



EXPORTERS IN PAKISTAN AND FIRMS WHO DO NOT EXPORT: WHAT'S THE BIG DIFFERENCE?

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Theresa Chaudhry and Muhammad Haseeb

STYLIZED FACTS ABOUT EXPORTERS

- These are noted in the new literature on international trade based on firm-level data.
 1. Export participation tends to be low and the share of exports in sales varies greatly
 2. Firms export only a relatively small share of sales
 3. Exporting firms tend to be more productive
 4. Exporters are larger (employment)
 5. Exporters are more skill and capital intensive, even in developing countries

DATA USED

- Census of Manufacturing Industries (CMI) 2000-01 for Punjab, and
- World Bank Enterprise Survey data (2006-07) for all Pakistan

- Data for CMI 2005-06 for Punjab available, but missing data on exports
- Newest CMI 2010-11 also failed to ask firms about exports

- On the other hand, the composition of exports did not change much over 2000-2010

1. EXPORT PARTICIPATION TENDS TO BE LOW AND THE SHARE OF EXPORTS IN SALES VARIES GREATLY

Industry	Total Firms (CMI - Punjab)	Percentage Exporting (CMI)	Share of Exports in Total Sales (Exporters only) (CMI)	Total Firms (WB data 2006)	Percentage Exporting (WB data)
Food manufacturing (general)	323	4.95%	0.38	184	6.0%
Textiles	702	22.65	0.55	206	22.8
Wearing apparel	173	54.34	0.93	190	27.9
Leather and products of leather	48	45.83	0.91	74	40.5
Other chemical products	121	9.09	0.17	48	35.4
Iron and steel basic industries	103	1.94	0.28	39	5.1
Fabricated metal products	127	10.24	0.57	35	25.7
Machinery except electrical	132	9.85	0.21	14	7.1
Electrical machinery apparatus	102	13.73	0.30	46	10.9
Total Firms (including sectors not listed here)	2136	21.5%		1122	22.99%

2. FIRMS EXPORT ONLY A RELATIVELY SMALL SHARE OF SALES?

Export Share in Sales	Share of Exporters (CMI-Punjab)	Share of Exporters (WBES)
<0.05	0.12	0.05
0.05-0.15	0.07	0.16
0.15-0.3	0.06	0.07
0.3-0.5	0.05	0.08
0.5-0.7	0.09	0.04
0.7-0.9	0.13	0.07
>0.9	0.48	0.52

Half of exporters in Pakistan have little domestic presence

- CMI-Punjab: 51% of sales are exports, WBES: 67%

- In contrast, Bernard et al (2007) found for the U.S. that only around 14 percent of sales were exports

3. EXPORTING FIRMS TEND TO BE MORE PRODUCTIVE

- Total Factor Productivity
 - Using Hsieh and Klenow (2009)
- Labor Productivity
 - Following OECD methodologies

3. EXPORTING FIRMS TEND TO BE MORE PRODUCTIVE

- We cannot say, however, that exporter status is a causal factor for TFP
- Large literature suggesting that firm differences pre-date exporting;
 - In other words, firms who enter export markets were more productive to begin with
 - Roberts and Tybout, 1997; Bernard and Jensen, 2004
- There is also some literature suggesting that exporting can increase the productivity of exporters further, via “learning by exporting” and investments that complement exporting
 - Côte d'Ivoire (Van Biesebroeck, 2006), India (Mukim, 2011), Korea (Aw, Chung and Roberts, 2000), Slovenia (De Loecker, 2007), Taiwan (Aw et al, 2011).

MEASURES OF TOTAL FACTOR PRODUCTIVITY

- Consider the production function for firm i in sector s :

