Discussion of: The Long-Run Labor Market Effects of the Canada-US Free Trade Agreement

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July 2021

Big Picture

- Great paper!
  - First-order question
  - Clean identification strategy and balanced evaluation
  - Well-written and clear
- Evidence on US manufacturing workers and trade shocks
  - Workers lose jobs, earnings, start Tea Party, and die of overdoses
  - Non-manufacturing workers in shocked labor markets also hurt
- Compelling evidence that trade leads to reallocation
  - Limited/no cumulative earnings effects
  - Low-attachment workers reallocate to other industries and sectors
  - Effects concentrated in large firms

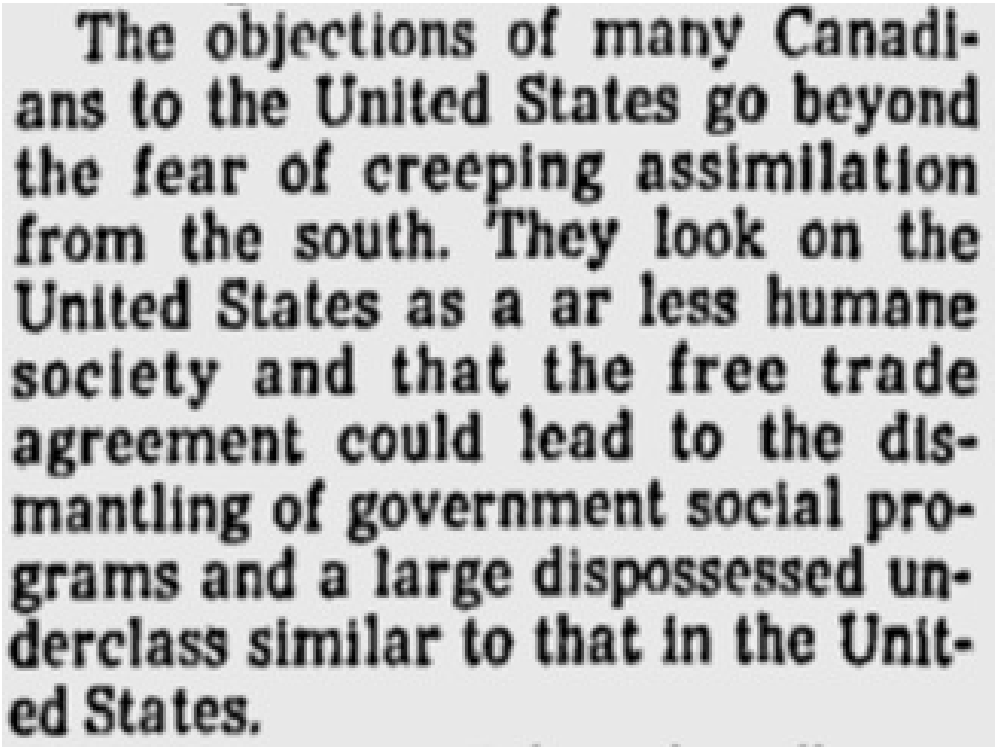
Background on CUFSTA

- NYT, Aug 29, 1988 quotes John N. Turner, the Liberal leader, in a June speech to the Commons

"We are here to debate a bill which will finish Canada as we know it and replace it with a Canada that will become nothing more than a colony of the United States. It is a dream come true for Americans. At long last they have found a Government in Ottawa dumb enough, stupid enough, patsies so craven in the face of American demands that they just caved in to every request made of them."

Concerns over displaced workers and an 'underclass'

