

Development and Trade Competitiveness of the Italian Tomato Sector

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Abstract

The tomato-processing sector and its products have historically played a strategic role in the context of Italy's fruit and vegetable industry. In recent years, the whole tomato processing supply chain in Italy has experienced profound restructuring triggered by the reform of the Common Market Organisation, accompanied by increasingly fierce price competition resulting from several emerging countries competing with Italy on foreign markets. We analyse the main changes currently under way in the scenario of international trade in tomato and its derivatives, and how they have inevitably changed European dynamics and hence the competitiveness of Italian tomato exports. Starting from these general considerations, we seek to ascertain whether Italy has managed to keep pace with the radical changes in the tomato sector and market and whether it has managed to maintain its traditional dominant position internationally. The results show Italy's partial failure to anticipate the new conditions of international trade on tomato and its derivatives, in some cases losing market share.

Keywords: International markets, food, export performance.

JEL: F14

1. Introduction

After potato, tomato is the second most important herbaceous crop in the world. Though grown worldwide regardless of end use, its chief areas of cultivation are in Asia, the Americas and the Mediterranean basin (Dorais et al., 2008). In the two-year period 2010-2011 world production of tomato for direct consumption and for processing amounted to almost 156 million tons, showing a growth of about 5.3% against the previous two-year period, perfectly in line with the average growth recorded over the whole decade. Since the early 1990s world production has doubled (FAOSTAT, 2011). Tomato products constitute one of the main made-in-Italy agrifood businesses and have an undeniable symbolic value. The tomato processing sector and its products have historically played a strategic role in the context of Italy's fruit and vegetable industry due both to the demand for raw materials from the agricultural sector and to the employment generated by the tomato processing industry (Bazzani and Canavari, 2013). Moreover, the high propensity to export the various end products has long reduced the structural deficit of Italy's agri-food balance of trade (Lombardi and Verneau, 2010). In recent years, the whole tomato processing supply chain in Italy has experienced profound re-

structuring triggered by the reform of the Common Market Organisation (CMO), accompanied by increasingly fierce price competition resulting from several emerging countries competing with Italy on foreign markets (Lombardi et al., 2013). Thanks to an aggressive trade policy focussing on low production costs and appreciable acceleration in production, China and India have become established as the world's chief tomato producers (respectively 30.5% and 9.5%), overtaking the USA. The trend shown by the two Asian countries signals a strong export flow towards Western Europe in the field of semi-finished products (Sodano, 2005). Yet, as will be shown below, the current emerging market share does not give cause for concern except as regards the dynamism of international trade and the ability of countries that are traditional producers and exporters to anticipate market dynamics.

This paper describes and analyses the main changes under way in the international trade in the tomato and its derivatives and the dynamics of the competitiveness of Italian exports. It focuses chiefly on market dynamics in the European Union, insofar as it is the chosen area of trade for Italian production, and investigates whether Italy has been able to react to the radical changes affecting the sector and the market for tomato and its derivatives. Specifically, it assesses Italy's performance in terms of maintaining its traditionally dominant position within international trade dynamics. Further, Italian export flows are studied in order to ascertain whether they are consistent with changes operating in the international demand structure.

Comparison of Italian trade dynamics with those of other European countries affords insights into the current scenario in the market for fresh and processed tomatoes. For this purpose the changes in Italian trading performance are highlighted by using detailed indexes of market shares for the main categories of processed tomato with a view to evaluating the dynamics of the main retail markets for Italian products and their degree of penetration on the chief European markets.

The sources used in this study were the FAO and Comext-Eurostat databases. Analysis of trade flows was carried out by considering five aggregated product categories, starting with those that are least processed (fresh and refrigerated tomatoes) and ending up with those of higher added value (Ketchup and other sauces), thereby exhausting the whole range of "red derivatives".

Our results appear to show that in Italy there has been both geographical and product diversification. However, Italy's trade performance shows shortcomings in anticipating, or keeping pace with, the general market situation, failing to intercept the demand from specific markets. Despite increasing its total export flows, Italy appears unable to keep up with the growth in foreign demand that its chief EU partners have expressed over the same period.

The main innovation of our contribution lies in its use of market shares as an objective index to understand the changes in a country's performance. Indeed, analysis of mere market flows, chiefly found in the literature, leaves room for criticism regarding the robustness of results.

The rest of the paper is structured as follows: in section 2 the European tomato sector is described, taking into account the export and import flows of European countries for all five categories of tomato products; the third section focuses on Italian competitiveness in the tomato sector, seeking to appraise how Italy has reacted to different changes in competitive scenarios; in section 4 some conclusions are drawn and policy implica-

tions are formulated with a view to improving Italy's position in one of the most strategic markets related to the tomato sector.

