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THE CLOTHING EXPORT PERFORMANCE AND PROSPECTS FOR ADVANCED AND EMERGING ECONOMIES: EVIDENCE FROM A PANEL DATA ANALYSIS

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PRELIMINARY VERSION

Abstract

This paper studies the clothing export performance of twelve top exporting countries (China, Honk 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 country, after controlling for nonstationarity, cointegration and Granger causality. Price elasticities estimates are used, together with market shares and unit values dynamics, to assess the export performance and prospects of the various countries. A multifarious picture emerges from the analysis, whereby China plays the role of uncontested leader, but not all the advanced European countries, which are supposed to be more severely hit by the competition of the low-labour costs countries, definitely lose competitiveness, since different outcomes are possible according to the specific price and quality strategies adopted.

JEL: F10, F14, O10,

Keywords: Clothing, Price elasticity, Income elasticity, Export Performance, Product Quality, Panel Granger causality

1. Introduction

In the last decade, the knowledge economy has emphasized the importance of innovation for competitiveness spreading the idea that economic growth, especially in advanced economies, rests on high technology industries.

Already in the Eighties, Lucas (1988) suggests that countries specializing in high tech activities would enjoy high rates of productivity growth compared to other countries. Fagersberg (2000) notices that in a globalized world this may not imply slower growth in welfare in low-tech specialized countries, as long as differences in productivity growth are fully reflected in prices. However, if producers of high-tech products can keep most of the returns from faster technological progress to themselves by controlling prices (Reinert, 1993), the prospects for countries specialized in low-tech may be rather bleak. In such a case, it may pay off for a country to change its pattern of specialization towards more promising areas through policy intervention, as suggested by Lucas (1988).

This point of view has lead European governments and the European Union (EU) to focus their policies on the importance of R&D for development and high tech industries, as defined by R&D intensity, to foster competitiveness and growth (e.g. Sapir et al., 2003; European Commission, 2004). The Integrated Guidelines at the basis of the Europe 2020 strategy follow the same wave, having the goal of “optimising support for research, development and innovation, strengthening the knowledge triangle and unleashing the potential of the digital economy” (European Commission, 2010).

The underlying assumption is that high wage levels make it unlikely for advanced European countries to withstand competition from low-wage countries with increasingly skilled labour force. According to this stream of thought, European advanced countries should dismiss their traditional productive background opting for a structural change towards more R&D intensive industries.

This focus goes at the detriment of traditional sectors, which for a long time have been the backbone of European growth and still occupy a good part of the labour force, especially in new accession countries such as Bulgaria and Romania.[1] Furthermore, in some countries low-tech industries give a significant contribution to the balance of payments. Taking Italy as an example, low-tech industries contribute to the trade balance with a surplus of 18 billion euros, while the overall trade balance is in deficit for 36 billions and the balance for goods and services is negative for 33 billions. [2]

Finally, in advanced countries such as Italy, France, Germany and Spain, despite the diminishing weight of traditional sectors on total employment, industries such as food and clothing not only contribute to value added and employment by themselves, but also generate a reputation for the country based on quality and excellence with positive

[1] Taking the clothing industry, which will be the focus of this study, as an example the ratio between the *Number of employees in full time equivalent units* in this sector with respect to manufacturing in new accession countries such as Bulgaria, Romania and Lithuania in 2010 was 20.06%, 13.81% and 10.84% respectively (Eurostat). Also some of the former member states still present important percentages, i.e. Portugal 13.27% and Italy 5.30%. In Italy, however, the change in output composition was not in the direction predicted by specialization theories: the high-tech industries, which used to account for an important share of output in the fifties and sixties, generally contracted afterwards. During the period of increasing globalization – second half of the seventies, the eighties and the nineties –, on the contrary, the expanding industries were mainly the traditional ones and the sectors producing investment goods for them (Traù, 2003).

[2] These figures are taken from ISTAT Coeweb database.

externalities for the whole economy. A progressive dismissal of traditional sectors could therefore produce a loss of competitive advantage for such countries. It is also worth noting that an industrial policy predominantly based on R&D and high-tech sectors risks to increase interregional inequality in favour of city-regions, since peripheral regions are less equipped to compete for high tech industries (Hansen and Winther, 2011).

On the other hand there is a number of studies (see among others: Kirner et al., 2009; Radauer and Streicher, 2007; Tunzelmann and Acha, 2005) pointing out that non-research-intensive industries are – and will be for the foreseeable future – important not only for employment but also for growth and knowledge formation. Moreover, they challenge the view of innovation as limited to R&D expenditure intensity and highlight the importance of innovation also in low and medium tech industries. [3]

In this paper we argue that traditional sectors could still have an importance place in the productive mix of advanced (European) countries. However, in order to be competitive, countries with high relative prices (mainly due to higher labour costs but, in most cases, also to higher quality standards [4]) should be able to guarantee higher quality and higher quality-price ratio.

For such countries competitiveness becomes a matter of quality rather than of price.

A number of studies (Borin and Lamieri, 2007; Felettigh and Federico, 2010) highlight how export price elasticity could be a valid instrument in order to understand the degree of quality competitiveness of a country. Indeed, a country denoted by high prices and quality reputation is likely to exhibit a rigid demand. However, as time goes by, demand can become more elastic if the markets recognize a decrease in product quality and then demand will shift to products from countries with same quality but lower prices. On the contrary, demand can remain rigid if consumers recognize the superiority of a country's products and maintain a high willingness to pay for high quality goods. If quality lowers with time, then it is likely that demand will shift to lower price-same quality goods, and elasticity will increase[5].

For these reasons, we think that a combined study of the price elasticities, market shares and export unit prices of a country over a period of two decades can shed light on the competitiveness of traditional sectors in advanced countries and their potential for the future. Changes occurred in different countries will be analyzed in order to understand if there has been a uniform reaction to the emergence of new competitors or if competitiveness has increased for some countries with certain features and decreased for others.

In order to reach our purposes the clothing industry has been chosen as the focus of the analysis. Clothing is one of the low-tech industries which still covers an important part in employment, value added creation and export[6], both in emerging and advanced countries. It is also a sector where advanced European countries suffer more the competition of lower-wage countries such as China, Hong Kong, India and Turkey. In the trade balance of a

[3] A Special Issue (Number 38, Issue 3) of Research Policy is entirely dedicated to this topic.
[4] Considering the indicator *Share of personnel costs in production* provided by Eurostat for the Clothing Industry, Italy (the country with higher export unit values) shows a percentage of 15.7 and Germany of 19.7%, well below the European average of 21%. This is probably due to other factors affecting the total costs of productions, such as the use of quality materials.
[5] In this paper elasticity is considered in absolute value. An increase in elasticity (in absolute value) will thus imply a decrease in its algebraic value and vice versa.
[6] See Table A1 in the Appendix for the share of Clothing in total manufacturing export for the twelve countries considered in the analysis which follows.

country like Italy, clothing exports contribute with 4.6 billions euros to the surplus provided by low-tech industries.[7] Finally, clothing can be considered as representative of the quality reputation of a country and of its productive system.

We share the approach of previously mentioned studies in choosing to analyze export data, owing to the higher availability and comparability of data on production and unit values and the importance of exports on the trade balance and growth performance. Indeed it is worth noting that in a lung run perspective exports are the true final determinant of real growth of an open economy, since they are the only exogenous component of aggregate demand.[8]. We depart from previous literature in that we are not interested in studying export elasticities towards specific destination markets but rather the price elasticity of clothing exports of the main exporting countries with respect to the whole world.

The contribution of the present paper is twofold. First, price and income elasticities for the twelve top exporting countries updated until the most recent evidence are provided and compared. Second, the analysis brings evidence that competitiveness of advanced countries, expecially the European ones, is not compromised by low labour costs of emerging countries, but rather depends on specific price and quality strategies. It follows that export performance in low tech industries can still represent a significant contribution to economic growth.

The paper is structured as follows. Section 2 describes the model to be estimated and the available data. Section 3 presents the testing framework and the estimation methods used, together with the results obtained. A number of robustness checks are also provided. Section 4 concludes and highlights the main policy implications to be drawn from the evidence shown.

2. Model specification and Data

The model to be estimated is a traditional export function specification for each good and country considered, in a panel context. Hence the following equations are estimated:

$$\ln X_{it} = \alpha_i + \beta_{1i} \ln RP_{it} + \beta_{2i} \ln GDPW_t + \varepsilon_{it} \tag{1}$$

where lnX_{it} are the yearly export volumes for each of the 37 goods; $lnGDPW_i$ is the annual world GDP in constant 2005 USD; $lnRP_{it}$ are the yearly relative export prices of each good; t=1,…,T; i=1,…,N, and α_i represents the intercept, while β_{1i} and β_{2i} are respectively the clothing exports price and income elasticities of each countries . All the variables are transformed in natural logarithms. Relative prices were obtained as the

[7] Figures based on data collected from the ISTAT Coeweb database.

