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VISIT AND BUY. AN EMPIRICAL ANALYSIS ON TOURISM AND EXPORTS

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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 the international trade literature. In this paper I 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. Rajan and Zingales (1998) methodology is applied in order to identify those products (experienced goods) which are more likely to be sampled by foreign visitors. I concentrate on 11 manufacturing industries whose products are 'local' varieties and are likely to be part of the traveling experience. I compute an index of experienced good intensity and I use products which are not final consumption goods as a control group. The identifying strategy enables us to robustly assess the influence of total arrivals in a country on its exports. After considering 25 EU countries, it is found that tourism promotes exports and its effect is not negligible, particularly for the EU15 group, being of 3.5% for sectors at mean of the experienced good intensity distribution.

Keywords: Trade, Tourism, Gravity
JEL Classification: F14, F15

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1. Introduction

Although revenues from inbound tourism can be considered equivalent to exports, namely 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.

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. They can be called exports *at home*. They are easier: they are not burdened by all the costs involved in crossing a border. More, 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 second possibility: the direct contact between foreign visitors and local products, potentially, can activate an international demand once tourists come back to their own countries.[1]

In this paper I examine data at the country level and I 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 perspective 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); Durberry (2004))and Oh (2005)).

Identification is our issue. When linking people's movements with goods' border crossing, a procedure consistent with the underlying intuition on how arrivals can favor new foreign sales has to be adopted. Theoretically, arrivals to a country are a way for local firms to gain information on foreign costumers' tastes and, in the other direction, for foreign consumers to add local varieties to their consumption bundle. If this is true then a proper methodology needs to be based on the identification of those cases where such information exchange is likely to occur. I propose to test whether this is *differently* verified for those goods which are sampled during the travel, with respect to the complete bundle of produced goods.

[1]The implication of exports at home is that also firms which do not operate in the international markets (the great majority) can get to know foreign tastes by selling to tourists.

The focus is on exchanges within the EU. First of all, unlike existing studies, I use bilateral data on both travel and exports. If the assumption to be tested is that English people will know Italian products better, and hence buy them, if spending some time in Italy 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 some positive role of tourist visits on US exports using data from 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 focus on wine in Fischer and Luis (2009) suggests that the movement of people across borders can be relevant for making *some* products better known to foreign consumers. The identifying strategy here used builds on a similar reasoning.[2] Rajan and Zingales (1998) methodology is applied in order to identify those products which are more likely to be sampled (*experienced*) by foreign visitors. An indicator that proxies the experience good intensity focusing on 11 manufacturing industries whose varieties are more apt to vary with the location, such as food, beverages and some light manufacturing, is calculated. The assumption is that tourist will sample and taste 'local' variety as a part of tourist experience. Then, products which are similar to the previous ones but are not going to be *experienced* by tourists are also needed as a 'control group'. Commodities produced by the same industry but with a different end of use (all products but consumption goods) enter the control group.

The identifying strategy here proposed enables to robustly assess the influence of arrivals in a country on its exports. After considering 25 countries belonging to the European Union, we find that tourism has a positive effect on exports which ranges between 0 to 7% according to the sectoral intensity of experience good and the distinction between Old and New Europe economies.

The paper is structured as follows: section 2 will present the empirical issues of our work. The 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. A test on our sectoral choices is presented in section 6, which provides a robustness check for our results. Conclusions follow.

[2]We also understand that the choice of the travel destination is motivated by specific country characteristics such as weather, average temperature and the quality of tourist resources. But also the quality of the tourist experience can depend on the availability of some products. The possibility of drinking good wine plays some role in making France a tourist destination. The argument of this paper is that the great reductions in air-fairs increased the mobility of EU citizens as well as their awareness of products previously unknown outside national borders. In the case of French wine a visit to the Bordeaux region is likely to promote the experience of new varieties (new producers) of the well known grape, in line with our findings.

