Visit and Buy.
An Empirical Analysis on Tourism and Exports

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Abstract

The impact of international tourism flows has been poorly studied within standard gravity models of international bilateral trade. In this paper we use disaggregated bilateral data on both movements of people and movements of goods in order to carry out a panel data analysis on how the two flows are linked. We apply Rajan and Zingales (1998) methodology in order to identify those products (*experienced* goods) which are more likely to be sampled in their origin country by foreign visitors. We compute an index in order to proxy the experience good intensity for 11 manufacturing industries whose products can be easily transported and could be defined as 'local' varieties. We use all products of the same sectors which are not final consumption goods as a control group. Our identifying strategy enables us to robustly assess the influence of total arrivals in a country on its exports. By considering 25 EU countries, we find that tourism promotes exports and its effect is not negligible.

JEL codes F14, F15

Keywords: Trade, Tourism, Gravity;

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1. Introduction

Although revenues from inbound tourism can be considered equivalent to exports, namely an export of services in the balance of payments of the host country, scholars have surprisingly overlooked tourist flows within standard international trade models. From an intuitive point of view, the fact that tourism is likely to affect the nature and the size of commodity transactions between countries, should be self-evident. For example, tourism facilities and services are likely to involve the import of specific goods which are needed in order to satisfy visitors' needs.[1]

On the exports' side there are potentially two channels, distinct in time, whose possible interrelation deserves investigation. First of all there is the provision of local products to tourists. Exports *at home* are easier: they are not burdened by all the costs involved with a border.[2] Still, selling products at home to foreign visitors involves an exchange of information with a dual content, on local products and on foreign tastes, which may foster traditional exports. This paper revolves around this possibility: the direct contact between foreign visitors and local products activates an international demand once tourists come back to their own countries.

At this stage we are not making any point on firm behavior. We examine data at the country level and we evaluate whether tourism may change consumers' attitudes about foreign cultures, this way inducing a higher demand for foreign products. The issue is still undeveloped in the literature. The study of the relationship between tourism and exports is not new, but another glimpse has been prevalent till now. Several works have considered tourism and exports as joint determinants of growth and tried to detect long-run causal relationships (e.g.Balaguer and Cantavella-Jorda (2002); Dritsakis (2004) and Durberry (2004)).[3] In the latter study aggregate exports and international tourism are studied by means of a production function where economic growth is explained by physical capital, human capital and exports. Other papers try to detect at an aggregate level the existence of a causal link between exports and international tourism, seen as different sources of foreign receipts, and the long-run economic growth.

From a different perspective what the mentioned literature points out is that identification is the issue. When linking people's movements with goods'

[1] Also, development of hotels and other tourism infrastructures often needs the expansion of import trade with overseas states. But also for this issue, i.e. the relationship between tourism expansion and imports of capital goods, there is a general lack of empirical evidence.

[2] The important implication is that firms, which normally do not sell their products to foreign customers and which have been found by recent literature to be the great majority, can meet foreign tastes selling to tourists.

[3] See also Oh (2005)

border crossing, a procedure consistent with the underlying intuition on how arrivals can favor new foreign sells has to be adopted. If it is true that a travel may involve an exchange of information with a dual content, on local products and on foreign tastes, then a proper methodology has to be based on the identification of those cases where such information exchange is likely to occur. The causal effect in this paper is identified by the differential effect with products which instead a foreign visitor is not likely to experience when visiting a country.

In this work we apply a panel data approach to exchanges within the EU. First of all, differently from the existing studies, we use bilateral data on both travel and exports. If we believe that English people will better know, and so buy, Italian products after spending some time in Italy, regardless the motivation of the travel business or leisure, the use of bilateral data links in a precise way a specific flow of people to the correspondent flow of commodities whose exports could be stimulated. A paper in line with such approach is Quinn (2009), who finds that some positive role of tourist visits on US exports using data of 19 countries. In another work, Fischer and Luis (2009) check for the possibility that arrivals in Spain from Germany are a stimulus for exports of Spanish wines to Germany).