[8] As well known GDP is the sum of households and Government consumption, investment and exports minus imports. In the long run households consumption, imports and investment (through the acceleration mechanism) depend on income, while Government expenditure, if the balanced-budget principle is to be respected, depends on taxation, which in turns depends on income too, so that exports are the only exogenous variable capable of triggering the growth process. Also, according to the post-Keynesian approach, economic growth is limited by the balance of payments constraint, so that increasing a country's exports allows it to relax the binding constraint and achieve a higher rate of GDP growth (McCombie and Thirlwall, 2004).

ratio between export unit values of each country for every good *i* at time *t* (UV_{it})[9] and the average export UVs for all 12 countries considered. The coefficient of $lnRP_{it}$ is expected to be negative while the coefficient of $lnGDPW_i$ is expected to be positive.

The data employed in this study were obtained from the UN Comtrade database. Annual data from 1992 to 2011 were collected for the 15 top exporting countries, which together accounted for the 82.42% of the total value of exports for 2011 (Table 1, Source of data WTO). Three countries however (Bangladesh, Belgium and Vietnam) were excluded from the sample having incomplete records for the twenty years considered. The analysis was then carried out on the twelve remaining countries (China, Hong Kong, France, Germany, India, Indonesia, Italy, Netherlands, Spain, Turkey, UK, USA) accounting for the 72.20% of the 412 billions euros of world exports in 2011.

The available data were gathered to form 12 panel datasets, one for each country. Each dataset consists of 740 observations relative to 37 clothing goods[10] (4 digit level of the Standard International Trade Classification Rev. 3) observed for 20 years.

Table 2 provides the descriptive statistics for export volumes, shares of each country's clothing exports on the total of the 12 countries and UV_{it} for each country at the beginning and the end of time span considered, together with an average for the twenty-year period. It should be noticed that in 1995 the General Agreement on Tariffs and Trade (GATT) Uruguay Round came into effect, so that it was decided to bring the textile trade under the jurisdiction of the World Trade Organisation (WTO). The Agreement on Textile and Clothing (ATC) provided for the gradual dismantling of the quotas that existed under the Multi Fibre Arrangement (MFA), signed in 1974. The process ended in 2005.

The time dynamics of the 12 countries market shares[11] in volumes reveals a decrease for Hong Kong, Italy, UK, USA and an increase for China, Germany, India, Spain and Turkey. It is worth noting that China after 2005 overcame the threshold of 50% of total exports in volumes, more than doubling its 1992 share. France, Indonesia and the Netherlands show a rather stable pattern.

Quite interestingly, the export share of Italy in value (USD) remains relatively high throughout the whole period. This is due to the experienced high increase in UVs. Furthermore UVs are considerably higher than all other countries in the sample.

3. Methods and results

3.1 Panel unit root tests

In the first step, the variables' order of integration is determined. It is common practice in the literature to perform many panel unit root tests, given their shortcomings in terms of size and power properties. For these reasons, three different panel unit root tests are proposed: Breitung (2000) and Hadri (2000), which assume homogeneity

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[9] Export unit values for each good and country are obtained by dividing exported goods values by their volumes. Similarly average export UVs for each good of the whole sample countries are obtained by dividing total export values of each good by their total volumes.

[10] A list of the goods considered in the analysis is provided in the Appendix.

[11] From here on, we will use *market share* in order to indicate the export volume (or value) of the single country on the total of the 12 countries considered on the analysis.

among the cross section's unit roots, and a more recent test by Pesaran (2007). The null hypothesis of these unit root tests is all series contain a unit root, with the exception of Hadri (2000), whose null hypothesis is all panels are stationary. The implementation of Hadri unit root test is conducted to confirm or deny conclusions based on tests with the null hypothesis being nonstationarity. Moreover, Pesaran (2007) unit root test is more powerful because it allows us to verify the nonstationarity of our variables in heterogenous panels with cross section dependence. As underlined by Pesaran (2007), this last test is also appropriate even in the case of very small sample sizes (e.g., when N and T equal 10). In addition, two popular time series unit root tests are employed to verify the order of integration of $GDPW_t$: Augmented Dickey-Fuller test (ADF) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) unit root tests (see Said and Dickey, 1984 and Kwiatkowski et al., 1992). This choice is motivated by the nature of this variables, which has properly time series property given its invariance for each cross sections.

Tables 3a, 3b and 3c show the results of the tests for the three variables of interest. Time series unit root tests confirm the nonstationarity of the world GDP ($lnGDPW_t$) as a priori expected. Export volumes lnX_{it} are found to be I(1) for all countries. Only the Breitung test for the UK suggests the variable to be I(0), but all other three tests confirm nonstationarity.

As for the variable $lnRP_{it}$, on the contrary, the Breitung first-generation test indicates nonstationarity for the majority of countries. However both the Hadri and the second-generation Pesaran tests show evidence of non-stationarity for the twelve panels of countries.

3.2 Panel cointegration tests

In order to investigate the existence of a long-run relationship among the considered variables, the Pedroni (1999) and Kao (1999) tests were computed for the 12 panel datasets. Both tests are based on the Engle-Granger (1987) two-stage cointegration test framework.

Pedroni test allows for heterogeneity across the cross sections in terms of intercept and trend coefficients. After the estimation of Equation (1), the stationarity of residuals is tested, which are supposed to be I(1) under the null hypothesis of no cointegration in a heterogeneous panel. For this purpose, Pedroni proposed two groups of cointegration tests. The first group is a panel statistics test or within dimension test which includes four statistics: panel-v, panel-ρ, panel-pp, and panel ADF-statistics. This group pools the residuals of the regression along within the dimension of the panel and considers homogeneity across the cross sections. The second group is a between dimension and group statistics test which includes three statistics: group-ρ, group-pp, and group ADF-statistics. This group pools the residuals of the regression between the dimensions of the panel and allows for heterogeneity across the cross sections.

The second test is Kao test, that follows the same basic approach as Pedroni test but specifies the cross section specific intercepts and homogenous coefficient during the first stage, thus meaning heterogeneity in intercept α_i and homogeneity in β_{1i} and β_{2i} and all coefficients trends to be zero.

As per the Pedroni test, the null of no cointegration is rejected if at least four out of seven of the provided statistics are significant. [12] Table 4 shows that cointegration is confirmed by both tests in seven out of twelve countries. For the remaining five countries one test confirms cointegration while the other does not. As far as Hong Kong, Turkey and USA are concerned, Pedroni fails to reject the null of cointegration but Kao reject it. For India and Germany, on the contrary, Pedroni test rejects cointegration while Kao does not. On the whole, since for each country at least one test confirms cointegration, the presence of a long-run relationship among the variables is assumed.

3.3 Panel Granger causality test

Given the existence of a cointegrating relationship among the variables, the next step is to determine the direction of the causality relationship between them. Causality is tested by the two-step Engle–Granger causality procedure (Engle and Granger, 1987).

Firstly, we apply the panel Mean group estimator proposed by Pesaran and Smith (1995) to the three following equations:

$$\ln X_{it} = \alpha_i + \beta_i \ln RP_{it} + \gamma_i \ln GDPW_t + \varepsilon_{it} \tag{2a}$$

$$\ln RP_{it} = \alpha_i + \beta_i \ln X_{it} + \gamma_i \ln GDPW_t + \varepsilon_{it} \tag{2b}$$

$$\ln GDPW_t = \alpha_i + \beta_i \ln X_{it} + \gamma_i \ln RP_{it} + \varepsilon_{it} \tag{2c}$$

in order to estimate the long run equations and obtain the residuals or error correction terms (ECTs), which are a deviation from the long-run equilibrium relationship. Estimation is repeated for each country panel dataset.

This estimator is designed for “moderate-T, moderate-N” macro panels, where moderate typically means about 15 time series/cross section observations. It is part of the panel time-series (or nonstationary panel) literature, which emphasizes variable nonstationarity, cross section dependence, and parameter heterogeneity (in the slope parameters, not just time-invariant effects). It has been preferred to more widely used estimators, such as the DOLS and FMOLS, since this estimator demonstrated a better fit to our panel data characterised by moderate time series of length T=20.