2. Movements of people and movements of goods

Table 1 illustrates how the EU market has witnessed a quite dramatic increase movements of people (regardless of their duration) here proxied by the number of total passengers. The distinction by transport mode makes it clear that a strong push to movements across borders has been given by developments in the air transport market. 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 was 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, Ryanair and EasyJet, ending to be the major low-cost players in the EU transport market already in 2005.

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)

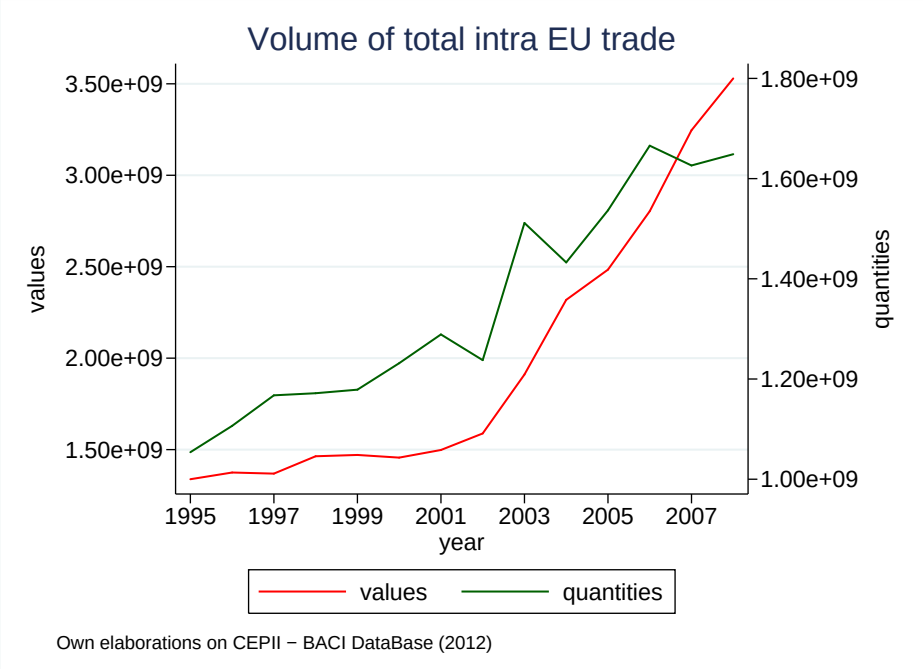
Our main question is whether such an impulse given on the temporary border crossing of people has had an impact on making different national products better known to EU consumers, and has therefore stimulated trade. As figure (1) shows, the increase, in the same years, in the movement of goods within EU borders has been strong and continuous. Volumes measured both in values and quantities give a similar picture. This paper revolves on the possibility that tourism has been a valid help for making local products better known to foreign tastes, within the EU. In order to evaluate on this claim, differently from existing studies on tourism, trade and growth, which use total arrivals in a country, origin-destination people's movements are used.

2.1. *A double-sided causality link*

Arrivals correspond to international visitors to a country excluding same-day non-resident visitors.[3] The possibility that a short-term visit is motivated by

[3]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

Figure 1
Total trade within EU 27 countries - 1995-2007



business reasons is not completely neglected by such definition, therefore introducing a problem in the direction of the causal mechanism. If travelling 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 tourism and lowering transport costs) time-varying-FE controls are needed.

2.2. *The basic test*

Our dependent variable is 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

than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited."

partners or when their distance (either geographical or cultural) is smaller. Furthermore the gravity equation also accounts for barriers significantly impeding trade.

If we want to control for all factors stimulating traveling across country-pairs (such as changes in the route map), the classical variables entering a gravity exercise (income of origin and destination and measures of distance) cannot be estimated. Also the main explanatory variable (arrivals j to i) here investigated needs to have one more dimension of variability with respect to the time-varying-pair FE. I will use the variance across industries in some degree of exposure to foreign tastes in order to estimate a coefficient of the differential effect of total arrival.

The estimated model 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. *Experience-goods: a definition*

The characteristics of a given good influence the way consumers can get information on its 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 an experience good is one whose qualitative characteristics can be known only through buying and using the item.