The specific approach in Fischer and Luis (2009) makes clearer the point: by focusing on the wine sector they suggest that the movement of people across borders can be relevant for making *some* products better known to foreign consumers. Our empirical work builds on such identifying assumption. Theoretically arrivals to a country are a way for local firms to gain information on foreign costumers' tastes and, on the other direction, for foreign consumers to add local varieties to their consumption bundle. If both factors potentially increase countries' exchanges after the event 'travel' we should test whether this is *differently* verified for those goods which are sampled during the travel (with respect to the complete bundle of produced goods).

We also understand that the choice of the travel destination can be motivated by specific country characteristics such as weather, average temperature, quality of touristic resources, but also by the quality of the touristic experience given also by the availability of some products. The possibility of drinking good wine plays some role in making France a touristic destination. If this is true in general with respect to traveling our identification strategy looses its ground. [4] Our argument is that the great reductions in air-fairs increased the mobility of EU citizens and their awareness of products previously unknown outside national borders. Furthermore, also in the example of French wine a visit to the Bordeaux region is likely to promote the experience of new varieties (new producers) of the well known wine grape.

We apply Rajan and Zingales (1998) methodology in order to identify those

[4]The choice theory applied to tourism shows that ...

products which are more likely to be sampled (*experienced*) in their origin country by foreign visitors. We compute an index that proxies the experience good intensity for 11 manufacturing industries whose products can be labeled 'local' varieties. We assume such characteristic to be crucial for increasing the probability of having a product sampled by foreign visitors. Then, we also need products which are similar with previous ones but they are not going to be *experienced* by tourists. Such products are going to be our control group. Commodities which belong to the same sectors but have a different end of use (they are not consumption goods but either capital, primary or intermediate products) enter the control group.

Within this framework it is fundamental to control for all shocks which may make easier for both goods and people to move across borders. During the period considered the air transport market has witnessed quick changes in terms of new routes and connections. New routes have been activated (by low-cost companies or their competitors) influencing the level of connectivity of a particular country-pair. In order to prevent this and other unobservables factors to influence our estimates we use a fixed-effect model with controls for the trading-pair in each period.

Our identifying strategy enables us to robustly assess the influence of arrivals in a country on its exports. By considering a sample of 25 countries belonging to the European Union, we find that tourism promotes exports.

The paper is structured as follows: section 2 will present the empirical issues of our work. Our proxy for the *experience-goods* intensity and its computations are discussed in section 3. Section 4 describes the data. Results are illustrated in section 5. We test our sectoral choices in section 6, which provides a robustness check to our results. Conclusions follow.

2. Movements of people and movements of goods

In this paper we investigate on movements of people regardless of their duration. We look at total arrivals to a country, a flow variable which accounts for temporary transfers (short-term travels) where no migration decision is involved. For a first understanding of recent developments at the core of our investigation Table 1 illustrates how the EU market has witnessed a quite dramatic increase in the number of total passengers. The distinction by transport mode makes clear that a strong push to movements across borders has been given by developments in the air transport market. In fact, the period considered (1998-2005) just follows the first appearance of low-cost companies, which in 1995 started to establish themselves at the EU level. At the beginning of the period the list of companies flying above the EU skies has been quite long with many companies competing in order to acquire a dominant position either at the route or country level. The passing of the years has seen two of them,

Table 1
Percentage change in number of passengers 1995-2008, by mode

Period	Cars	Bus	Rail	Air	Sea	Total
1995-2008	21.4	9.4	17	*62*	-8	22.5
per year	1.5	0.7	1.2	*3.8*	-0.6	1.6
2000-2008	9.3	5.5	10	*23*	-1.9	10
per year	1.1	0.7	1.2	*2.6*	-0.2	1.2
2007-2008	-0.7	0.9	3.5	*-1.9*	-0.2	-0.3

* Energy and Transport in Figures, EU Commission (2010)

Ryanair and EasyJet, ending to be already in 2005 major players in the EU transport market.

Our main question is whether such an impulse given on the temporary border crossing of people has had an impact on making different national products better known to EU consumers, and has therefore stimulated trade. Differently from existing studies on tourism, trade and growth, which use total arrivals in a country without distinguishing their origin, we identify specific inter-national movements. Linking bilateral information on both flows is the first fundamental step in order to deal with the identification of a clear causal link between arrivals and exports.

