Trade, structural change and labour market transitions in Vietnam

Ramisha Asghar
Bank of Canada

Brian McCaig
Wilfrid Laurier University

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Motivation

- As developing countries have become more integrated with the global economy in recent decades, it has raised questions about the role of international trade in promoting or hindering structural change (McMillan et al., 2014; Alessandria et al., 2021)
- Potentially large aggregate productivity improvements from moving workers out of agriculture (Gollin et al., 2014)
- However, it is challenging to find exogenous events that one could argue actually caused structural change
  - Erten and Leight (2021) is a notable exception, examining structural change in China in response to changes in trade policy
- There is no evidence on from what initial activities individuals make these transitions

Vietnam: Large shift out of agriculture

- Large reduction in the share of young (15-29) workers in agriculture (0.69 to 0.28) while the share in manufacturing (0.11 to 0.31) and services (0.19 to 0.41) increased between 1999 and 2019 Table

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  - Confirms and extends results from McCaig and Pavcnik (2013)
  - Change was larger for women Men Women
  - Slightly smaller shift for the overall working age population 15 to 55

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  - Slightly smaller shift for the overall working age population 15 to 55
- The shift was a largely a within district (>600 districts) process
  - Shifts within districts account for 87-97% of the overall change, depending on the sector Table

Who is changing sectors?

- It is tempting to conclude that workers are shifting out of agriculture directly into manufacturing and services but ...
- We don't know this for sure without being able to track specific individuals
- We use multiple rounds of individual panel data from the Vietnam Household Living Standards Surveys
  - Large survey conducted every two years starting in 2002
  - Can track individuals across successive surveys
  - Does not track individuals who have left the household
  - We focus on transitions into manufacturing industries that were highly-exposed to U.S. tariff reductions and firms in the formal sector

Transitions into high-exposure formal manufacturing

	Age 15 to 29			
Initial activity	Initial share	Share in same activity at the end of the panel	Share in HEFM in at the end of the panel	Share of total transitions into HEFM
Not working	0.363	0.650	0.027	0.348
Agriculture	0.361	0.761	0.018	0.233
Mining	0.004	0.485	0.022	0.003
Manufacturing, non-HEFM	0.081	0.560	0.085	0.244
Services	0.191	0.760	0.026	0.172
Total	1.000	0.703	0.028	1.000
Number of individuals	117,943			

Note: The sample is based on the 2002-04 through 2016-18 VHLSS individual panels. Age is based on the initial survey in the respective panel.

- 2.8% of individuals transition into HEFM
- Transitioning is least likely for individuals initially in agriculture and most likely for individuals in other manufacturing

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- Nonetheless, transitions from agriculture account for almost a 1/4 of all transitions as do transitions from other manufacturing
- Transitions from not working, mostly from school, account for over a 1/3 of all transitions

U.S.-Vietnam Bilateral Trade Agreement (BTA)

- The BTA was signed on July 13th, 2000 and was implemented on December 10th, 2001
- The BTA immediately lowered tariffs on Vietnam's exports to the U.S. through the transition of Vietnam's status from the U.S.'s Column 2 tariff schedule to its Most Favoured Nation (MFN) tariff schedule
  - Column 2 tariffs originated with the 1930 Tariff Act and remained in place for most communist countries
  - MFN tariffs were negotiated as part of the Uruguay WTO round
- The U.S. tariff cuts on Vietnamese imports were immediate and large, with an average reduction of 20.9 percentage points, from 23.4% to 2.5% and increased exports significantly (McCaig and Pavcnik, 2018; McCaig, Pavcnik, and Wong, 2022) Exports
- Previous work has shown a shift within industries to formal firms (McCaig and Pavcnik, 2018) and an expansion of employment in formal manufacturing industries, particularly among foreign entrants (McCaig, Pavcnik, and Wong, 2022)

Local labor markets empirical approach

- Measure how exposed a district is to the tariff change by:

$$\Delta\tau_d = \sum_j \alpha_{jd} \times \Delta\tau_j \tag{1}$$

- $\Delta\tau_j$ is the change in the U.S. tariff in industry j (Column 2 minus MFN)
- $\alpha_{jd} = \frac{emp_{jd}}{emp_d}$ is the share of traded workers in district d that work in industry j using the 1999 census (Kovak, 2013)

$$y_{idt} = \delta\Delta\tau_d + \beta_3 X_{idt} + \beta_4 Z_d + \theta_t + \epsilon_{idt} \tag{2}$$

- y_{idt} is an indicator for individual i in district d in panel t transitioning to HEFM
- X_{idt} is a vector of individual characteristics, Z_d is a vector of initial district controls, and θ_t is a dummy for the panel

Greater transition probability in more exposed districts

	All non-HEFM	Not working	Agriculture	Services	Other manuf.
	(1)	(2)	(3)	(4)	(5)
U.S. tariff reduction	0.0085***	0.0074***	0.0104***	0.0060***	0.0095**
	(0.0012)	(0.0013)	(0.0020)	(0.0015)	(0.0045)
N. obs.	117,942	42,833	42,580	22,471	9,552

Note: Standard errors reported in parentheses are clustered by district. Significance * 10% ** 5% *** 1%.

