Questions for this lecture

1. How does firm performance matter for development and growth?

2. Do firms upgrade by exporting, and if so how and why?

3. Does the destination of exports matter for product quality?

4. How and why does export performance evolve over the firm life cycle?

Outline

1. Recent literature on links between exports, quality upgrading and firm performance

2. Discussion of broader implications of this research agenda

3. Student presentation

Background

1. Impressive export performance of some fast-growing emerging markets suggests that export success is a key driver of sustained economic growth and poverty reduction

2. Many countries seek to achieve export-led growth and shift specialization away from low-skill intensive sectors and natural resources (structural transformation)

3. Research on North-South trade used to be mostly about countries and sectors, with emphasis on comparative advantage (differences in technology/factor endowments) and static gains from trade liberalization

4. More recent research puts firms at the center stage

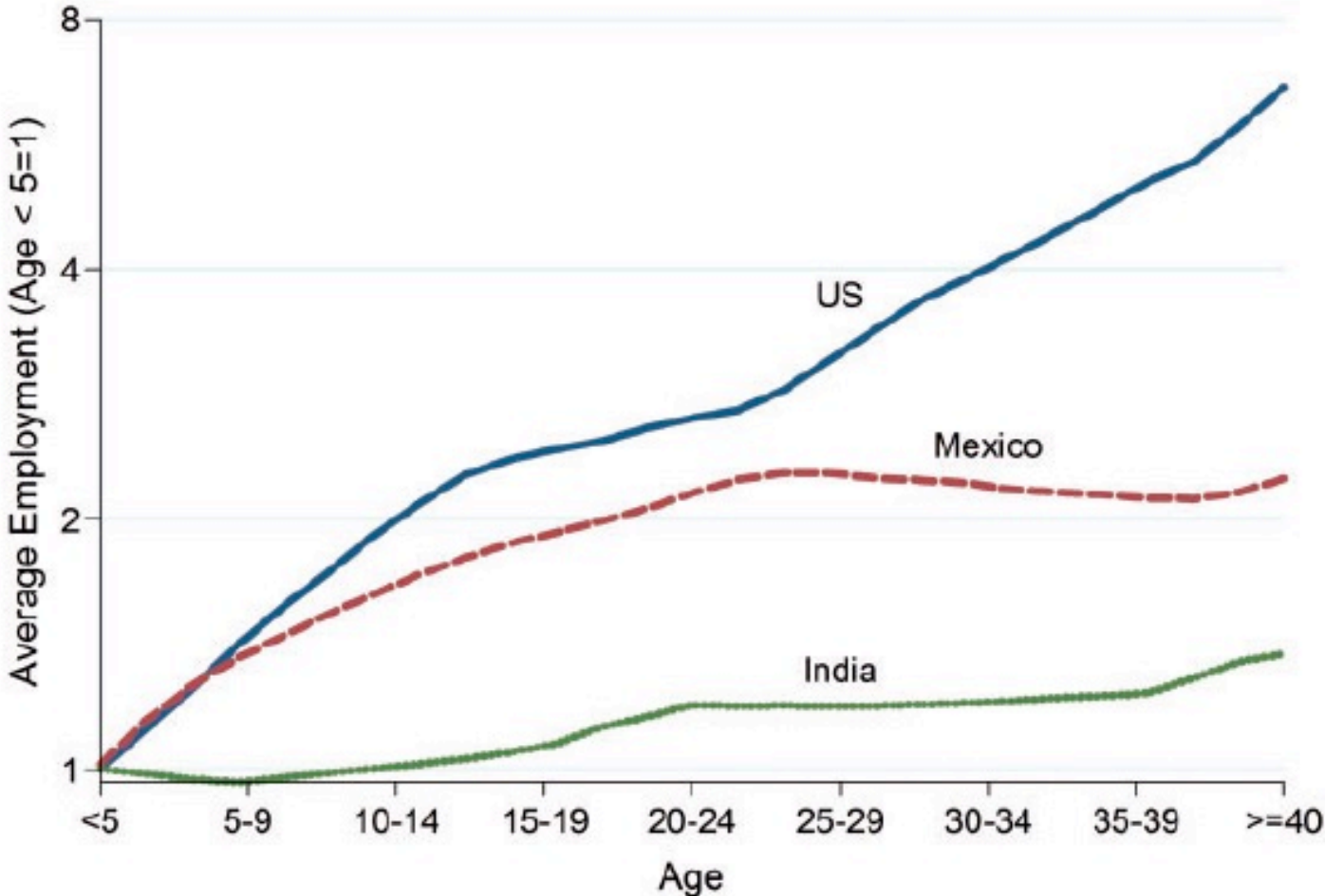# Skewed firm size distribution in lower-income countries