In the second step the lagged residuals of (2a), (2b) and (2c) are incorporated into the VECM framework as the ECTs. The dynamic error correction model can be specified as follows:

$$\Delta \ln X_{it} = \alpha_{1j} + \sum_{m=1}^{n} \theta_{11im} \Delta \ln X_{it-m} + \sum_{m=1}^{n} \theta_{12im} \Delta \ln RP_{it-m} + \sum_{m=1}^{n} \theta_{13im} \Delta \ln GDPW_{t-m} + \gamma_{1i} ECT_{it-1}^{\ln X} + u_{it} \tag{3a}$$

$$\Delta \ln RP_{it} = \alpha_{2j} + \sum_{m=1}^{n} \theta_{21im} \Delta \ln RP_{it-m} + \sum_{m=1}^{n} \theta_{22im} \Delta \ln X_{it-m} + \sum_{m=1}^{n} \theta_{23im} \Delta \ln GDPW_{t-m} + \gamma_{2i} ECT_{it-1}^{\ln RP} + v_{it} \tag{3b}$$

[12] For the within dimension, weighted statistics have been calculated as well. They have not been reported in the Tables since they confirm the results of unweighted statistics. Estimations are available upon request.

$$\Delta \ln GDPW_t = \alpha_{3j} + \sum_{m=1}^{n} \theta_{31im} \Delta \ln GDPW_{t-m} + \sum_{m=1}^{n} \theta_{32im} \Delta \ln X_{it-m} + \sum_{m=1}^{n} \theta_{33im} \Delta \ln RP_{it-m} + \gamma_{3i} ECT_{it-1}^{\ln GDPW} + \varphi_{it} \quad (3c)$$

where Δ indicates the first differences of the variables and m the lag length. Three levels of causality can be determined: short run, long run and strong causality.

The short run causality is determined by means of a Wald test based on the null hypothesis H_0: $\theta_{12im}=0$ and H_0: $\theta_{13im}=0$ for all i and m in Equation (3a); similar null hypotheses are tested for Equations (3b) and (3c).

The long run Granger causality, the one of interest for this study, is investigated by testing the significance of the ECTs' coefficients γ_i. They represent the long run speed of adjustment at which the values of lnX_{it}, $lnRP_{it}$ and $lnGDPW_t$ return back to their long run equilibria once the equilibrium relationship is violated. Their sign is expected to be negative in accord with the convergence toward long-run equilibrium.

Strong causality is given by the joint significance of $ECT/\Delta lnRP_{it}$ and $ECT/\Delta lnGDPW_t$ for all cross sections in Equation (3a) and similarly for Equations (3b) and (3c).

The estimation method widely applied in comparable studies is the system generalised method of moments (GMM) proposed by Arellano and Bover (1995) and Blundell and Bond (1998). Following Holtz-Eakin, Newey, and Rosen (1988), Arellano and Bond (1991) developed a GMM estimator that instruments the differenced variables that are not strictly exogenous with all their available lags in levels. Arellano and Bond also developed an appropriate test for autocorrelation, which, if present, can render some lags invalid as instruments. A problem with the original Arellano-Bond estimator is that lagged levels are poor instruments for first-differences if the variables are close to a random walk. Arellano and Bover (1995) describe how, if the original equation in levels is added to the system, additional instruments can be brought to bear to increase efficiency. In this equation, variables in levels are instrumented with suitable lags of their own first-differences. The assumption needed is that these differences are uncorrelated with the unobserved individual effects. Blundell and Bond show that this assumption in turn depends on a more precise one about initial conditions. We followed the instructions provided by Roodman (2006, 2009) in order to assess the validity of the instruments and of instruments subsets, i.e. a high p-value of the Hansen J statistic (of at least 0.25) and of the difference-in-Hansen statistic. Furthermore, instruments were collapsed to limit instrument proliferation.[13]

Table 5 reports the results in terms of Wald tests on the coefficients.[14] In the long run bidirectional causality is confirmed for the whole sample with the exception of France for which the direction goes from price to volumes.

Given that for all countries the price is confirmed to Granger-cause volumes, the analysis can go on with the comparison of price elasticities for the 12 selected countries.

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[13] More details on estimations, instruments' number and p-values are available upon request. However, the maximum number of instruments used is well below the suggested threshold (maximum number of instruments = N, i.e. 37 in this case).

[14] Since in this study we are interested in understanding the direction of causality for lnX_{it} and $lnRP_{it}$, i.e. if prices determine export volumes or vice versa, we report only the results obtained for Equations (3a) and (3b). Estimations for Equation (3c) are available upon request.

3.4 Long run elasticities

Once the direction of causality is established and evidence about the presence of causality from prices to export quantities is verified, we can discuss the results obtained from estimates of Equation (2a). Our interest is in particular focused on the price elasticity of clothing exports for each country. The coefficients reported in Table 6 are unweighted averages of the estimated coefficients across groups (Eberhardt, 2012). All coefficients are statistically significant at the 1% or 5% level.

Figure 1 helps in interpreting the results. Price elasticities seem to be independent of average unit values (AUVs), market shares or the development status of a country (whether being advanced or emerging). The majority of countries concentrates on the range (-0.63, -0.85) with some exceptions: the USA - presenting the highest elasticity, together with the lowest AUV - and three low elasticity countries (Turkey, India and Spain) in the range (-0.36, -0.41) with low/medium AUVs. These results are in partial opposition to a priori expectations. Since price is frequently considered as a proxy for quality, countries with higher AUVs could in fact be expected to show more rigid demands with respect to countries characterized by low AUVs. Only the USA elasticity behaviour seems to confirm this hypothesis, while low AUV countries such as Turkey, India and Indonesia record lower elasticities than the majority of advanced countries with the exception of Spain.

In order to enhance our understanding of the dynamics and determinants of the countries' different price elasticities, a number of robustness check are presented in Section 3.5. In particular the effects of quality and time changes are taken into consideration.

Before moving to the robustness check, however, some considerations about income elasticities (see Table 6 and Figure 2) seem worthwhile as well. Coefficients are statistically significant for all countries with the exception of the UK. Countries recording higher export growth such as China, Spain and India, are those showing the highest income elasticities. The Netherlands, Turkey and Germany as well show a coefficient above 1.3, while other European countries, i.e. Italy, France and the Netherlands, are less responsive to world income growth. Hong Kong and the USA, quite particularly, exhibit negative income elasticities, due to the strong fall in their exports in the period under consideration. This is probably to ascribe to a shift in their specialization model toward more high-tech oriented goods, especially under the competitive pressure of China.

3.5 Discussion and Robustness checks

In this section a number of robustness checks are reported in order to understand and better explain the price elasticity coefficients presented in Section 3.4.

3.5.1 Introduction of weighted average coefficients

First of all, weighted coefficients for price elasticities have been estimated for each country. Table 6 presents the unweighted averages of the coefficients obtained with the N group-specific ordinary least-squares regressions as estimated by the Panel mean group estimators. However, it is likely that results change if weights are applied based on the importance of the 37 clothing goods on the total export per country. The variable used to estimate the weights is the mean of the variable X_{it} in the observation period. Results are reported in Table 7. The magnitude of the coefficients does not change significantly. China's and Hong Kong's price elasticities increase by 0.1 and 0.12 respectively, approaching the value of -1. France increases its elasticity by 0.07 and the Netherlands by 0.3. The coefficient for Indonesia is no more significant. These estimates depict a partially new picture where China and Hong Kong display the highest elasticities after the USA.

3.5.2 Division of the sample according to the goods quality level

Prices can be considered good proxies for quality in markets, like clothing, characterized by a high degree of vertical differentiation (Khanderwal, 2010). In this subsection an indicator, based on relative prices, is used in order to investigate if goods having different quality degrees also show different elasticities inside the same panel. In particular, a good is considered of low quality (L) if its average relative price in the 20-years period considered is lower than or equal to 0.85; of medium quality (M) if the relative price belongs to the open interval (0.85;1.15); and of high quality (H) if the relative price is equal to or greater than 1.15.

In order to achieve this goal, Equation (2a) is estimated using the Mean group estimator for each category of quality.

Table 8 shows the results of the estimates. France, Germany and Italy's whole basket of goods belongs to the high quality category while Indonesia's to low quality. As for the other countries, some interesting findings emerge. Hong Kong's L goods present an elasticity of -1.20 compared to -0.75 for M and -0.79 for H goods.

China, as well and more evidently, shows lower elasticities for H and L goods (-1.07 and -1.10, respectively) than for M goods (-0.72). The same thing happens for the Netherlands, India, and the UK. Inside these panels, therefore, the hypothesis that low quality goods are characterized by higher elasticities is confirmed. Contrary to expectations, instead, H goods seem to follow the same rule of L goods.

