DETECTING VERTICAL INTRA-INDUSTRY TRADE IN CULTURAL PRODUCTS

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The European integration process has always been markedly characterized by the increasing incidence of Intra-Industry Trade. This has been theoretically justified on the grounds of the new approaches emerging in international trade literature, based on imperfect competition and differentiated products. In recent years another distinctive economic feature of the European Union is the importance gained by the so called "cultural and creative sectors", which are often studied and monitored for their great growth potential. We provide here a systematic decomposition of world trade in "cultural/creative goods" for the year 2009 (using harmonised bilateral flows for 213 products defined as "cultural products" by UNESCO, 2009) into three trade types: inter-industry, intra-industry (IIT) in horizontally versus vertically differentiated products. We show that the world trade in cultural goods is significantly characterised by two-way trade of vertically differentiated products. Moreover we specifically focus on the Italian peculiarities in the "cultural trade": therefore we first work out which ones of the world countries are the "top exporters" of these categories of products and then we compute an indicator of the Italian goods quality relative to each one of these competitors.
Not surprisingly, we find that the most important bilateral IIT intensities in cultural products are observed in Europe. However the presence of developing countries is not unimportant. This can be explained partly as a consequence of the increasing level of trade integration among some Asian countries and as a consequence of an increasing de-specialization of first industrialized countries in the production and trading of these products. Finally, with reference to the relative quality of Italian cultural products compared with that of the other top-exporters in these sectors, we find that the Italian products performances are good relative to those of emerging countries (such as China and India), but not as much if compared to other European countries (such as Germany, France and the United Kingdom).

Keywords: cultural and creative goods, relative quality, intra-industry trade, vertical differentiation
JEL codes: F1, F59, D4, Z1

Introduction

We seem to be in the middle of a long lasting hype about culture and creativity as possible key drivers of socioeconomic development processes. In the last few years this issue has been analysed in economics (Throsby, 2001), cultural geography (Scott, 2000), sociology (Zukin, 1995), media and communications studies (Cunningham, 2002), urban planning (Landry, 2000) among other disciplines. Given the heterogeneity of the related literature, trying to provide a unambiguous definition of cultural (and creative) economy could be difficult. As pointed out by O'Connor (2007), the debate on cultural industries began with Theodor Adorno, who, with his colleague Max Horkheimer, first coined the term in 1947 (Adorno and Horkheimer, 1979). The term "cultural industries" started to be very popular in 1984 with the Greater London Council. Since then, almost every national government had adopted its own definition, broadening or narrowing the range of activities object. Apart from the emerged problems of definitions and comparisons it is important to stress how these activities are not simply requiring public assistance, but how they represent productive and dynamic sectors (Lavanga, 2006).

In this context the main goal of our paper is to focus on an issue still not much debated, as that of international trade flows in cultural goods. Even if relevant reports, both at the EU level (Eurostat, 2011) and at a global level (UNCTAD, 2010), provided a measurement of world trends in cultural and creative goods and services, a thorough analysis on the patterns of bilateral trade in cultural goods and on the characteristics of these bilateral flows in terms of products differentiation is still missing (to our knowledge). The paper starts by introducing the literature related to issues of intra-industry trade (IIT) and by explaining how we apply the methodologies for identifying vertical IIT to cultural products. Then a data analysis is provided with the interpretation of results.

1. Methodology and data for disentangling vertical from horizontal IIT in cultural goods

1.1. Quality differentiation and vertical intra-industry trade

Since the 1960s, the identification of two-way trade flows within the same industries between countries with similar development and technological levels and with similar endowments has become one of the most important empirical findings in international trade studies.

This significant incidence of intra-industry trade (IIT), originally identified within the European Economic Community by scholars such as Verdoorn (1960), Balassa (1966) and Grubel (1967), has then become the most distinctive feature of the European integration process. Since these seminal analyses, many works (see Grubel and Lloyd, 1975, among others) have deepened the comprehension of this phenomenon and provided insights of the related methodological issues. Recently, two amendments to the original conceptual and empirical framework have gained ground: a) the overcoming of the original opposition between specialisation and IIT; b) the need for detailed bilateral trade data, in order to properly assess the incidence of IIT, without incurring in biases due to the overlapping at the industry level or to geographical aggregation.