There has been some discussion about 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). Hence, 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.[4]

[4]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 pre-purchase additional information 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

2.4. *The identification strategy*

The hypothesis I 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 the exports of those goods which can be consumed *in loco* with respect to those where this is not true. While exports of all types of goods can foster business trips, and therefore the movement of people across borders, the argument here made is that visiting a country will promote primarily those commodities which are more likely to be experienced during the travel.[5]

For implementing the chosen identification strategy firstly those industries whose products are more likely to rely on experience will be isolated. Secondly, an industry level indicator which captures different levels of such reliance on direct experience will be constructed. This will be our measure on *experience-goods'* intensity for the selected sectors.
The first point is crucial. Since we do not use a specific variable for the selection of the industries, a check on the validity of such choices is required. After isolating where the link from tourist flows to exports can be properly identified, a robustness check will be run by using all manufacturing sectors. The second point relates with the construction a control group. It will include commodities which have the same characteristics as the ones which can be experienced except for one: the fact of being not possible to *experience* them.

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

3.1. *Local varieties in manufacturing*

It is adopted the distinction between 'experience' and 'search' goods to define the activities of interest 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); some other commodities which are, also, difficult to transport (mining, iron and steel industries, metal products, machinery, transport equipment). Typically, these are not commodities which can be experienced while traveling.

can be replaced by a continuous variable: price.

[5]Saying it differently the channel of influence investigated is based to the fact that visiting a country promotes the experience of varieties which are still unknown to a foreign consumer before the visit. This is likely to be true for products whose national specificity is important. In other words, while there is not need to go to Switzerland to decide whether to buy an high-quality watch or to visit Germany to choose a Mercedes car, the preference towards a specific wine or food variety is likely to be enhanced after tasting it locally.

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

Instead, those activities producing items which can have a label 'local' variety will enter the analysis. Food and beverages satisfy these two categories. Also other items within light manufacturing can satisfy this condition, so that our investigation focuses on the 3-digit sectors reported in Table 2.

Within these activities it is necessary 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. They belong to the same activities above, they are similar in most other characteristics but they cannot be *experienced* during the travel since they are not suitable for final consumption.

3.2. *How the proxy is calculated*

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

Table 3 lists the total number of tariff lines (goods) for our sectors decomposing them by level of transformation. [6]

Tourists or visitors to a country 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 the potential products which can enter the bundle of goods consumed *in loco* (or easily transported to be consumed back home) with respect to similar products which are not for final consumption. The index Z measures the *experience*-good intensity for our industries.

[6]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

The index has to be uncorrelated with our dependent variable, i.e. it has to be independent from the trade pattern of specific country-pairs (the cross-sectional unit of our analysis). I therefore use figures for the whole EU region. I 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 goes from 1998 to 2009. Table 4 illustrates the heterogeneity across sectors in consumption goods. The index values in the starting and final year show sectors like Tabacco, Apparel and Footwear where there are only consumption goods, while sectors such as Wood& Cork or Glass show no tariff lines identifying goods for final consumption, Z 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 I identify the causality from arrivals flow from country j to country i to the corresponding exports from i to j.

4. The data

Trade data is based on 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 mir-

Table 4
Consumption goods shares in EU trade

	1998		2009		
ISIC Code	Z^v	Z^q	Z^v	Z^q	# Products
311	0.79	0.53	0.81	0.58	0.65
313	0.91	0.91	0.86	0.88	0.64
314	1.00	1.00	1.00	1.00	1.00
321	0.35	0.29	0.49	0.36	0.18
322	1.00	1.00	1.00	1.00	0.99
323	0.35	0.29	0.60	0.45	0.51
324	1.00	1.00	1.00	1.00	1.00
331	0.01	0.00	0.01	0.00	0.03
332	0.16	0.09	0.14	0.08	0.42
361	0.49	0.26	0.30	0.18	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

ror 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 1995-2009.

For tourism data on international arrivals flows disaggregated at the country-of-origin level, our source is the 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 any type of accommodations by nationality, where this information was available. Where it was not, in order to fill-up the dataset, overall international arrivals at national borders and by country of origin have been considered. The available years for tourist data flows are 1998-2010.

