Services versus goods trade : Are they the same ?

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by A. Ariu

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Abstract

In this paper, we present for the first time a qualitative and quantitative comparison between trade in services and trade in goods at firm level for the same country. We focus first on static features of trade such as participation rates, firms' characteristics, heterogeneity, concentration and trade variation. Secondly, we explore dynamic aspects focusing on entry, exit, firm survival and growth strategy. On the one hand, our results reveal qualitative similarities between services and goods trade at firm level, suggesting that heterogeneous models of trade can be a good starting point for the analysis of trade in services. On the other hand, we highlight dramatic differences in quantitative terms and in some key characteristics that pose new challenges to current trade models.

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1 Introduction

For a long time, international trade has been solely associated with the commerce of manufactured goods, but services have in fact become increasingly traded over time, and today goods and services represent two equally important components of world trade. Accordingly, the international trade literature has recently begun exploring trade in services in a bid to understand the patterns of this new form of trade. Starting out from the observation that services and goods have different characteristics,[1] the purpose of this new research field has been to understand to what extent existing theoretical models can be applied to services. Surprisingly, all studies using firm-level trade data[2] find that both types of trade share many common features in terms of export participation, concentration, variation and heterogeneity and only few, if any, differences.

Based on this evidence, the conclusion of Breinlich and Criscuolo (2011) is that current models focusing on heterogeneity[3] represent a solid building block for a theory of trade in services. However, the datasets used in these studies have either very limited information or none at all on firms trading goods.[4] Therefore, any similarity is only qualitative and usually referred to the evidence of trade in goods in different papers and/or countries. This data limitation raises two issues: first on the existence of quantitative differences between trade in goods and trade in services and second on the comparability between firms trading goods and those trading services. Therefore, any conclusion on the suitability of theoretical models becomes only partial. Moreover, all the micro-studies on trade in services limit their analysis only to the static characteristics of trade, leaving an open question on the comparison of dynamic aspects between trade in goods and trade in services.

In this paper, we use a very detailed dataset from the National Bank of Belgium (hereafter NBB) on Belgian firms for the period 1995-2005 with information on export and import transactions of both goods and services with non-European countries to present for the first time a comparison of qualitative and quantitative aspects of trade in goods and trade in services. First, we analyze trade participation, the characteristics of the firms engaging in trade and the size, composition, concentration and heterogeneity of firms' trade flows. Second, we explore trade dynamics, looking at entry, exit and survival in foreign markets, and comparing firms' growth strategies during their export and import life.

The findings confirm on the one hand qualitative affinities between goods and ser-

[1] The World Trade Organisation (2010) observes that services are intangible and their nature makes trade in services subject to more constraints than trade in goods. Product characteristics are observable before purchase and they can be produced, stored, moved and consumed in different locations and times. Services instead are not storable, their characteristics are not observable before purchase and production and consumption often coincide.

[2] Breinlich and Criscuolo (2011) for the UK, Kelle and Kleinert (2010) for Germany, Walter and Dell'mour (2010) for Austria, Gaulier et al. (2011) for France and Federico and Tosti (2010) for Italy

[3] Like Melitz (2003) and Bernard et al. (2003) among others.

[4] Kelle and Kleinert (2010), Federico and Tosti (2010) do not have any information on trade in goods, Breinlich and Criscuolo (2011) has information on trade in services only for two years and only for exports and Walter and Dell'mour (2010) Gaulier et al. (2011) have information on trade in goods, but they do not exploit it.

vices trade found in previous studies[5]: trade participation is rare, trade values are concentrated in the hands of a few firms trading multiple services in many countries and heterogeneity of firms' flows is a key component of trade at firm level. On the other hand, we find profound quantitative dissimilarities and some crucial key differences. First, service exporters and importers only make up a small share of firms that engage in trade and, at the same time, services trade represents a small share of total trade, both across and within firms. However, even if they start out smaller, new service exporters and importers become bigger than their goods' counterparts after five years, leading services and goods shares to converge over time. Second, transaction size and trade frequency[6] differ across goods and services, and they are the most crucial components of export and import growth, while product and country expansions play only a marginal role. Finally, firms choosing different trade options (export versus import and services versus goods) differ in firm characteristics, but the distinctive features of trade in goods and trade in services do not vary across different firms.