Figure 12: Distribution of Employment by Establishment Size
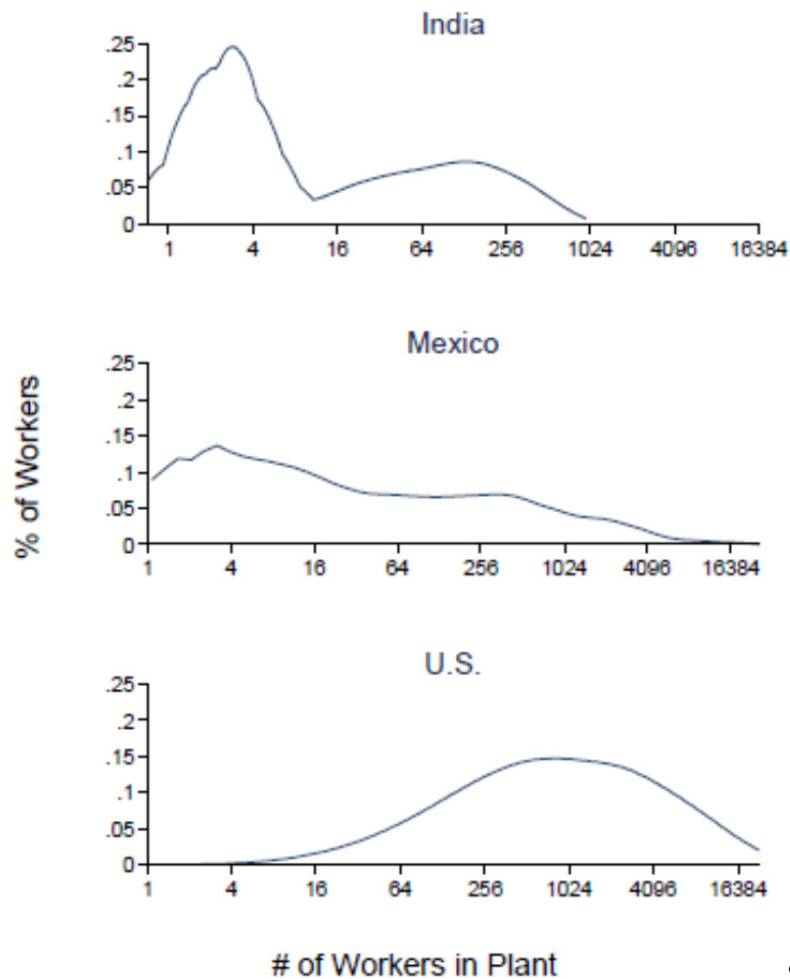
Source: Hsieh and Klenow (2014)

Larger firms tend to be more productive, more skill and capital intensive, pay higher wages

Firms grow less as they age in lower-income countries

Source: Hsieh and Klenow (2014)

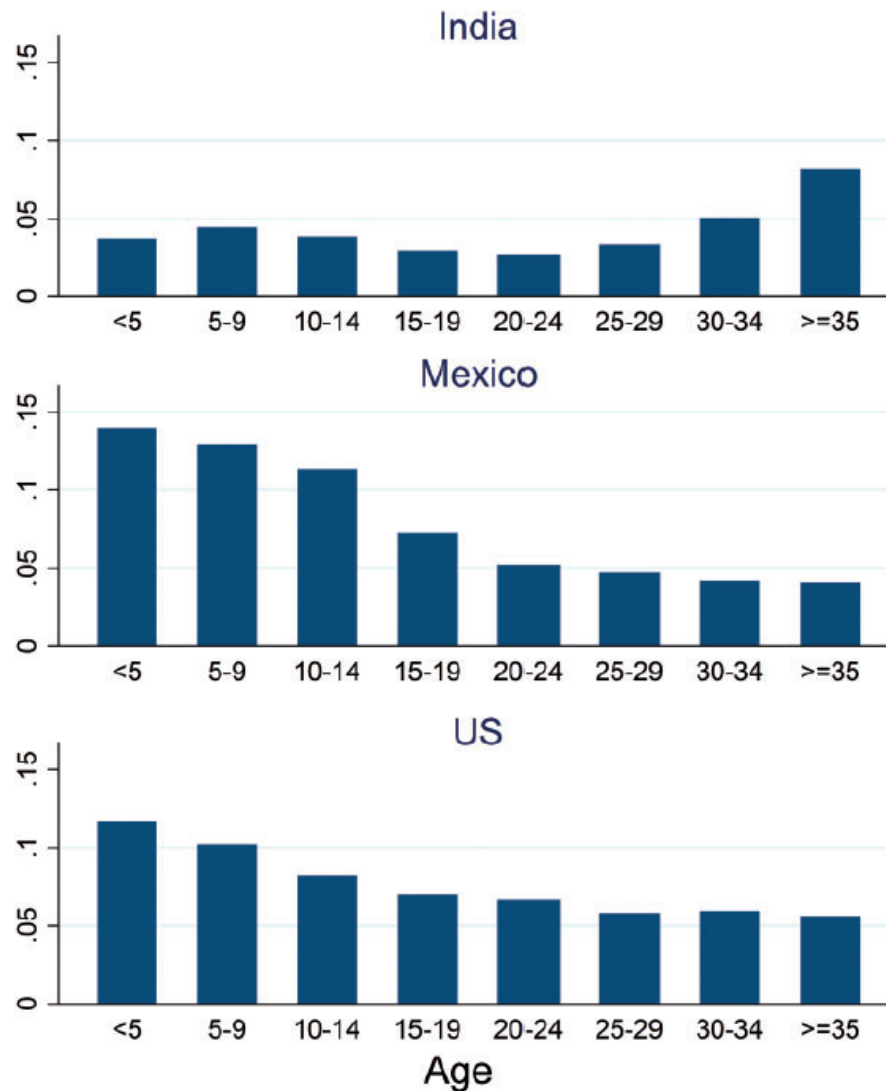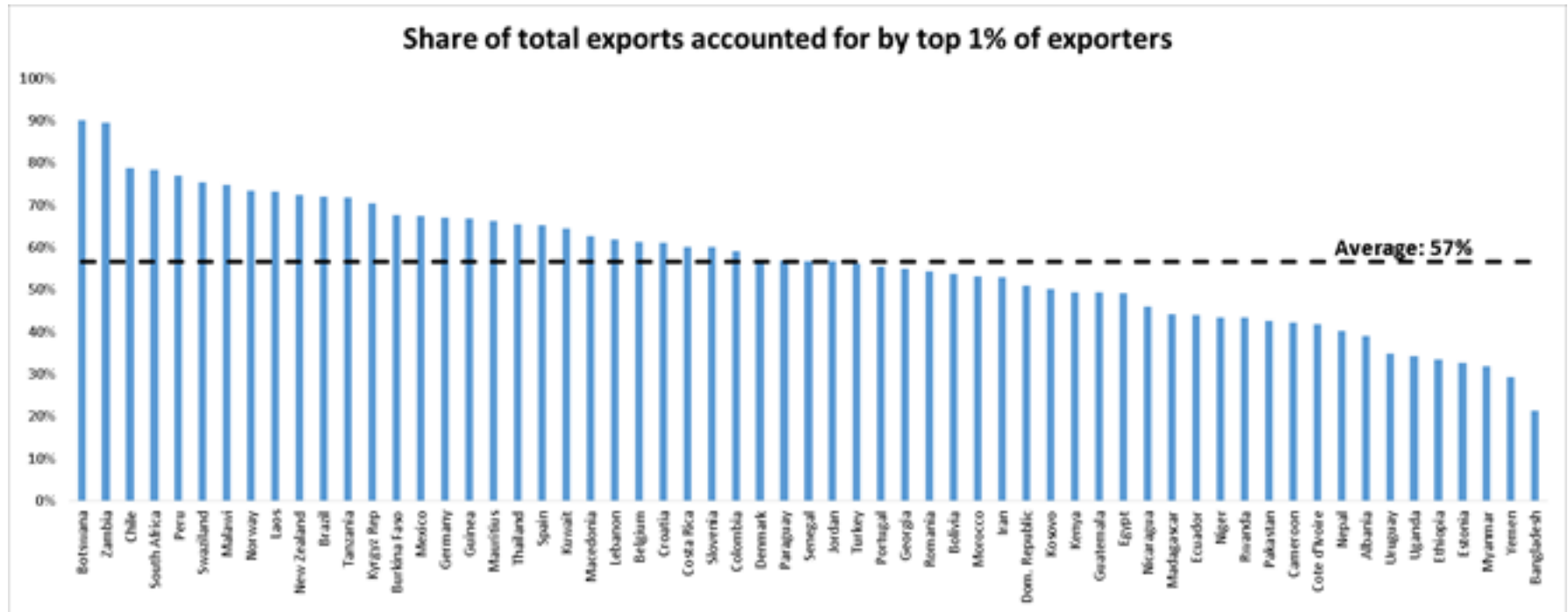# Tougher selection of young firms in richer countries (up or out!)