$$Y_{si} = A_{si} K_{si}^{\alpha_s} L_{si}^{1-\alpha_s}$$

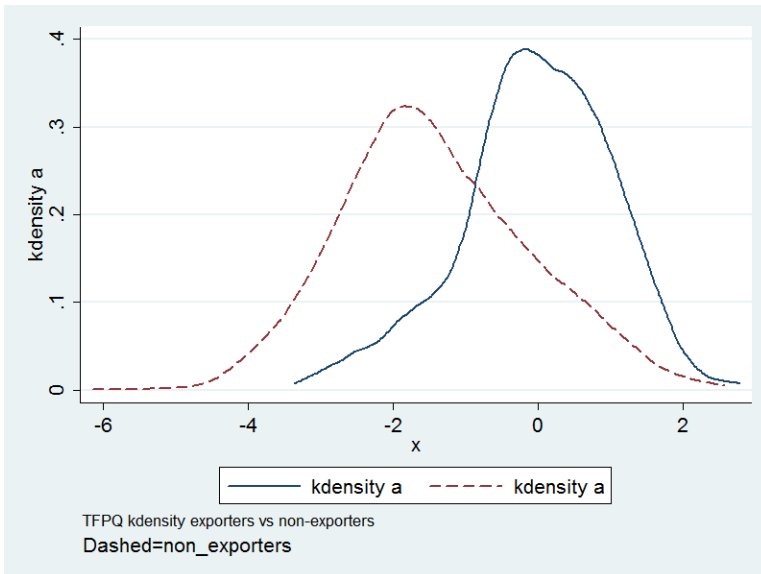
- TFPQ is output productivity
- TFPR is revenue productivity

$$\text{TFPQ}_{si} \triangleq A_{si} = \frac{Y_{si}}{K_{si}^{\alpha_s} (wL_{si})^{1-\alpha_s}}$$

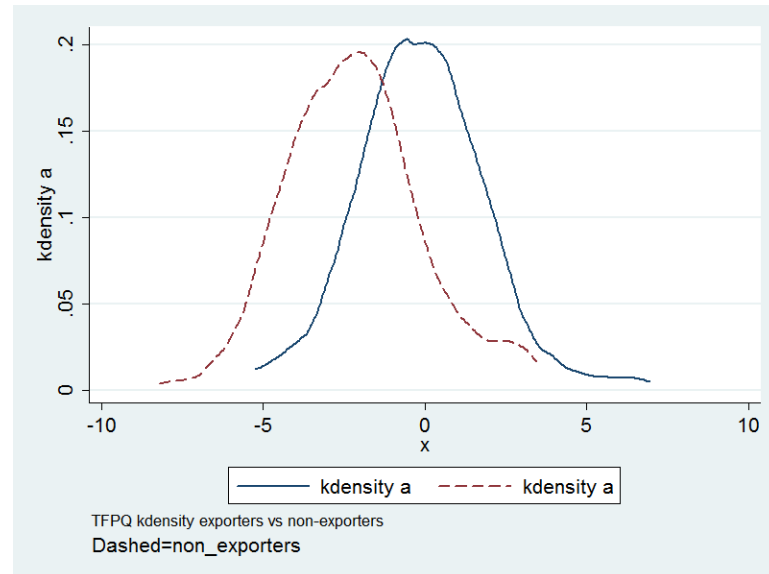
$$\text{TFPR}_{si} \triangleq P_{si} A_{si} = \frac{P_{si} Y_{si}}{K_{si}^{\alpha_s} (wL_{si})^{1-\alpha_s}}$$