- Beaver County Times, Nov 25, 1988

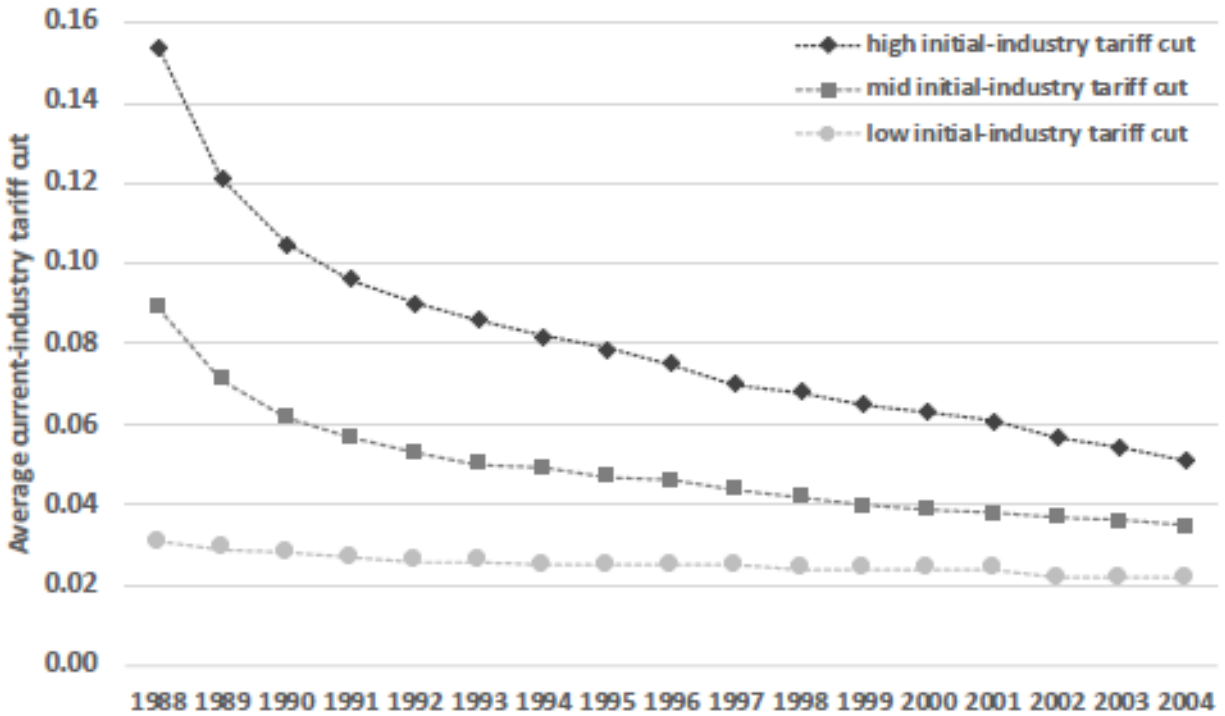


The objections of many Canadians to the United States go beyond the fear of creeping assimilation from the south. They look on the United States as a ar less humane society and that the free trade agreement could lead to the dismantling of government social programs and a large dispossessed underclass similar to that in the United States.

- Similar to concerns (and effects) of US-China trade

Instead, affected workers reallocated to other sectors

Figure 5: Evolution of Canadian Tariff-Cut Exposure: Low Attachment Workers



- Low-attachment workers move to less affected sectors

Reallocation from manufacturing to other sectors

Table 2: Years Worked (1989-2004)

	(1) Total	(2) Initial Firm	(3) Initial Ind.	(4) Manuf.	(5) Constr.	(6) Mining	(7) Agric.	(8) Services	(9) Unknown
Panel A: Low Attachment (n=20,577)									
$-\Delta \ln(1+\tau_j^{CAN})$	-1.013	-6.477**	-2.661	2.598	1.635**	0.467	-0.657	4.014**	0.0686
	(1.284)	(2.701)	(1.712)	(1.766)	(0.766)	(0.358)	(0.549)	(1.567)	(0.0445)
$-\Delta \ln(1+\tau_j^{US})$	-3.030	4.551	6.807**	-9.483***	0.841	-0.181	-0.0663	-5.425*	-0.0728
	(2.319)	(3.884)	(3.064)	(2.844)	(1.731)	(0.576)	(0.993)	(2.955)	(0.0689)
R-squared	0.096	0.132	0.048	0.048	0.046	0.022	0.027	0.062	0.008
Panel B: High Attachment (n=63,128)									
$-\Delta \ln(1+\tau_j^{CAN})$	2.338*	-1.602	-2.899*	4.907	0.955	0.460	-0.588*	1.054	0.0521
	(1.206)	(4.364)	(1.724)	(3.254)	(0.737)	(0.427)	(0.325)	(1.410)	(0.0368)
$-\Delta \ln(1+\tau_j^{US})$	-3.071	8.532	5.095	-9.907*	0.385	-0.292	-0.734	-6.132**	-0.0186
	(1.890)	(7.705)	(4.677)	(5.376)	(1.499)	(0.479)	(0.522)	(2.525)	(0.0616)
R-squared	0.058	0.102	0.035	0.042	0.022	0.028	0.015	0.061	0.004