2.1. *A double-sided causality link*

Arrivals data correspond to international visitors to a country and include both tourists and same-day non-resident visitors.[5]

In this paper we are interested in understanding whether the permanence of tourists increases commodity exports of the guest country through "exposing" foreigners to experience local varieties. But if traveling is motivated by business reasons and therefore by the same exporting activity between two countries the relation is a double-sided one: international travels can either foster or be fostered by exchanges between two economies. Even more there could be unobserved factors likely to influence both flows. Any event which could increment the probability of moving across borders (or could reduce the costs of the same activity) is likely to affect both movements of people and movements of goods thus introducing an omitted variable bias when estimating the correlation between arrivals and exports. In the last 15 years many new routes have been opened in the EU transport market. As new routes may affect both types of flows, stimulating both tourism and lowering transport

[5]The World Tourism Organization defines tourists as people who "travel to and stay in places outside their usual environment for more than twenty-four (24) hours and not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited."

costs to ship products to another country, after finding a well-sounded identification strategy it is important to properly specify the empirical model by introducing fixed-effect (FE) controls for every period (time varying FE).

2.2. *The Basic test*

Our hypothesis is that countries that receive higher arrivals will tend to export more. In order to perform a test first of all we need to merge the correspondent flows, i.e. we need to control whether arrivals from a particular country stimulate exports to that precise economy. This means that the origin country of the arrival flows corresponds to the destination country of the commodities' flow. Our dependent variable is therefore exports from country i to country j in sector s at time t. Our main explanatory variable is total arrivals from country j to country i in the same period.

The most adequate framework for explaining the level of bilateral exports is the gravity model that explains why flows rise with the size of either trading partners or when their distance (either geographical or cultural) is smaller. Furthermore the gravity equation also accounts for barriers significantly impeding trade. For example, sectors with higher technical barriers have been found to reveal a higher propensity to exchanges within borders (internal trade).

As said before the most effective way for correcting for all potential sources of omitted-variable bias in the coefficient of our interest variable is to use a country-pair indicator variable (country-pair FE) for each time period. Our explanatory variable needs to have one more dimension of variability with respect to the time varying country-pair FE. In this set-up the usual variables entering a gravity exercise (income of both partners and distance) cannot be estimated. Also, the coefficient of a variable which varies across the country-pairs and in time (as the total number of arrivals for each country pair) cannot be estimated. We can estimate a coefficient of the differential effect of total arrivals using the information on the variability across industries.

The model we estimate is then:

$$\begin{aligned} EXP_{ijst} = Constant + \beta_{1jt...25jt...i1t...i25t}\text{Country-pair Indicators x t} \\ +\beta_s\text{Industry Indicator x Tot Arrivals} + \epsilon_{ijst} \end{aligned} \tag{1}$$

where EXP_{ijst} are exports from country i to j in sector s at time t.

2.3. *The identification Strategy*

The channel of influence we are investigating on works because spending some days in another countries allows local products to be experienced. Therefore we can adopt an identification strategy based on the hypothesis that a touristic shock increases more the exports of those commodities which can be better

known when consumed in the home country with respect to those ones less dependent on local promotion. In other words, we assume that some firms can reduce the costs of promoting their varieties in another country simply by firstly "exporting" *in loco*. When back home foreign consumers are more likely to buy those products which have experienced during their travel. This is likely to be the case for products whose national specificity is important. Some simple examples will clarify our reasoning: while there is not need to go to Switzerland to decide whether to buy a Swiss watch or to Germany to choose a Mercedes car, the preference towards a specific wine or food variety is likely to be enhanced after tasting it. Visiting a country promotes the experience of varieties which are still unknown to a foreign consumer before the travel.

The most disaggregated comprehensive data on bilateral exports available are at the product level with several products produced within the same industry. In order to implement our identification strategy we firstly need to isolate those industries whose products rely on experiencing. Secondly, for the same industries, we need to construct an indicator which captures different levels of such reliance experiences. In other words we need to measure the *experience-goods* intensity at the industry level.

The first point is quite crucial. Since it needs a sound argument on the selection of the industries, a robustness analysis on the validity of such choices is required. We use the definition of experience goods in order to choose sectors where the link from tourist flows to exports can be properly identified.

