

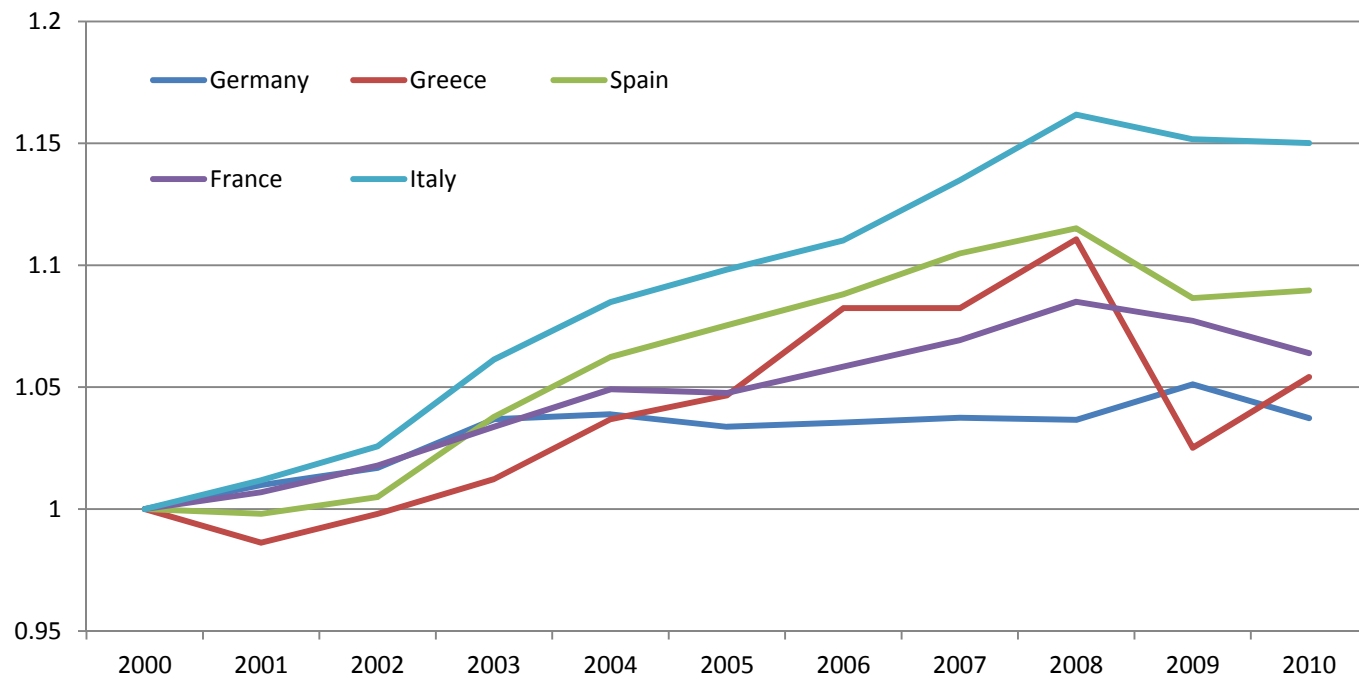
Quality/price competition across
sectors and destinations
Just a few ideas...

A. Berthou

Banque de France

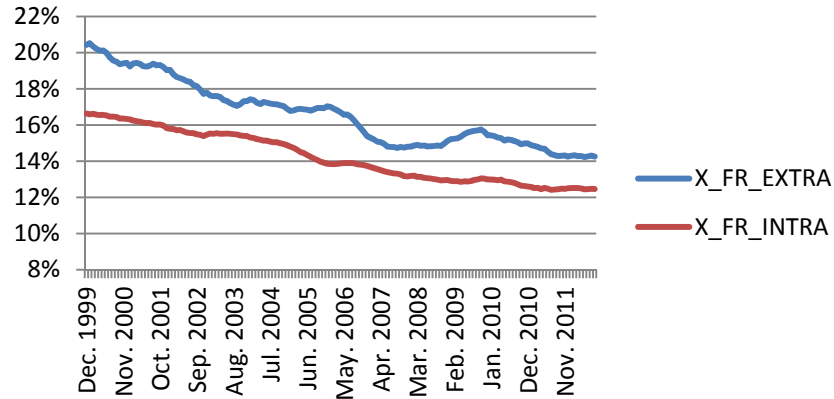
Heterogeneity in terms of price competitiveness...