FIGURE II
Exit Rate by Age

Source: Hsieh and Klenow (2014)

Similar patterns for exports

- Across countries exports are highly concentrated among their largest firms

Share of total exports accounted for by top 1% of exporters

Average: 57%

- Large exporting firms are more productive, more skill intensive and pay higher wages
- These export superstars help define comparative advantage

(Freund and Pierola, 2015 REStat)

Understanding export success

More developed economies have: more exporters, larger exporters, and more concentration in the top 5% of firms (Fernandes et al., 2016 JDE)
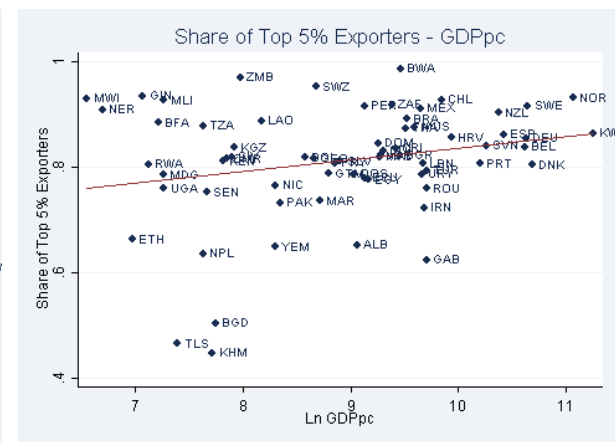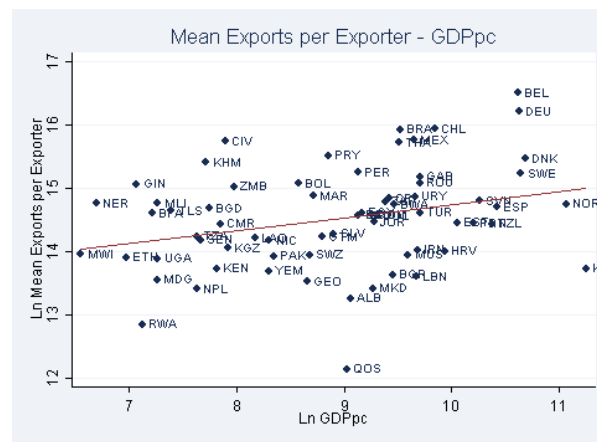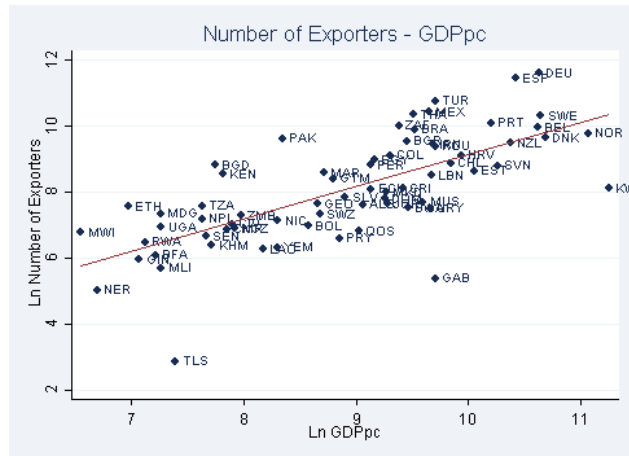
Relative to a country at the 25th percentile of the GDP per capita distribution (Cameroon), a country at the 75th percentile of the GDP per capita distribution (Mexico) has:

- 87 percent larger number of exporters
- 84 percent larger mean exports per exporter
- 8.2 percentage points larger share of exports accounted for by the top 5% of exporters

Understanding export success

In more developed economies, exporter entry and exit rates are lower while first-year survival of entrants is higher (Fernandes et al, 2016 JDE)
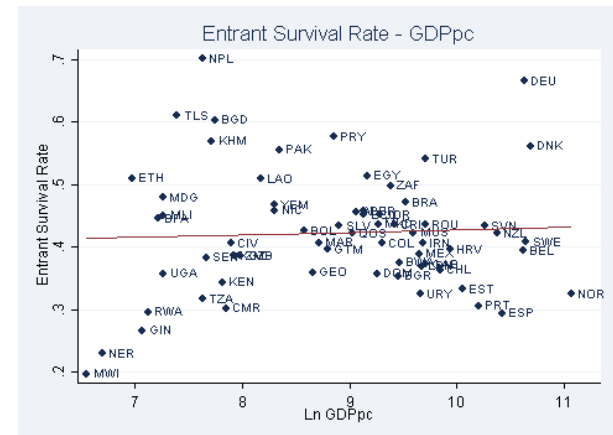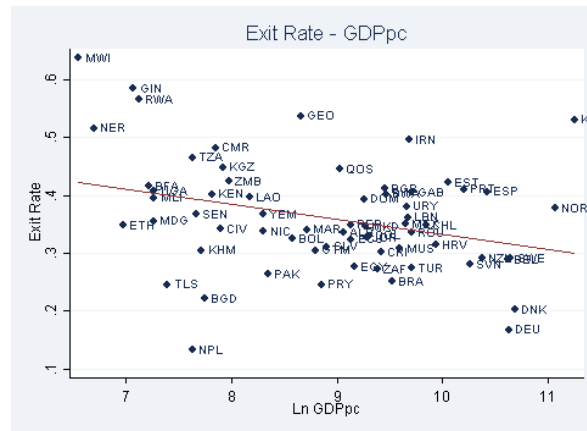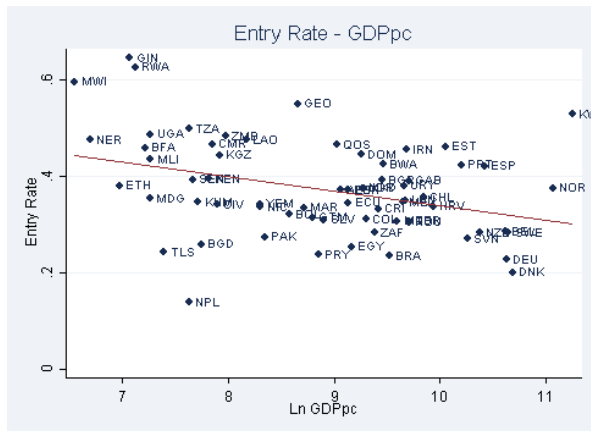

- Relative to a country at the 25th percentile of the GDP per capita distribution (Cameroon), a country at the 75th percentile of the GDP per capita distribution (Mexico) has:
    - 11 percentage points lower exporter entry and exit rates
    - 6 percentage points higher first-year survival rate of entrants into export markets

Understanding export success

What makes (some) firms succeed and grow?

What makes firms competitive in export markets?

What you export matters!

A growing body of evidence suggests that firms that are successful exporters produce and export **higher quality products**

- **Difficulty:** product quality is unobservable in the data

- Literature has relied on **accumulation of indirect evidence**

Understanding export success

Data by firm-product-destination reveal tremendous heterogeneity in export prices across firms and markets

Within narrow product categories, larger exporters charge higher prices for outputs and pay higher prices for material inputs (Bastos and Silva, 2010 JIE; Kugler and Verhoogen, 2012 REStud)