3. A measure on the *Experience-Goods* intensity at the industry level

The hypothesis we use for identifying the causal link from the number of visitors to exports (to the origin country of the arrival flow) is that a touristic shock is likely to stimulate differently exports of those goods which is possible to be consumed *in loco* with respect to those ones where this is not true.

Another way to look at the link between moving goods and people across borders is that while exports of all types of goods can foster business trips, and therefore the movement of people across borders, we suppose that visiting a country can promote primarily those commodities which are more likely to be experienced during the travel.

Firstly we need to select our sectors of interest. Secondly we have to build a control group. We have to find commodities which have the same characteristics as the ones which can be experienced but do not have the characteristics to be sampled. In other words this implies the construction of a measure of the industry's *experience goods* intensity.

3.1. *Experience-goods: a definition*

Goods characteristics contribute to the way consumers can get information on their quality. In the past 30 years such aspects have been extensively analyzed by the economics of information. According to Nelson (1974), *search* goods are those for which judgments regarding product attributes/quality can be made by consumers prior to purchase while *experience* goods are those for which such judgments can be made only after purchase. In other terms the latter is one whose qualitative characteristics can be obtained only through buying and using the item.

Looking at a wider range of products there has been some discussion on finding an objective measure for distinguishing experience and search products: according to Porter (1976) a low unit price for a product implies that relevant performance information will be acquired via sampling (experience). Notably, an experience good is not such by design, rather by virtue of consumer choice in the face of varying informational costs. Thus, Porter's measure of the incentive to acquire product/vendor information is product price, as opposed to Nelson's ad hoc search/experience dichotomy.[6]

3.2. *Local varieties in manufacturing*

We decided to adopt the above definition to select the activities for our analysis. Our trade data, based on the ISIC-rev2 classification, includes all industrial sectors, some producing internationally 'standardized' commodities (such as chemical products, pharmaceuticals or electrical machinery) which do not have the appeal of being a local variety; or commodities which are also difficult to be transported (mining, iron and steel industries, metal products, machinery, transport equipment).

At this stage of the analysis we decided to concentrate on those activities producing as 'main' commodities items which can be labeled as 'local varieties'. Food and beverages satisfy such two categories. But other items within light manufacturing can also be included. We therefore start investigating exports for the 3-digit sectors reported in Table 2.

[6]More recently, Laband (1991) argues that the discussion of search versus experience goods and, more importantly, the behavior of buyers and sellers, is driven by the cost to the buyer of a disappointing purchase. As the cost of making a disappointing purchase increases, the would-be buyer rationally seeks to acquire additional information prior to purchase regarding product quality and performance. At the other extreme, for some items the cost of making a disappointing purchase is relatively small. Information about product quality for these items may be obtained cheaply through sampling and experience. As the purchase price of an item rises, so does the cost of making a disappointing purchase and, accordingly, so do the benefits from pre-purchase efforts to acquire information, *ceteris paribus*. Using this definition, according to Laband (1991) the awkward dichotomy of search versus experience can be replaced by a continuous variable: price.

Table 2
ISIC-rev.2 sectors

Code	Name
311	Food manufacturing
313	Beverage industries
314	Tobacco manufactures
321	Manufacture of textiles
322	Manufacture of wearing apparel, except footwear
323	Leather
324	Manufacture of footwear, except vulcanized or moulted rubber or plastic footwear
331	Manufacture of wood and wood and cork products, except furniture
332	Manufacture of furniture and fixtures, except primarily of metal
361	Manufacture of pottery, china and earthenware
362	Manufacture of glass and glass products

Within these activities we have now to distinguish products which can be easily sampled from others which are similar on all other characteristics except from the fact that foreign visitors are not going to consume them locally because they are not adapt for final consumption. We can think of them as a control group: items which are potentially interesting to foreign visitors, since they belong to the same activities above, which are similar for other characteristics but it is not possible to be *experienced* during the travel since they are not apt for final consumption.

3.3. *How the proxy is calculated*

At the product level we can define a commodity by its end of use. This means that we can firstly define a product to be a final good or an intermediate product. Within final goods we can also distinguish between consumption products, primary commodities and capital goods.

