

Export markets and labor allocation in a poor economy

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IGC Ideas for Growth: Trade Session

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BREAD, CEPR, IGC, NBER

Motivation

- Labor allocation across heterogeneous economic units (sectors, employers) has consequences for aggregate productivity
 - Kuznets (1966)
 - Caselli (2005), Rodrik and McMillan (2011)
 - Foster, Haltiwanger, Syverson (2008), Banerjee and Duflo (2005), Restuccia and Rogerson (2008), Hsieh and Klenow (2009)

Motivation

- Systematic relationship between level of development and employment in small, household-run businesses (Kuznets (1966), Golin (1988, 2002), Banerjee and Duflo (2006, 2008), La Porta and Shleifer (2008))
- Does not only reflect large agricultural sector
 - 80% of manufacturing employment in India (Nataraj (2011), HK(2011))
 - 66% of manufacturing employment in Vietnam
- Large labor productivity differences between household-run businesses and other employers

This paper

- Examines how new export opportunities in Vietnam affect labor allocation across heterogeneous employers
- Focuses on the U.S.-Vietnam Bilateral Trade Agreement (BTA) implemented in December 2001
- Uses data from the Vietnam Household Living Standards Survey (VHLSS) spanning the BTA
 - Labor force module
 - Rare opportunity to examine economy-wide labor force responses to international trade in all employers

Contributions

- Margin of adjustment
 - work for a hh business vs. registered employers in formal enterprise sector
- Existing trade studies focus on compliance with payroll taxes in formal manufacturing **sector** (Goldberg and Pavcnik (2003), Harrison, McMillan, and McLaren (2011), Menezes-Filho and Muendler (2011), Paz (2012))

Contributions

- Nature of trade reform: increased exporting opportunities
 - Policy emphasis on export market access through bilateral and regional free trade agreements, multilaterally in WTO
- Differential effects of exporting opportunities on firm outcomes (Verhoogen (2008), Bustos (2011), Trefler (2004), Brambilla et. al. (2012))
- Large literature on labor market consequences/labor reallocation of unilateral import tariff reforms (Goldberg and Pavcnik (2007), Harrison, et. al. (2011), Kovak (2010), Topalova (2010), Menezes-Filho and Muendler (2011))
- Declines in poverty/increases in wages in geographic areas of VN with greater pre-BTA concentration of industries that benefited from new exporting opportunities (McCaig (2011))

Roadmap

- Conceptual framework
- The nuts and bolts of this study
 - The U.S-Vietnam Bilateral Trade Agreement
 - Data description
 - Household business definition
 - Empirical methodology
- Findings
- Conclusions

Export Markets and Hh Business Employment

- Expansion in exports due to declines in US tariffs on Vietnamese exports
- Export opportunities differentially affect profitability of firms within an industry
 - Hh businesses differ from other firms in several dimensions
 - Suppose hh businesses simply less productive than other firms (Melitz (2003))
 - Initially more productive firms expand output and employment
 - Less productive, smaller firms contract and/or exit
 - Labor reallocates from less to more efficient firms

Export Markets and Hh Business Employment

- Household businesses do not directly export and/or compete with exporting firms on product markets
- Hh businesses might compete for labor with larger, more formal firms
 - Export opportunities increase labor demand/higher earnings among exporters
 - Increases the opportunity costs of working in a household business
 - Labor reallocates away from household businesses toward other employers
- Increased wages in geographic areas of VN with greater pre-BTA concentration of exporting industries (McCaig (2011))

U.S.-Vietnam BTA

- Implemented in December 2001
- Negligible changes in VN import tariff commitments to US
 - MFN tariffs to the US prior to the agreement
 - Long term commitment to improve market access in services, IPR, FDI
- US grants Vietnam “Most Favored Nation” status
 - Vietnam moved from Column 2 to MFN tariff schedule
- Tariffs decline on average by 21.1 percentage points
 - from 23.4 to 2.4%
 - declines vary across industries (St. dev. is 17.9 ppt)