Subsequent papers found similar evidence for Colombia, Chile, China, India and USA
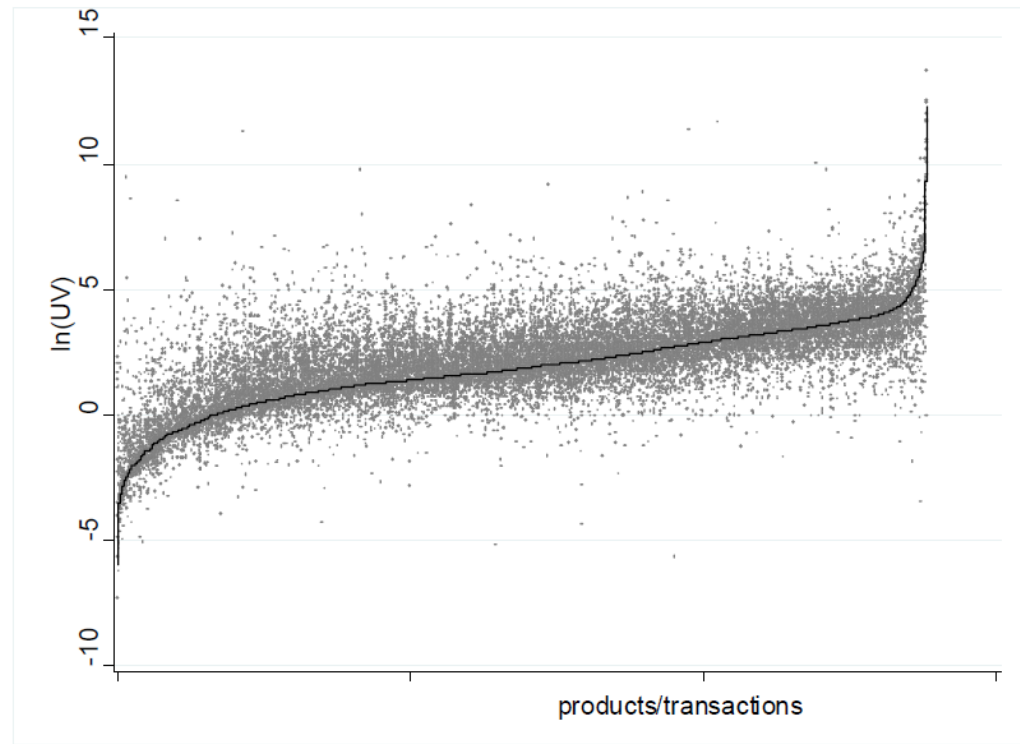
Figure 1: Unit values: Product versus firm-product data

Understanding export success

Where you export to matters!

Growing body of evidence suggests that to be successful in high-income export destinations firms need to upgrade product quality

Within narrow product categories, firms charge higher prices in richer destinations (Bastos and Silva, 2010 JIE, Portugal)

Similar evidence for China (Manova and Zhang, 2012), Hungary (Gorg et al., 2010), France (Martin, 2012), Spain (Lucio et al, 2016), USA (Harrigan et al., 2015)

Bastos and Silva (2010, JIE)

Table 6
Firm-product-country data: Basic results.

	Full sample						Manufacturing					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ln Y	0.026	0.024	0.012	0.007	0.006	0.005	0.027	0.024	0.012	0.007	0.006	0.005
	(3.99)***	(2.48)**	(2.48)**	(1.08)	(1.23)	(0.95)	(4.22)***	(2.52)**	(2.54)**	(1.09)	(1.21)	(0.92)
ln Y/L	0.042	0.051	0.038	0.043	0.039	0.039	0.043	0.053	0.040	0.046	0.040	0.040
	(1.75)*	(2.61)***	(2.58)**	(3.01)***	(1.90)*	(2.06)**	(1.81)*	(2.70)***	(2.78)***	(3.16)***	(1.95)*	(2.09)**
EU	−0.011	−0.029	0.023	0.024	−0.056	−0.075	−0.013	−0.028	0.018	0.020	−0.059	−0.076
	(0.33)	(0.71)	(0.82)	(0.66)	(1.45)	(1.67)*	(0.39)	(0.69)	(0.63)	(0.55)	(1.51)	(1.70)*
LANDL	0.137	0.117	0.120	0.113	0.077	0.066	0.135	0.118	0.118	0.112	0.077	0.066
	(3.40)***	(3.28)***	(3.58)***	(3.49)***	(1.86)*	(2.00)**	(3.37)***	(3.25)***	(3.55)***	(3.47)***	(1.85)*	(1.99)**
ln DIST	0.094		0.086		0.053		0.090		0.083		0.052	
	(6.95)***		(7.06)***		(4.00)***		(6.77)***		(6.74)***		(3.93)***	
1<km≤4000		0.135		0.093		0.073		0.122		0.086		0.071
		(5.13)***		(5.84)***		(3.39)***		(4.78)***		(5.56)***		(3.26)***
4000<km≤7800		0.265		0.223		0.114		0.253		0.212		0.112
		(5.86)***		(5.83)***		(2.78)***		(5.65)***		(5.67)***		(2.72)***
7800<km≤14000		0.168		0.204		0.109		0.160		0.199		0.108
		(3.62)***		(4.52)***		(2.34)**		(3.47)***		(4.43)***		(2.30)**
14000<km		0.271		0.254		0.184		0.263		0.245		0.180
		(5.74)***		(5.55)***		(3.56)***		(5.80)***		(5.63)***		(3.49)***
Product fixed-effects	Yes						Yes					
Firm fixed-effects			Yes						Yes			
Firm-product fixed-effects					Yes						Yes	
R^2	0.55	0.55	0.56	0.56	0.94	0.94	0.53	0.53	0.55	0.55	0.94	0.94
F-statistic	25.06	28.90	15.46	15.56	7.94	9.34	25.38	29.23	14.48	15.62	7.65	9.04
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	247,269						240,649					
Products	7553						7080					
Firms	16,366						15,815					
Product-firm groups	161,166						156,456					
Destinations	199						199					

Robust t-statistics in absolute value within parentheses, based on standard errors clustered by importing country. * significant at 10%; ** significant at 5%; *** significant at 1%. R^2's include the contribution of the fixed-effects.

Bastos and Silva (2010, JIE)

Table 12
Export quality and firm labor productivity.