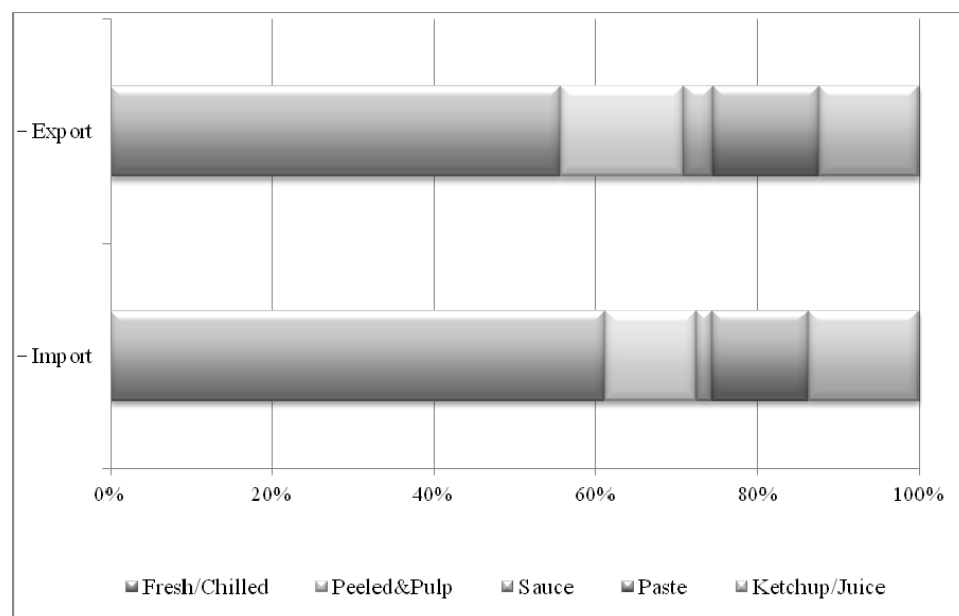
2. The European tomato market

Trade in all the various types of processed tomato on the EU market amounted overall to 11.9 billion euro (2012) with a positive balance of trade. Trade was predominantly intra-EU, attaining 82% of exports and 88% of imports. For the same year, the largest item was that of *fresh or chilled tomatoes* which accounted in value for 61% of imports and 55% of exports. Except for *tomato sauces*, the other products varied between €600 million and €900 million both for exports and imports (cfr. table 1 and figure 1).

Tab. 1 – E 27: overall trade value (€ million, 2012)

Product	Imports			Exports		
	World	EU	Others	World	EU	Others
Fresh or chilled tomatoes	3,579	3,177	403	3,374	3,000	374
Peeled and pulp tomatoes	653	623	30	928	610	318
Tomato sauce	123	118	6	215	178	37
Tomato paste	693	520	173	798	545	253
Ketchup and tomato juice	798	715	83	744	627	117
Total	5,847	5,152	695	6,059	4,960	1,099

Source: our calculations based on Eurostat data



Source: our calculations based on Eurostat data

Figure 1 – E 27: Imports and exports from/to the world expressed in percentage (year 2012)

The value flows give a fair idea of the economic importance of the market. However, to outline its structural aspects it is more appropriate to consider the time series of trade volumes insofar as they are not affected by nominal price changes which may have occurred during the period in question (table 2).

Tab. 2 – EU: exports and imports to/from the world (million quintals)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	exports												
Fresh or chilled tomatoes	20.1	22.6	22.5	23.4	24.8	24.7	26.0	26.8	28.6	27.5	26.0	29.4	28.7
Peeled and pulp tomatoes	9.5	10.1	7.6	9.5	9.7	10.1	11.0	11.7	11.8	11.3	12.9	13.7	13.8
Tomato sauce	1.8	2.1	2.4	2.6	2.5	2.6	2.7	2.9	2.9	2.9	3.1	3.2	3.5
Tomato paste	7.3	7.9	8.6	8.0	7.7	8.1	9.4	9.3	9.0	9.0	8.9	9.2	8.2
Ketchup and tomato juice	3.7	4.2	4.7	4.6	4.8	4.7	4.8	5.8	5.8	5.6	6.5	6.2	6.3
	imports												
Fresh or chilled tomatoes	21.4	23.5	23.2	24.7	26.0	27.2	28.6	30.5	30.7	31.1	30.0	30.8	30.1
Peeled and pulp tomatoes	6.8	7.2	7.5	7.8	7.7	8.1	8.2	8.9	8.7	8.3	8.8	9.3	9.3
Tomato sauce	1.1	1.4	1.5	1.6	1.5	1.6	1.7	1.8	1.6	1.6	1.7	1.7	1.8
Tomato paste	5.2	5.7	6.3	7.1	6.7	6.8	6.5	7.7	8.1	8.2	8.7	9.2	8.5
Ketchup and tomato juice	3.8	4.1	4.5	4.9	5.0	5.1	5.5	6.0	6.2	6.4	6.9	6.8	6.6