According to Helpman and Krugman (1985), monopolistic competition and internal economies of scale lead to IIT in horizontally differentiated products, whereas dissimilarities in factor endowments and technological levels drive trade patterns in inter-industry trade, as in the old comparative advantage theory. As Feenstra (2004) points put, such an interpretation of IIT is coherent with the idea of complete specialization. However, it completely misses the analysis of the vertical differentiation of products, which, on the contrary, entails the idea of IIT as an exchange of "different" goods. As a consequence, it is necessary to understand the price mechanism in order to discern between horizontal IIT (two-way trade in homogeneous products) and vertical IIT (two-way trade of qualitatively differentiated products).

The first scholars interested in the measurement of vertical IIT were Abd-el Rahman (1991) with French data, Freudenberg et al. (1992) with German data, and Greenaway et al. (1994) with British data. Measuring the relative importance of vertical IIT at one point in time, they demonstrate that vertical IIT is not marginal. The first longitudinal multi-country study was done by the CEPII (1997). This analysis showed that vertical IIT is responsible for both the rise of total two-way trade in Europe and for the consequent reduction in inter-industry trade (whereas horizontal IIT remains stable over time).

1.2. Disentangling vertical from horizontal IIT in cultural goods

The two main methods for disentangling vertical from horizontal IIT (see Greenaway, Hine and Milner, 1994; and Fontagné and Freudenberg, 1997) rely on the same assumption regarding the association of price, unit values and the quality of traded products: that differences in prices within one product category mirror differences in quality. Three comments have to be made regarding such an assumption (as pointed out by Fontagné, Freudenberg and Gaulier, 2005):
- it is only acceptable with the most detailed trade data, where aggregation of different products within one product category is minimised (one must use HS 6-digit trade data);

- though there are good reasons leading to slight departures from a strict association of prices with quality, trade economists are accustomed to this simplification;

- prices of traded products are not known, as each transaction has its own characteristics (such as time, place, volume, partners, and special conditions) and thus its own price. This is why average unit values are used instead of prices.

The CEPII has developed a database (BACI) based on COMTRADE, aimed at constructing a harmonised world trade matrix for values and quantities at the 6-digit level of the HS. Predicted mirror flows ratios from a gravity-type equation are used to convert CIF to FOB figures. These very detailed data at the product level allow to compute the unit values of worldwide bilateral flows at a level of disaggregation which is the closest one to the idea of a "product" available at an international level, making it possible to carry out analyses based on the calculation of unit values as an approximation of average goods' prices (see Affortunato and Mattoscio, 2012).

Following the above mentioned methods, our approach is to apply to our products of interest (HS6 "cultural" codes) the following methodology:

1) we conduct the analysis on bilateral trade data on "cultural goods" worldwide, at the product level, for the year 2009, calculating the unit values (value/quantity) for each elementary flow in cultural goods at the most detailed level (HS6);

2) we first categorize whether the flow is inter-industrial or intra-industrial, depending on the degree of overlapping: when the value of the minority flow is at least 10% of the majority flow (see Fontagné and Freudenberg,1997), the total trade in this product is considered to be ITT;

3) we check whether unit values are similar (relying on a 25% difference in unit value) in order to allocate the associated trade flow to a given category of product differentiation: horizontal in case of unit value similarity, vertical otherwise;

4) we make all calculations at the product, declaring country and partner levels.

Table no. 1 – How to disentangle vertical form horizontal IIT

Degree of overlap betwee export and import value	Similarity of export and import values		
Does the minority flow represent at least 10% of the majority flow?	Do export and import unit values differ less than 25%?		Unit value not available
	Yes	No	
Yes	Two-way trade in horizontally differentiated products	Two-way trade in vertically differentiated products	Two-way trade non allocated
No	One way trade		

Source: Fontagné, Freudenberg and Gaulier (2005)

Since we are particularly interested in the Italian peculiarities in the "cultural trade", we then conduct a second type of analysis, always based on the comparison of unit values for each HS6 "cultural" code: first we work out which ones of the world countries are the "top exporters" of these categories of products and then we compute an indicator of the Italian goods' quality relative to each of these competitors (see Abd-el-Rahman, 1991).