	Unit value (ln)		Quantity (ln)	
	(1)	(2)	(3)	(4)
ln firm productivity	0.026	0.027	0.138	0.166
	(1.99)**	(2.21)**	(5.76)***	(5.93)***
Constant	1.899	1.886	4.217	3.940
	(14.69)***	(15.46)***	(17.46)***	(14.20)***
Product fixed-effects	Yes		Yes	
Product-country fixed-effects		Yes		Yes
R^2	0.55	0.71	0.37	0.63
F-statistic	3.97	4.89	33.18	35.22
P-value	0.046	0.027	0.000	0.000
Observations	232,526		232,526	
Products	7468		7468	
Firms	14,804		14,804	
Destinations	220		220	

Robust t-statistics in absolute value within parentheses, based on standard errors clustered by firm. * significant at 10%; ** significant at 5%; *** significant at 1%. R^2's include the contribution of the fixed-effects.

Understanding export success

Evidence of higher export prices to richer destinations is suggestive of quality differences. But could also reflect variable markups.

Several recent papers provide more evidence supporting the quality-upgrading hypothesis:

- Portuguese firms induced to export more to richer nations purchase more expensive material inputs (Bastos, Silva and Verhoogen, 2018 AER)

- Argentinian firms exporting more to the US and EU pay higher wages and employ more skilled workers (Brambilla, Lederman and Porto, 2012 AER)

- Exporting leads Brazilian firms to upgrade technical skills of the workforce via job training (Bastos, Silva and Proenca, 2016 RIE)

Bastos, Silva and Verhoogen (2018, AER)

TABLE 6—DESTINATION INCOME AND FIRM-AVERAGE INPUT PRICES, BASELINE IV ESTIMATES

	Dependent variable: Firm-average log real input price					
	(1)	(2)	(3)	(4)	(5)	(6)
log average destination GDP/cap	0.66	0.61	0.73	0.71	0.77	0.68
	(0.21)	(0.21)	(0.25)	(0.25)	(0.26)	(0.26)
log(1 + average destination distance)		−0.01	−0.00	−0.00	0.05	0.06
		(0.00)	(0.00)	(0.00)	(0.03)	(0.03)
Export share of sales				−0.34	−0.33	−0.66	−0.22
				(0.13)	(0.13)	(0.23)	(0.32)
log sales				0.02	0.01	0.01
				(0.01)	(0.01)	(0.01)
Initial source interactions	Yes	Yes	Yes	Yes	Yes	Yes
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	45,659	45,659	45,659	45,659	45,659	45,659
Kleibergen-Paap LM statistic (under-identification)	264.22	269.91	249.61	248.92	245.01	232.20
Kleibergen-Paap LM p-value	0.00	0.00	0.00	0.00	0.00	0.00
Kleibergen-Paap Wald rk F-stat (weak instruments)	3.11	3.11	2.67	2.65	2.53	2.32
Anderson-Rubin Wald test F-stat	2.20	2.20	2.19	2.17	2.17	2.18
Anderson-Rubin Wald test p-value	0.00	0.00	0.00	0.00	0.00	0.00

Notes: Table reports IV estimates of equation (23) in text, where instruments are interactions of indicators for positive exports to destination in 1997 and log RERs for Portugal's top 100 non-eurozone export destinations; first-stage results are in online Appendix Table B1. Average destination GDP/capita defined as in equation (18). Columns 1 to 4 treat only log average destination GDP/cap as endogenous; column 5 adds log(1 + average destination distance) and column 6 adds export share of sales to endogenous set. Robust standard errors in parentheses.
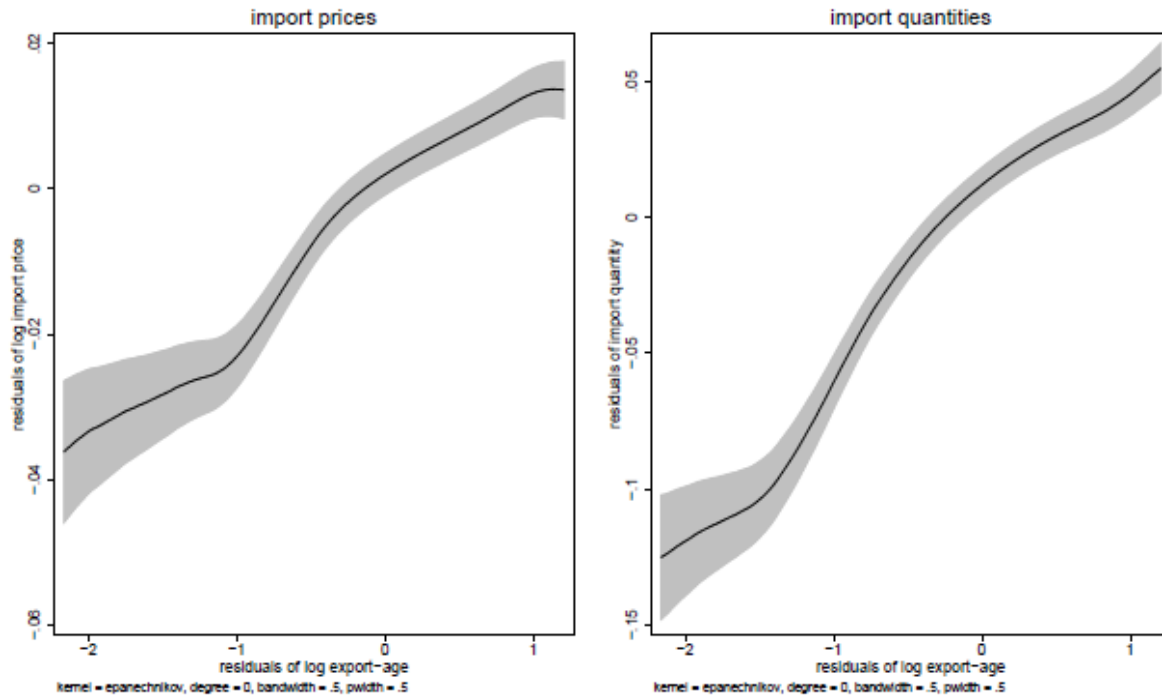
Understanding export success