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- Low-attachment workers' time at initial firm decreasing in import tariff cut...

Reallocation from manufacturing to other sectors

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- Low-attachment workers' time at initial firm decreasing in import tariff cut...but they move to Services & Construction

Reallocation from manufacturing to other sectors

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R-squared	0.058	0.102	0.035	0.042	0.022	0.028	0.015	0.061	0.004

- Low-attachment workers' time at initial firm decreasing in import tariff cut...but export tariff cut positive ("Feenstra Effect")

Comment 1: Why does reallocation occur in Canada?

- Results differ from the US response to China's WTO accession
  - Autor et al. (2013, 2014) find increased unemployment, SSDI
  - Pierce and Schott (2020) displaced workers overdose on opiods
- Likely explanations for different reallocation response:
  - Differences between the US vs Canadian labor market
  - Differences in the trade shock

Add an unemployment category to this table!

Table 2: Years Worked (1989-2004)

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	(1.284)	(2.701)	(1.712)	(1.766)	(0.766)	(0.358)	(0.549)	(1.567)	(0.0445)
$-\Delta \ln(1+\tau_j^{US})$	-3.030	4.551	6.807**	-9.483***	0.841	-0.181	-0.0663	-5.425*	-0.0728
	(2.319)	(3.884)	(3.064)	(2.844)	(1.731)	(0.576)	(0.993)	(2.955)	(0.0689)
R-squared	0.096	0.132	0.048	0.048	0.046	0.022	0.027	0.062	0.008
Panel B: High Attachment (n=63,128)									
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	(1.206)	(4.364)	(1.724)	(3.254)	(0.737)	(0.427)	(0.325)	(1.410)	(0.0368)
$-\Delta \ln(1+\tau_j^{US})$	-3.071	8.532	5.095	-9.907*	0.385	-0.292	-0.734	-6.132**	-0.0186
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R-squared	0.058	0.102	0.035	0.042	0.022	0.028	0.015	0.061	0.004

- How much time do Canadian workers spend in unemployment?

Canada has higher unemployment *and* LFP rates

Fig. 5.2 Differences in labor market activity rates, Canada minus the United States

Note: LFPR means labor force participation rate.

Source: Card and Riggel (1993)

- Labor force participation growing in Canada
- UI (EI) Recipiency rates in 1986: US - 25% vs CA - 60%
- Recipiency rates more equal across demographic groups in CA

No significant total earnings losses

Table A8: Cumulative Normalized Earnings (1989-2004)

	(1) Total	(2) Initial Firm	(3) Initial Ind.	(4) Manuf.	(5) Constr.	(6) Mining	(7) Agric.	(8) Services	(9) Unknown
Panel A: Low Attachment (n=20,577)									
$-\Delta \ln(1+\tau_j^{CAN})$	-6.142	-13.21***	-4.455	4.314	4.311**	1.446	-1.203	2.614	0.0449
	(6.742)	(4.853)	(3.802)	(5.614)	(1.742)	(1.117)	(0.839)	(4.619)	(0.224)
$-\Delta \ln(1+\tau_j^{US})$	14.74	12.34	3.107	-7.687	3.783	0.263	-0.858	2.800	0.988
	(12.67)	(9.066)	(6.182)	(10.52)	(2.811)	(2.028)	(1.424)	(10.66)	(0.722)
R-squared	0.141	0.048	0.017	0.038	0.030	0.021	0.017	0.123	0.005
Panel B: High Attachment (n=63,128)									
$-\Delta \ln(1+\tau_j^{CAN})$	0.542	-3.007	-2.101	4.822	0.794	0.570	-0.385	-0.195	0.0435
	(3.295)	(5.698)	(2.263)	(3.649)	(0.817)	(0.591)	(0.307)	(2.108)	(0.0437)
$-\Delta \ln(1+\tau_j^{US})$	0.627	11.69	0.285	-8.773	1.216	-0.554	-0.803*	-2.417	-0.0213
	(4.197)	(9.409)	(5.188)	(5.849)	(1.700)	(0.847)	(0.435)	(3.020)	(0.0592)
R-squared	0.121	0.070	0.029	0.052	0.023	0.024	0.014	0.077	0.004