The UK - which records 20 H and 17 L goods – behaves consistently, even though there is only a slight difference in the magnitude of the coefficients.

As far as the USA are concerned, instead, these estimations confirm that the country has the highest elasticity for the 33 low quality goods while the 3 goods of high quality have an elasticity of -0.58, which is consistent with our hypothesis.

Similarly, the Spanish demand for high quality goods is slightly more rigid than that for medium quality goods.

As for Turkey, even this analysis confirms the surprisingly low elasticity[15] resulting from the MG estimates, though the medium quality category coefficient is not significant.

3.5.3 Estimation of rolling periods elasticities

Finally, in order to understand if elasticities have changed during the considered period and in which measure, rolling periods elasticities estimates have been carried out. The

[15] This result is consistent with the evidence provided by Erdoğan Coşar (2002).

MG estimator has been applied for the 12 panel datasets considering 12 periods of T=9, from the period 1992-2000 until the period 2003-2011.

Figures 3 displays the results. The upper graph reports the results for the whole sample. It is easy to recognise a common path for a group of countries whose elasticities rise around the period 1999-2007. A closer look reveals that it is the group of medium-price countries, and specifically India, Cina, Hong Kong, and the Netherlands, as detailed in the bottom-right graph. The USA - the only low-price country presenting significant estimates when rolling periods elasticities are computed - was included in this graph since they share with medium-price countries an increase in elasticities in the same period, although of a smaller size.[16] However, the USA elasticities remain in the range of the medium/high price countries, such as France, Germany, Italy, the UK, Spain. A detailed representation for such countries is provided in the bottom left graph. Some interesting outcomes of rolling periods estimates are the following.

First of all, elasticities are not uniform but vary according to the different period considered.

Secondly, medium price countries show a common trend in that elasticities remain low in the first periods and start to grow from 1999-2007. In particular, in the last decade China elasticity overcomes the value of -2, India the value of -1.5 and Honk Kong the value of -1.3, while from the long run estimates for the whole period the three countries present elasticities in line with those of the majority of advanced countries.

This evidence provides support to the hypothesis of a higher elasticity for low/medium goods with respect to high price (and then quality) goods.

Third, medium/high price countries elasticities are rather stable below 1 (in absolute terms) but differences can be recognised in their trends. While the UK and Germany experience a decrease in elasticities, Italy shows an opposite trend. France's elasticity, instead, after a period of steady decrease, follows the same Italian path.

The Spanish elasticity is one of the lowest for the whole period and it is worth noting that Spain is the only country of the medium/high price group recording a growth in the market share both in volumes and in values. This suggests a competitiveness gain for this country in the clothing industry together with an increased quality and reputation of its products. If AUVs and market shares grow and, at the same time, elasticities remain stable, a high price can be considered a good indicator of a high quality. If, on the contrary, AUVs increase but elasticities and market shares fall, as in the case of Italy, this could be the sign of a decline in competitiveness so that high prices alone can no longer be considered as a proxy for quality.

Figures 4 and 5 contribute to a better understanding of the changes occurred in the countries competitiveness over the last decade. Figure 4 represents the position of each country in terms of elasticity and AUV at the beginning of the century. In particular the elasticities for the rolling period 1992-2000 are plotted on the y-axis; the AUVs for the year 2000 on the x-axis. The size of the points is given by the market share in volumes for each country at the time considered. Table 5 displays the same picture for the rolling period 2003-2011 with the base year 2011 for AUVs and market shares. The lines dividing the graph in four quadrants cross the y-axis in the mean point between higher and lower elasticities and the x-axis in the point of mean AUV for the years 2000 and 2011.

[16] Turkey and Indonesia have been included in the graph for all countries but not in the detailed ones since only a small part of the coefficients obtained from the rolling periods estimates are significant.

The relatively low elasticities of low AUVs countries such as Turkey and Indonesia, lying in the bottom left quadrant, need to be better investigated. The USA experienced an increase in elasticity, but, in relative terms, it is however less consistent than those of China and India. For this reason the USA lie in the bottom-left quadrant in Fig. 5.

China, India, and the Netherlands appear in the upper side of the graph, while Germany, Spain and France, HK and Italy lie in the quadrant of higher AUVs and more rigid demand elasticities. The circles sizes (reflecting each country's market share) highlight that Spain's market share - although increasing – is still distant from France's and Germany's. Italy remains in the bottom-right quadrant (high price, low elasticity) but its market share decreases considerably and its AUVs increase significantly more than for other countries.

Germany, showing a significant decrease in elasticity – the lowest among the other advanced countries -, a still high market share, high AUVs - but not as high as Italy -, seems to be the country with the highest competitive advantage among the medium/high price nations.

4. Conclusion and policy implications

In this paper we have argued that low tech industries deserve the attention of policy-makers because even in advanced countries they can still contribute to economic growth and equilibrium in the balance of payments.

This argument has been developed by comparing price elasticities, market sizes and relative prices of 12 of the top exporting countries in the clothing industry for which export data were available for at least 20 years (1992-2011).

Firstly, we checked that the variables employed in the estimation of price elasticities (export quantities, relative prices and world GDP) were I(1) and cointegrated. Secondly we investigated the causal pattern of causality among the considered variables by means of an Engle–Granger panel procedure. The direction of causality from prices to export quantities was found to exist for each of the twelve countries. Finally we used the estimated price elasticities in order to compare the countries features. In the comparison we also took into account the differences in the quality of the goods exported and the changing time behaviour of elasticities obtained by separating the two decades in twelve rolling periods of 9 years each.

Results indicate that China, whose market share overcomes 50% of total exports, also displays the highest price elasticity, which has started to grow from the rolling period 1998-2006, when the whole group of medium price countries experienced the same pattern.

Low price countries show low elasticities. This result needs to be better investigated since it is contrary to a priori expectations, but an in-depth analysis of this aspect is beyond the aim of this paper. Turning to discuss the behaviour of medium-high price countries, and in particular of European advanced states, our findings support the hypothesis that their competitiveness has not diminished.

However, different price strategies have brought to different results.

Germany's export unit prices have decreased during the twenty-year period considered and this trend has determined lower elasticities and higher market shares.

Spain's unit values, on the contrary, have increased but its price elasticity has remained rather constant and its market share has increased. These two countries share a positioning in the medium/high price segment, with an average unit value around USD 40. It is likely that the increasing competitiveness of the two countries is given by this positioning. Their AUVs, in fact, are higher than competitors such as China and Hong Kong, in this way signalling quality, but not so high as France and Italy. Italy, in particular, with an AUV of USD 92 in 2011, has experienced a strong decrease in its market share and an increase in its price elasticity.

This phenomenon could be given different explanations. It could indicate that there has been a substantial churning inside the clothing industries leaving only high segment firms to survive. On the one hand, then, it could be a quality-upgrading sign, but on the other it could also indicate a loss in competitiveness due, on the production side, to high costs and, on the demand side, to a difficult absorption by high-price goods markets. The worrying element is the constant decrease of the country's export market share accompanied by an increase in its absolute price elasticity. It is worth noting, however, that Italy's market share in values, although halved in twenty years, is still high, ranking in third place after China and Kong Kong. An adjustment process could be in act whereby Italy's would position in the luxury segment, for which a market willing to pay high prices for high-quality or luxury goods exists. At the same time, those markets interested in goods with a high quality-price ratio could be shifting to Spanish or German products.

The importance of the clothing industry in terms of output, employment and revenues is thus still evident, but a qualitative and quantitative deeper understanding of the forces behind the achieved results is needed in order to understand how the Italian apparel industry can remain competitive. Existent literature on the phenomenon indicates the need for a quality upgrading of the industry but it goes back to the pre-crisis period and an updated examination is needed.

France seems to share some of the Italian problems, although its price level is not as high as Italy's and the country maintains relatively a stable market share in volumes while the share in values has decreased in the latest years. The Netherlands resembles France as far as market shares and elasticities are concerned, but with an AUV of USD 41 which is in line with Germany and Spain, although grown sensibly in the most recent years.

To sum up, the analysis has confirmed that the medium-high price goods of advanced countries are still an important component of the exports of apparel and deserve the policy-makers' attention with regards to competitiveness and social cohesion.

Countries like Germany and Spain succeeded in increasing their market shares while at the same time reducing their price elasticities. Italy suffers a contraction in its market share and our previous analysis has shown that in this economic phase possible competitors are both advanced countries, like Germany and Spain, and low-medium price countries. Qualitative and quantitative in depth-analysis are needed in order to better understand, at the firm level, what are the best price and innovation strategies to be enforced in order to improve the global market position, and, at the country level, what policies should be implemented to support the export performance and the connected growth prospects.