- A one standard deviation increase in exposure is associated with a 1.5 percentage point increase in the probability of transitioning to high-exposure formal manufacturing ($=0.0085\times1.8$)
- Consistent with results in McCaig, Pavcnik and Drozdoff (2022) which shows women shift into manufacturing in districts more exposed to rising FDI employment opportunities
- US tariff reductions have stronger effects on transitions of better educated individuals

Summary

- Rapid shift of the workforce out of agriculture
  - Mostly a within-district reallocation
- Individuals within agriculture are the least likely to transition to jobs in highly-exposed formal manufacturing, but due to the size of the sector, they still account for almost 1/4 of total transitions
  - Workers in other manufacturing are the most likely to transition – account for 1/4 of transitions
  - Individuals not working (primarily in school) account for over 1/3 of transitions
  - Women and better educated more likely to transition
- Using a local labor markets approach, transition probability increases in districts more exposed to U.S. tariff reductions on exports from Vietnam

Long run structural change: Men

	Age 15 to 55			Age 15 to 29		
Industry	1999	2009	2019	1999	2009	2019
Agriculture	0.66	0.50	0.32	0.68	0.50	0.30
Manufacturing	0.09	0.13	0.20	0.10	0.17	0.27
Of which:						
High-exposure	0.05	0.08	0.13	0.06	0.10	0.18
High-exposure, formal	0.02	0.04	N.A.	0.02	0.05	N.A.
Services	0.24	0.36	0.48	0.21	0.32	0.42
Number of observations	5,765,689	3,710,310	2,004,360	2,537,728	1,467,258	601,550

Note: The table reports the share of workers by sector and year for the indicated age groups. The source data is the 1999, 2009, and 2019 population censuses. All shares are weighted using sampling weights. N.A. denotes not available as there was no question related to working in a formal vs informal firm in the 2019 census.

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Long run structural change: Women

	Age 15 to 55			Age 15 to 29		
Industry	1999	2009	2019	1999	2009	2019
Agriculture	0.70	0.54	0.32	0.70	0.49	0.25
Manufacturing	0.09	0.16	0.26	0.13	0.24	0.36
Of which:						
High-exposure	0.06	0.09	0.17	0.09	0.14	0.25
High-exposure, formal	0.02	0.06	N.A.	0.03	0.10	N.A.
Services	0.20	0.30	0.42	0.16	0.26	0.38
Number of observations	5,358,910	3,491,757	1,816,931	2,434,442	1,341,017	528,064

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Long run structural change

	Age 15 to 55			Age 15 to 29		
Industry	1999	2009	2019	1999	2009	2019
Agriculture	0.68	0.52	0.32	0.69	0.50	0.28
Manufacturing	0.09	0.15	0.23	0.11	0.21	0.31
Of which:						
High-exposure	0.06	0.08	0.15	0.07	0.12	0.21
High-exposure, formal	0.02	0.05	N.A.	0.02	0.08	N.A.
Services	0.23	0.33	0.45	0.19	0.29	0.41
Number of observations	11,124,599	7,202,067	3,821,291	4,972,170	2,808,275	1,129,614

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Most structural change occurred within districts

- We decompose the aggregate changes into between- and within-district changes (>600 districts)

Sector	Total Change	Within Districts	Between Districts	Share within Districts
	1999 to 2019			
Agriculture	-0.415	-0.381	-0.034	0.919
Manufacturing	0.200	0.174	0.027	0.867
Services	0.218	0.211	0.007	0.966
High-exposure manuf	0.136	0.121	0.015	0.888

Note: The source data is the 1999, 2009, and 2019 population censuses restricted to individuals ages 15 to 29 at the time of the census. All shares are weighted using sampling weights.

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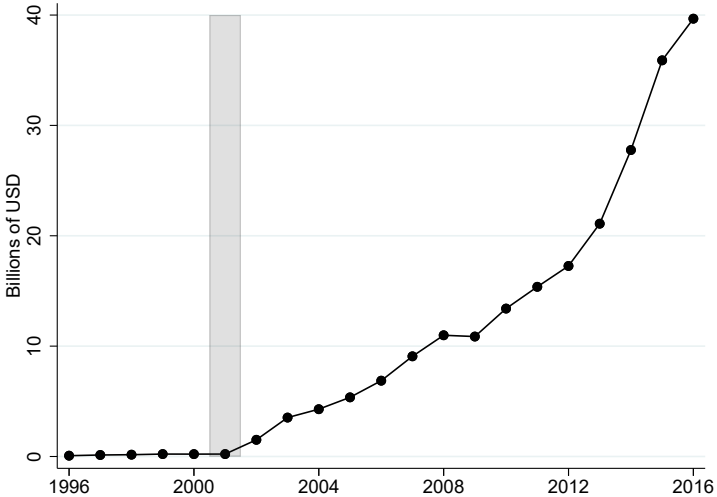
Vietnamese manufacturing exports to the U.S.



BTA