What is the dynamic process by which (some) firms become successful exporters?
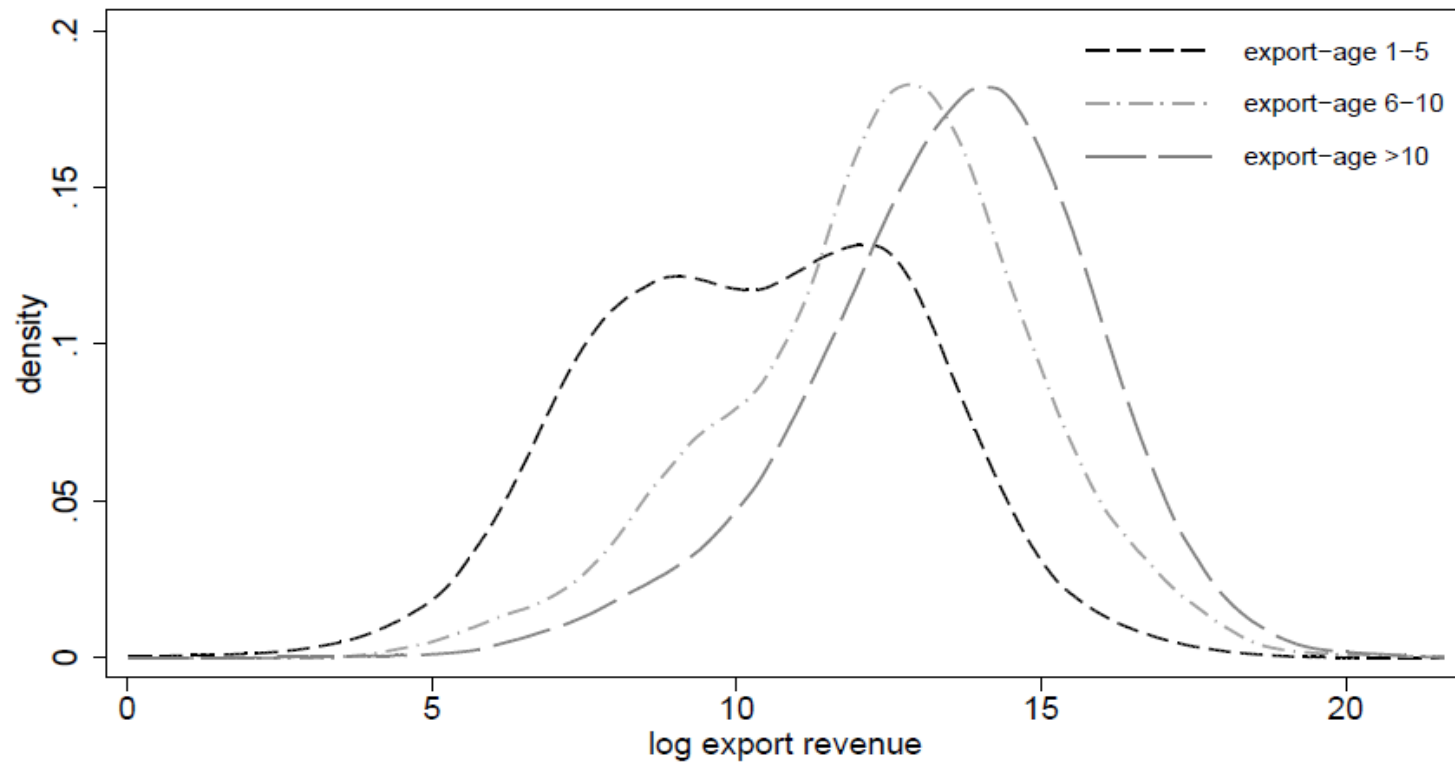
Exporters tend to start small and grow as they age conditional on survival (Bastos, Dias and Timoshenko, 2018 CJE)