- Do affected workers disproportionately use EI benefits?
- Valuable input into current US debate on facilitating reallocation!

Comment 2: Foreign sourcing is a potential channel

- Authors focus on import competition channel
- Import tariff cuts consist of a mix of inputs and outputs
- Cheaper inputs are different from increased competition
- Effects at large firms entirely consistent with offshoring!

Market expected firms to gain from cheaper inputs

Table 7
Input tariffs and MNE status as controls.

	(1)	(2)	(3)
	Return	Return	Return
$d_e * d_x$	−0.011	−0.009	−0.016
	(12.645)**	(13.394)**	(8.249)**
$d_e * d_x * d\tau_{US}$	−0.395	−0.555	−0.480
	(17.511)**	(15.780)**	(10.915)**
$d_e * d_x * d\tau_{CAN}$	−0.011	0.003	0.011
	(2.581)*	(0.487)	(2.148)*
$d_e * d_x * d\tau_{INPUT}$	−0.118		−0.192
	(6.162)**		(3.819)**
$d_e * d_{MNE}$		0.018	0.017
		(10.840)**	(10.509)**
$d_e * d_{MNE} * d\tau_{US}$		0.681	0.649
		(6.760)**	(6.252)**
$d_e * d_{MNE} * d\tau_{CAN}$		0.045	0.042
		(0.987)	(0.928)
Firms	247	194	194
Event window	Nov. 21–22	Nov. 21–22	Nov. 21–22
Length event window	2 days	2 days	2 days
Observations event window	494	388	388

Notes. Table shows cumulative average abnormal returns from market-model OLS regressions (figures in brackets are t-stats based on standard errors clustered per trading day).

Source: Breinlich (2014)

- Expected returns of input tariff cuts higher for larger firms

Input versus output cuts may have opposite effects

Table 8: IV Estimates of Chinese exposure and firm-level employment changes

	$\Delta\left(\frac{Emp_f^{Man}}{Emp_f^{Total}}\right)$	$\Delta\left(\frac{Emp_f^{MPRO}}{Emp_f^{Total}}\right)$	$\Delta ln\left(Emp_f\right)$	$\Delta ln\left(Emp_f^{Man}\right)$
$\Delta Exposure_f^{Output}$	-0.001	-0.033**	-1.698***	-1.747***
	0.0252	0.0164	0.633	0.658
$\Delta Exposure_f^{Input}$	-0.406***	0.275***	0.922	-0.087
	0.119	0.0583	2.159	2.316
Constant	0.002**	-0.001	0.041**	0.045**
	0.00	0.00	0.02	0.02
Observations	72,500	72,500	72,500	72,500

Notes: * p<0.10, ** p<0.05, *** p<0.01.
First Stage KP F-stat 17.33
Standard errors clustered at the industry level.

Source: Ding, Fort, Redding, Schott (2020)

CUFSTA increased US manufacturers' specialization

- US firms with above-median import tariff cuts dropped products and skewed shipments towards top product

TABLE I

U.S. MANUFACTURING FIRM SCOPE DURING THE CANADA–U.S. FREE TRADE AGREEMENT

	[1]	[2]	[3]
Change in products	−0.059	−0.624	−0.572
	0.015	0.101	0.096
Change in entropy	0.011	0.156	0.153
	0.003	0.026	0.026
Firm observations	66,472	66,472	66,472
Major industry dummy variables	No	Yes	Yes
Log 1987 employment	No	No	Yes