Table 3 lists the total number of tariff lines (goods) for our sectors decomposing them by level of transformation. [7]

Our hypothesis is that tourists or visitors are likely to taste (*experience*) consumption products but not intermediate, capital or primary goods. Such information is used to compute an index which will differentiate our industries according to the intensity of products which potentially can enter the bundle of goods consumed *in loco* (or easily transported to be consumed back back home) with respect to similar products which are not for final consumption. The index we construct (Z in the notation which follows) gives a measure of the *experience*-good intensity for the industries we are considering.

[7] The Broad Economic Categories definition of the UN has been used. A full description of the data is given in Section 4.

Table 3
Number of Products by Transformation Level

Sector	# Products	C	K	P	PD	T
311	396	256	0	24	0	116
313	25	16	0	2	0	7
314	6	6	0	0	0	0
321	535	100	0	19	9	407
322	232	230	0	0	0	2
323	48	19	0	1	1	27
324	29	29	0	0	0	0
331	47	1	0	0	12	34
332	20	9	0	2	1	8
361	15	5	0	0	1	9
362	59	0	0	0	1	58

* Products = 6-digit HS tariff lines
** Cepii classification by transformation level based on Broad Economic Categories of the UN; C = Consumption; K = Capital; P = Primary; PD = Parts and accessories; T = Processed

Such proxy has to be independent from the trade pattern of our specific country-pairs, the cross-sectional unit of our analysis. In other words we want our index to be uncorrelated with our dependent variable. We therefore use figures for the whole EU region. We compute shares of consumption goods ($ExpC$) in total exports ($TotExp$):

$$Z_{st} = \frac{ExpC_{st}}{TotExp_{st}} \tag{2}$$

where both values (Z^v) and quantities (Z^q) have been used, and s goes from 311 to 362, while t from 1998 to 2004. Table 4 illustrates the heterogeneity across sectors in terms of their intensity in consumption goods shares. The index values in the starting and final year show sectors as Tabacco, Apparel and Footwear where there are only consumption goods, while sectors such as Wood& Cork or Glass no tariff lines identifying goods for final consumption are presents (therefore the index value is zero).

In Eq.1 the Z_{st} term interacted with our variable of interest will identify a differential effect of total arrivals linked to the time-varing inter-industry heterogeneity in consumption goods intensity. Such differential effect is the way we identify the causality from arrivals flow from country j to country i to the corresponding exports from i to j.

4. The data

The trade data used are from CEPII Trade, Production and Bilateral Protection Database, which has been recently Mayer et al. (2008) updated from a

Table 4
Consumption goods shares in EU trade

	1998		2004		
ISIC Code	Z^v	Z^q	Z^v	Z^q	# Products
311	0.79	0.53	0.81	0.57	0.65
313	0.91	0.91	0.92	0.93	0.64
314	1.00	1.00	1.00	1.00	1.00
321	0.35	0.29	0.40	0.32	0.19
322	1.00	1.00	1.00	1.00	0.99
323	0.35	0.29	0.46	0.38	0.40
324	1.00	1.00	1.00	1.00	1.00
331	0.01	0.00	0.01	0.00	0.02
332	0.16	0.09	0.14	0.07	0.45
361	0.49	0.26	0.39	0.22	0.33
362	0.00	0.00	0.00	0.00	0.00

* Z^v and Z^q calculated using the sum of exports of 25 EU countries
** # Products = share of C tariff lines

previous version. The dataset is similar to the one with the same title provided by the World Bank (Trade, Production and Protection database). One of the advantages of CEPII dataset is a better coverage of trade data. Trade data is based on a new database developed by CEPII, called BACI (for Base pour l'Analyse du Commerce International), which is built using COMTRADE, from the United Nations Statistical Department, as a primary source. The advantage of BACI is the use of mirror rows (harmonized to warrant consistency), which increases the coverage of the trade data. The result is a database that expands figures in production, provides bilateral trade based on a new and highly disaggregated dataset, and adds bilateral data on trade policy (tariffs and non-tariff barriers) at the industry level. Data are available for ISIC rev2 3-digit industry level (28 industrial sectors) over the period 1980-2004.