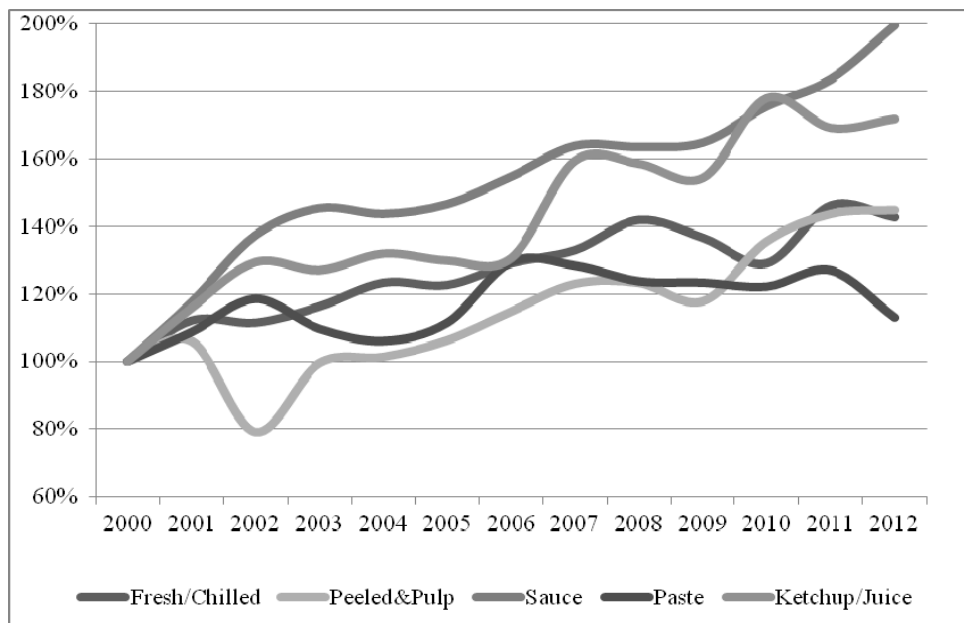
Source: our calculations based on Eurostat data

From an analysis of exports there emerges for the category *fresh or chilled tomatoes* a decidedly rising trend, from 20 million to about 29 million quintals at the end of the period, corresponding to an increase of over 42%. A similar trend is shown by *peeled and pulp tomatoes* which increased from 9.6 million quintals to 13.8 million quintals (+44%). The growth in *tomato paste* exports was less significant, increasing just 13% over the same period, with 2006 being a real watershed: previous growth in exports had been about 30%, but after 2006 such exports growth progressively fell back by about 12%.

Exports of *Ketchup and tomato juice* systematically progressed, growth exceeding 70% during the period, rising from slightly over 3 million quintals in 2000 to over 6 million quintals in 2012. However, what is generally important is the market trend towards product categories with a higher content of services such as tomato sauce, to the detriment of peeled and pulp tomatoes and especially tomato paste. Export trends for all product types are illustrated in figure 2.

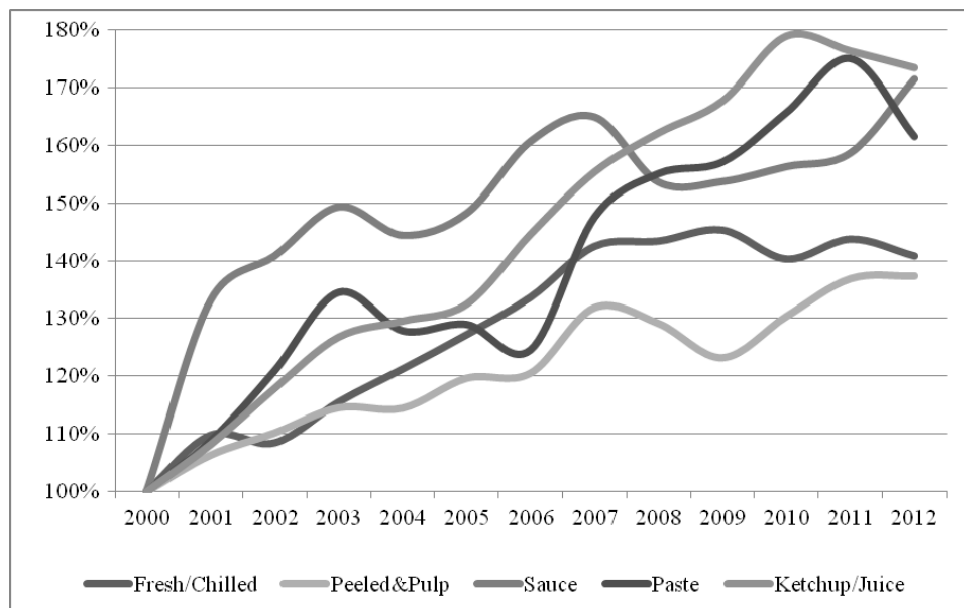
The growth trend for EU imports is more clear-cut than that observed for exports. For two product categories (*fresh or chilled tomatoes* and *peeled and pulp tomatoes*) the increase is around 40%, while for the other categories the increase varies between 60% and 70% (figure 3). The product type with the greatest share of foreign demand in the EU is that of *fresh or chilled tomatoes* which exceeded 30 million quintals by the end of the period, 83% of which was intra-EU trade.