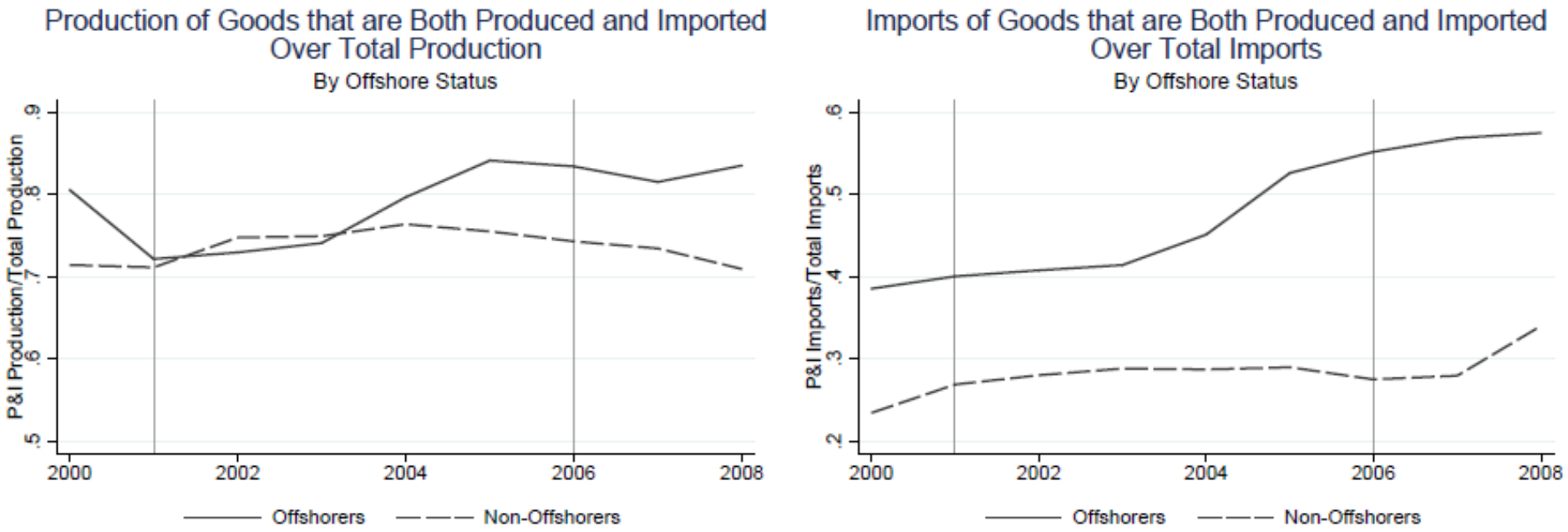
Notes. Table reports mean difference in noted variable between surviving firms experiencing above- and below-median changes in Canadian export opportunities between 1987 and 1992. Each cell reports the mean difference and associated standard error from a separate OLS regression. Change in products refers to change in number of five-digit SIC categories produced in the United States. Change in entropy is defined in the text. Change in export opportunities refers to the output-weighted average change in Canadian tariffs across the four-digit SIC industries produced by the firm. Robust standard errors are clustered according to

Source: Bernard, Redding, Schott (2011)

- Canadian firms dropped plants outside their 'core competency' (Lileeva 2008)

Offshoring firms produce and import the same goods

Figure 5: Imports and production of produced-and-imported goods, by firm offshore status