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TABLES

Tab. 1 – Fifteen Top Exporters countries: Export Value in Million USD and Market share in 2011.

	Export value in USD	Market Share
China	153,773,607,747	37.28%
Hong Kong	24,504,787,059	5.94%
Italy	23,250,080,256	5.64%
Bangladesh	19,938,723,442	4.83%
Germany	19,645,830,891	4.76%
India	14,364,620,682	3.48%
Turkey	13,947,693,562	3.38%
Viet Nam	13,153,686,067	3.19%
France	11,011,343,198	2.67%
Spain	9,246,173,895	2.24%
Belgium	9,070,231,455	2.20%
Netherlands	8,230,700,985	2.00%
Indonesia	8,045,240,376	1.95%
United Kingdom	6,554,768,825	1.59%
United States	5,222,792,968	1.27%
Total	297,797,640,444	72.20%

Source: our elaboration on WTO figures

Tab. 2 – Descriptive statistics: Export Volume (in tons), AUV and Market share, Beginning-of-Period, End-of-period and average values and percentages

	Export Volume			**AUV**			**Market share (in volume)**		
	1992	2011	Average	1992	2011	Average	1992	2011	Average
China	766,578	4,411,045	2,401,827	21.79	34.86	24.10	24.67%	52.43%	37.39%
France	94,758	241,942	161,746	55.58	45.64	46.05	3.05%	2.88%	2.70%
Germany	158,99	476,753	260,227	52.54	42.13	43.79	5.12%	5.67%	4.22%
Hong Kong	836,787	600,745	881,465	23.97	40.79	27.96	26.93%	7.14%	16.60%
India	119,73	494,487	257,507	25.97	29.63	26.48	3.85%	5.88%	4,27%
Indonesia	193,199	504,879	358,149	16.38	15.93	12.99	6.22%	6.00%	6.07%
Italy	238,211	251,866	293,345	51.40	92.31	58.15	7.67%	2.99%	5.42%
Netherlands	83,144	212,011	137,225	32.51	41.20	28.43	2.68%	2.52%	2.93%
Spain	23,194	213,99	94,751	30.53	42.85	35.91	0.75%	2.54%	1.45%
Turkey	182,137	537,145	425,891	22.95	25.97	20.73	5.86%	6.38%	7.17%
UK	112,924	194,793	160,879	32.40	34.04	29.42	3.63%	2.32%	2.91%
USA	298,117	273,195	494,719	14.13	19.12	13.00	9.59%	3.25%	9.49%

Tab. 3a – Unit Root Tests for the variable $\ln GDPW_t$

ADF	KPSS
0.34	0.61
(0.97)	[0.46]

Notes: *T*-statistic and *LM*-statistic are reported for Augmented Dickey-Fuller test (ADF) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) unit roots tests; p-values and asymptotic critical values in parentheses and brackets; asymptotic critical value of 0.46 corresponds to 5 per cent significance level; ADF and KPSS unit root tests are calculated by including the intercept in the test equation; The null hypothesis is "$lnGDPW_t$ has a unit root" for ADF test and "$lnGDPW_t$ is stationary" for KPSS test.

Tab. 3b - Panel Unit Root Test Statistic for the variable *ln* X_{it}

	Breitung	Hadri	Pesaran without trend	Pesaran with trend
China	6.74 (0.88)	63.89 (0.00)	-0.70 (0.24)	0.40 (0.65)
France	2.21 (0.99)	53.86 (0.00)	0.77 (0.78)	3.3210 (1.00)
Germany	4.86 (1.00)	62.48 (0.00)	0.01 (0.50)	0.99 (0.84)
Honk Kong	1.39 (0.91)	49.09 (0.00)	3.69 (1.00)	0.89 (0.81)
India	2.85 (0.99)	42.19 (0.00)	-0.91 (0.18)	-0.92 (0.18)
Indonesia	-0.14 (0.44)	49.50 (0.00)	-0.54 (0.29)	0.34 (0.64)
Italy	0.24 (0.59)	36.43 (0.00)	2.90 (0.99)	3.08 (0.99)
Netherlands	1.02 (0.85)	43.12 (0.00)	0.07 (0.53)	0.41 (0.66)
Spain	7.62 (1.00)	63.24 (0.00)	-0.39 (0.35)	1.54 (0.94)
Turkey	3.62 (0.99)	43.72 (0.00)	0.69 (0.75)	2.71 (0.99)
UK	-2.54 (0.00)	32.47 (0.00)	-0.72 (0.24)	-0.42 (0.34)
USA	-1.08 (0.14)	42.52 (0.00)	1.04 (0.85)	1.98 (0.97)

Notes: Lambda statistic, z statistic and the standardised Z-tbar are reported for the Breitung (2000), Hadri (2000) and Pesaran (2007) unit roots test respectively; p-values in parenthesis; Breitung (2000) and Hadri (2000) tests are calculated by including the intercept in the test equation, while Pesaran (2007) unit root test is also computed by adding a time trend; The null hypothesis for all tests is “Panels contain unit roots” with the exception of the Hadri test, whose null hypotesis is “All panels are stationary”.

Tab. 3c- Panel Unit Root Test Statistic for the variable *ln* RP_{it}

	Breitung	Hadri	Pesaran without trend	Pesaran with trend
China	1.21 (0.89)	31.93 (0.00)	-0.87 (0.19)	-0.58 (0.28)
France	-2.61 (0.00)	36.35 (0.00)	-0.11 (0.46)	-0.58 (0.28)
Germany	-1.52 (0.06)	47.39 (0.00)	-0.24 (0.41)	-0.41 (0.34)
Honk Kong	-1.74 (0.04)	38.05 (0.00)	-0.36 (0.36)	-1.17 (0.12)
India	-3.34 (0.00)	36.02 (0.00)	0.86 (0.80)	1.62 (0.95)
Indonesia	-0.01 (0.49)	44.34 (0.00)	0.47 (0.68)	0.69 (0.76)
Italy	-5.10 (0.00)	23.72 (0.00)	-0.31 (0.38)	0.16 (0.56)
Netherlands	-3.81 (0.00)	38.09 (0.00)	-0.82 (0.20)	-0.84 (0.20)
Spain	-3.20 (0.00)	31.21 (0.00)	1.83 (0.97)	3.43 (1.00)
Turkey	-3.23 (0.00)	20.92 (0.00)	-0.25 (0.40)	0.19 (0.58)
UK	-6.49 (0.00)	21.43 (0.00)	-1.03 (0.15)	-0.34 (0.37)
USA	-3.51 (0.00)	30.58 (0.00)	-1.22 (0.11)	-0.07 (0.47)

Notes: See Table 3b.

Tab. 4 – Pedroni and Kao Panel Cointegration Tests

	China	France	Germany	Honk Kong	India	Indonesia	Italy	Netherlands	Spain	Turkey	UK	USA
Pedroni test												
Panel *v*-Statistic	225.52 (1.00)	-292.31 (1.00)	-170.15 (1.00)	-233.59 (1.00)	-111.33 (1.00)	-74.01 (1.00)	-265.07 (1.00)	0.66 (0.25)	-40.92 (1.00)	-59.81 (1.00)	-368.05 (1.00)	-
Panel ρ-Statistic	-1.08 (0.14)	-0.68 (0.25)	-1.33 (0.09)	0.00 (0.50)	-0.11 (0.46)	-0.67 (0.25)	-1.04 (0.15)	-0.46 (0.32)	0.16 (0.56)	0.45 (0.67)	-0.29 (0.39)	-
Panel pp-Statistic	-2.92 (0.00)	-2.66 (0.00)	-2.094 (0.02)	-1.51 (0.06)	-1.62 (0.05)	-2.97 (0.00)	-4.15 (0.00)	-2.26 (0.01)	-2.45 (0.00)	-1.35 (0.09)	-2.03 (0.02)	-
Panel adf-Statistic	-4.96 (0.00)	-4.94 (0.00)	-1.55 (0.06)	-4.80 (0.00)	-2.30 (0.01)	-4.85 (0.00)	-3.36 (0.00)	-1.75 (0.04)	-2.84 (0.00)	-1.52 (0.06)	-3.75 (0.00)	-
Group ρ-Statistic	0.69 (0.75)	1.59 (0.94)	-1.23 (0.11)	2.21 (0.98)	1.24 (0.89)	1.58 (0.94)	0.62 (0.73)	1.32 (0.91)	1.48 (0.93)	2.55 (0.99)	0.49 (0.69)	-
Group pp-Statistic	-2.69 (0.00)	-3.18 (0.00)	-6.59 (0.00)	-0.78 (0.22)	-2.06 (0.02)	-3.31 (0.00)	-4.08 (0.00)	-2.68 (0.00)	-2.54 (0.00)	-0.73 (0.23)	-3.31 (0.00)	-
Group adf-Statistic	-6.08 (0.00)	-6.89 (0.00)	-6.07 (0.00)	-4.47 (0.00)	-2.86 (0.00)	-3.98 (0.00)	-4.29 (0.00)	-2.04 (0.02)	-3.96 (0.00)	-1.64 (0.04)	-5.48 (0.00)	-
Kao test												
ADF	-1.65 (0.05)	-4.11 (0.00)	-1.03 (0.15)	-1.77♦ (0.04)	-1.09♦ (0.14)	-2.36 (0.00)	-1.44♦ (0.07)	-3.21 (0.00)	-3.35 (0.00)	-5.43 (0.00)	-3.72 (0.00)	-3.82 (0.00)

Notes*:* The panel statistics are the within-dimension statistics while group statistics are between-dimension ones; The null hypothesis is no cointegration; p-values in parenthesis; Lag length selection based on SIC unless specified by adding ♦ which indicates a User-specified lag length equal to 1; Trend and intercept options: "No deterministic trend" for all countries with the exception of the Netherlands Spain and Turkey for which the option used was "No deterministic intercept or trend".