Our sample contains information on bilateral exports in values, quantities and in the number of goods traded for 25 countries in Europe (all EU27 except for Sweden and Malta, whose data on tourist flows are incomplete) by ISIC rev2 sector (see table in the Appendix) and by product type (or stage of production).

For tourism data on international arrivals flows disaggregated at the country-of-origin level, our source is represented by Yearbook of Tourism Statistics, released each year by the World Tourism Organization's (UNWTO). To the best of our knowledge, this publication represents the best source in terms of detailed information on the number of arrivals, length of holidays and country of origin of tourists. Bilateral tourist flows have been built by matching for each couple of countries the information on total arrivals of non-resident visitors in all kind of accommodations by nationality, in most cases where this information was available. In the other case, in order to fill-up the dataset, the overall international arrivals at national borders and by country of origin

Table 5
Arrivals and Exports - Difference in Difference Results

	(1)	(2)	(3)	(4)
VARIABLES	Log of Exports in value			
Z^v x $Log(Arr)$	0.05***		0.05***	
	(0.003)		(0.003)	
Z^q x $Log(Arr)$		0.03***		0.03***
		(0.003)		(0.003)
Constant	7.65***	7.83***	7.65***	7.83***
	(0.020)	(0.017)	(0.019)	(0.015)
Observations	24,422	24,422	24,422	24,422
R^2 between	0.49	0.45	0.43	0.40
Number of FE	1,830	1,830		
Number of FE			2,826	2,826

(1) and (2) symmetric country-pair FE $(n(n-1)t)$
(3) and (4) asymmetric country-pair FE $(2n(n-1)t)$
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

have been considered. The available years for tourist data flows are 1998-2007. Given the availability of trade data our analysis is referred to the 7 year-period, 1998 to 2004.

5. Arrivals and Exports

5.1. *Results from the Basic Regression*

The results for the empirical model eq.1 are reported in Table 5. All four specifications are estimated by a FE model. Controls in (1) and (2) are for the country-pair ij (CP) in the different t periods, and are symmetric, i.e. the imposed restriction is that the heterogeneity of the pair is identical for both exports from i to j and reverse. In (3) and (4) controls have been constructed in order to relax this restriction and to allow for a different impact for the same couple depending on which is the exporting country: the heterogeneity of the couple is considered to be different according to i or j being the exporting country. The causal link from arrivals to trade is identified by the interaction of our variable of interest (total arrivals from j to i) with Z^v or Z^q, our proxy for isolating those products whose quality can be ascertain after sampling and that varies across industries in time.

Coefficients are significantly different from zero in all equations and suggest a total effect of 5% when arrivals are doubled in those sectors which produce only final consumption goods ($Z^v = 1, Z^q = 1$). Results from the quantity based index suggests a smaller but still significant and relevant coefficient. Exports are stimulated by 3% when arrivals double in the same sectors.

At this stage, one first robustness control is to evaluate our measure in a gravity equation, where controls for the economic size of both trading partners are introduced.

5.2. *Arrivals in a Gravity Specification*

The gravity equation is the most successful empirical models for the analysis of trade volumes. We augment the standard gravity equation with standard gravity variables (see Anderson and van Wincoop (2003), Rose and van Wincoop (2001)).[8] Gravity equations are highly suited for explaining trade costs. These are related to many aspects which impede international exchanges, and therefore are proxied by different measures, distance first of all. Geography is a clear contribution to the costly movements of goods across economies and, regardless of the fact that transport costs have shown a decreasing trends in the last decades, the coefficient for the distance variable has not shown any decrease in size in recent gravity exercises (Buch et al. (2004)). Linked to geography is also adjacency or any measure related to the position of an economy in the space (landlocked countries or islands have been normally identified as different).[9]

We estimated a FE specification with asymmetric country-pairs controls, which implies that the restriction of a symmetric multilateral resistance is not imposed.

Results in Table 6 confirm size and significance of coefficients already discussed in Table 5. There is not change when time FE are also included, in order to capture shifts in unobservables which may impact both the moving of people and goods across borders.