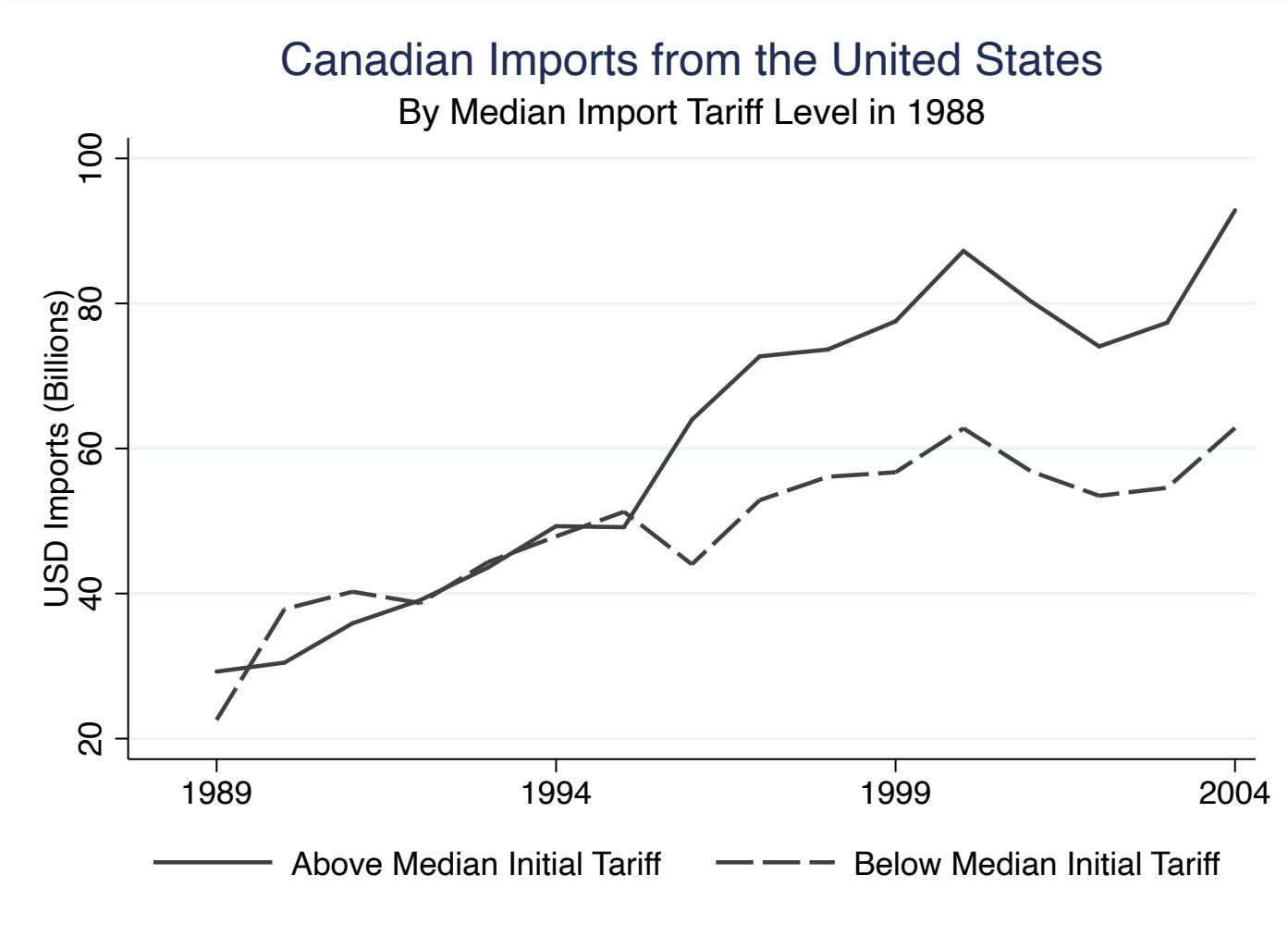
Source: Bernard, Fort, Smeets, Warzynski (2021)

- Offshoring firms specialize in core products at home and abroad, shed production workers but increase sales and tech workers
- CUFSTA led to reductions in production workers (Beaulieu 2003)

Comment 3: Exploit trade data for mechanisms

- Authors aggregate 7,240 HS8 codes to 78 NAICS codes
- Specifications are all “reduced-form”
  - Regress outcome variables on the instrument
  - Great for clean, identified ‘second-stage’ results!
- Potential for detailed trade flows to provide insight on:
  - Timing of the employment responses
  - Types of imports that grow (e.g., inputs versus final goods)

Significant share of tariffs go to zero after 5 years



Source: Discussant's calculations using authors' tariff data and US exports from Schott (2008)