Tab. 5 – Panel granger causality test results

Countries	Variables	Short run ΔlnX_{it}	$\Delta lnRP_{it}$	$\Delta lnGDPW$	Long run ECT	Joint (short run/long run) $ECT/\Delta lnX_{it}$	$ECT/\Delta lnRP_{it}$	$ECT/\Delta lnGDPW$
China	ΔlnX_{it}	-	0.05	0.09	2.94*	-	1.56	4.44**
	$\Delta lnRP_{it}$	0.28	-	0.03	13.90***	9.81***	-	6.97***
France	ΔlnX_{it}	-	3.96*	1.77	7.02**	-	3.88**	3.71**
	$\Delta lnRP_{it}$	6.51**	-	3.12*	0.56	14.36 ***	-	1.61
Germany	ΔlnX_{it}	-	5.34**	4.76**	5.02**	-	3.02*	14.09***
	$\Delta lnRP_{it}$	3.51*	-	24.38***	8.20***	14.40***	-	13.49***
Hong Kong	ΔlnX_{it}	-	0.04	0.4	5.11**	-	2.82*	2.55*
	$\Delta lnRP_{it}$	1.32	-	0.15	26.10***	17.38***	-	14.35***
India	ΔlnX_{it}	-	0.02	8.06***	3.97*	-	3.03*	6.35***
	$\Delta lnRP_{it}$	5.47**	-	1.57	17.27***	8.63***	-	11.86***
Indonesia	ΔlnX_{it}	-	5.87**	1.02	22.87***	-	25.43***	13.28***
	$\Delta lnRP_{it}$	7.85***	-	10.67***	14.21***	26.97***	-	38.22***
Italy	ΔlnX_{it}	-	0.89**	0.5	30.25***	-	15.64***	15.39***
	$\Delta lnRP_{it}$	1.20	-	0.26	8.29***	4.24**	-	4.19**
Netherlands	ΔlnX_{it}	-	0.34	0.47	4.08*	-	7.65***	2.63*
	$\Delta lnRP_{it}$	0.97	-	17.51***	4.52**	2.98*	-	9.88***
Spain	ΔlnX_{it}	-	7.73***	0.17	10.94***	-	8.45***	11.54***
	$\Delta lnRP_{it}$	0.38	-	3.51*	6.67**	5.52***	-	11.00***
Turkey	ΔlnX_{it}	-	1.65	1.07	16.41***	-	12.11***	10.91***
	$\Delta lnRP_{it}$	1.24	-	1	20.43***	12.13***	-	11.97***
United Kingdom	ΔlnX_{it}	-	2.25	4.35**	26.21***	-	13.14***	15.32***
	$\Delta lnRP_{it}$	7.87***	-	0.48	6.21**	8.22***	-	4.00**
USA	ΔlnX_{it}	-	6.91**	0.85	32.28***	-	16.17***	16.16***
	$\Delta lnRP_{it}$	0.04	-	0.35	27.15***	17.85***	-	13.65***

Notes: *(**)[***] indicates significance at 10(5)[1] per cent level.

Tab. 6 – Long run estimates (lnX_{it} as dependent variable)

	China	France	Germany	Honk Kong	India	Indonesia	Italy	Netherlands	Spain	Turkey	UK	USA
$lnRP_{it}$	-0.83***	-0.66***	-0.71***	-0.84***	-0.63***	-0.76***	-0.79***	-0.41***	-0.41***	-0.36**	-0.85***	-1.23***
	(0.17)	(0.08)	(0.08)	(0.17)	(0.14)	(0.12)	(0.11)	(0.13)	(0.13)	(0.15)	(0.07)	(0.18)
$lnGDPW_{it}$	2.87***	1.06***	1.33***	-0.60**	1.71***	0.65***	0.93***	3.31***	3.31***	1.52***	0.21	-1.26***
	(0.28)	(0.17)	(0.25)	(0.27)	(0.25)	(0.15)	(0.25)	(0.32)	(0.32)	(0.25)	(0.16)	(0.31)
Constant	-13.16***	3.83**	1.30	22.67***	-3.53	8.89***	4.69*	-20.96***	-20.96***	-0.99	12.71***	28.18***
	(3.02)	(1.76)	(2.63)	(2.86)	(2.69)	(1.64)	(2.65)	(3.37)	(3.37)	(2.74)	(1.70)	(3.28)

Notes: Standard errors in parentheses; *(**)[***] indicates significance at 10(5)[1] per cent level.

Tab. 7 – Long run weighted estimates (lnX_{it} as dependent variable)

	China	France	Germany	Honk Kong	India	Indonesia	Italy	Netherlands	Spain	Turkey	UK	USA
$lnRP_{it}$	-0.92***	-0.73***	-0.75***	-0.96***	-0.62***	-0.14	-0.74***	-0.72***	-0.43***	-0.39**	-0.87***	-1.25***
	(0.16)	(0.09)	(0.08)	(0.13)	(0.14)	(0.11)	(0.12)	(0.13)	(0.14)	(0.15)	(0.05)	(0.18)
$lnGDPW_{it}$	2.69***	0.91***	1.24***	-0.50*	1.68***	1.36***	0.64***	0.86***	3.48***	1.53***	0.06	-1.32***
	(0.30)	(0.17)	(0.27)	(0.27)	(0.25)	(0.24)	(0.15)	(0.27)	(0.34)	(0.25)	(0.15)	(0.31)

Notes: Standard errors in parentheses; *(**)[***] indicates significance at 10(5)[1] per cent level.

Tab. 8 - Long run estimates (lnX_{it} as dependent variable) for different levels of relative price

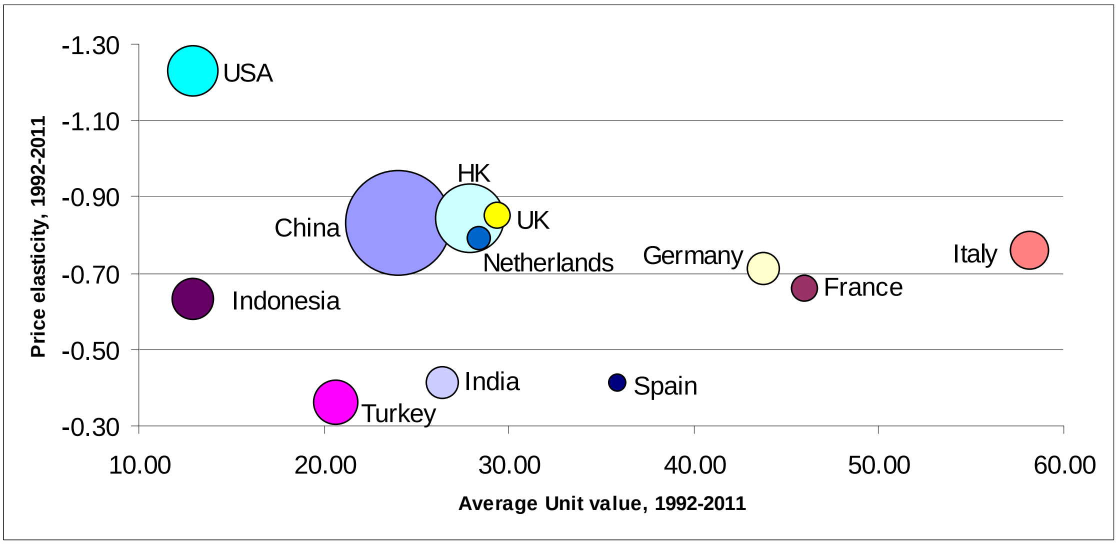
Country	Quality level	Number of goods	Obs	ln RP_{it}	ln $GDPW_{it}$	*Constant*
China	H	5	100	-1.07***	2.18***	-5.91
				(0.40)	(0.68)	(7.24)
	M	26	520	-0.72***	3.17***	-16.34***
				(0.18)	(0.34)	(3.64)
	L	6	120	-1.10*	2.13***	-5.45
				(0.59)	(0.71)	(7.30)
France	H	37	740	-0.66***	1.06***	3.83**
				(0.08)	(0.17)	(1.76)
Germany	H	37	740	-0.71***	1.33***	1.30
				(0.08)	(0.25)	(2.63)
Honk Kong	H	9	180	-0.79***	-0.56	22.19***
				(0.20)	(0.74)	(7.96)
	M	22	440	-0.76***	-0.37	20.52***
				(0.26)	(0.32)	(3.45)
	L	6	120	-1.20***	-1.49***	31.25***
				(0.27)	(0.32)	(3.25)
India	H	8	160	-0.70***	1.56***	-1.99
				(0.15)	(0.55)	(6.08)
	M	18	360	-0.60***	1.51***	-0.44
				(0.19)	(0.29)	(3.05)
	L	11	220	-0.64*	2.15***	-9.71
				(0.34)	(0.58)	(6.09)
Indonesia	L	37	740	-0.17	1.42***	0.29
				(0.11)	(0.25)	(2.72)
Italy	H	36	720	-0.76***	0.63***	9.11***
				(0.12)	(0.15)	(1.67)

