



## Invited article

# The price and income elasticities of the top clothing exporters: Evidence from a panel data analysis



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## ABSTRACT

This paper studies the main export function features of twelve top clothing exporters (China, Hong Kong, France, Germany, India, Indonesia, Italy, Netherlands, Spain, Turkey, UK and USA) in the period between 1992 and 2011. Price and income elasticities are estimated for each economy using a panel data approach, after controlling for nonstationarity, cointegration and Granger causality. Rolling regressions are also performed, and show the existence of some elasticities instability over time, fundamentally related to the profound economic and institutional changes affecting the clothing trade in the period under consideration. The analysis suggests that most advanced economies, including Hong Kong, changed their position in the global value chain towards an “organizational” role. China confirms its leadership in clothing exports although its rising price elasticity sounds a warning with regard to future prospects.

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## 1. Introduction

The analysis of the size and time stability of an economy's export elasticities is of central importance in empirical trade studies (see, among others, Arize, 2001; Aziz & Li, 2008; Hooper, Johnson, & Marquez, 2000; Sharma, 2001; Thorbecke, 2010), given their fundamental role in terms of growth performance, international competitiveness, balance of payments equilibrium and industrial policy decisions. In fact, as noted by Aziz and Li (2008), if export price and income elasticities are low, changes in external conditions or in the exchange rate are unlikely to have much impact on an economy's growth or its current account dynamics. However, if they are not stable, little can be said about how an economic system might respond to such changes. In empirical trade literature, several papers focusing on Asian economies study the size and stability of export function parameters for the whole system (Arize, 1990, 2001; Aziz & Li, 2008; Lucas, 1988; Muscatelli, Srinivasan, & Vines, 1992). The most widely studied case is China, given its increasing importance in international trade especially after its entry into the World Trade Organization. In particular, Yao, Tian, and Su (2013) estimate China's export elasticities for the time period 1992–2006 and find that its outstanding performance is due to the joint influence of a very high income elasticity (2.34) and a surprisingly low price elasticity (−0.65). However, Aziz and Li (2008) find that in the same period price and

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**Table 1**  
Top 15 Clothing exporters: export values (Billion of USD) and market shares in 2011.

	Export value	Market share (%)
China	153.8	37.28
Hong Kong	24.5	5.94
Italy	23.2	5.64
Bangladesh	19.9	4.83
Germany	19.6	4.76
India	14.4	3.48
Turkey	13.9	3.38
Vietnam	13.2	3.19
France	11.0	2.67
Spain	9.2	2.24
Belgium	9.0	2.20
Netherlands	8.2	2.00
Indonesia	8.0	1.95
United Kingdom	6.6	1.59
United States	5.2	1.27
Total	340.0	82.42

Source: Authors' elaboration on WTO data.

income elasticities were not stable, but increased over time, because of changes in the composition and degree of sophistication of exports.

All the above mentioned studies use aggregate data and real effective exchange rates (REERs) to estimate the basic parameters of the export functions. Some studies highlight the importance of using disaggregated sectoral data in order to obtain specific trade elasticities at the industry level, but still adopt aggregate REER indexes in their estimations. Finally, others make use of industry-specific REERs (Dai & Xu, 2013): this approach is the most appropriate from both a theoretical and an econometric standpoint, as confirmed by the fact that a significant relationship between sectoral exchange rates and exports can be identified here (Dai & Xu, 2013), unlike many studies using aggregate REERs.

Sectoral elasticities have the further advantage of allowing comparisons between different economies in specific industrial sectors, in order to shed light on their positioning in the global market and avoid problems connected to the composition fallacy (for details, see Mayer, 2003). Price elasticities can thus indicate the relative strength of an economy's production, since it is likely that high-quality goods will exhibit an inelastic foreign demand and vice versa. On the other hand, income elasticities, closely correlated with the export growth rate, reflect the non-price competitiveness of an economy, and are influenced by factors such as export composition by goods and destination markets, embodied technology, marketing strategies and promotion, distribution services, financial assistance to exporters and so on.

The aim of this paper is to estimate the export price and income elasticities for the world's top exporters in the clothing industry. This sector was chosen as it has been the driving force behind the impressive export performance of many Asian economies, including China, Hong Kong, Bangladesh, India, Vietnam and Indonesia. This is particularly true for China, the leading exporter in 2011 with a 37.3% share of world exports (see Table 1). The other five economies are among the top ten exporters and together account for another 19.4% of world clothing exports. Clothing is also a low-tech industry which still plays an important role in value added creation and trade in many advanced economies<sup>2</sup>, despite recent strong competition from lower-wage nations. Finally, clothing also carries the quality reputation of an economy and its productive system.

The contribution of this paper is threefold. First, price and income elasticities for the top exporters in the last twenty years are estimated and compared. Second, these elasticities are re-estimated for different sub-periods in order to verify whether they are stable over time. To the best of our knowledge, this is the first study providing such estimates for twelve top world clothing exporters over a time-span of twenty years. Third, our econometric analysis allows insights into strengths, weaknesses and prospects for the clothing industry derived by jointly considering market shares, export average unit values (AUVs) and price and income elasticities for each sample economy. In particular the paper provides the theoretical and empirical background to assess whether investing in a traditional industry like clothing is still profitable and thus sustainable, especially in the case of advanced economies. This conclusion would appear to be at variance with recent literature on industrial policy, which mainly suggests discouraging investment in traditional sectors and promoting R&D expenditure in high-tech industries (see, for example, OECD, 2010; European Commission, 2010), because of their higher productivity growth rates (Fagerberg, 2000; Grossman & Helpman, 1991).

Adopting an original methodology, we use an appropriate measure of relative export prices, obtained as the ratio between each economy's disaggregated export unit values and the AUVs of the whole sample. We also examine issues that have been little investigated in literature in the field, such as the order of integration of trade variables, their possible cointegration in the long run and the direction of Granger causality between them. Our empirical analysis uses a panel data approach, which

<sup>2</sup> See Table A1 in Appendix A for the share of clothing in total manufacturing exports for the twelve economies considered in the analysis.

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