DISTRIBUTIONS OF TFPQ: EXPORTERS VS. NON-EXPORTERS



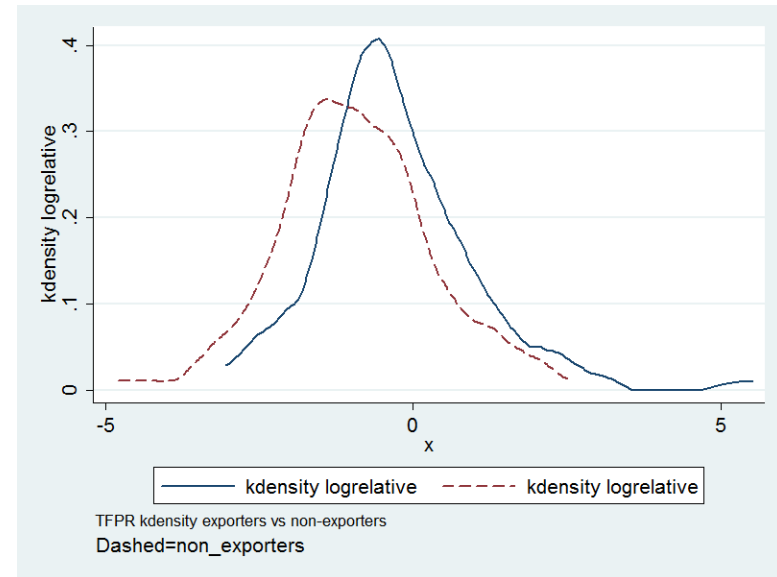
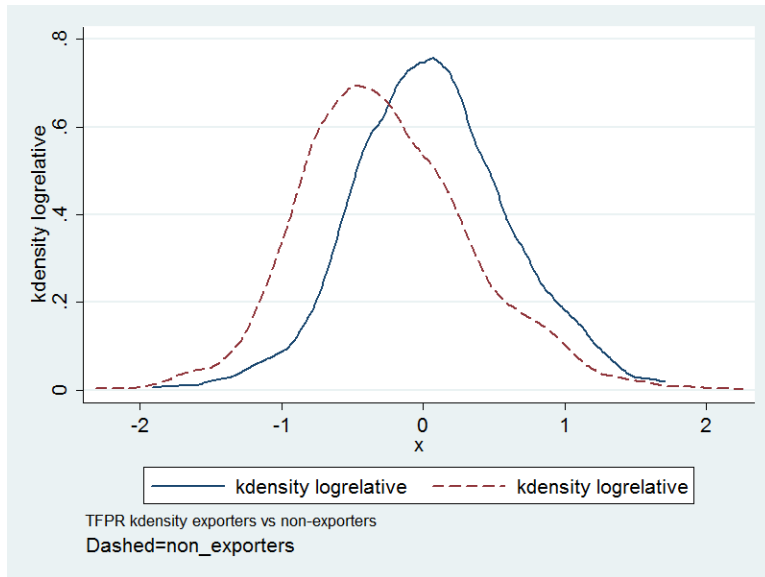
CMI-Punjab



World Bank Enterprise Survey

- Average TFP higher for exporters
- Long LHS tail for non-exporters, indicating high level of dispersion and survival of low productivity firms

DISTRIBUTIONS OF TFPR: EXPORTERS VS. NON-EXPORTERS



CMI-Punjab

World Bank Enterprise Survey

- Less dispersion than TFPQ (expected), but average TFPR higher still for exporters
- Dispersion of TFPR indicates distortions in the economy
- Firms in the right-tail of the distribution (high TFPR) are constrained from growing to their optimal size

REGRESSION ANALYSIS

- To check for robustness of TFP relationship with exporter status, we regress log differences in each of the TFP measures on firm characteristics

$$\log TFPQ_{si} - \log \overline{TFPQ_s} = \beta_0 + \sum_j \beta_j X_{jsi} + \varepsilon_{si}$$

$$\log TFPR_{si} - \log \overline{TFPR_s} = \beta_0 + \sum_j \beta_j X_{jsi} + \varepsilon_{si}$$