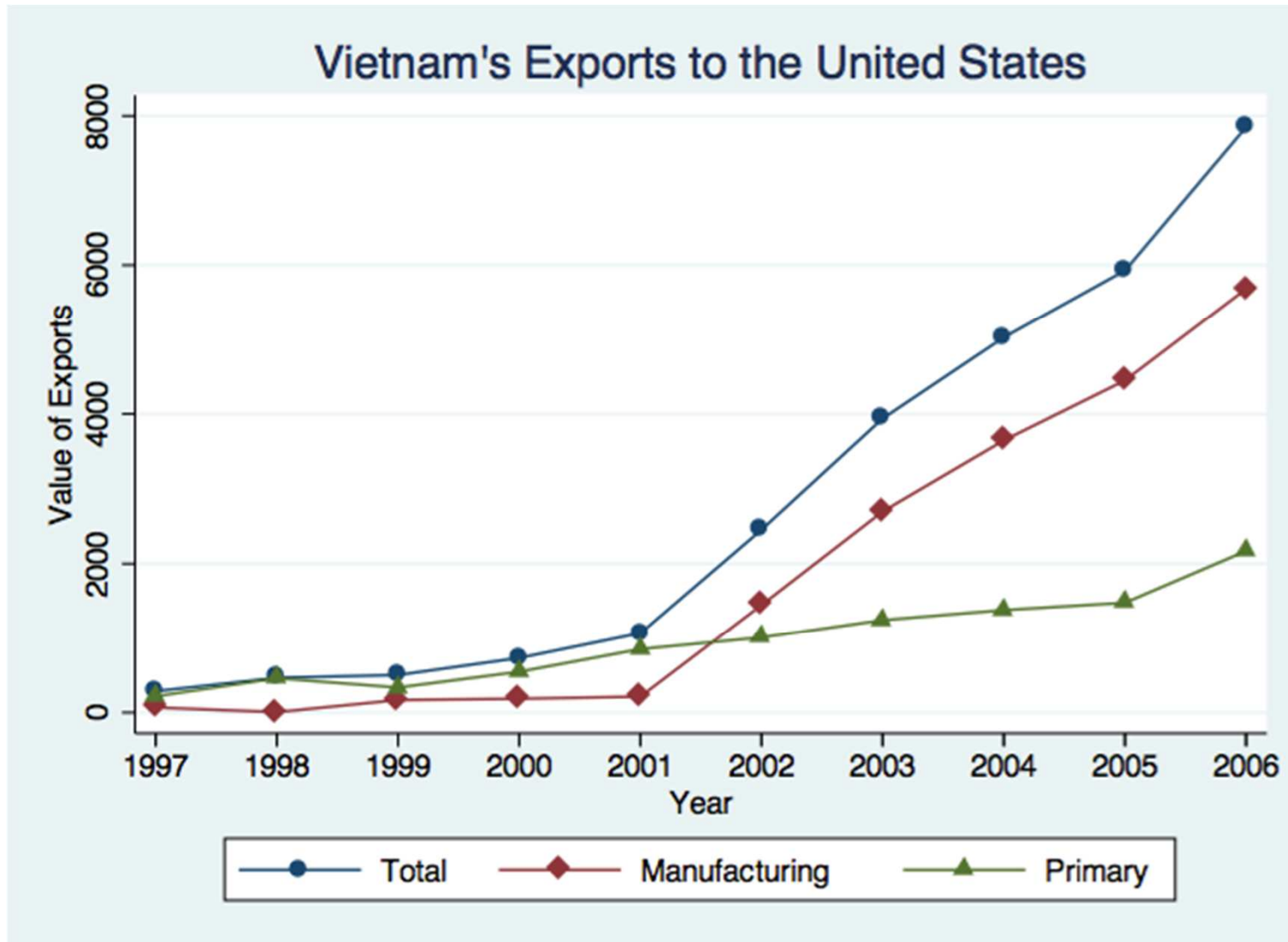
U.S. tariffs on Vietnamese exports

	Mean pre-BTA tariff (Column 2)	Mean post-BTA tariff (MFN)	Mean tariff cut	Standard deviation
Agriculture, hunting & forestry	0.091	0.017	0.074	0.007
Fishing	0.013	0.002	0.012	
Mining	0.021	0.001	0.020	0.025
Manufacturing	0.338	0.034	0.303	0.153
Other	0.060	0.004	0.057	0.179
Total	0.234	0.024	0.211	0.179