Netherland	H	14	280	-0.92*** (0.17)	1.07*** (0.26)	3.75 (2.75)
	M	20	400	-0.69*** (0.17)	1.22*** (0.35)	1.53 (3.75)
	L	3	60	-0.78*** (0.14)	-1.63* (0.97)	30.19*** (9.13)
Spain	H	21	420	-0.39*** (0.13)	3.48*** (0.40)	-22.60*** (4.26)
	M	14	280	-0.53** (0.25)	3.32*** (0.57)	-21.22*** (5.96)
	L	2	40	0.19 (1.39)	1.53 (1.05)	-1.87 (10.68)
Turkey	H	4	80	-0.27** (0.13)	1.17 (1.02)	2.23 (11.07)
	M	5	100	-0.64 (0.50)	2.27*** (0.68)	-8.28 (7.53)
	L	28	560	-0.32* (0.18)	1.44*** (0.28)	-0.15 (3.06)
UK	H	20	400	-0.88*** (0.11)	0.25 (0.23)	12.26*** (2.52)
	M	17	340	-0.82*** (0.07)	0.15 (0.22)	13.24*** (2.30)
USA	H	3	60	-0.59** (0.26)	-0.72 (1.10)	22.85** (10.71)
	L	33	660	-1.27*** (0.19)	-1.26*** (0.34)	28.23*** (3.56)

Notes: Standard errors in parentheses; *(**)[***] indicates significance at 10(5)[1] per cent level.

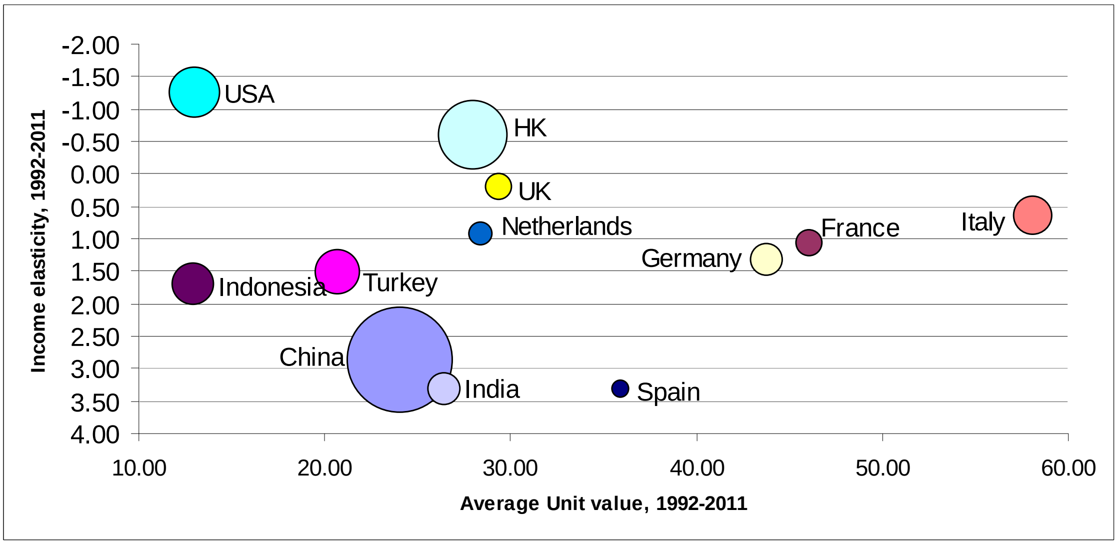
FIGURES

Figure 1 – Price elasticities and average unit values for the period 1992-2001



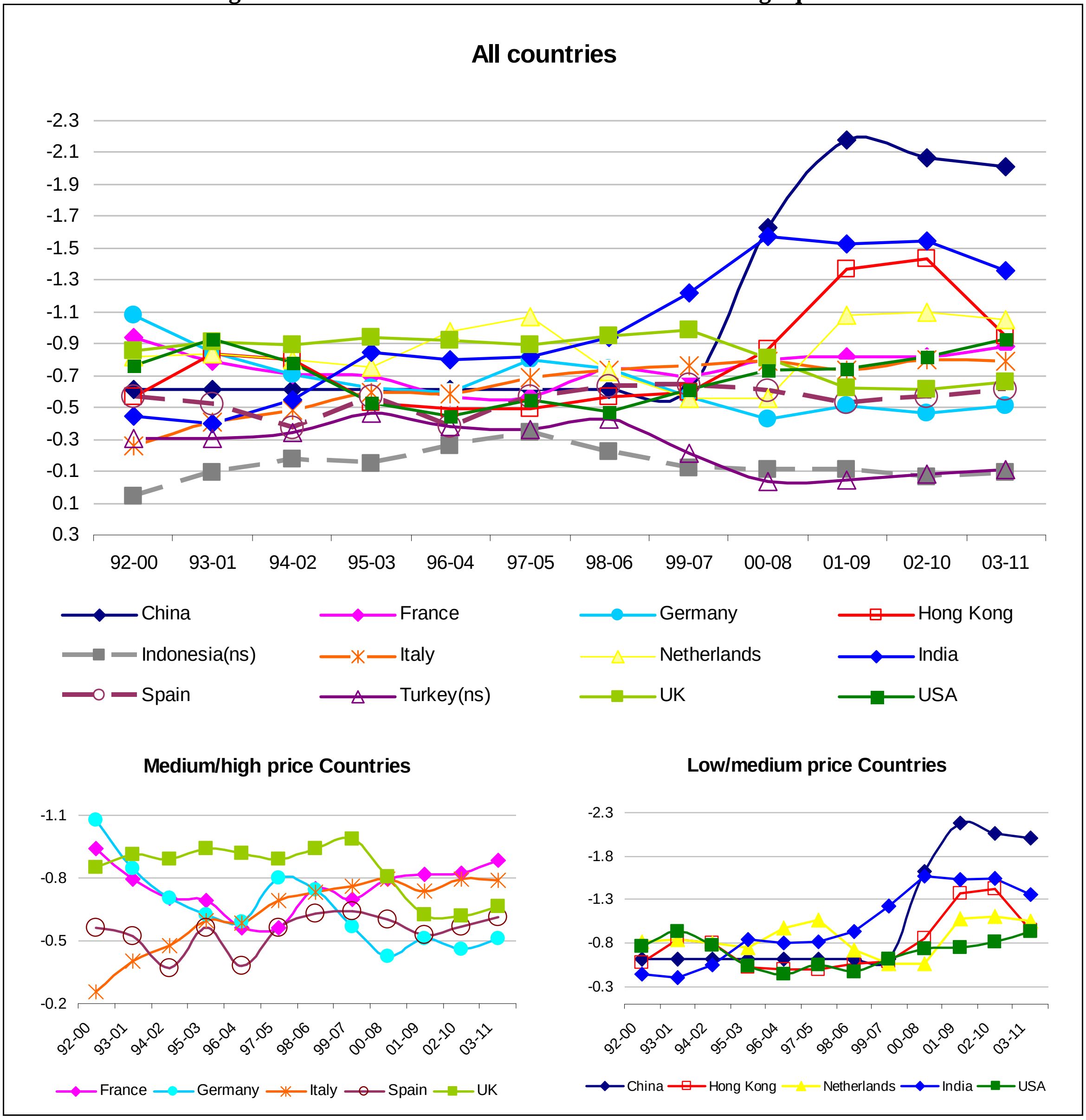
Notes: The size of the bubbles is **the** average market share of each country in 1992-2011