6. Robustness Analysis

The argument we made for identifying the proper causal link from touristic flows to trade flows is strictly depend on finding a differential effect that visits to a country may have on its export capacity. Such differential effect is founded on the argument that hosting tourists favor a bi-directional exchange of infor-

[8] Although gravity model has been long criticized for lacking theoretical foundations, it gained firm microfoundations long ago (Anderson (1979)). Further supporting theoretical refinements have been developed since then (Bergstrand (1985), Bergstrand (1989), Deardorff (1995), Eaton and Kortum (2001)). The success of the gravity equation stems from the ability to explain some simple trade patterns, namely: a) bilateral trade rises with the size of either trading partner; b) countries further apart trade less; c) borders appear to impede trade a lot.

[9] Other factors which capture the costly aspects of trade are proxied by cultural and institutional variables, such as a common language, colonial links usually captured by the distance between the trading centers of the two regions. Other controls often used include dummy variables indicating if both partner and reporting countries are members of any free trade agreement (such as EU, CEFTA, and FTA).

Table 6
GDP, Arrivals and Exports - Difference in Difference Results

	(1)	(2)	(3)	(4)
VARIABLES	Log of Exports in value			
$Log(GDP_i)$	0.74***	0.28	0.72***	0.27
	(0.241)	(0.308)	(0.241)	(0.307)
$Log(GDP_j)$	1.43***	1.34***	1.45***	1.37***
	(0.224)	(0.286)	(0.224)	(0.284)
Z^v x $Log(Arr)$	0.05***	0.05***		
	(0.006)	(0.006)		
Z^q x $Log(Arr)$			0.03***	0.03***
			(0.006)	(0.006)
Constant	-49.26***	-35.16***	-49.22***	-35.28***
	(4.374)	(10.957)	(4.361)	(10.886)
Time FE	NO	YES	NO	YES
Observations	24,422	24,422	24,422	24,422
R^2 between	0.58	0.41	0.57	0.39
Number of FE (as)	438	438	438	438

GDP is expressed in PPP values
asymmetric country-pair FE $(2n(n-1)t)$
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

mation between firms and consumers: on foreigners' tastes for local firms and on local varieties for foreign consumers. The argument which is made is that this will be valid for those products which can be *experienced* while traveling but not for all the ones whose information on their characteristics can be gained without a first experience in consuming them.

Consistently with this idea we first selected a range of sectors where we think this is more likely to be true. In a second moment we constructed an indicator for measuring the experience good intensity by using the end of use definition for the products belonging to each chosen ISIC-rev2 sector.

While our measure for Z_{st} does involve the reasonable assumption that when traveling it is more likely to experience consumption products more than primary or capital goods, the first sectoral selection is the result of a discretionary choice. For this reason our selection has to be checked against the case others manufacturing sectors were included.

Results in Table 7 are from eq.1 estimated increasing the number of sectors. All regressions include asymmetric time-varying FEs in order to capture all changes in the unobservables affecting the country-pair. The initial add to our 11 sectors are some activities which do not have any good apt to final consumption. Therefore their value of Z_{st} is null. These 13 sectors (listed in A.1) are included in the model estimated in (1) and (2). The number of

Table 7
Arrivals and Exports - Difference in Difference Results

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Log of Exports in value					
Z^v x $Log(Arr)$	0.09***		0.03***		-0.04***	
	(0.002)		(0.002)		(0.002)	
Z^q x $Log(Arr)$		0.08***		0.02***		-0.03***
		(0.002)		(0.002)		(0.002)
Constant	7.35***	7.40***	7.86***	7.87***	8.05***	7.99***
	(0.007)	(0.007)	(0.003)	(0.003)	(0.008)	(0.007)
Observations	53,289	53,289	93,888	93,888	93,888	93,888
R^2 between	0.49	0.49	0.45	0.44	0.43	0.40
Number of FE	2,827	2,827	2,827	2,827	2,827	2,827

asymmetric country-pair FE $(2n(n-1)t)$
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

observations increases to 53,919, while the magnitude for the coefficient of interest indicate a stronger differential effect between sectors where experience goods are present and sectors without them. Adding activities, where according to our assumption the effect from tourism to export is null, increases the differential effect that people's movements have on the correspondent good's exchanges. Results reported in table 5 would indicate therefore a lower-bound magnitude from tourism to exports.

