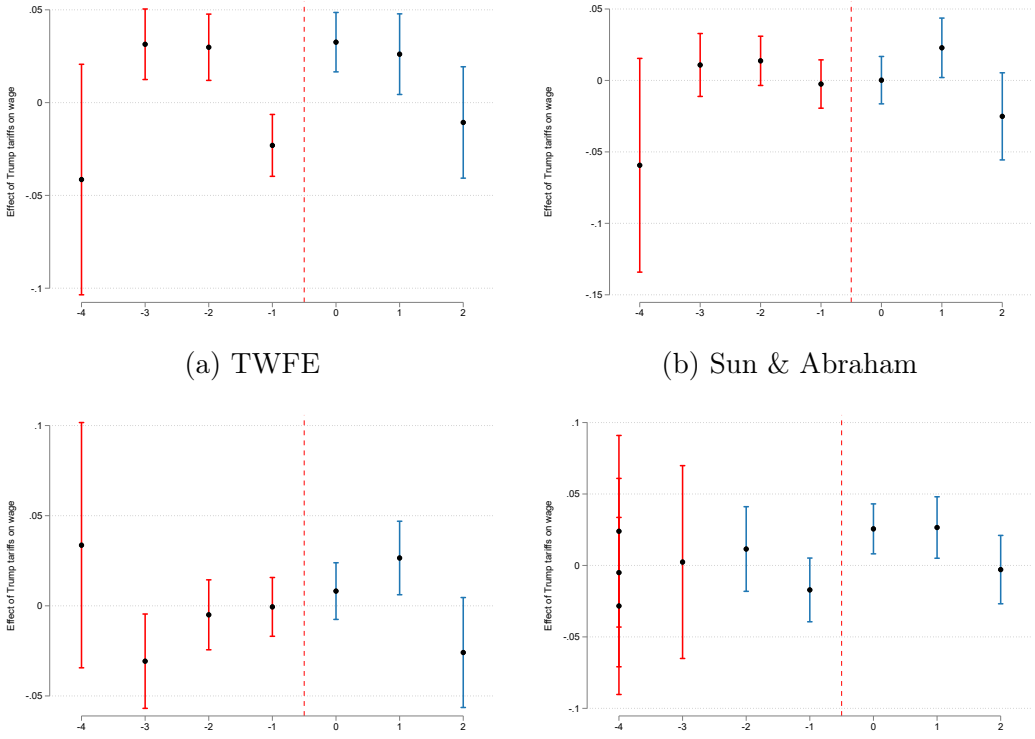
(b) Sun & Abraham

(c) Callaway & Sant'Anna

(d) Borusyak et al.

Notes: The dots show diff-in-diff estimates of the effect of tariff hikes on hours worked across years and sectors. Blue bars are c.i. for treatment effects relative to the year before treatment, or the avg pre-treatment period in the case of Borusyak et al. Red bars are c.i. for pre-treatment placebos, showing the year-on-year effects. Data on labor markets are from Vietnam's LFS. Data on tariff hikes from Fajgelbaum et al. (2021).

Figure A.5: The effect of Trump tariffs on wages



(a) TWFE

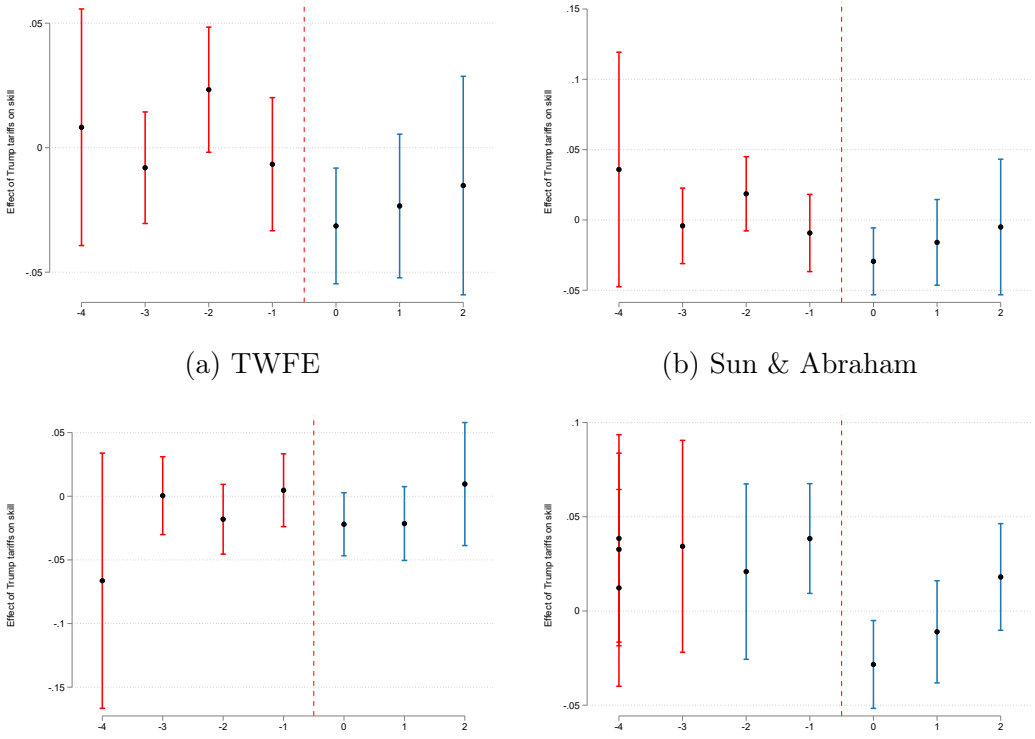
(b) Sun & Abraham

(c) Callaway & Sant'Anna

(d) Borusyak et al.

Notes: The dots show diff-in-diff estimates of the effect of tariff hikes on wages across years and sectors. Blue bars are c.i. for treatment effects relative to the year before treatment, or the avg pre-treatment period in the case of Borusyak et al. Red bars are c.i. for pre-treatment placebos, showing the year-on-year effects. Data on labor markets are from Vietnam's LFS. Data on tariff hikes from Fajgelbaum et al. (2021).

Figure A.6: The effect of Trump tariffs on skills



(a) TWFE

(b) Sun & Abraham

(c) Callaway & Sant'Anna

(d) Borusyak et al.

Notes: The dots show diff-in-diff estimates of the effect of tariff hikes on skills across years and sectors. Blue bars are c.i. for treatment effects relative to the year before treatment, or the avg pre-treatment period in the case of Borusyak et al. Red bars are c.i. for pre-treatment placebos, showing the year-on-year effects. Data on labor markets are from Vietnam's LFS. Data on tariff hikes from Fajgelbaum et al. (2021).