In 2000 ten countries accounted for almost the entire market cover (96.5%) in the EU 27. The situation for each product category is detailed in table 3 where market shares, for the years 2000 and 2012, are reported together with differences between the two years.



Source: our calculations based on Eurostat data

Fig. 2 – EU 27: trend in export volumes



Source: our calculations based on Eurostat data

Fig. 3 – EU 27: trend in import volumes

Tab. 3 – Market shares in the years 2000 and 2012 with relative differences

Country \ Product	Fresh or Chilled	Peeled & Pulp	Sauce	Paste	Ketchup & Juice
2000					
Netherlands	35.8	2.1	6.9	2.3	34.6
Italy	6.7	83.6	67.1	39.9	17.9
France	3.2	1.3	1.5	3.4	4.4
Germany	1.4	2.6	5.4	1.4	11.7
Spain	43.9	4.3	11.7	13.9	10.6
Belgium	6.6	0.5	0.4	0.4	4.8
Portugal	0.5	1.8	4.7	15.6	4.3
Poland	0.2	0.0	0.0	0.0	0.5
United Kingdom	0.6	0.7	0.8	2.0	4.7
Greece	0.2	2.5	0.8	16.1	0.4
RW	0.9	0.6	0.7	4.8	6.1
2012					
Netherlands	60.0	2.3	1.4	1.1	29.6
Italy	7.8	74.1	64.5	41.6	19.0
France	11.7	2.0	3.8	1.2	1.4
Germany	5.8	5.8	18.7	10.8	10.0
Spain	0.2	8.4	6.8	21.4	13.2
Belgium	8.3	0.5	0.4	1.0	5.8
Portugal	1.2	1.8	1.5	1.0	2.2
Poland	1.6	0.2	0.2	15.7	6.5
United Kingdom	0.8	1.1	0.1	0.1	2.8
Greece	0.4	2.0	1.5	4.6	0.3
RW	2.3	1.9	1.3	1.6	9.3
Differences					
Netherlands	24.1	0.2	-5.5	-1.2	-5.0
Italy	1.1	-9.6	-2.6	1.7	1.1
France	8.4	0.7	2.2	-2.3	-3.1
Germany	4.4	3.2	13.3	9.4	-1.7
Spain	-43.7	4.1	-5.0	7.5	2.5
Belgium	1.7	-0.1	0.0	0.5	1.0
Portugal	0.7	0.0	-3.2	-14.6	-2.1
Poland	1.4	0.1	0.2	15.7	6.0
United Kingdom	0.2	0.4	-0.8	-1.9	-2.0
Greece	0.3	-0.4	0.7	-11.6	-0.1
RW	1.4	1.3	0.6	-3.2	3.2

A quick glance at table 3 for the year 2012 shows that the remaining producers (RW) accounted for little more than 9% of the *ketchup and tomato juice* and just over 2% of *fresh or chilled tomatoes* for the same year. Supplies of other products were decidedly low. On the basis of these data several major observations may be made. As regards individual countries, in 2012 the Netherlands on its own covered accounted for 60% of the market for *fresh or chilled tomatoes*, a long way ahead of France (about 12%). Be-

tween 2000 and 2012 both countries significantly enlarged their market shares, improving respectively by 24.1 and 8.4%. That of *peeled and pulp tomatoes* represents the segment for which Italy is undisputed leader of the European market with a current share of 74%. It is worth noting that, though Italy remains the market leader of this product, its performance has declined from 83.6% (2000) to 74.1% (2012), losing 9.6% in the time span considered. The same applies to *tomato sauce* for which Italy's market share is 64.5% with a loss, in terms of market share, of 2.6%. A slight improvement may be noted for *tomato paste* and *ketchup and tomato juice*. In 2012 supplies from Italy, Spain, Poland and Germany covered about 90% of the EU's market requirements with regard to *tomato paste*. In 2000 the same countries supplied 55% of the same product. During the time span considered Portugal dramatically lost its market share while Poland and Germany became new competitors. Interestingly, while Spain was able to improve its market position significantly, Italy achieved a much lower rate of increase (1.7%). For *ketchup and tomato juice* the EU market is more diversified insofar as supplies are spread over a larger number of partners. In 2012 Italy supplied 19% of the market and was second only to the Netherlands (30%). Lastly, from these data there seems to be no reason to fear the market share from the rest of the world.