Average ad-valorem tariffs

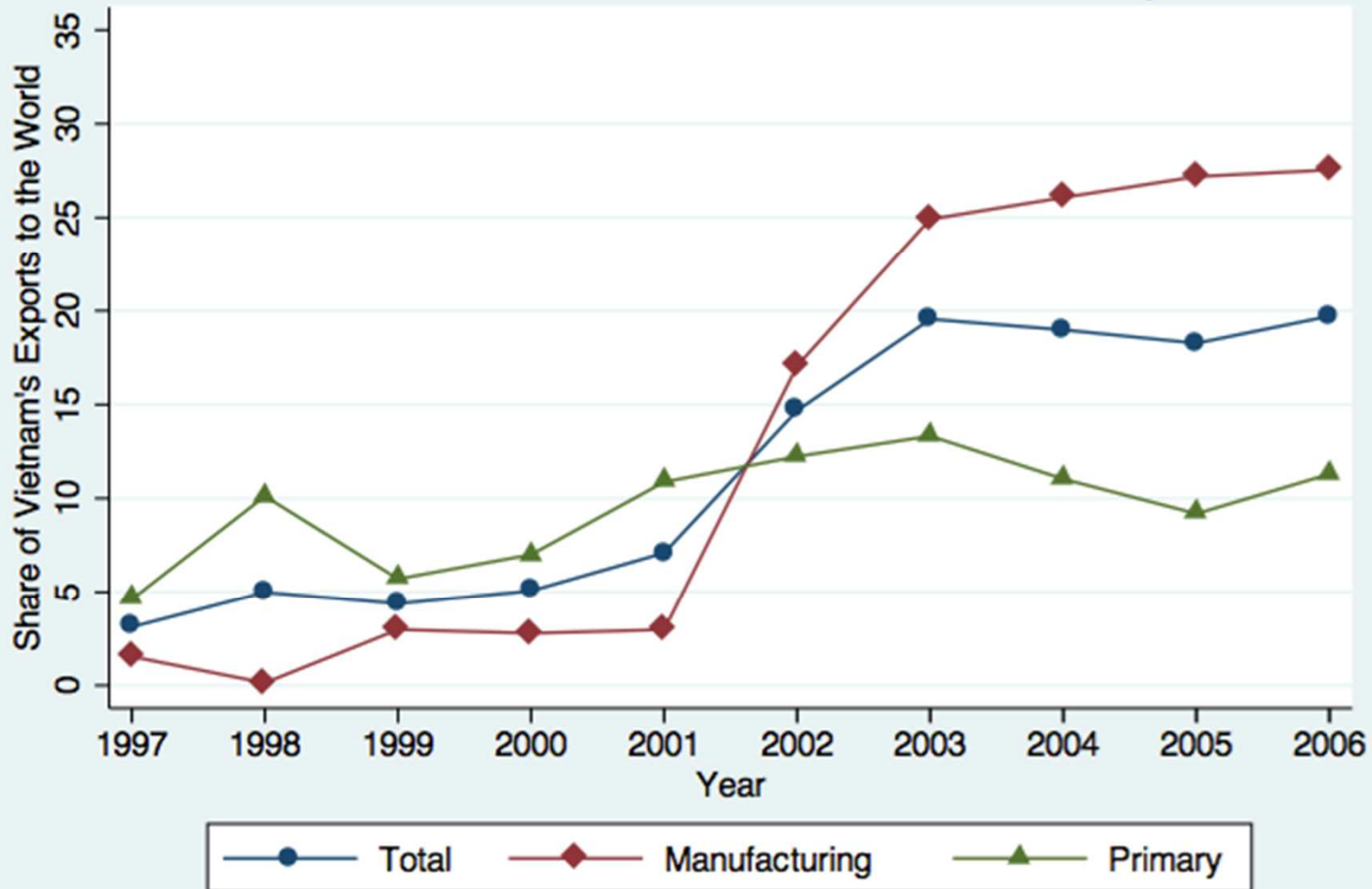
U.S.-Vietnam BTA

- Leads to large export growth to the U.S.