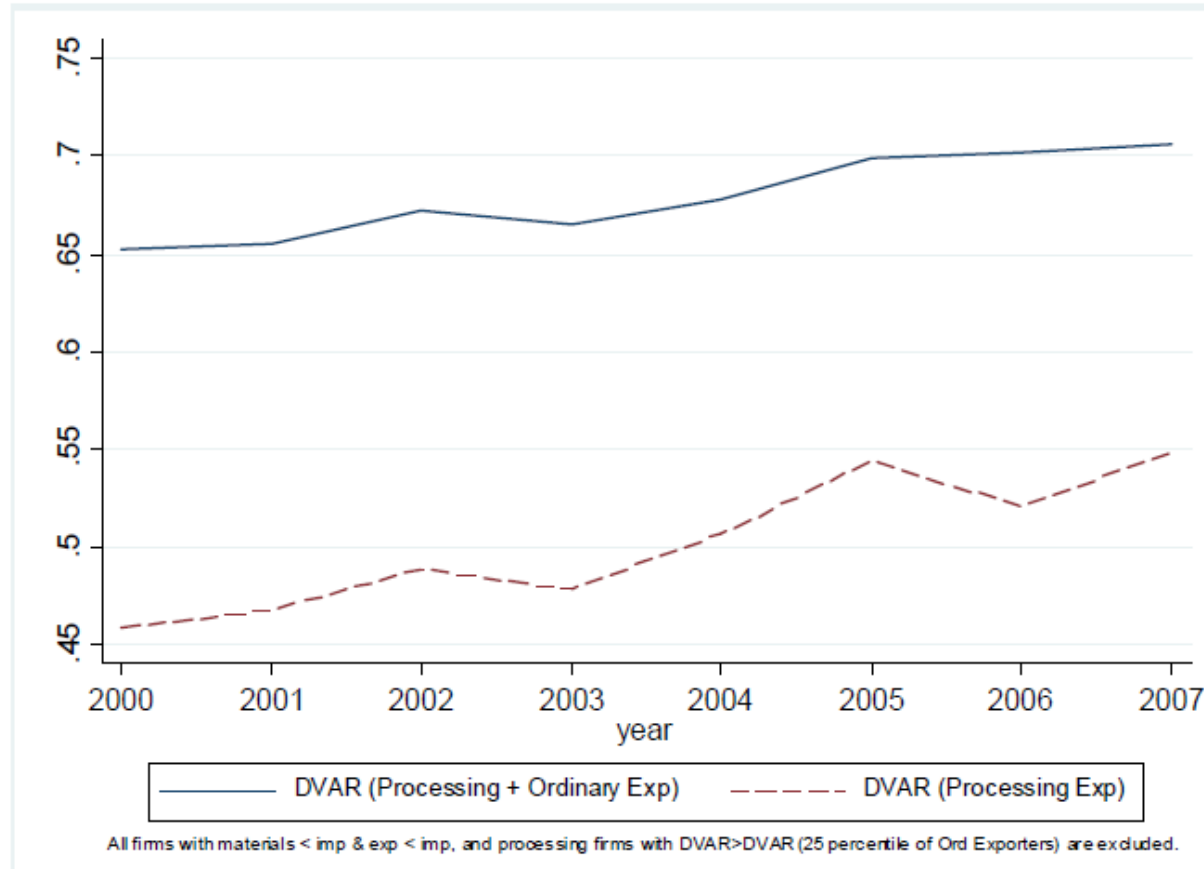# Understanding export success

Access to higher-quality imported inputs is key for quality upgrading and export success

Exporters tend to use higher-price imported inputs as they age and grow (Bastos, Dias and Timoshenko, 2018)

Understanding export success

Domestic input suppliers are also important

All firms with materials < imp & exp < imp, and processing firms with DVAR>DVAR (25 percentile of Ord Exporters) are excluded.
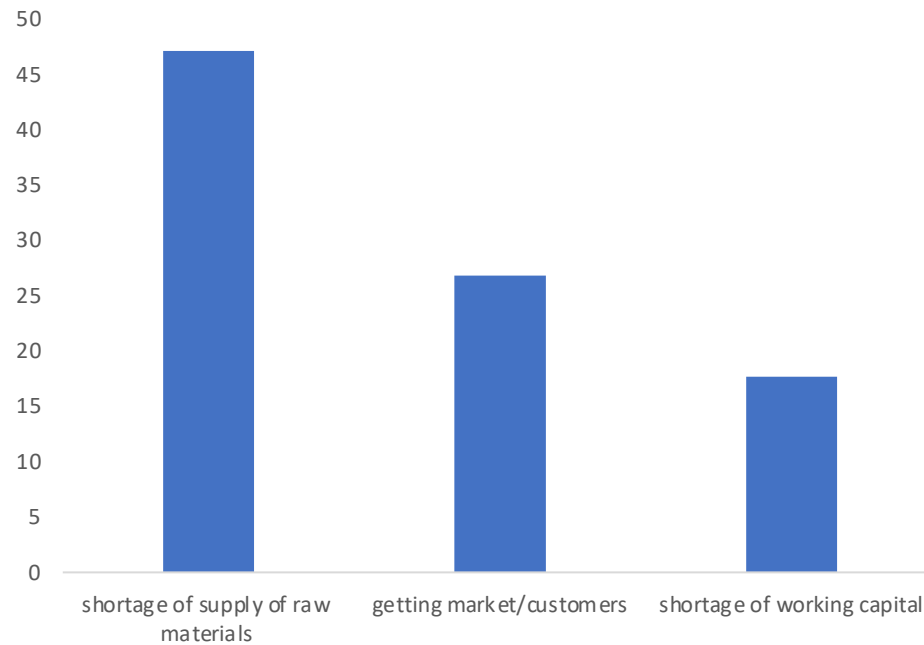
Domestic value added of Chinese exports increased following liberalizing trade and FDI reforms (Kee and Tang, 2016 AER)

Understanding export success

Major barriers faced by Ethiopian plants (self-declared)

Major problems currently faced by plant, 2006

Broader implications

- Access to high-quality imported intermediate inputs is key for product quality upgrading and export success

- No room for mercantilist trade policies where exports are good and imports are bad => trade liberalization and facilitation

- Local input suppliers are also important => policies/programs targeting only exporters may be misguided

- Potentially important interactions between export competitiveness and labor, education, innovation policies