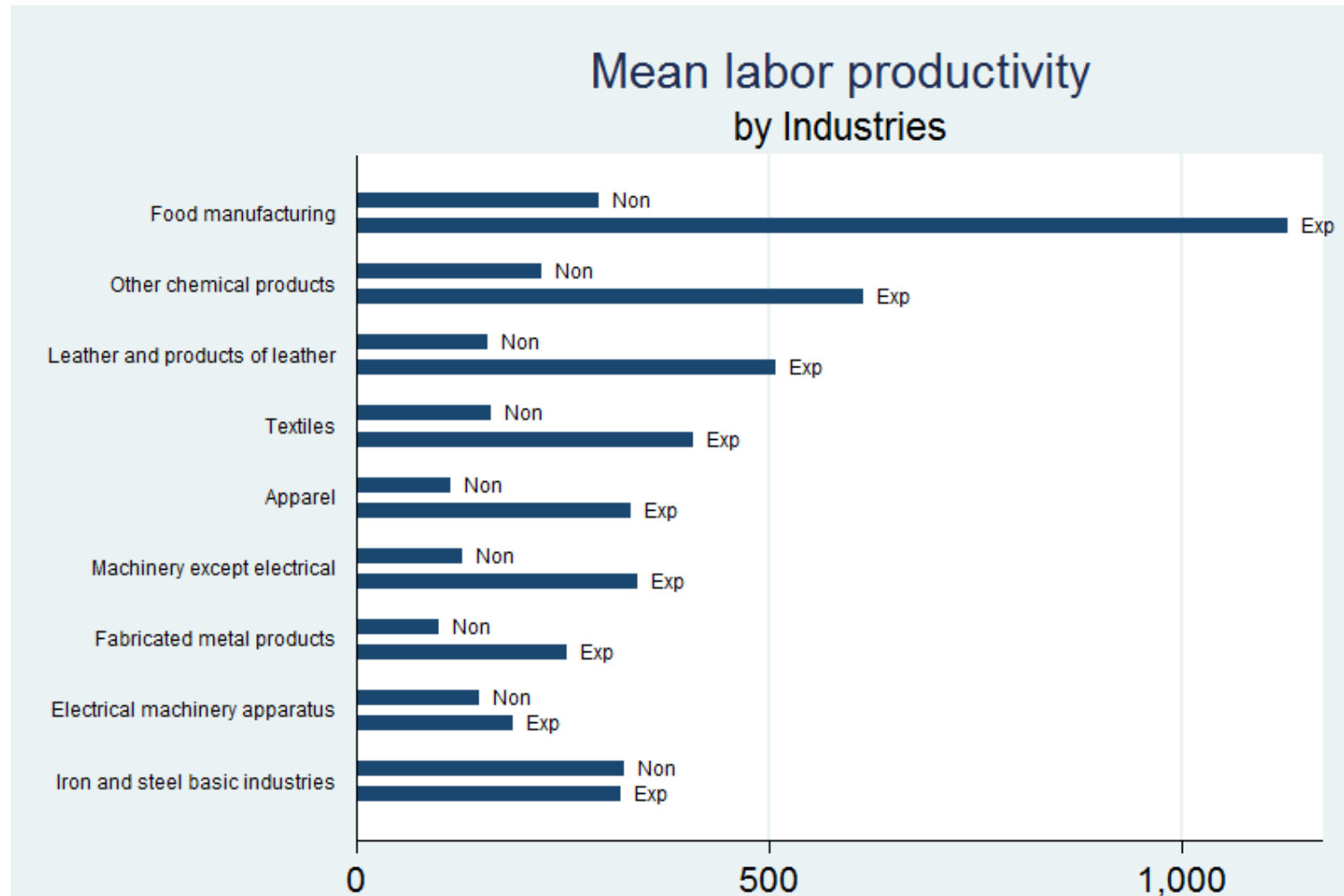
REGRESSION ANALYSIS

VARIABLES	Log Relative TFPQ	Log Relative TFPR
Exporter (dummy)	0.410***	0.152***
	(7.199)	(4.215)