Despite the market positions of individual countries shown in table 3, of great importance are the variations experienced by all major partners in the twelve-year time span (2000-2012). Looking at the bottom of table 3, it may be observed that, thanks to the characteristics of its effective, solidly structured supply chain (Wijnands, 2001), the Netherlands has consolidated its leading position for *fresh or chilled tomatoes*. With the sole exception of *Ketchup and tomato juice*, also for the other three types of products the Netherlands has achieved good results. France has lost several percentage points in its market shares of *tomato paste* and *Ketchup and tomato juice*; it has consolidated its ranking for *peeled and pulp tomatoes* and for *tomato sauce*, and has achieved considerable success (+8.5%) with its market share of *fresh or chilled tomatoes*. Germany has managed to improve its own ranking in all product categories except for *Ketchup and tomato juice* whose share has, nevertheless, remained unchanged. Over the same period there was 9% growth in market share for *tomato paste*, 13% for *sauce*, and 3 and 4 %, respectively, for *peeled and pulp tomatoes* and *fresh or chilled tomatoes*. Spain recorded mixed results, with significant growth for *sauce*, *paste* and *peeled and pulp tomatoes* but a sharp reduction in market share for *fresh or chilled tomatoes* for which it was absolute leader in 2000. The picture for Italy also seems mixed: its market shares of *Ketchup and tomato juice* have substantially held up, shares of *tomato sauce* and *fresh or chilled tomatoes* have fallen back slightly, but there has been a hefty drop (10%) in market share for *peeled and pulp tomatoes*. It is worth pointing out the collapse in Portugal's share of *tomato paste* and the severe reduction recorded by Greece for the same production segment, while Poland has powerfully acquired a market share of 16%. The latter country has had good results with *Ketchup and tomato juice*, acquiring a 6% share of the EU market.

3. Focus on Italian trade competitiveness

As reported in the previous section, the processed tomato sector is a strategic component in Italy's agri-food industry, contributing to ensuring a considerable volume of foreign trade, especially with highly specialised products for which Italy has long en-

joyed comparative advantage. Put differently, Italy shows a certain degree of trade specialisation, emerging as a net exporter of tomatoes and especially of tomato products, with a positive balance in the last 12 years, which has consistently ranged between 805 million and 1470 million euros. The volumes exported for each product are shown in table 4.

Tab. 4 - Italy: exports (000's of tons)

Product		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fresh or chilled tomatoes	Total	128	137	133	110	115	98	112	119	120	100	137	115	111
	vs EU	117	122	115	95	101	91	102	110	110	93	129	107	101
Peeled and pulp tomatoes	Total	849	895	936	819	840	857	921	991	980	944	1116	1165	1137
	vs EU	597	614	641	566	555	553	599	645	646	616	717	736	694
Tomato sauce	Total	135	159	171	166	174	187	206	220	236	239	253	269	274
	vs EU	121	141	151	148	155	163	171	182	196	203	214	229	229
Tomato paste	Total	294	306	350	301	285	278	289	315	299	288	287	297	264
	vs EU	110	122	125	115	118	117	135	143	139	125	139	132	126
Ketchup and tomato juice	Total	62	67	83	83	81	75	76	80	92	91	105	94	92
	vs EU	53	56	69	68	65	59	61	65	77	75	86	76	71

Source: our calculations based on Eurostat data

Compared with the year 2000, exports of *tomato sauce* doubled (103%), the increase in *Ketchup and tomato juice* was 50% while exports of *peeled and pulp tomatoes* performed moderately (34%). By contrast, *fresh or chilled tomatoes* fell by 13% and those of *tomato paste* by 10%. Italy's international ranking may be represented by the pattern of normalized balance¹ listed in table 5.

Tab. 5 – Normalised trade balance

Product	2000	2002	2004	2006	2008	2010	2012
Fresh or chilled tomatoes	0.417	0.508	0.249	-0.143	-0.101	-0.276	-0.121
Peeled and pulp tomatoes	0.986	0.980	0.993	0.996	0.991	0.996	0.998
Tomato sauce	0.998	0.993	0.999	0.996	0.999	0.999	0.999
Tomato paste	0.721	0.568	0.385	0.655	0.328	0.426	0.349
Ketchup and tomato juice	0.953	0.943	0.965	0.967	0.934	0.987	0.981

Source: our calculations based on Eurostat data

For *fresh or chilled tomatoes* Italy has gone from being a net exporter to incurring a trade deficit, while there has been a marked decline in the position of *tomato paste*. Italy's international ranking with respect to the other products analysed has remained unchanged.

¹ The **normalised** trade balance index is given by the ratio between the trade balance (exports minus imports) and the absolute trade volume (exports minus imports). The value varies between 1 (maximum specialisation) and -1 (maximum despecialisation).

The destination of Italian agri-food flows has always been strongly conditioned by Italy's strict membership of a geopolitical and economic area and product perishability. In other words, the particular importance assumed by product freshness (Lawless, 2011; Jienwatcharamongkhon, 2014), as in the case of tomato, and the fundamental role played by *home bias* (Fujita *et al.*, 2000; Wolf, 2000; Chen, 2004; Carrere *et al.*, 2013) have ensured that over 90% of *fresh or chilled tomatoes* are destined for EU markets, which also absorbs 80% of Italy's exports of *tomato sauce and Ketchup and tomato juice*. However, this does not apply to the flows of *tomato paste* and those of *peeled and pulp tomatoes*, 50% and 40% of which, respectively, reach extra-EU destinations. Particularly significant for Italian *peeled and pulp tomatoes* are the US and Japanese markets. In this specific case we believe that what has played, and continues to play, a pivotal role is the worldwide reputation of San Marzano peeled tomatoes (Caracciolo *et al.*, 2011), which has also broadly motivated the *Italian sounding* phenomenon (Cembalo *et al.*, 2008; Cicia *et al.*, 2012; Cicia *et al.*, 2013). Relevant details for the 2000-2012 period are given in table 6.

