

Intra-Industry Trade in Tourism Services

Nuno Carlos LEITÃO

Polytechnic Institute of Santarém and CEFAGE- UE, Portugal
nunocarlosleitao@gmail.com

Abstract. *Usually the tourism flows are explained by demand, economic growth, and revealed comparative advantage (neoclassic trade theory).*

This manuscript examines the link between intra-industry trade and international tourism flows. We have examined the Portuguese intra-industry trade in this sector. The analysis apply the static (Grubel and Lloyd) and dynamic index (Brülhart). Our results show that the tourism services are important for a small economy such as Portugal. The intra-industry trade is very significant between Portugal and the following countries: Spain, USA, Italy, Greece, Turkey and Canada.

Keywords: tourism flows; intra-industry trade; Grubel and Lloyd index; Brülhart index, Portugal.

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Introduction

The tourist flows have been studied frequently in terms of demand, and economic growth. Some researchers as Phakdisoth and Kim (2007), Leitão (2010), Surugiu et al. (2011) demonstrated that international trade explains the tourism sector. As refers Leitão (2010, p. 64): “(...) Tourism is a significant source of export significant revenues for any country”. It is important that policymakers and economists understand the factors of intra-industry trade in travel services.

The main objective of this manuscript is to apply the techniques of international trade, including the indexes of intra-industry trade (Grubel, Lloyd, 1975, Brühlhart, 1994) to Portuguese tourism flows.

The Portuguese economy is characterized by a small open economy, where tourism has a role in economic growth. In terms of geographic location, Portugal is located in Southern Europe, and in the Western part of Iberian Peninsula. The surface of the country, including the archipelago of the Azores (2,247 square kilometres) and Madeira (794 square kilometres), is 92,345 square kilometres.

The climate is mild, which allowed that the tourist activity has developed. Portugal has a historical, rich cultural and artistic past. The country has a qualified tourist supply which allows it to receive international conferences, international exhibitions and sporting events.

According to the Bank of Portugal (statistics of tourist cash flows) in 2008, Portugal held tourist expenditure with particular emphasis on Spain, France and the United Kingdom. As regards the revenue the United Kingdom comes first in terms of ranking, followed by France and then Spain.

Webster et al. (2007), Sinclair and Stabler (2007) analysed the revealed comparative advantage. Bela Balassa (1966) proposed an index to analyse the comparative advantage. The comparative advantage is explained by neoclassic trade theory (Ricardo, Heckscher-Ohlin).

The study of Webster et al. (2007) also emphasized the “new trade” theories, i.e intra-industry trade (IIT) using a multicountry analysis. The authors demonstrated that Indonesia, Sri Lanka, Greece, and Mexico present highest values of IIT. Developed economies such as Canada, Netherlands, and USA present highest values of IIT. However some developed economies such as Japan and Germany have lowest values of IIT.

In general, the literature on intra-industry trade in tourism services focuses on the factors, as in monopolistic competition, product differentiation and economic scales (Lee, Lloyd, 2002). Balassa (1979), Falvey and Kierzkowski (1987) demonstrated that economies with lower trade barriers have higher levels of intra-industry trade.

The study of Lee and Lloyd (2002) shows that per capita gross domestic product (PCGDP), and trade orientation (TROR) has a positive impact on intra-industry trade in services.

The remainder of the paper is organized as follows: section 2 presents the relationship between tourism service and IIT; section 3 presents the indicators of IIT; section 4 and 5 show the results of IIT and marginal IIT. The final section provides conclusions.

The nature of tourism services and intra-industry trade

In the end of 70's, new trade theories emerged. These models of Krugman (1979), Lancaster (1980), Helpman (1981), Eaton and Kierzkowski (1984) and Helpman and Krugman (1985) introduced a new reality: intra-industry trade (IIT). For other words, these models permit to explain the simultaneous trading (export and import) of product within a particularly industry.

Balassa (1966) refers that the intra-industry trade is explained by similar per capita incomes. Geographical distance discourages IIT. Moreover, the common border promotes bilateral trade. Trade barriers have a negative impact on the promotion of IIT.

For a long time trade in services was not subject to analysis in the international economics. With the Uruguay Round trade in services gains weight with the General Agreement on Trade in Services (GATS). The Uruguay Round has implemented a trading system based on multilateralism. The World Trade Organization (WTO) was confronted with the process of globalization and protectionism (Bhalla and Bhalla (1997).

The discussion of intra-industry trade in tourism services have been negligenced.

There are some studies that analysed intra-industry trade in services as in Kierzkowski (1989), Tang (1999), Lee and Lloyd (2002), Webster et al. (2007). Kierzkowski (1989) analysed the transportation services. The study of Tang (1999) examined the international telephone industry. Lee and Lloyd (2002) applied the index of Grubel and Lloyd (1975) and the index of Brühlhart (1994) in services by country and in services by industry for the period 1992-1996.

Webster et al. (2007) also apply the index of Grubel and Lloyd (1975) and the index of Brühlhart (1994) in tourism services. The authors concluded that tourism is explained by product differentiation, economies of scale and monopolistic competition.

In 1990's, international economics watched a new paradigm. IIT is measured and explained with dynamic process. According to the literature, the concept of marginal intra-industry trade is associated with labour market adjustment costs (Brühlhart, 1994).