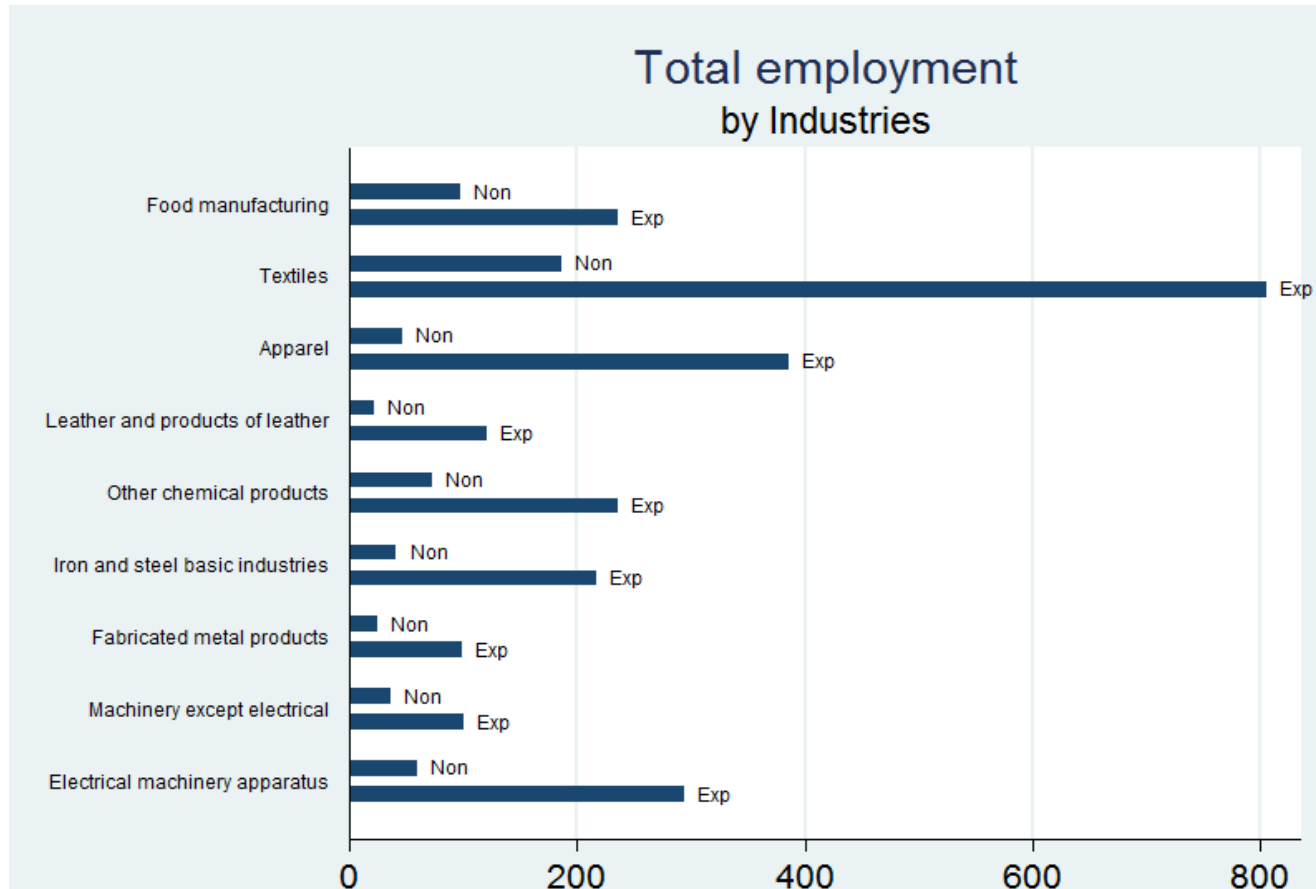
Note: t-statistics in parentheses: *** p<0.01, ** p<0.05, * p<0.1

- Control for: firm size, region, and ownership status
- TFPQ is 41 percent higher for exporters and
- TFPR is 15 percent higher for exporters as compared to non-exporters