- Slow employment responses may reflect gradual implementation

Comment 4: The mass-layoff result

- Document no effect of CUFSTA on probability of mass layoffs
  - Define layoff as 70% decline of observed firm employment
  - Positive impact of Chinese import penetration
  - Better to use Canadian import penetration (tell how bad this is!)
- Yet Trefler (2004) shows considerable plant exit
  - Plant exit more likely by big firms (Bernard and Jensen 2007)
  - Sourcing to China likely higher fixed cost than US
- Use this setting to examine hiring of non-manufacturing workers
  - US manufacturing firms grow total employment
  - These workers largely missing but easy to consider

Appendix

Input tariff cuts increase firm productivity

TABLE 4—BASIC RESULTS

Dependent variable: $\ln(TFP_{it})$	(1)	(2)	(3)	(4)	(5)	(6)
Output tariff$_t^k$	−0.206***	−0.070*	−0.092**	−0.096**	−0.096**	−0.095**
	(0.033)	(0.042)	(0.043)	(0.043)	(0.043)	(0.043)
Input tariff$_t^k$		−0.441***	−0.318***	−0.315***	−0.315***	−0.325***
		(0.062)	(0.063)	(0.063)	(0.063)	(0.063)

Source: Amiti and Konings (2007)

- Similar importance of input trade in India (Goldberg et al. 2010)

Tariff cuts increase years worked for some workers

Table A14: Years Worked, by Income Group (1989-2004)

	(1) Total	(2) Initial Firm	(3) Initial Ind.	(4) Manuf.	(5) Constr.	(6) Mining	(7) Agric.	(8) Services	(9) Unknown
Panel A: Low Income (n=27,902)									
$-\Delta \ln(1+\tau_j^{CAN})$	-2.351***	-5.834**	-2.182	0.866	1.110	0.345*	-0.734	4.015***	0.0641
	(0.803)	(2.808)	(1.508)	(2.109)	(0.698)	(0.202)	(0.496)	(1.422)	(0.0462)
$-\Delta \ln(1+\tau_j^{US})$	-0.596	4.887	7.261***	-8.287***	0.0845	-0.254	-0.291	-3.919*	-0.0781
	(1.787)	(3.991)	(2.578)	(2.590)	(1.271)	(0.300)	(0.950)	(2.169)	(0.0604)
R-squared	0.091	0.134	0.056	0.051	0.046	0.019	0.027	0.066	0.006
Panel B: High Income (n=27,901)									
$-\Delta \ln(1+\tau_j^{CAN})$	4.409***	0.448	-5.150**	8.765***	1.508	0.567	-0.182	-1.640	0.0920
	(1.414)	(4.649)	(2.129)	(2.912)	(1.004)	(0.853)	(0.285)	(2.394)	(0.0699)
$-\Delta \ln(1+\tau_j^{US})$	-4.159	16.68	-6.198	-9.498	0.699	-0.847	-0.892**	-4.165	-0.0264
	(3.009)	(12.15)	(6.297)	(9.316)	(2.023)	(0.903)	(0.377)	(4.635)	(0.0898)
R-squared	0.083	0.108	0.055	0.046	0.020	0.039	0.011	0.049	0.005

- High-income workers increase work in other industries. Gains from reallocation?

Positive earnings effects for high-income workers!

Table A17: Cumulative Normalized Earnings, by Income Group (1989-2004)