**Export price indexes relative to the eurozone 17
(Eurostat Comext)**

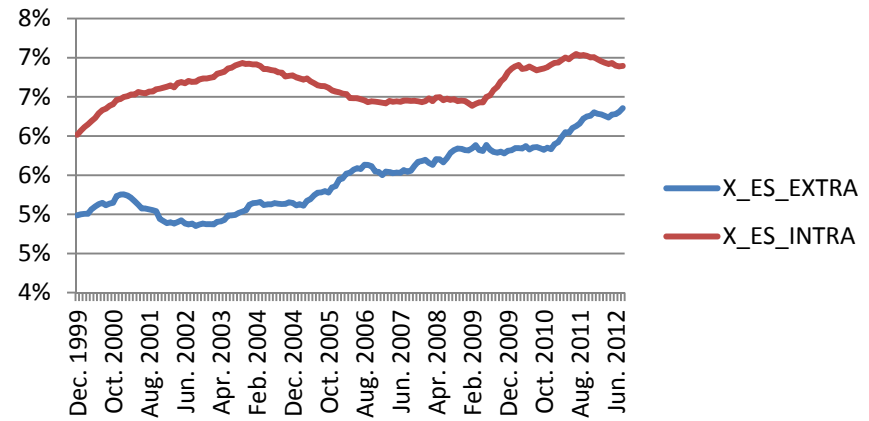


... does not reflect relative export performance

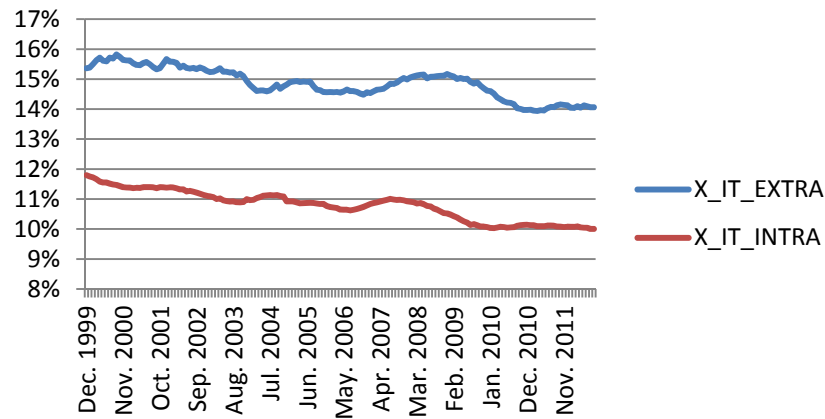
France relative to Eurozone



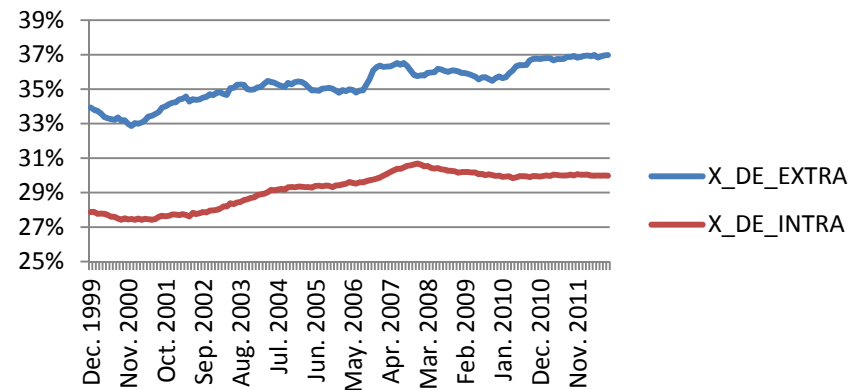
Spain relative to Eurozone



Italy relative to Eurozone



Germany relative to Eurozone

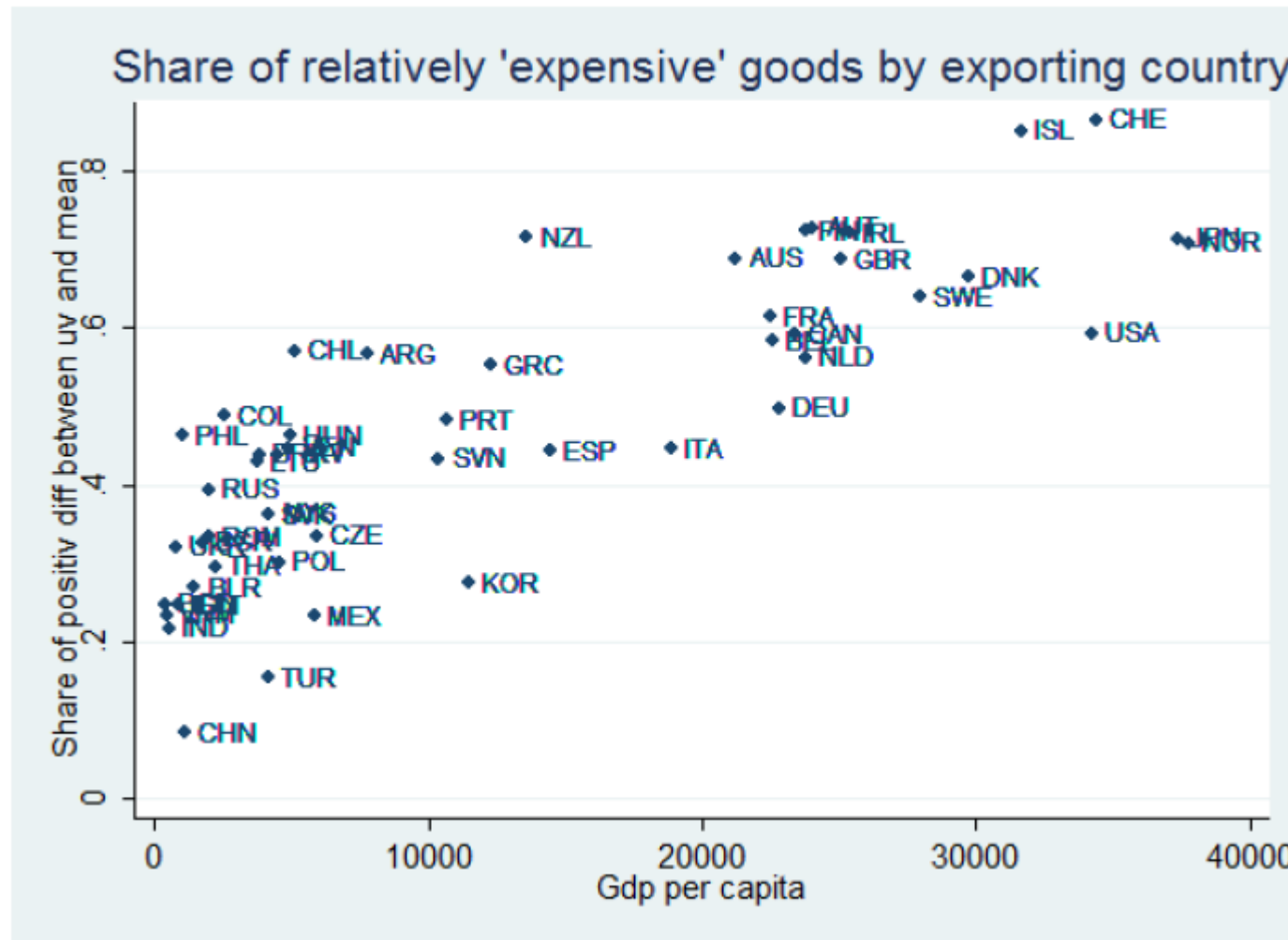


Source : Eurostat Comext

Non-price factors

- They seem to play an important role in the aggregate
 - The residual in aggregate trade equations is large
 - « quality », technology or any other non-price factor (infrastructures, integration into Global Value Chains etc.)
- Huge literature in the past few years has investigated « quality » in international trade data
 - Trade models emphasize the importance of accounting for quality differences to explain heterogeneity of export performance (Baldwin and Harrigan, 2011)
 - Within-sector vertical specialization emphasized in empirical studies using product-level data and unit values (Schott, 2004, 2008; Fontagné et al. 2008)
 - Using estimated quality confirms that advanced economies tend to export higher levels of quality (Khandelwal, 2010, Amiti and Khandelwal, 2012)

Figure 2: GDP per capita and country-level specialization in expensive varieties



Source: Crozet et al. 2011

What can we say about firm performance and quality?