3. EXPORTING FIRMS TEND TO BE MORE PRODUCTIVE



4. EXPORTERS ARE LARGER

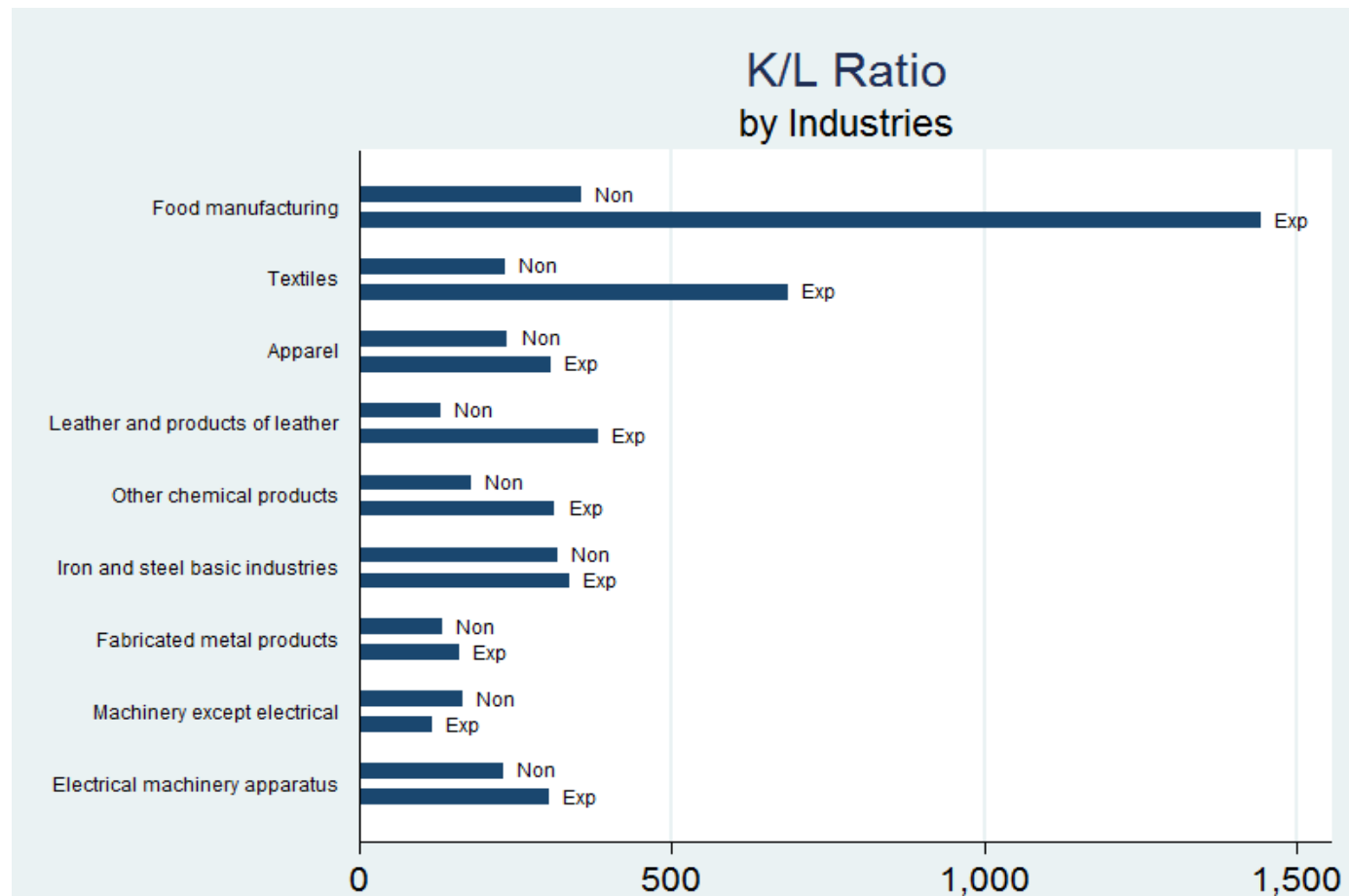


In textiles, average exporter around 4x the size of a non-exporter
In garments, exporters are around 8x times the size of non-exporters

5. EXPORTERS ARE MORE SKILL AND CAPITAL INTENSIVE, EVEN IN DEVELOPING COUNTRIES