The 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) by using the Broad Economic Category definition of the UN. This information is the one used in order to distinguish products exposed to foreign tastes while traveling. The analysis is referred to the 12 year-period, 1998 to 2009.

Table 5
Arrivals and Exports - Difference in Difference Results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Log of Exports in value					
	ALL	ALL	ALL	ALL	EU15	Other
Z^v x $Log(Arr)$	0.04***		0.05***		0.07***	0.02***
	(0.002)		(0.003)		(0.003)	(0.002)
Z^q x $Log(Arr)$		0.03***		0.03***		
		(0.002)		(0.003)		
Constant	7.77***	7.89***	7.78***	7.89***	9.18***	7.10***
	(0.011)	(0.01)	(0.011)	(0.01)	(0.02)	(0.01)
Observations	51,676	51,676	51,676	51,676	17,029	34,647
R^2 between	0.43	0.45	0.35	0.40	0.35	0.19
Number of FE	3,183	3,183				
Number of FE			5,108	5,108	1,573	3,535

(1) (2) symmetric time varying country-pair FE $(n(n-1)t)$
(3) (4) (5) (6) asymmetric time varying country-pair FE $(2n(n-1)t)$
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

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 an time-varying-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 between i and j. 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 ascertained 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 ($Z^v = 1, Z^q = 1$). This is true for Tobacco, Apparel and Footwear. Results from the quantity-based index suggests a significant but smaller effect: exports are stimulated by 3% when arrivals double in the same sectors. The effect will be smaller in sectors with a smaller Z^v or Z^q, such as Textiles, Leather, Furniture, Manufacture of china and glass. In this last sector the effect is null since it is impossible for the channel of transmission (from *experience* to buy) to work.

I also split the sample in order to isolate the EU15 members (in eq. 5)

from all other trade flows (6). Results point for a bigger effect for the first group of countries. Exports for the 'Old Europe' increase of 7% with one unit increase in arrivals. This is the maximum effect: it is recorded in those sectors where only consumption goods are produced. Sectors at the median of the distribution will have an effect reduced to half, which is quite important in terms of magnitude Flows which interest countries not in the monetary union are still fostered by arrivals at 2% (in those sectors where $Z^v = 1$).

6. Robustness Analysis

6.1. *Arrivals in a standard Gravity specification*

A first robustness control is to evaluate our measure in a gravity equation, where controls for the economic size of both trading partners are introduced.[7] Gravity equations are highly suited for valuating the impact of trade costs. These are related to many aspects which impede international exchanges, and therefore are proxied by different measures. Geography clearly contributes to the cost of moving goods across economies and variables such as distance and adjacency refer to both the mutual or individual position of an economy in the space (landlocked countries or islands are normally considered different). Costly aspects of trade are proxied also by cultural and institutional variables. 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).

In order to control for institutional changes at the European level, influencing both people and goods' flows, I augment the standard gravity equation including standard gravity variables (see Anderson and van Wincoop (2003), Rose and van Wincoop (2001)) with dummies controlling for the entrance of accession countries to the EU, for the signing of the Schenghen Treaty and for the introduction of the common currency (Euro). I estimated an 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. Results on institutional variables indicate that entrance to the EU is the important regulative measure in stimulating trade inside the union.

[7] 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.