- Exporters charge higher prices than non-exporters, larger plants charge higher output prices and pay more for their inputs, more productive firms pay higher wages (Verhoogen, 2008; Kugler and Verhoogen, 2011; Hallack and Sivadasan, 2008; Iacovone and Javorcik, 2008).
- Firms set higher prices in richer and more difficult markets (Manova and Zhang, 2011; Martin, 2012; Görg et al. 2010; Bastos and Silva, 2010)
- « Champagne » quality increases with firm-level prices, the probability of market entry and export values (Crozet et al. 2012)

Implications in terms of specialization

- Martin and Mejean (2012) use firm-destination-product exports data to construct various measures of the quality of French exports
 - Two indexes following Boorstein and Feenstra (1987) or Khandelwal, Schott and Wei (2012)[\[Appendix\]](#)
 - The quality of French exports increased by 11% between 1995-2005 (results do not differ much across methodologies)
 - Aggregate quality increases with competition from low wage countries in export markets

Empirics

Figure 1: Evolution of the Aggregate Quality of French Exports

(a) Whole sample

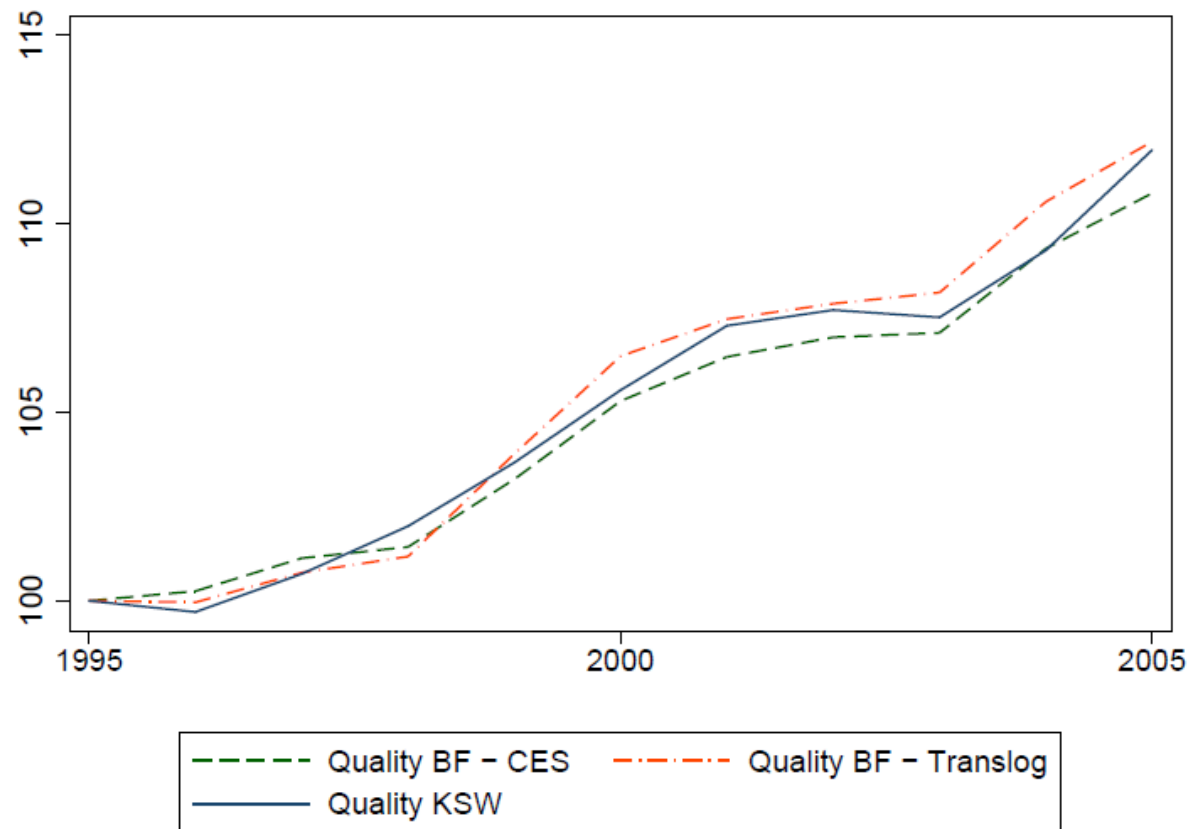
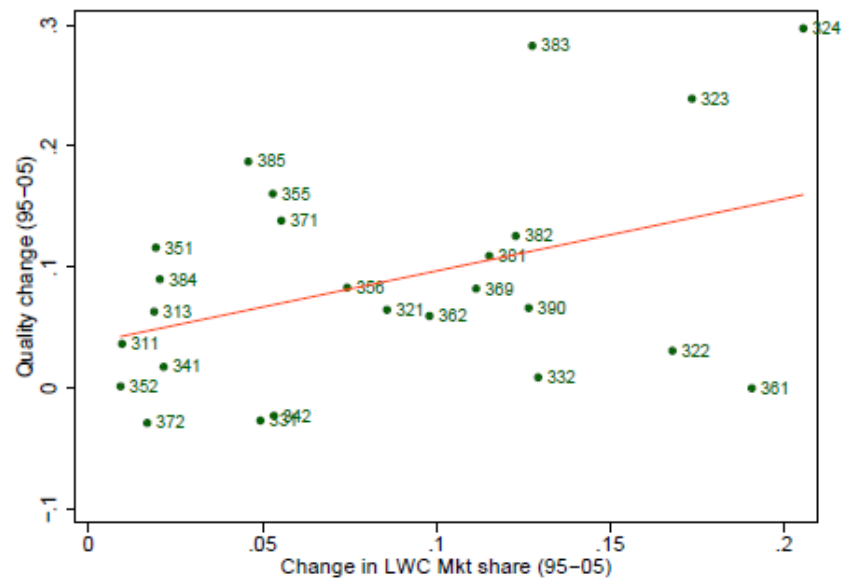
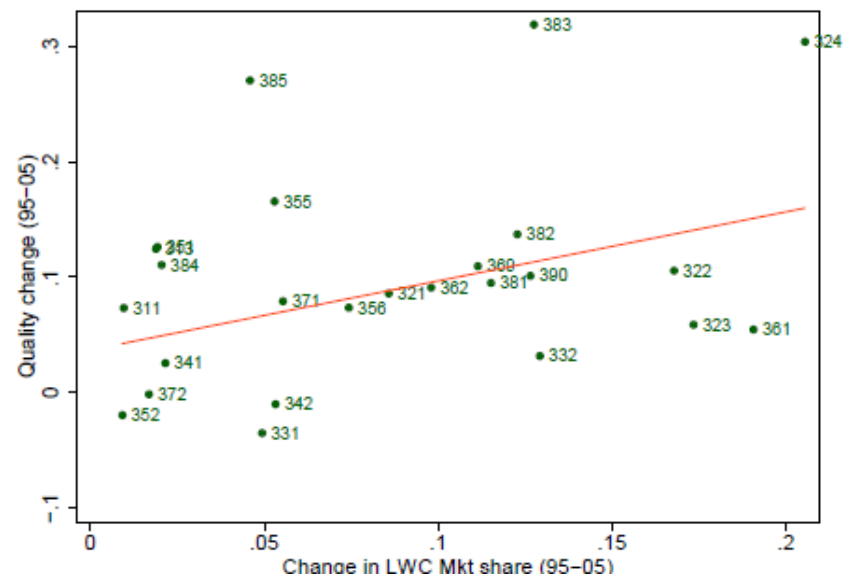


Figure 4: Quality & Competition from Low-Wage Countries, Across Industries

(a) BF-CES index



(b) KSW index



Quality vs cost competition

- What is the relation between price and sales depends on the type of competition:
 - Cost competition → Revenues decrease with price
 - Quality competition → Revenues increase with price
 - The type of competition can differ across sectors or sectors *destinations
- Di Comite, Thisse and Vandenbussche (2012)
 - Firm-level prices of products are strongly correlated across destinations, whereas product sales are not
 - Rationalized in a model where preferences can shift the demand for a certain variety (with a given level of quality) across destinations.