Figure 2 – Income elasticity and average unit values for the period 1992-2001



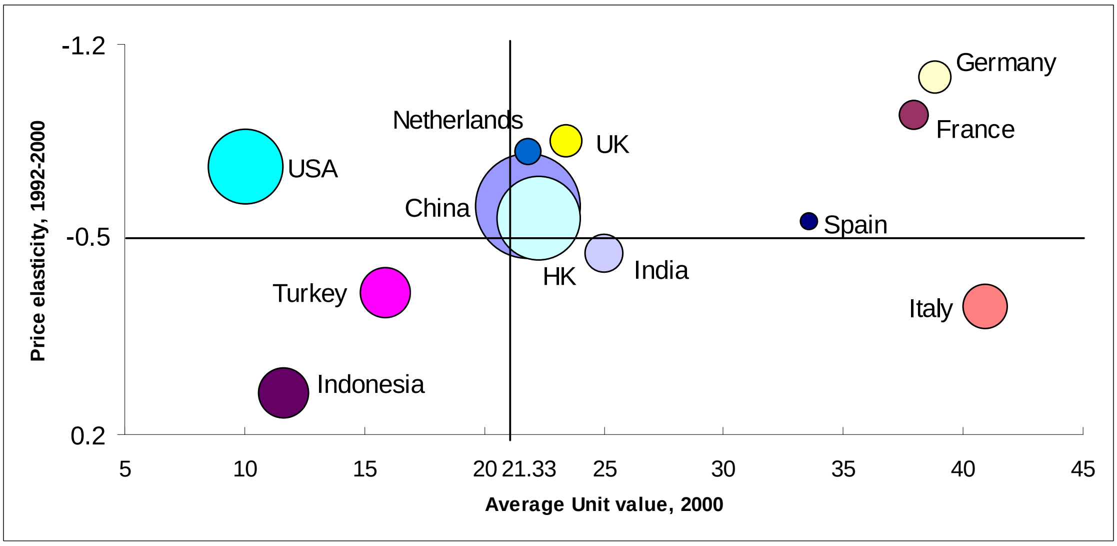
Notes: The size of the bubbles is the average market share of each country in 1992-2011

Figure 3 – Price elasticities estimated from the rolling equations



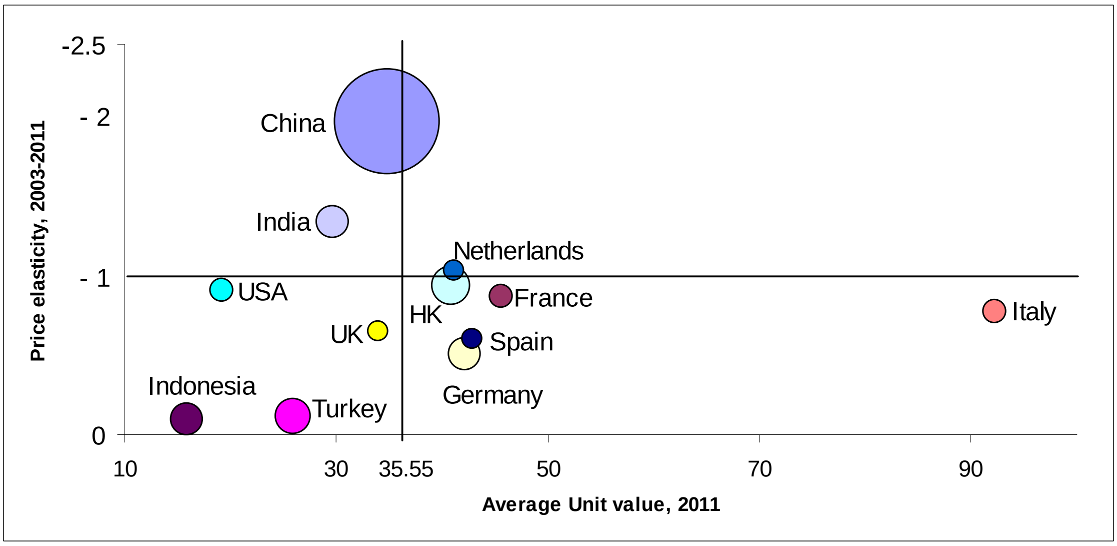
Notes: In the All Countries graph all estimated coefficients have been included but some remarks are needed. For Indonesia coefficients are significants only for period 5 and 6. For Turkey coefficients are significant for period 1 to period 7. Coefficients' estimates for China are significant if the first considered period is 1992-2006. For this reason the figure displays constant estimated coefficients for China until the 7th period. In the Low/medium price graph coefficients' estimates for China are significant starting from the period 1992-2006. For this reason the figure displays estimates for China only from the 7th period.

Figure 4 – Positioning of the different countries in terms of AUV and price elasticity, year 2000



Notes: Price elasticities are estimated for the rolling period 1992-2000. Size of the balls given by the market share in volumes, year 2000

Figure 5 - Positioning of the different countries in terms of AUV and price elasticity, year 2011



Notes: Price elasticities are estimated for the rolling period 2003-2011. Size of the balls given by the market share in volumes, year 2011

APPENDIX

Tab. A1 – The share of clothing on the export of all commodities, World and selected countries, Beginning-of-Period and End-of-period percentages

	World	China	France	Germany	HK	India	Indonesia	Italy	Netherlands	Spain	Turkey	UK	USA
1992	3.68%	19.67%	2.27%	1.94%	16.77%	15.02%	9.32%	6.86%	1.93%	1.10%	28.40%	1.92%	0.94%
2011	2.34%	8.10%	1.90%	1.36%	5.38%	4.86%	3.95%	4.44%	1.65%	3.07%	10.34%	1.40%	0.35%

Tab. A2 – Detail of the Clothing goods according to the SITC Classification Rev. 3

84	CLOTHING AND ACCESSORIES
841	MENS,BOYS CLOTHNG, NOT KNITTED
8411	Overcoats,outerwear,etc.
8412	Suits and ensembles
8413	Jackets and blazers, men's or boys', of textile materials, not knitted or crocheted
8414	Trousers, bib and brace overalls, breeches and shorts, men's or boys'
8415	Shirts
8416	Underwear, nightwear etc.
842	WOMEN,GIRL CLOTHNG, NOT KNITTED
8421	Overcoats, other coats etc.
8422	Suits and ensembles
8423	Jackets and blazers, women's or girls', of textile materials, not knitted
8424	Dresses, women's or girls', of textile materials, not knitted or crocheted
8425	Skirts and divided skirts, women's or girls', of textile materials, not knitted
8426	Trousers, bib and brace overalls, breeches and shorts, women's or girls'
8427	Blouses, shirts
8428	Underwear, nightwear etc.
843	MENS,BOYS CLOTHING,KNITTED
8431	Overcoats, car coats, capes, cloaks, anoraks (including ski jackets)
8432	Suits, jackts, trousers. etc.
8437	Shirts, mens boys, knitted
8438	Underwear, nightwear etc.
844	WOMEN,GIRLS CLOTHNG.KNITTED
8441	Overcoats, car coats, capes, cloaks, anoraks (including ski jackets)
8442	Suits, dresses skirts etc.
8447	Blouses, shirts and shirt blouses, women's or girls', knitted or crocheted
8448	Underwear, nightwear etc.
845	OTHER TEXTILE APPAREL,NES
8451	Babies' garments,clothes acc
8452	Garment,felt,txtl fabric
8453	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted
8454	Tshirts, singlets and other vests, knitted or crocheted
8455	Brassieres, corsets, etc.
8456	Swimwear
8458	Other garments, not knitted
8459	Other garments, knitted
846	CLOTHING ACCESSORIES, FABRIC
8461	Accessories, not knitted
8462	Hosiery, etc. knitted
8469	Other madeup clothing accessories
848	CLOTHNG,NONTXTL; HEADGEAR
8481	Leather apparel, accessories
8482	Plastic, rubber, apparel, etc.
8483	Articles, accessories fur
8484	Headgear, fittings, nes

Notes: the 4-digit level has been used in the analysis but the whole list is provided for completeness