2. Results

Not surprisingly, we find here that the most important bilateral IIT intensities in cultural products are observed in Europe. What is more interesting when considering the IIT ranking in terms of values is the presence of developing countries. This is due, to our understanding of the phenomenon, partly to the increasing level of trade integration among some Asian countries (as well as the important role of geography) and partly to the peculiarities of the "cultural" H6 codes and to the fact that many first industrialized countries are increasingly de-specializing in the production and trading of these products (as measurements of the main trade specialization index, such as the Balassa and the Lafay ones, confirm).

Table no. 2 – The worldwide top bilateral IIT shares in cultural products

The worldwide top ten bilateral IIT (shares)			The top ten bilateral IIT (values)		
Exporter	**Importer**	**share**	**Exporter**	**Importer**	**share**
Belgium-Luxembourg	France	70,62	Mexico	USA	52,61
Germany	United Kingdom	70,14	USA	Canada	55,92
United Kingdom	USA	70,14	USA	Mexico	52,61
Germany	USA	66,82	Canada	USA	55,92
Belgium-Luxembourg	Germany	65,88	USA	United Kingdom	70,14
Germany	Belgium-Luxembourg	65,88	Rep. of Korea	China	37,44
Germany	Netherlands	64,93	Malaysia	USA	27,49
France	United Kingdom	62,09	China	Japan	36,02
Belgium-Luxembourg	Netherlands	59,72	Netherlands	United Kingdom	50,71
Austria	Germany	58,77	Netherlands	Germany	64,93
Australia	New Zealand	57,82	China	Malaysia	21,33
New Zealand	Australia	57,82	China	Singapore	18,96
Denmark	Sweden	57,35	China	Rep. of Korea	37,44
Germany	Switzerland	57,35	Malaysia	Singapore	54,03
Sweden	Denmark	57,35	Netherlands	Belgium-Luxembourg	59,72
Canada	USA	55,92	Japan	China	36,02
France	Switzerland	54,98	Malaysia	China	21,33
Germany	Italy	54,50	USA	Germany	66,82
Norway	Sweden	54,50	United Kingdom	USA	70,14
Rep. of Korea	USA	54,03	Germany	Netherlands	64,93

Table made by the authors

Table no. 3 reports the ranking of trade partners which show higher shares of horizontal IIT (on the left side) and of vertical IIT (on the right side).

Table no. 3 – Ranking of bilateral horizontal and vertical IIT (shares %)

IIT-Horizontal		TWT-H	TWT-V	IIT-Vertical		TWT-H	TWT-V
Canada	USA	34,60	21,33	Belgium-Luxembourg	France	18,48	52,13
New Caledonia	China	35,07	0,47	USA	United Kingdom	19,43	50,71
New Caledonia	USA	29,15	2,13	United Kingdom	Germany	19,43	50,71
New Caledonia	Australia	24,64	4,74	Netherlands	Germany	17,30	47,63
USA	Netherlands	22,75	15,17	Germany	USA	18,01	48,82
Japan	New Caledonia	21,56	0,24	Australia	New Zealand	9,95	47,87
Germany	France	19,67	46,21	Belgium-Luxembourg	Germany	18,96	46,92
USA	United Kingdom	19,43	50,71	France	Germany	19,67	46,21
USA	France	20,14	32,94	United Kingdom	France	15,88	46,21
Belgium-Luxembourg	Germany	18,96	46,92	USA	Rep. of Korea	8,29	45,73
United Kingdom	Germany	19,43	50,71	USA	Italy	6,87	44,79
France	New Caledonia	20,14	14,45	Germany	Italy	9,95	44,55
Belgium-Luxembourg	France	18,48	52,13	Sweden	Denmark	13,74	43,60
France	Netherlands	18,48	31,75	France	Italy	13,98	43,36
Singapore	Australia	18,25	12,09	Belgium-Luxembourg	Netherlands	17,06	42,65

Table made by the authors

With regard to the final step of our analysis, the results for the Italian performance in terms of cultural goods quality relative to the top-exporters of these products are as follows:
- the first striking result is the huge percentage of Italian cultural products which can be identified as vertically differentiated relative to each one of the other top-exporters;