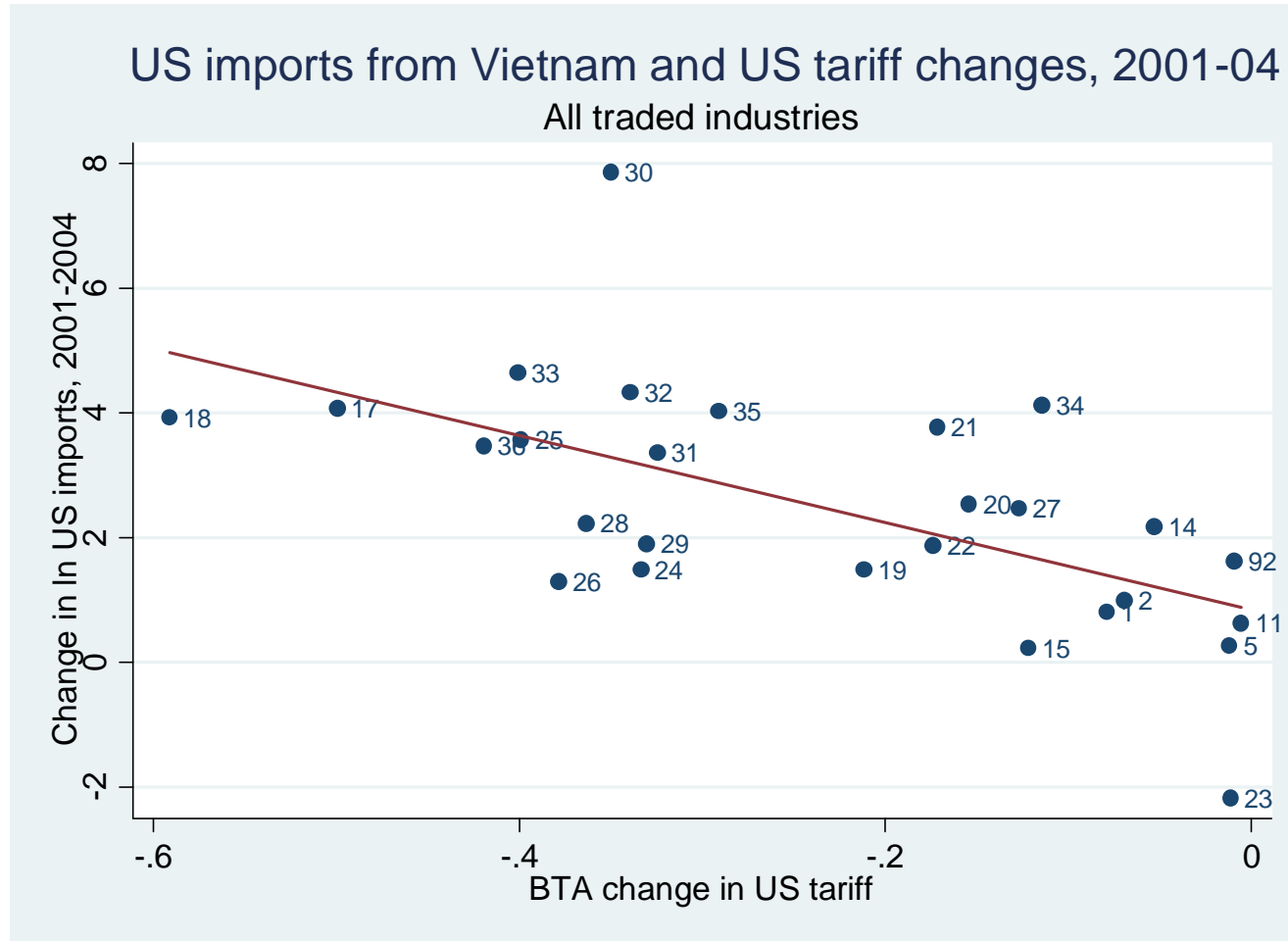
- rapid expansion of trade, concentrated in manufacturing
- value of exports to the US more than triples 2001-2004

Share of the United States in Vietnam's Exports



- Growth in exports to the US as a share of total VN exports
- Overall: 5.1% in 2000 to 20.2% in 2004
- Manufacturing: <5% in 2000 to 25% in 2004

Tariff declines and Export expansion



Industries with bigger tariff declines experience bigger export growth

15--this pattern not pronounced in pre-reform data, nor exports to the EU

Exports to the U.S.

ISIC rev. 3 industry	2004 Value (million USD)	Annual Growth 2001 to 2004 (%)	Share of exports to U.S. in 2004 (%)
Wearing apparel	2056	273	40.1
Luggage, handbags, saddlery, harness, and footwear	588	63	11.5
Textiles	577	293	11.2
Food products and beverages	570	7	11.1
Furniture	433	213	8.4
Agriculture	349	33	6.8
Refined petroleum	213	11	4.1
Office, accounting, & computing machinery	49	1290	1.0

Worker-level Data

- Vietnam Household Living Standards Surveys
 - nationally representative hh survey w/ labor market module
 - Two cross sections 2002, 2004
 - 12 month recall (cover 2001 and 2003)
 - Panel subcomponent
 - 1993 and 1998 VLSS for falsification checks
- Usual information on worker demographic characteristics, education, location, industry affiliation