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

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Log of Exports in value					
	ALL	EU15	Other	ALL	EU15	Other
$Log(GDP_i)$	0.30	-0.46	0.13	0.31	-0.48	0.13
	(0.191)	(0.327)	(0.236)	(0.190)	(0.319)	(0.234)
$Log(GDP_j)$	1.81***	0.78***	1.82***	1.86***	0.85***	1.84***
	(0.207)	(0.286)	(0.252)	(0.206)	(0.282)	(0.251)
Z^v x $Log(Arr)$	0.04***	0.07***	0.02***			
	(0.004)	(0.007)	(0.006)			
Z^q x $Log(Arr)$				0.03***	0.05***	0.01
				(0.005)	(0.006)	(0.006)
$Euro_{ij}$	0.04	0.20	0.03	0.04	0.20	0.03
	(0.030)	(0.044)	(0.057)	(0.030)	(0.044)	(0.057)
$Schengen_{ij}$	-0.02	0.01	-0.45	-0.02	0.01	-0.49
	(0.028)	(0.044)	(0.044)	(0.028)	(0.044)	(0.044)
EU_{ij}	0.12***		0.13***			
	(0.037)		(0.037)			
Constant	-47.95***	0.416***	-43.75***	-49.27***	-0.744***	-44.41***
	(7.70)	(11.95)	(9.82)	(7.66)	(11.77)	(9.80)
Time FE	YES	YES	YES	YES	YES	YES
Observations	51,676	17,029	34,647	51,676	17,029	34,647
R^2 between	0.36	0.26	0.14	0.35	0.27	0.13
Number of FE (as)	546	154	392	546	154	392

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

6.2. *All manufacturing activities*

The argument made for identifying the proper causal link from touristic flows to trade flows is strictly dependent on the differential impact that visits to a country may have on its export capacity according to some industry or commodity characteristics. Such differential effect is founded on the argument that hosting tourists favor a bi-directional exchange of information 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 activities exposed to tourism *in loco* were first selected. Since such a choice is not based on one explicit variable apt to distinguish *experience* goods from others the selection has to be checked against the case others manufacturing sectors were included.

Table 7
Arrivals and Exports - Difference in Difference Results

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Log of Exports in value					
Z^v_{st} x (Arr)	0.09***		0.03***		-0.04***	
	(0.002)		(0.002)		(0.002)	
Z^q_{st} x (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	91,011	91,011	120,012	120,012	120,012	120,012
R^2 between	0.49	0.49	0.45	0.44	0.43	0.40
Number of FE	3,183	3,183	3,183	3,183	3,183	3,183

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

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 the starting 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 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 interpret 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 methodology two cases are distinguished: zero *experience good* intensity ($Z_{st} = 0$): said it differently, the restriction imposed is that consumption products from these activities also if sampled while traveling do not provide more information which can promote consumption after traveling. Or, alternatively, the share of consumption prod-

ucts (either in value or in quantity) help to identify products whose exports can be triggered by arrivals to a country also for these 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 indicator 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.
In our interpretation, the result is indicating that the chosen identification strategy is not working any more. The reason is that, for these industries, the share of consumption goods for activities listed in A.2 cannot be used as a measure of *experience-goods* intensity of their total production, and therefore cannot be interpreted in the same way as in our initial sectors. It is not a measure of exposure to foreign demand by tourist. While giving a 0 to the industry *experience-goods* index of such activities, consistently with the definition used in the paper, does not alter our results, in the latter case the indicator is not able to identify, any more, those activities where people's new arrivals may favor firms's capability to get their product known in the international market.

7. Conclusions

The paper proposes a novel method to identify a causal link from travels to exports. In theory foreign arrivals to a country can be thought 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 once traveling. The hypothesis here tested is that visits a country receives can *after* foster its exports *differently* for those goods which are sampled during the travel.

Rajan and Zingales (1998) methodology is applied in order to identify those products which are more likely to be sampled (*experienced*) in their origin country by foreign visitors. Firstly, an index to proxy the *experienced*-good intensity for 11 manufacturing industries, whose products can be labeled 'local' varieties, is constructed. It is assumed such characteristic to be crucial for having a product sampled by foreign visitors. Then, information on commodities which belong to the same sector but which are not final consumption goods (they are either capital, primary or intermediate products) is used to define a control group.

The identifying strategy enables to robustly assess the influence of total ar-

rivals in a country on its exports. Our data on 25 European countries indicate that tourism promotes exports, with a differential sectoral effect ranging from 5% (for sectors where only consumption goods are produced) to 2.5% calculated at the mean of the industry distribution when all countries are included. The number rises to 3.5% for exports of the 'Old Europe'. It is lower, but still significant, for the new countries.

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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