- We have less information here, but look at compensation, K/L ratio, and capital purchases

EXPORTERS MORE CAPITAL INTENSIVE?



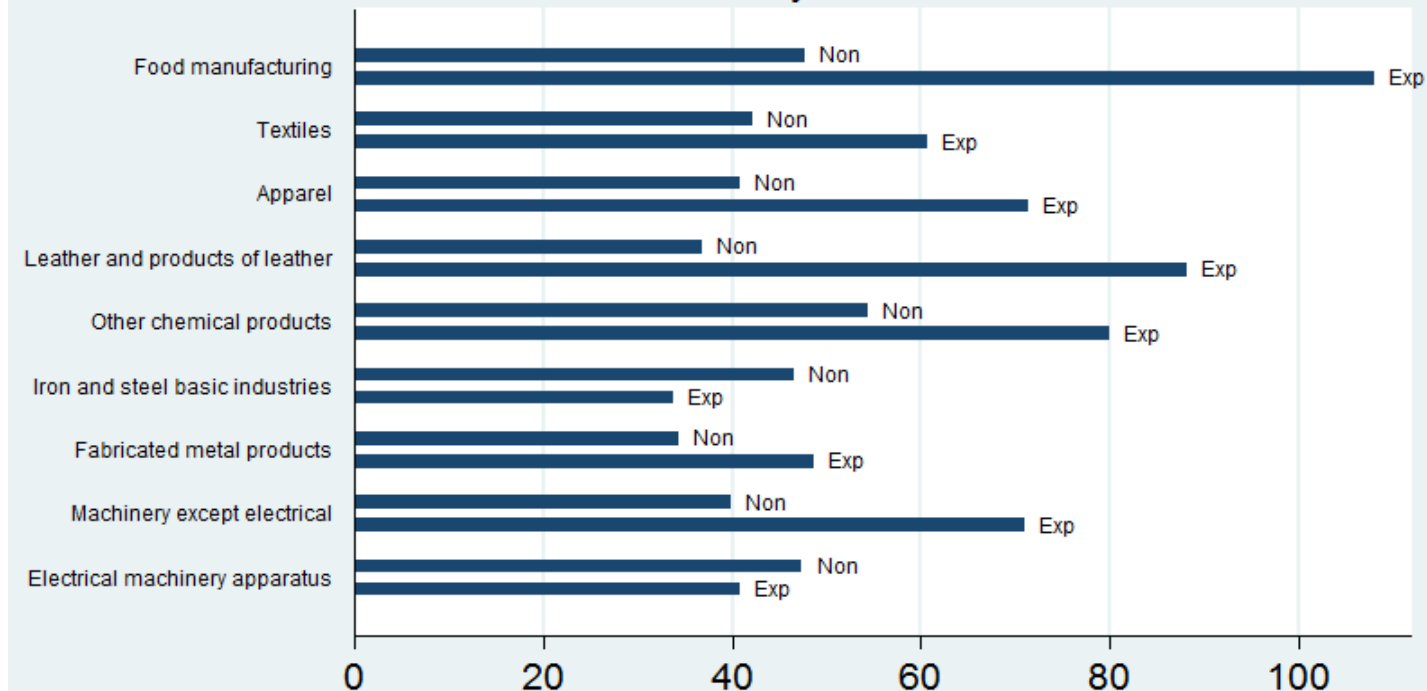
- Only in some sectors
- Exporters have twice the K/L ratio in food manufacturing, textiles, and leather products