Quality vs cost competitiveness

- Nguyen (2011) using Danish firm-level data :
 - The type of competition by market (product-destination) can be inferred from firm-level relation between export revenues and prices (unit values)
 - He estimates $\ln sales_{nctf} = A_{nct} + \beta_{nct} \ln p_{nctf} + \varepsilon_{nctf}$
 - Plots the distribution of the betas

- 60% of Danish exports are to markets with negative price-sales elasticity
- Huge heterogeneity is observed across markets
- Price-sales elasticity is related to GDP per capita of destination, following an inverted U-shape

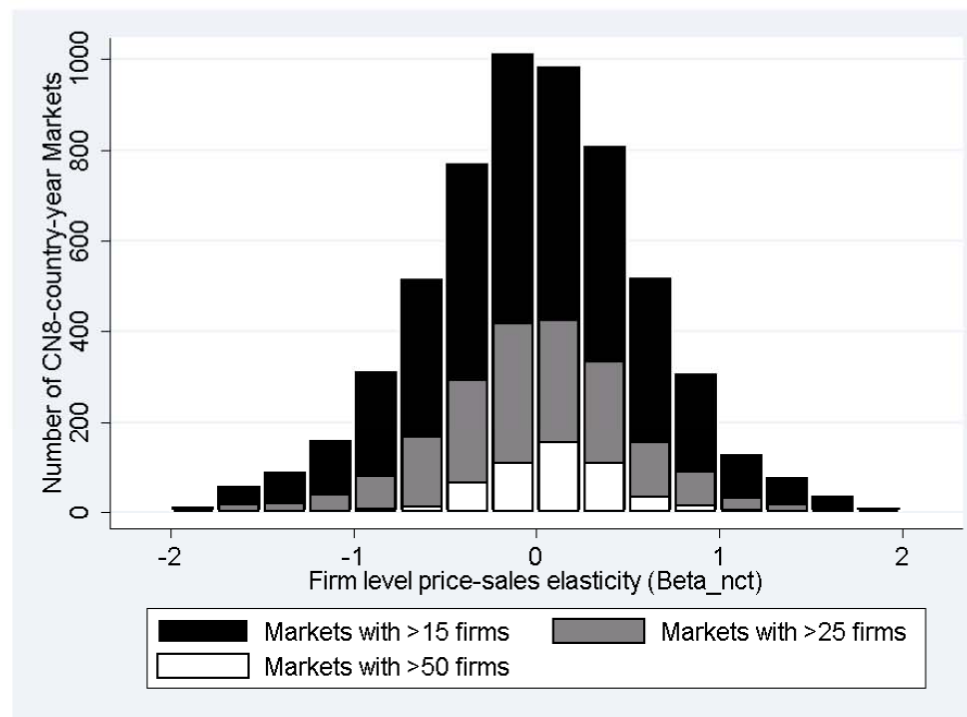
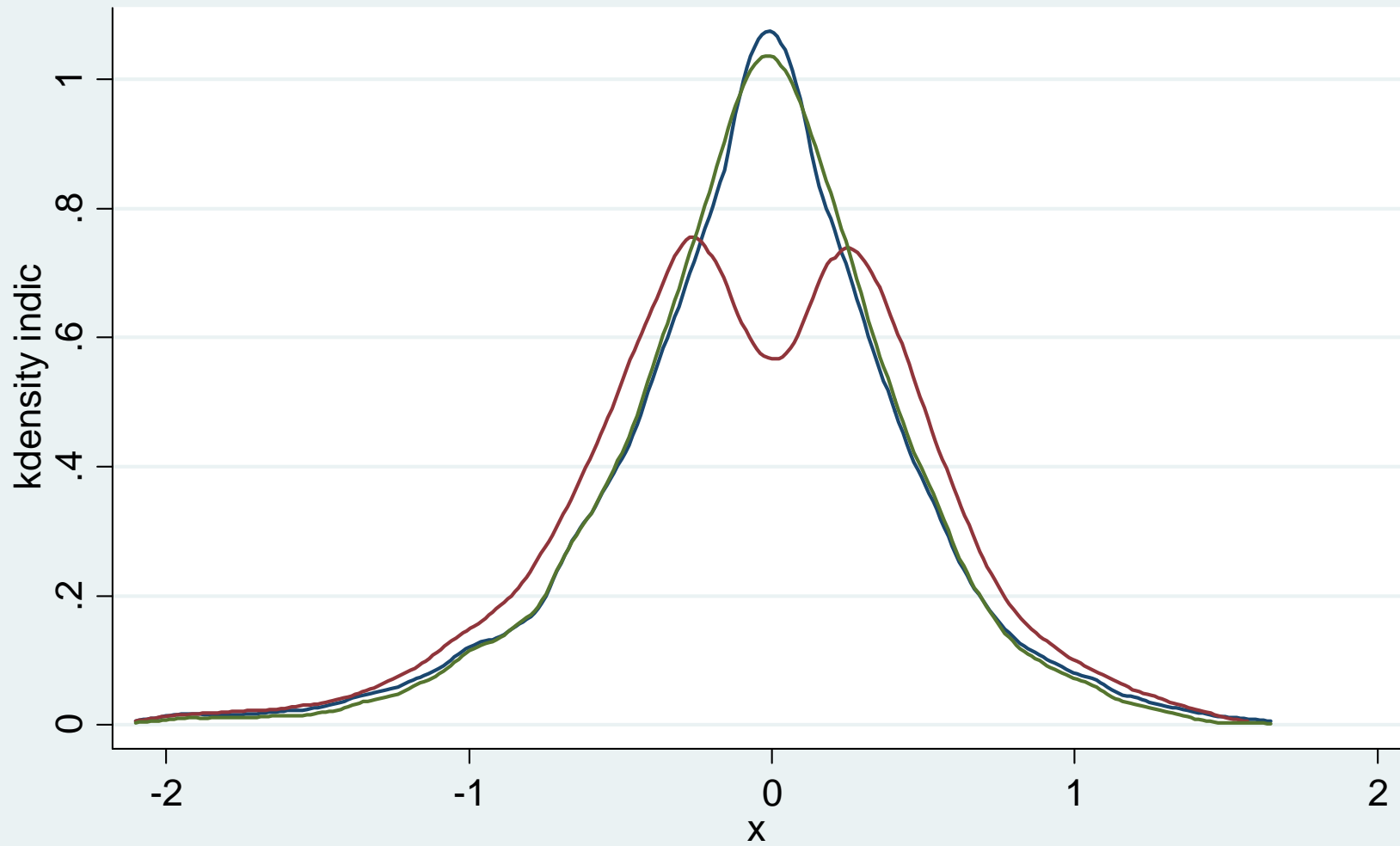