Tab. 6 – Destination of Italian exports by product and market (millions of €) (2000-2012)

Partner	Year	Fresh or chilled tomatoes	Peeled and pulp tomatoes	Tomato sauce	Tomato paste	Ketchup and tomato juice
Germany	2000	97.5	58.9	23.0	33.7	22.1
	2012	62.0	104.9	47.1	64.2	50.5
United Kingdom	2000	6.4	109.2	5.6	18.8	10.5
	2012	19.8	172.2	19.5	26.2	7.4
France	2000	10.9	30.1	14.0	20.2	9.3
	2012	10.8	62.0	22.0	35.0	15.1
Rest of EU	2000	31.3	70.3	14.3	29.1	10.2
	2012	76.2	131.3	46.7	49.4	28.4
Japan	2000	0.1	34.8	1.0	0.6	0.8
	2012	0.3	77.4	5.5	1.4	2.8
USA	2000	0.6	31.4	2.1	0.9	1.4
	2012	0.4	64.3	3.2	2.7	3.6
Rest of World	2000	11.1	62.2	5.3	113.8	6.7
	2012	18.4	164.8	24.8	141.8	32.1

Source: our calculations based on Eurostat data

The result that emerges from the trade balance comparison of 2000 and 2012 is shown in table 7. The increase in value of Italian exports amounts to almost 700 million euros, generalised across all markets, whether EU or extra-EU. *Peeled and pulp tomatoes* performed particularly well. While these figures represent an undoubtedly positive scenario, they should not lead to complacency. As we will see in the section below, the international ranking of a competitor cannot be inferred from absolute and nominal values but from normalized indicators such as market shares.

Tab. 7 – Balance in euros of Italian exports by product and market (year 2012)

Partner	Fresh or chilled tomatoes	Peeled and pulp tomatoes	Tomato sauce	Tomato paste	Ketchup and tomato juice	Total
Germany	-35.5	46.0	24.1	30.5	28.4	93.5
United Kingdom	13.4	63.0	13.8	7.5	-3.1	94.6
France	-0.1	32.0	8.0	14.9	5.8	60.6
Japan	0.2	42.6	4.5	0.8	2.0	50.1
USA	-0.2	32.8	1.1	1.8	2.2	37.8
Rest of EU	44.9	61.0	32.4	20.3	18.2	176.8
Rest of World	7.4	102.6	19.5	28.0	25.5	182.9
Total	30.1	379.9	103.4	103.8	79.1	696.2

Source: our calculations based on Eurostat data

3.1. Market share analysis

Having thus established that the trend of flows represents only one aspect of the overall picture of a country's performance, to have an objective element di riscontro it is necessary to verify the result in terms of the index of market shares. This index expresses how much of foreign demand for a specific market is covered by imports from individual suppliers. As our aim was to analyse the Italian position, we calculated the market share (Q_m) as follows:

$$Q_m = \frac{IMP_j \text{ from Italy}}{IMP_j \text{ from Other Countries}}$$

for $j = D, UK, F, A, B, NL$ (reference markets as in tab. 9)

Q_m , expressed as a percentage, represents the Italian contribution to covering the international demand stemming from market j .

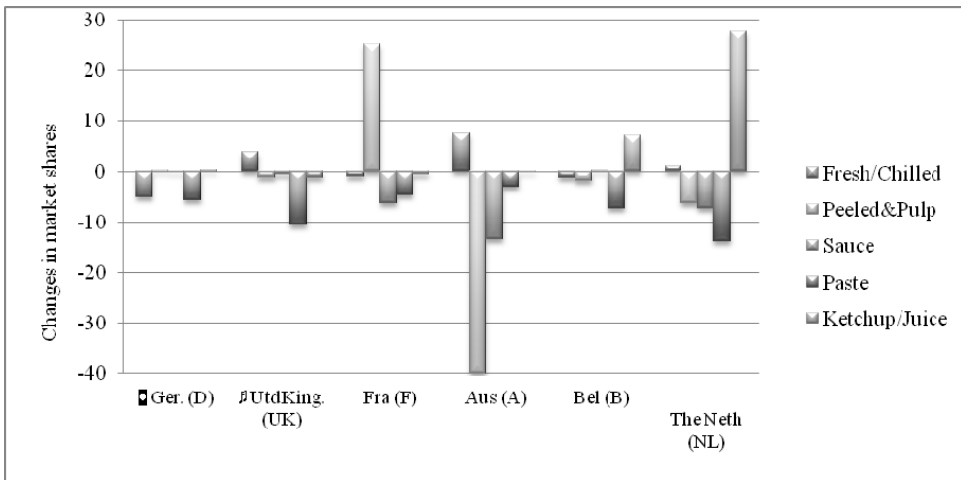
In table 8 for the six European markets, the traditional outlets for Italian products, we report the values of the trade indicator. The picture obtained from comparing the shares for the year 2000 and those for 2012 is rather variegated and definitely not positive as, at first glance, was that from the analysis of absolute trade flows. Results are conflicting for countries and products, but the overall assessment does not seem comforting for Italy.