CAPITAL PURCHASES OF EXPORTING AND NON-EXPORTING FIRMS, BY SECTOR

	Percentage that Imported Machinery		Percentage that bought Local Machinery	
Industry	Non-exporters	Exporters	Non-exporters	Exporters
Food manufacturing	2.6%	6.3%	21.9%	62.5%
Textiles	4.5	30.1	25.5	71.3
Wearing apparel	1.4	4.7	19.2	53.5
Leather and products of leather	4.5	5.9	9.1	35.3
Other chemical products		11.1	35.4	77.8
Iron and steel basic industries	1.1	0	13.3	50
Fabricated metal products		9.1	8.6	9.1
Machinery except electrical	1	18.2	14.7	45.5
Electrical machinery apparatus	1.3	7.7	15.2	46.2
Total	3	15.7	20.3	56.6

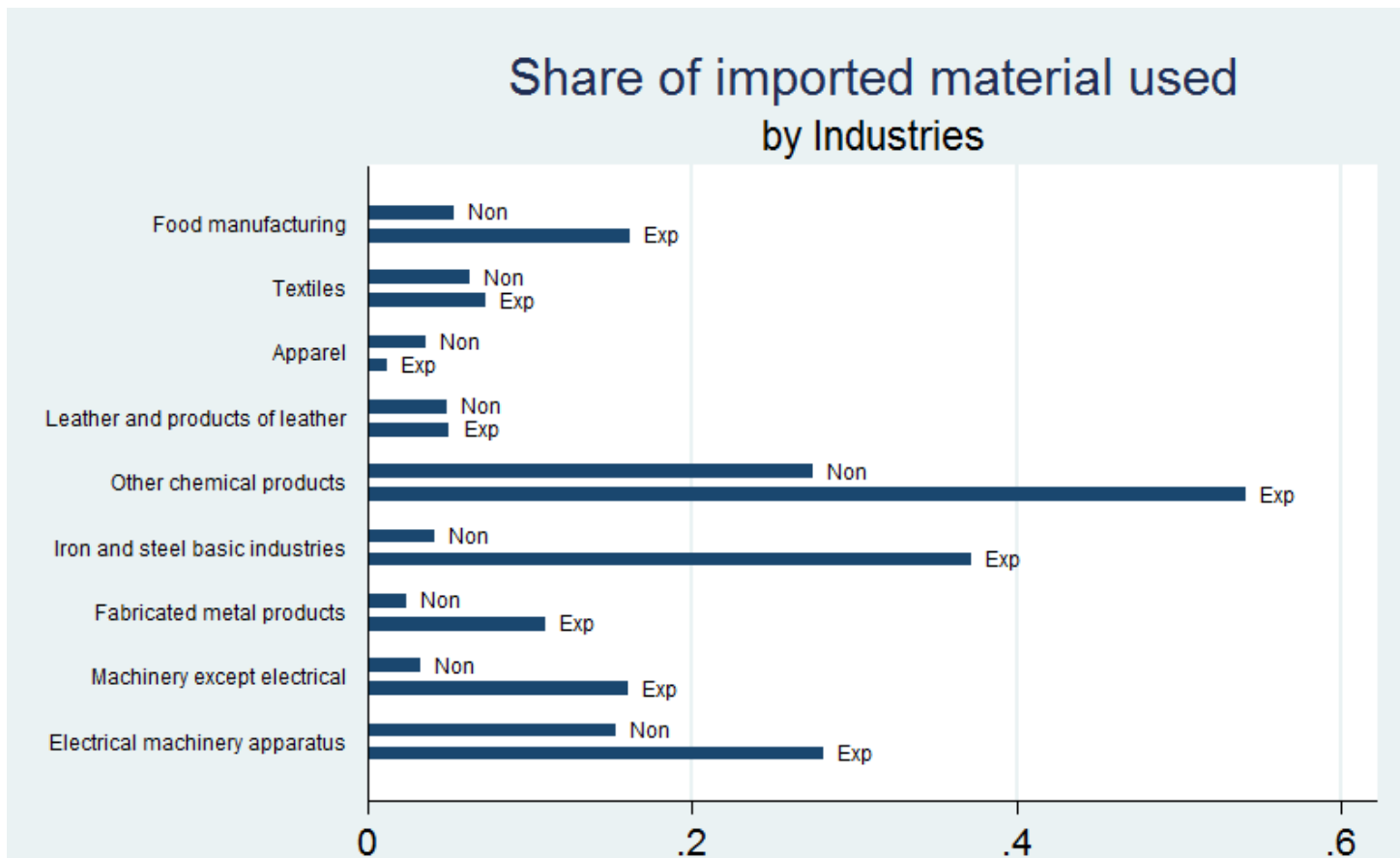
COMPENSATION MOSTLY HIGHER IN EXPORT FIRMS: SKILL RELATED?

Compensation per worker (production+contract)
by Industries



- Dramatic differences in food manufacturing, leather products
- Considerable differences in textiles, garments, nonelectrical machinery, fabricated metal products, and other chemicals.

IMPORTED INPUTS



- In many industries, firms that export appear to also use a larger share of imported materials in their input mix
- Large differences for food manufacturing, other chemicals, iron and steel, electrical machinery, and fabricated metal products

WHICH SECTORS TO PROMOTE?

- Which sectors can improve living standards for workers and expand employment opportunities?
 - Exporters offer higher compensation, are more productive, and have larger firm size
 - Exports also bring in foreign exchange
- Is promotion of the export-intensive sectors a no-brainer?

WHICH SECTORS TO PROMOTE?

- However, exporters tend to use more imported inputs and more capital per worker, some of which must also be imported, and all of which must be financed
 - Firms are credit-constrained
 - Foreign exchange to import machinery scarce

TEXTILES

- Already the most important sector in terms of both manufacturing and exports
- 23% are exporters and export half their output
- Larger than non-exporters (employment),
- Compensated workers somewhat better, and
- Used modest quantities of imported inputs (due mainly to government restrictions on fabric importation),
- But... were very capital intensive, purchasing both imported and local machinery

APPAREL/GARMENTS

- More than half of the apparel producers in the CMI-Punjab 2000-01 were exporting, and exported nearly all of their output (93 percent).
 - The capital-labor ratio and use of imported inputs was modest
 - Fewer than 5 percent of exporters imported capital in 2000-01
- Exporters were around 8 times the size of non-exporters, employing on average 400 workers,
- Offered significantly higher compensation.
- Therefore, the government's recent emphasis on developing the readymade garments sector is well placed.

LEATHER GOODS

- Half of the firms exported
- Exporters sold most of their output abroad.
- Used very little imported inputs.
- Exporters had a higher capital-labor ratio, but it was still relatively modest,
 - Also purchased locally produced machinery.
- Firm size was not very large as compared to other sectors
- On the other hand, compensation above average

- Maybe this is a sector worth looking at more closely?