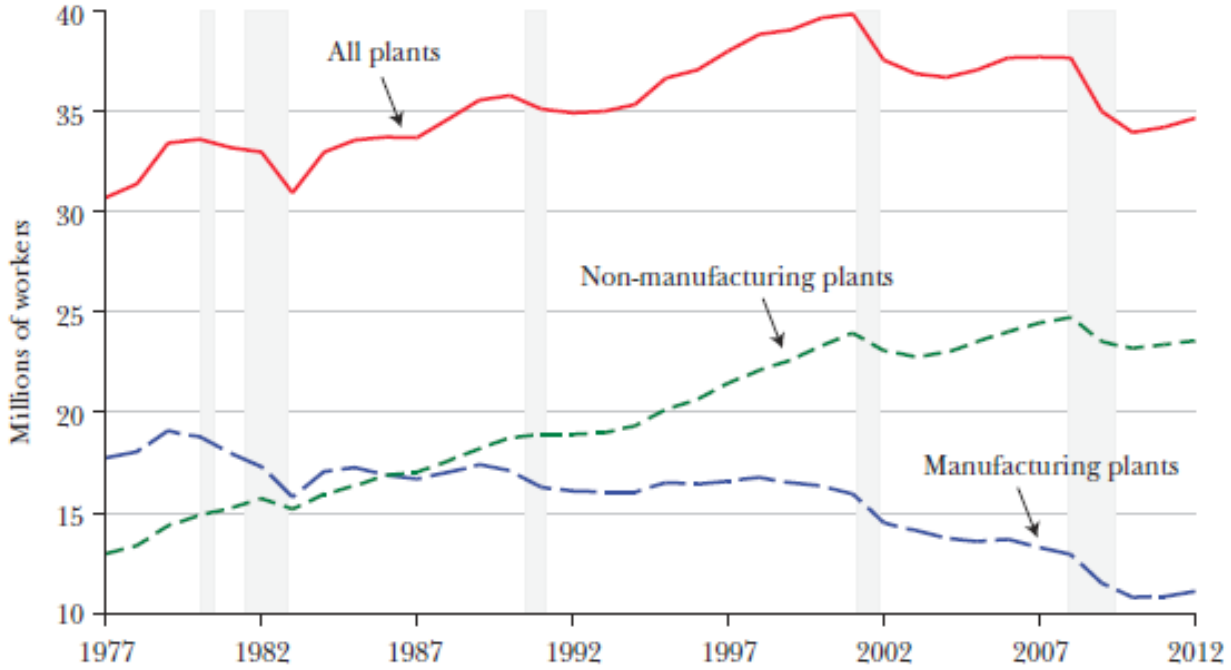
	(1) Total	(2) Initial Firm	(3) Initial Ind.	(4) Manuf.	(5) Constr.	(6) Mining	(7) Agric.	(8) Services	(9) Unknown
Panel A: Low Income (n=27,902)									
$-\Delta \ln(1+\tau_j^{CAN})$	0.719	-3.682	-1.834	2.626	1.504*	0.492	-0.675	2.277	–
	(3.532)	(2.997)	(1.653)	(3.052)	(0.759)	(0.353)	(0.437)	(2.079)	
$-\Delta \ln(1+\tau_j^{US})$	8.985	5.094	2.342	-3.652	1.477	-0.328	0.135	3.541	–
	(5.790)	(4.677)	(2.513)	(4.587)	(1.376)	(0.710)	(0.818)	(4.079)	
R-squared	0.124	0.053	0.014	0.033	0.025	0.013	0.019	0.114	0.009
Panel B: High Income (n=27,901)									
$-\Delta \ln(1+\tau_j^{CAN})$	1.482	-1.514	-1.010	5.752***	0.532	0.326	-0.0307	-2.611*	0.0382
	(1.714)	(2.965)	(1.191)	(2.015)	(0.475)	(0.354)	(0.111)	(1.426)	(0.0283)
$-\Delta \ln(1+\tau_j^{US})$	2.808	16.47***	-6.550**	-0.498	0.655	-0.976	-0.448**	0.154	0.00419
	(2.728)	(5.686)	(2.790)	(4.444)	(0.849)	(0.654)	(0.197)	(1.644)	(0.0409)
R-squared	0.081	0.087	0.057	0.044	0.017	0.026	0.008	0.044	0.005

- High-income workers in affected industries earn more in other manufacturing industries. Gains from reallocation?

US manufacturing firms grow in other sectors

Figure 7

Employment at Manufacturing Firms Decomposed into Employment at Manufacturing versus Non-Manufacturing Establishments, 1977–2012



Source: Longitudinal Business Database and author's calculations.
Note: Manufacturing firms are defined as any firm observed to have a manufacturing establishment during the sample period. The shading corresponds to NBER-dated recessions.

Source: Fort, Pierce, and Schott (2018)

- US manufacturing plants switch sectors in response to China (Bloom et al. 2019)