- the second important consideration steams from the evidence that Italian cultural products reveal a high percentage of high-quality cultural exports relative to many emerging countries (in particular China, India, Singapore, Thailand);
- however, the most important issue is that Italy shows a somewhat poor performance in terms of cultural products quality relative to rich countries (most evidently relative to Japan, but also relative to other European countries, such as France, Germany and the United Kingdom).
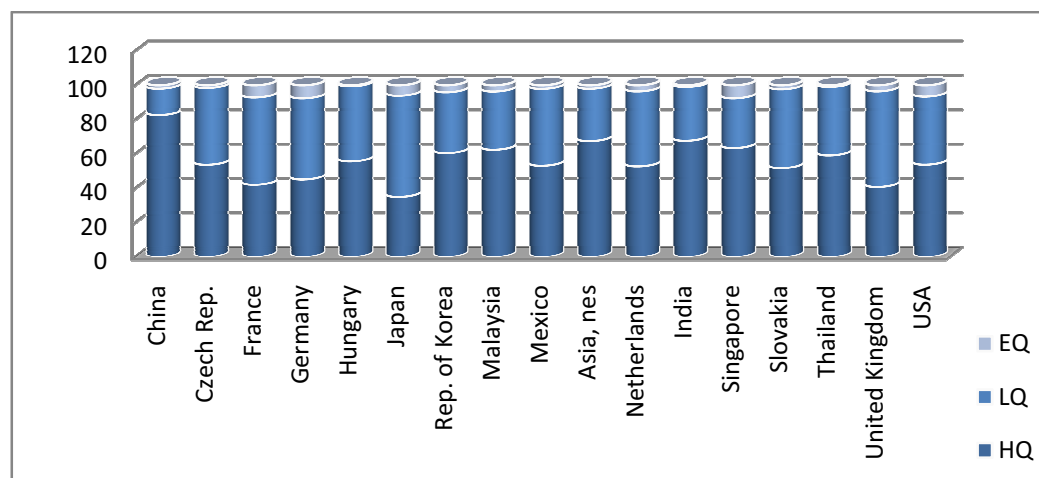

Figure 1 – Italian cultural goods' quality at a glance

Conclusions

The revelation of two-way trade within industries, between countries of similar development levels, is one of the most important empirical finding of the 1960s concerning international trade. In contrast to the simplistic opposition between inter-industry trade (based on differences in prices leading to specialisation) and IIT (seen as two-way trade of differentiated products with similar prices), there are both empirical evidence and theoretical arguments in favour of two-way trade of qualitatively differentiated products. Accordingly, IIT in cultural goods has been divided into two parts: IIT in horizontally differentiated (i.e. similar) products and IIT in vertically differentiated products (i.e. differing by quality). In order to empirically study IIT, more detailed possible industry breakdowns are necessary. Moreover both values and quantities (to be able to construct unit values) are indispensable at the product level (HS 6-digit codes) for bilateral trade flows. For our analysis, we use the database BACI (CEPII), constructing a harmonised world trade matrix for values as well as quantities at the 6-digit level of the HS, in which predicted mirror flows ratios from a gravity-type equation are used to convert CIF to FOB figures in order to have not only exports but also imports expressed FOB.

Following Fontagné and Freudenberg (1997) and Fontagné, Freudenberg and Gaulier (2005), our approach is to conduct an analysis aiming at disentangling vertical and horizontal IIT in the trade of "cultural goods" as defined by UNESCO (2009). Therefore, we calculate the unit values (value/quantity) for each elementary flow in cultural goods at the most detailed level, we categorize whether there is inter-industrial or intra-industrial trade, depending on the degree of overlapping and finally we check whether there is horizontal IIT (in case of unit value similarity) or vertical IIT (otherwise). Not surprisingly, we find that the most important bilateral IIT intensities in cultural products are observed in Europe. However the presence of developing countries is not unimportant. This can be explained partly to as a consequence of the increasing level of trade integration among some Asian countries and as a consequence of an increasing de-specialization of first industrialized countries in the production and trading of these products. Finally, with reference to the relative quality of Italian cultural products compared with that of

the other top-exporters in these sectors, we find that Italian performance are good relative to those of emerging countries (such as China and India), but not as much if compared to other European countries (such as Germany, France and the United Kingdom).

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