From observation of the data, there is an appreciable fall (common to all markets considered) in the shares of *tomato paste*; the positional loss for Italian *tomato sauce* is less marked but just as widespread; for *peeled and pulp tomatoes* the 25-point increase on the French market contrasts with the 40-point loss on the Austrian market. On the latter market Italy has lost ground for all product categories except for *fresh or chilled tomatoes* which recorded a 7.5% increase in market share. *Ketchup and tomato juice* have made good progress on the Belgian and especially the Dutch markets, though this success is minor compared with the overall result. Such a lack of success is illustrated in figure 4.

Tab 8 – Market shares by product and partner (2000/2012)

Partner	Year	Fresh or chilled tomatoes	Peeled and pulp tomatoes	Tomato sauce	Tomato paste	Ketchup and tomato juice
Germany (D)	2000	10.77	48.20	49.61	58.73	30.36
	2012	5.62	48.22	49.41	52.98	30.63
United Kingdom (UK)	2000	1.74	47.09	41.68	71.96	9.68
	2012	5.62	45.88	41.06	61.45	8.37
France (F)	2000	3.44	36.69	40.98	67.31	17.37
	2012	2.45	61.95	34.59	62.61	16.68
Austria (A)	2000	20.38	44.44	48.53	56.35	23.25
	2012	27.88	3.87	35.05	53.21	23.14
Belgium (B)	2000	3.26	41.51	34.92	69.64	8.93
	2012	1.96	39.65	35.05	62.35	16.15
Netherlands (NL)	2000	0.37	43.39	32.23	77.71	2.77
	2012	1.47	37.06	25.00	63.82	30.36

Source: Our calculations based on Eurostat data



Source: Our calculations based on Eurostat data

Fig. 4 – Changes in market shares (2000-2012)

According to the data, in Italy there has been both geographical and product diversification at the same time. Certain markets (and certain products) appear to have been abandoned, while some markets (with other products) have been defended, consolidated or improved, without managing to anticipate or keep pace with the general situation and failing to intercept the demand from such markets. In sum, despite increasing its total export flows, Italy appears unable to keep up, proportionally speaking, with the growth in foreign demand that the six EU partners have expressed over the same period. What gives most cause for concern, however, is the fact that the decline in Italy's ranking has

occurred in a context of significant growth in demand from European consumers, which is worth some 1,157 million euros for the six European partners considered (tab. 9).

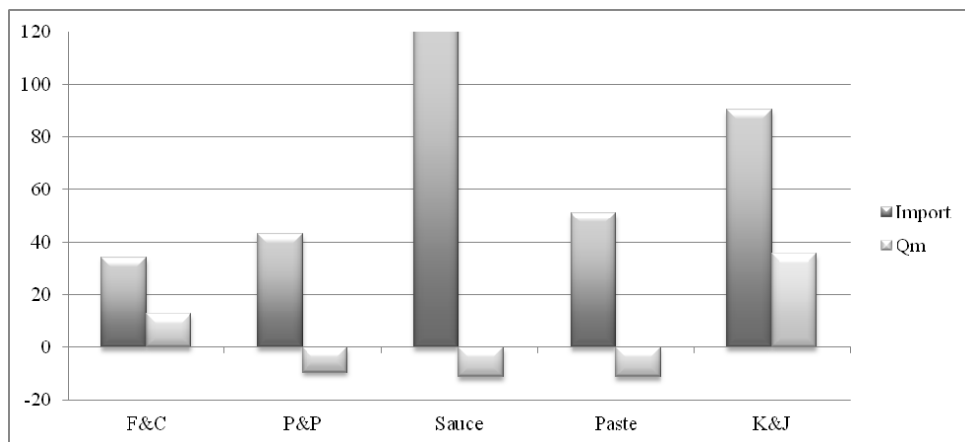
Tab. 9 – Growth in market volume and value of the six partners (2000-2012)

Product	Thousands of quintals	%	€ million	%
Fresh or chilled tomatoes	3,327	19	650	34
Peeled and pulp tomatoes	1,292	27	107	43
Tomato sauce	494	59	51	124
Paste	851	45	98	51
Ketchup and tomato juice	1,886	64	252	90
Total	7,849		1,157	

Source: Our elaboration of Eurostat data

For *fresh or chilled tomatoes* the demand of the six partners rose by 19% in volume and 34% in value; for *peeled and pulp tomatoes* increases were respectively 27% and 43%; for *tomato paste* market demand rose by 45% in volume and 51% in value. The same trend was found for *ketchup and tomato juice*, rising 64% in real terms, corresponding to a nominal growth of 90%. Tomato sauce recorded a 59% increase in volume, corresponding to more than double the value (124%).