Figure 1: Price-Sales Elasticities β_{nct} for 5899 CN8-country-year markets. The gray (white) distribution comprises only markets with greater than 25 (50) firms.

Source : Nguyen, 2011



— kdensity indic — kdensity indic
— kdensity indic

Median = -0.0184671 ; Mean = -0.04949

Possible research directions

- Aggregate indicators of quality in exports
 - uses the detailed trade data (firms, products, destinations per year)
 - Distinction of within-firm evolution, reallocation of market shares, entry/exit
 - Exploit characteristics of destinations...

Possible research directions

- Identification of price/quality competition across sectors (and destinations)
 - For which sectors and/or do we observe price / quality competition?
 - Can we identify differences in terms of export performance across sectors differentiated by the type of competition?
 - Distribution of firm-level exports growth for each type of sector

Appendix

Indicators of quality

- **Boorstein and Feenstra (1987) index:**

- Changes from the aggregate quality index can be inferred from the comparison of the unit value and ideal price indices:

$$\Delta \ln Q_{kct} = \Delta \ln UV_{kct} - \Delta \ln \pi_{kc}(\{p_{fpct}\})$$

- Any increase in the unit value index that is not matched by an equivalent price increase is the result of consumption being reallocated towards more expensive varieties
- Reallocation is optimal if these varieties are of better quality

Indicators of quality

- **Khandelwal, Schott and Wei (2012):**

- Utility incorporates a preferences parameter λ

$$U = \left(\int_{\zeta \in \Omega} (\lambda_c(\zeta) q_c(\zeta))^{\sigma-1} d\zeta \right)^{\sigma/(\sigma-1)}$$

- Quality shifts the demand addressed to each variety:

$$q_c(\varphi) = \lambda_c^{\sigma-1}(\varphi) p_c^{-\sigma}(\varphi) P_c^{\sigma-1} Y_c$$

- The quality of a variety is obtained taking the residual of the demand equation, controlling for prices, product fixed effects, and destination-time fixed effects:

$$\ln q_{fhct} + \sigma \ln p_{fhct} = \alpha_h + \alpha_{ct} + \epsilon_{fhct}$$

- Quality is computed as: $\ln \hat{\lambda} = \hat{\epsilon}_{fhct} / (\sigma - 1)$

[Back](#)