Still not all sectors are included: 16 activities (included in A.2) offer a positive number of consumption final goods although it is difficult to classify them as *experience* goods. In fact, information on their characteristics and quality can be ascertain without consuming them. Products in this category can enter the bundle of varieties available for consumption in the international market with standard export strategies at the firm level since these products cannot be defined as 'local' varieties.

In order to evaluate the robustness of our claims we have considered both the case of zero *experience good* intensity ($Z_{st} = 0$) or the possibility that the share of consumption products (either in value or in quantity) help to identify products whose exports can be triggered by arrivals to a country also for such activities. Results in (3) and (4) include those sectors by imputing a null value for Z_{st}. In this case the values for the Z^v or Z^q indicate a smaller differential effects for our 11 sectors of interest but still of the expected sign and still significant at the 1%.

In (5) and (6) the value of our proxy Z_{st} is instead greater than 0 both in our 10 sectors (except sector 362) and in the 16 activities last added. The sign of our coefficients of interest turns now negative, indicating a negative differential impact with sectors which do not produce goods apt for final consumption. The

result is just saying that our identification strategy is not working any more. The reason is simple: the share of consumption goods for activities listed in A.2 cannot be used as a measure of *experience-goods* intensity and therefore cannot be interpreted in the same way as in our sectors of interest. While giving a 0 to the industry *experience-goods* index of such activities, consistently with the definition above used, does not alter our results, in the latter case our proxy is not able any more to identify those activities where people's new arrivals may favor firms's capability to get their product known in the international market. We can interpret this result as a prove both on the consistency of the definition used for identifying *experience* goods and on the validity of the discretionary choices made in its implementation. In other words, our results are found robust to changes in the sample of industries chosen coherently with our chosen identification strategy.

7. Conclusions

Our work proposed a novel method to identify a causal link from travels to exports. In theory we can think of foreign arrivals to a country as a way that local firms have to gain information on foreign costumers' tastes. On the other hand, during a travel consumers have the possibility to add local varieties to their consumption bundle. Both factors will potentially increase countries' exchanges which take place after the event 'travel'. Our hypothesis is that visits a country receives can *after* foster its exports *differently* for those goods which are sampled during the travel.

We have applied Rajan and Zingales (1998) methodology in order to identify those products which are more likely to be sampled (*experienced*) in their origin country by foreign visitors. Firstly, we have computed an index to proxy the *experienced*-good intensity for 11 manufacturing industries, whose products can be labeled 'local' varieties. We assume such characteristic to be crucial for having a product sampled by foreign visitors. Then, we have used information on commodities which belong to the same sector but are not final consumption goods (they are either capital, primary or intermediate products) as a control group. Our identifying strategy enables us to robustly assess the influence of total arrivals in a country on its exports. By considering a sample of 25 countries belonging to the European Union, we find that tourism can promote exports.

Our results suggest a total effect of 5% when arrivals are doubled in those sectors which produce only final consumption goods.

Appendix A

Table A.1
ISIC-rev.2 sectors without Consumption final products

Code	Name
210	Coal mining
220	Crude Petroleum and Natural gas production
230	Metal Ore mining
290	Other mining
351	Manufacture of industrial chemicals
353	Petroleum refineries
354	Manufacture of miscellaneous products of petroleum and coal
369	Manufacture of other non-metallic mineral products
371	Iron and steel basic industries
372	Non-ferrous metal basic industries
410	Manufacture of glass and glass products
941	Motion pictures and other entertainment service
959	Amusement and recreational services not elsewhere classified

Table A.2
Other ISIC-rev.2 sectors

Code	Name
111	Agriculture and livestock production
112	Agricultural services
121	Forestry
122	Logging
130	Fishing
341	Manufacture of paper and paper products
342	Printing, publishing and allied industries
352	Manufacture of other chemical products
355	Manufacture of rubber products
356	Manufacture of plastic products not elsewhere classified
381	Manufacture of fabricated metal products, except machinery and equipment
382	Manufacture of machinery except electrical
383	Manufacture of electrical machinery apparatus, appliances and supplies
384	Manufacture of transport equipment
385	Manufacture of (...) equipment nec, and of photographic and optical goods
390	Other manufacturing industries

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