To find further confirmation that Italy has not managed to keep abreast of the six European markets in question, we measured the growth rate of their imports against the variation in Italian market share. As shown by figure 5, for three product categories (*peeled and pulp tomatoes*, *tomato sauce*, *tomato paste*) Italy goes against the trend: while foreign demand grows, Italy's degree of cover diminishes. For *fresh or chilled tomatoes* and for *ketchup and tomato juice* the response of Italian exports has proved insufficient for the demand expressed by the six markets. Returning to the data contained in table 10 this means that Italy has in no way benefited from the growth of 255



Source: Our calculations based on Eurostat data

Figure 5 - Variation in imports and in Italian Qm (2000-2012)

million euros in the first three categories above, and performed disappointingly (i.e. less than proportionally) against the other competitors with the increase of 902 million euros found for *fresh or chilled tomatoes* and for *Ketchup and tomato juice*.

4. Conclusions

The processed tomato sector plays a strategic role in the economy of the Italian agri-food system especially because of the strong geographical concentration both of crop production and the processing industry. In this context, Italy confirms its presence among the main international players, even if market dynamics favour the ranking of other countries. As a *re-manufacturer* of tomato and its products, Italy's main market outlet for its production is the EU. The aim of this paper was to analyse the main changes occurring in the international trade scenario of tomato and its products and the competition dynamics of Italian tomato exports, focussing chiefly upon trading dynamics on the EU market insofar as it is the main area for trading Italian products. A further aim was to ascertain whether Italy has managed to defend its dominant position in international trade by studying export flows.

Analysis of trade flows with foreign countries showed significant increases in demand, both internationally and within the EU, stimulated by an appreciable increase in consumption. The Netherlands occupies a leading position on the European market in the segment of *fresh or chilled tomatoes*, for which it is able to cover more than half of the overall market requirements of the EU, helped by its strategic geographical positioning and by its traditional logistic efficiency. What was significant in this segment was Spain's loss of market share from its leading position in 2000 to a somewhat marginal presence in 2012.

With the sole exception of *ketchup and tomato juice* Germany is the partner which has strengthened its position in all segments, acquiring interesting market shares, suggesting that there may have been planned development of domestic tomato processing. The changes occurring in EU markets indicate for certain products real geographical diversification of origin and supply. A case in point is *tomato paste*: while Portugal has faded from the market and Greece has downsized production, Spain and Germany have considerably increased their market share.

Through a detailed overview of the European market, our results show the volumes of Italian exports are not proportionate with the increase in European demand, which is why Italy has underperformed. Despite increasing its total export flows, Italy seems to be unable to anticipate the market situation, failing to intercept demand from specific markets and meet the requirements of EU partners expressed over the same period. Appropriate conclusions must be drawn as soon as possible, followed by effective interventions to support the whole sector. In the meantime, in order that the tomato supply in its broadest sense can continue to be one of the fulcrums of Italy's food industry, both in terms of employment and income, greater attention should be paid to the national and international trends of this most dynamic sector. In this regard, it is increasingly essential to focus on the growing importance assumed by the quality, whether intrinsic or perceived, of exported goods. In other words, the quality of goods proves to be a decisive factor in capturing an increasingly sophisticated and segmented demand and thus becomes a key element in the competitiveness of firms, countries and relative export

flows (Wijnands J., 2001). The fact that products with more incorporated services and hence higher added value are becoming established on markets should be taken as a pointer to qualify and diversify national exports in the modern sense. Unfortunately, also in this respect something has not worked in terms of feedback between Italian production and the demand expressed on the markets. Suffice it to think that, against a considerable increase in European consumption of Ketchup and sauces, Rather than following this growth trend, Italian exports have constantly decreased in the course of recent years. In other words, it appears that Italy has gone in the opposite direction, failing to obey one of the basic rules which all international competitors seek to satisfy: that is, focus on a diversified supply with a good level of sophistication (Lall et al., 2006; Hausmann et al., 2007) understood as the set of innovative characteristics incorporated in goods (Cembalo et al., 2013; D'Amico et al., 2003). For a country like Italy, for which the most recent analyses depict a situation which, all in all, retains productive specialisation in traditional sectors (Carbone and Henke, 2012), the need to focus on greater product complexity appears evident. Technological innovation, design, the different quality attributes and the degree of diversification are all elements which greatly affect competitiveness and hence the possibility of positioning goods on wealthier, more highly evolved markets (Migliore et al., 2012). After all, world demand for this class of product appears to be growing at a constant rate, being relatively stable vis-à-vis both short-term fluctuations and long-term changes in demand.

One major limitation of our study is that we only consider in detail the European scenario, taking the rest of the world's dynamics superficially into account. Benefits would be reaped from analysing the Italian situation in a global context to gain insights into how Italy reacted to developing countries entering one of its most important agri-food businesses.

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