Household business Employment

- Informality is a multidimensional concept
- Vietnam: household businesses vs. registered enterprises
 - All foreign, state, and collective businesses have to legally register as an enterprise
 - Private businesses can legally operate as a
 - household business
 - registered private enterprise

Hh business employment

- Information on employer type
 - Self-employment (household farm or a household businesses)
 - Work for another household's business
 - Private sector, foreign business, state
- Indicator for working in a household business
 - 1 if self-employed or work for another household's business; 0 if other employer)
- Abstract from reallocation of workers within employer groups

Vietnamese non-farm HH businesses

- Predominantly operate in services (70%)
 - 40% in retail, 10% in hotels and restaurants
- 30% operate in manufacturing
- The most common activities within the manufacturing sector
 - Food and beverages (42.6%)
 - Wood processing (17.9%)
 - Clothing and apparel; dressing and dyeing of fur (11.0%)
 - Manufacture of furniture; manufacturing n.e.c. (8.4%)
 - Textiles (7.9%)

Hh businesses vs. Registered Enterprises: Working conditions

- Hh businesses
 - smaller (1.6 workers vs. 63.8 workers)
 - 7% lower per capita hh expenditure in households with household head (self)employed in a hh business than observationally equivalent families
 - Individuals less likely to work for wages
 - Conditional on earning wages, 14% lower earnings than observationally equivalent worker in same industry, occupation, and province
 - 5% lower earnings for switchers
 - Individuals less likely to receive some form of benefits

Employment in household businesses

All industries		Excluding agriculture and fisheries		Manufacturing	
2002	2004	2002	2004	2002	2004
0.847	0.814	0.672	0.626	0.657	0.601

-large economy-wide, in non-agricultural sectors, manuf.

-declines over time (8.5% drop in manufacturing)

Decomposition of changes in hh business employment

	All industries	Excluding agriculture & aquaculture	Manufacturing
Within			
Industry	-0.017	-0.040	-0.059
Between			
Industry	-0.016	-0.006	0.003
Total	-0.033	-0.046	-0.056

- Economy-wide, both channels play similar role (about 50%)
- Agriculture/aquaculture plays an important role in the between channel
- Within channel dominates outside of agriculture

Household business employment and tariffs

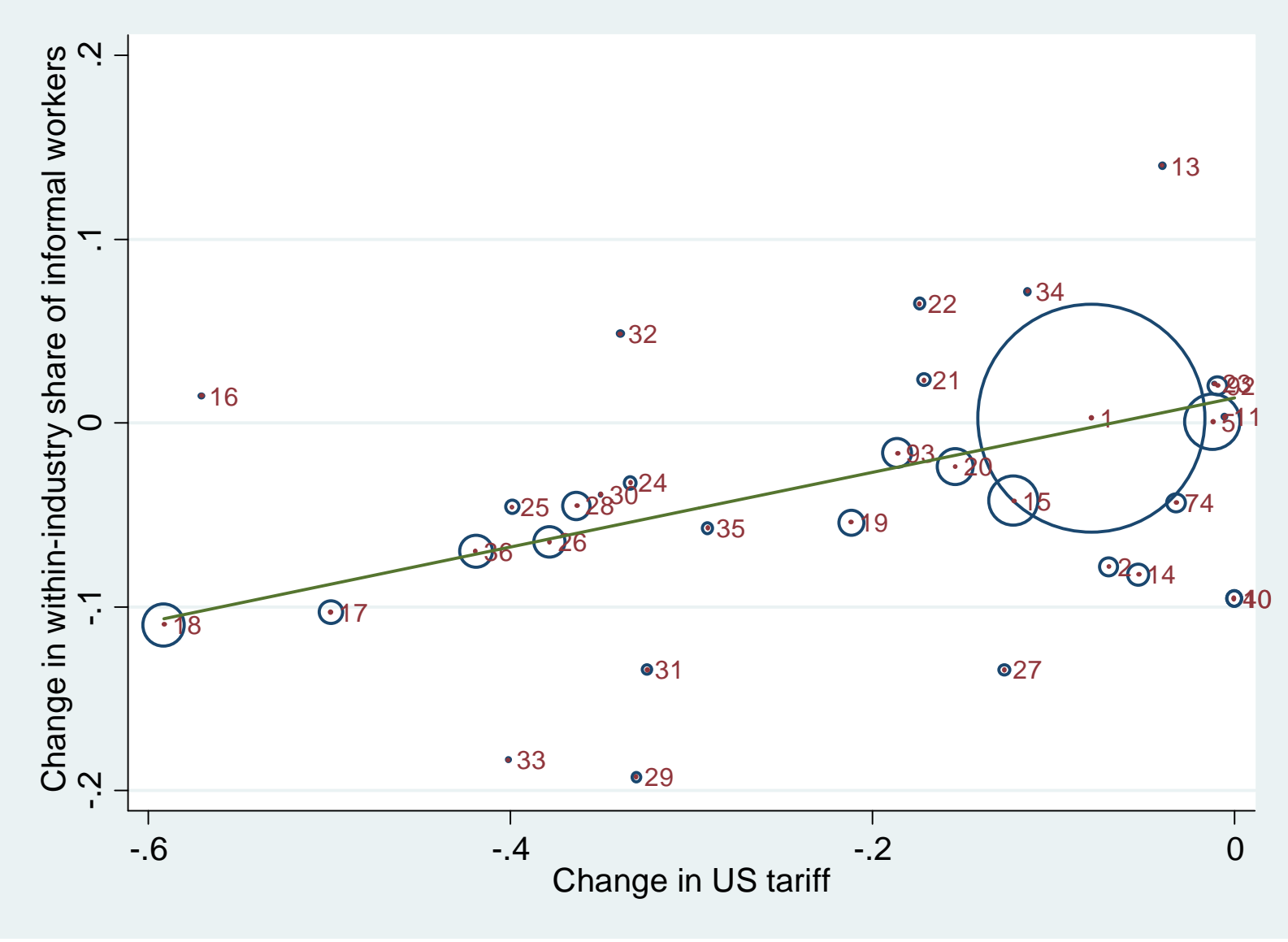
- The relationship between employment in a household business and industry tariffs:

$$H_{ijt} = X_{ijt}\beta_D + \beta\text{tariff}_{jt} + \lambda_j + t_t + p_p + \varepsilon_{ijt}$$

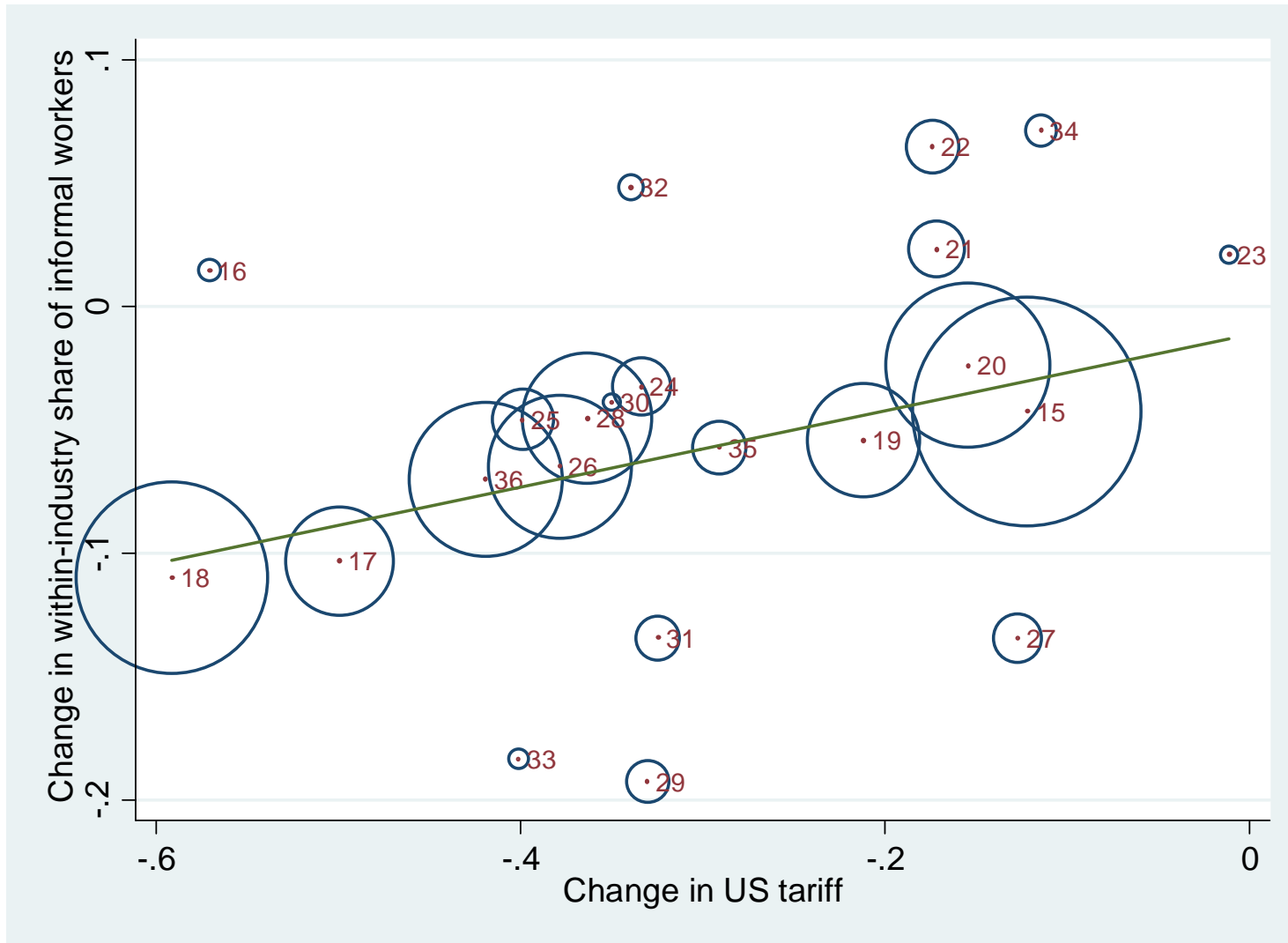
where

- H is an indicator for employment in hh business
- X is a vector of individual characteristics (age, age squared, education indicators, gender, minority, rural indicator)
- tariff is the U.S. tariff in industry j at time t
- λ is an industry fixed effect
- t is a time fixed effect
- p is a province fixed effect

Hh business employment and tariffs



Hh business employment and tariffs: manuf.



Hh business employment and tariffs

	(1)	(2)	(3)
	Traded	All industries	Manufacturing
Industry tariff	0.210*** (0.014)	0.125*** (0.034)	0.164*** (0.020)
Worker characteristics	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Industry fixed effects?	Yes	Yes	Yes
Province fixed effects	Yes	Yes	Yes
Number of industries	34	60	22
Observations	176,546	248,793	27,072
R-squared	0.415	0.591	0.293

--Traded: Avg. tariff declines 21.1 pct. point → 4.4 pct. point decline in hh business employment

--Manufacturing: Avg. tariff decline 30.3 pct. point → 5.0 pct point decline

Falsification test

- Pre-reform data from 1993 and 1998 VLSS
 - Pre-BTA tariffs are assigned to 1993 and post-BTA tariffs are assigned to 1998
- In 1993 we cannot separately identify working for someone else's household business and working for a private sector business
 - Use indicator for being self-employed as a dependent variable

No relationship prior to reform

	(1)	(2)	(3)
	Traded	All industries	Manufacturing
<hr/>			
Reform period			
Industry Tariff	0.212*** (0.0409)	0.127*** (0.0396)	0.201*** (0.0510)
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Only Pre-reform			
Industry tariff	0.0360 (0.0337)	0.0142 (0.0350)	-0.00480 (0.102)