Table 1 shows the importance of tourism receipts in Portugal by foreign countries in 2008. The United Kingdom occupied the first position, followed by France, Spain, and Germany. The fifth and sixth are occupied by Netherland and the United States.

Table 1

Tourism receipts by foreign country in 2008	
Country	Ranking by country
United Kingdom	1
France	2
Spain	3
Germany	4
Netherland	5
United States	6
Brazil	7
Ireland	8
Belgium	9
Italy	10

Source: Bank of Portugal dataset.

Material and methods

The data were taken from the Bank of Portugal (statistics of tourist cash flows) between Portugal and trade partners. We calculate the intra-industry trade in tourism services considers the incoming and outgoing expenditures.

The empirical literature use the index proposed by Grubel and Lloyd (1975). The Grubel and Lloyd (1975) index is given by:

$$IIT_i = 1 - \frac{|X_i - M_i|}{(X_i + M_i)} \Leftrightarrow IIT_i = \frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)}$$

The index is equal to 1 if all trade is of the intra-industry trade type. If IIT is equal to 0, all trade is inter-industry trade. The Grubel and Lloyd index is a static measure and, as Hamilton and Kniest (1991) demonstrated, the changes of this index over time do not adequately reflect the changes in trade partners. Their measure did not eliminate the scale effect. In other words, their index did not allow the comparison between industries of different size. This problem was resolved by Brühlhart (1994) marginal IIT index (MIIT).

$$MIIT = 1 - \frac{|\Delta X - \Delta M|}{|\Delta X| + |\Delta M|}$$

The Brühlhart index is a transformation of Grubel and Lloyd (1975) index. The MIIT index also takes the values 0 and 1. The value 0 indicates that the marginal trade in the industry is exclusively of the inter-industry trade and the value 1 represents that the marginal trade is entirely of the intra-industry.

According to the literature (Brühlhart, Elliot, 2002) the impacts on symmetric or asymmetric demand shock within or between industries are explained by trade-induced.

Intra-industry trade – Grubel and Lloyd index

Table 2 report Grubel and Lloyd index of intra-industry trade in Portuguese tourism for the year 2008 and 2009. Intra-industry trade in tourism services predominates between Portugal and the following countries: Spain, Greece, the United States, Italy, Canada, and Turkey. In other words, the IIT between Portugal and these countries are over 50%.

As Table 2 also shows, the trade partners with highest value of inter-industry trade (comparative advantage, i.e. $IIT < 0,5$) are Austria, Czech Republic, Denmark, Germany, Ireland, Netherlands, Poland and United Kingdom.

Table 2
Portuguese intra-industry trade in tourism services:
the index of Grubel and Lloyd

Countries	2008	2009
Austria	0.43	0.40
Belgium	0.53	0.52
Canada	0.54	0.61
Czech Republic	0.19	0.18
Denmark	0.21	0.21
France	0.44	0.41
Germany	0.39	0.38
Greece	0.69	0.71
Hungary	0.29	0.30
Italy	0.75	0.73
Ireland	0.29	0.73
Netherlands	0.29	0.30
Poland	0.31	0.27
Spain	0.97	0.90
Turkey	0.71	0.53
United Kingdom	0.32	0.37
United States	0.70	0.70

Source: Own calculations from Bank of Portugal dataset.

Marginal Intra-industry trade – Brülhart index

The marginal intra-industry trade (MIIT) appears in literature as a way of explaining the issues of structural adjustment in the labour market. The literature considers that intra-industry trade has lower adjustments costs than inter-industry trade, i.e, smooth adjustment hypothesis (SAH).

This article uses the index of marginal intra-industry trade (MIIT) is not to evaluate the issues of adjustment in the labour market, but to assess the changes in international tourism. As in Webster et al. (2007) we compare the results of IIT (Grubel, Lloyd index) with the indicator MIIT (Brülhart, 1994).

When we apply the MIIT index we see that the picture is something different. The countries with the highest values of marginal intra-industry trade in tourism services are: Austria, Canada, Netherlands, and USA (Table 3).

Table 3
Portuguese marginal intra-industry trade
in tourism services

Countries	MIIT
Austria	0.93
Belgium	0.21
Canada	0.90
Czech Republic	0.18
Denmark	0.21
France	0.88
Germany	0.42
Greece	0.53
Hungary	0.10
Italy	0.40
Ireland	0.43
Netherlands	0.90
Poland	0.55
Spain	0.26
Turkey	0.46
United Kingdom	0.12
United States	0.80

Source: Own calculations from Bank of Portugal dataset.

Conclusions

In this article we analyze the flows of tourism taking into consideration the indicators of international trade, including intra-industry trade. As we referred the studies of trade in services have been neglected. However,

Kierzkowski (1989), Tang (1999), Lee and Lloyd (2002), Webster et al. (2007) contributed to this gap decrease. We consider that there are necessary and empirical developments of theoretical models, not only in multilateral terms, but also in bilateral terms. It is our understanding that the classic studies, i.e. bilateral trade, give us a more realistic picture.

The results show that a correlation exists between the theory of international trade and tourism. That is, the tourist products are associated with product differentiation, economies of scale and are explained by monopolistic competition.

However this study has some limitations. In future we need to study the determinants of intra-industry trade in tourism services. This type of trade “two-way trade” is associated to different endowments and quality of products.

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