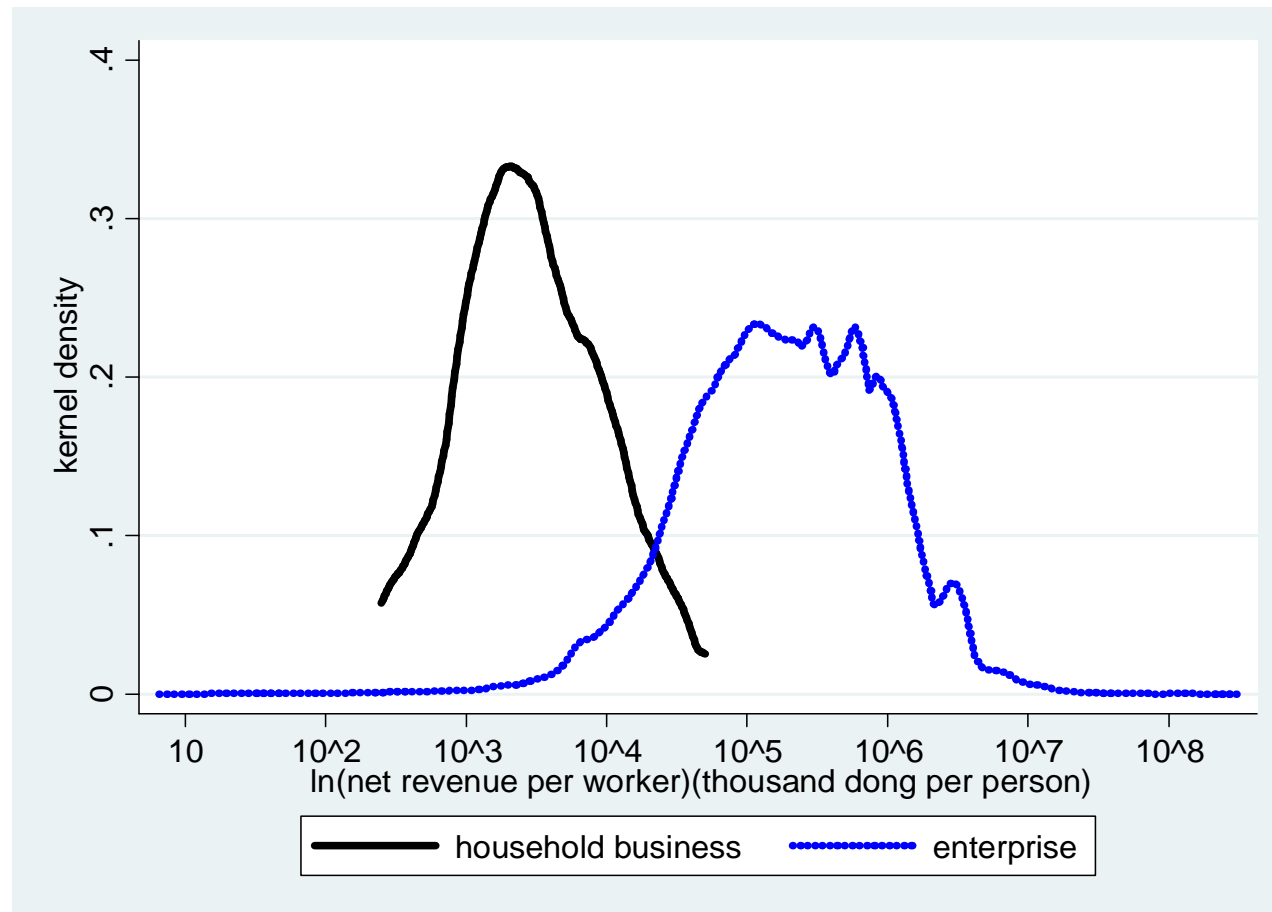
Additional Results

- Falsification Check: No relationship prior to reform
- Greater effects for younger cohorts
- Greater effects for individuals in internationally integrated provinces
- Results robust to inclusion of individual fixed effects in a panel subsample

Greater industry expansion in enterprise sector

	(1)	(2)	(3)
	Traded	All	Manu.
Enterprise Sector			
Tariff	-0.0254**	-0.0105*	-0.024
	(0.0114)	(0.00540)	(0.017)
All			
Tariff	-0.00445	-0.000137	0.00410
	(0.00557)	(0.00256)	(0.0336)

Labor Productivity: Hh businesses and Enterprises



Large differences in labor productivity

Potential associated productivity gains

- BTA might increase aggregate labor productivity through the reallocation of workers into the enterprise sector
- Manufacturing

Potential associated productivity gains

- Average labor productivity in enterprise sector about 9 times higher than in household businesses
- BTA induces 2.65 percent of manufacturing workers to move from hh businesses to enterprises between 2001 and 2003
- Use standard growth accounting approach to compute associated productivity change
 - 2.8% annual productivity growth due to BTA reallocation
- Aggregate productivity grew by 12% per year
 - BTA reallocation accounts for 23% of this growth

Conclusion

- VN and the BTA provide an excellent setting to examine the impact of export opportunities on labor allocation between hh businesses and formal employers in a low-income country
- Reallocation of labor away from hh businesses with greater export opportunities
- Complements studies on trade and labor reallocation based on matched employee-employer data/formal firms data
 - cover 34% of manufacturing employment in VN, 20% in India
- Implications of labor allocation across heterogeneous employers for aggregate growth
 - Elimination of a product market distortion induces labor reallocation toward more efficient employers