The evidence that heterogeneity plays a key role also for services trade supports current models of trade as a suitable theoretical framework for modeling services trade, however our analysis raises the need for modifications in order to incorporate the new findings of this paper into current trade models. Our results suggest three main directions. First, fixed costs should be at the market-product level and higher for services than for goods in order to allow fewer firms in the export and import markets and a lower propensity to introduce new products or explore new markets for services. Second a different demand structure would be needed for allowing higher growth prospects associated with a higher riskiness, thus to higher entry and exit for services. Third and most important, trade frequency should be embodied in theoretical frameworks because it is the most crucial element of trade in terms of export and import growth and in terms of cross-sectional variation across firms both for goods and services trade. Moreover, it would introduce the variation needed in order to ascertain the most interesting differences across goods and services.

This paper contributes to the literature of international trade in three ways. First, it complements the qualitative evidence of the existing empirical firm-level studies on trade in services in Breinlich and Criscuolo (2011), Kelle and Kleinert (2010), Walter and Dell'mour (2010), Gaulier et al. (2011) and Federico and Tosti (2010) with evidence at the quantitative and dynamic level. Second, it introduces two dimensions to the empirical literature on trade that describes the features of firm-level trade:[7] on the one hand, we are able to analyze all possible trade options a firm can exploit when facing foreign markets, i.e. both import and export and both services and goods trade; on the other hand, we introduce the transaction dimension to ascertain the differences across trade in services and trade in goods at firm level.[8] Third, this paper offers new challenges to current theoretical models, like Melitz (2003) and Bernard et al. (2003), Melitz and

[5]Breinlich and Criscuolo (2011), Kelle and Kleinert (2010), Walter and Dell'mour (2010) Gaulier et al. (2011) and Federico and Tosti (2010)

[6]We define the trade frequency as the number of transactions a firms makes over one year and transaction size as the value of each transaction.

[7]Like Bernard and Jensen (1995, 1999), Muûls and Pisu (2009), Mayer and Ottaviano (2007), Eaton et al. (2004, 2011), Bernard et al. (2009b) and Manova and Zhang (2009) among others.

[8]Eaton et al. (2008) use the transaction dimension in the contest of trade in goods.

Ottaviano (2008), Bernard et al. (2011) and Mayer et al. (2011) for the static models and Eaton et al. (2009), Rauch and Watson (2003), Albornoz et al. (2012), Freund and Pierola (2010), Lawless (2009) and Buono et al. (2008) for the dynamic ones, by suggesting new paths of development in order to incorporate the patterns of services trade.

The paper is organized as follows: in the second section we describe the data; in the third we present the static analysis; in the fourth we describe dynamics aspects of trade in goods and trade in services, in the fifth we provide robustness checks of the results and in section six we summarize the findings of the paper and suggest future lines of research.

2 Data

The analysis set out in this paper benefits from three extremely rich datasets provided by the National Bank of Belgium. The first is the NBB Trade Database, which includes imports and exports of goods made by Belgian firms over the period 1995-2010. The data provided by the NBB are organized at month-year-firm-product-country level: for every month and year, we have firm-level information on the values of import and export by product type and by partner-country. Moreover, we have information on the number of transactions made in that month-year for the firm-country-product triplet, the unit value of the good, the quantities shipped and if the information comes from the Intrastat (Intra-European) or Extrastat (Extra-European) declarations. Firms are identified thanks to the VAT number, products are classified following the 8-digit Combined Nomenclature (CN8) and countries using the ISO 2-digit codification. For the purpose of this paper, we focus only on transactions that involve change in ownership, in this way we get rid of transactions involving movement of stocks, replacement or repair of goods, processing of goods, returns and transactions without compensation. The requirement for observing a firm-level flow in this dataset changes for intra-European and extra-European trade. Firms trading with extra-EU countries had to declare to the NBB any transaction exceeding 1,000 Euros and this threshold remained stable over time. Firms trading with EU countries instead were obliged to declare their transactions only if their exports or imports on the previous year were above 104,115 Euros. This threshold increased to 250,000 Euros after 1998 and to 1,000,000 Euros for exports and 400,000 Euros for imports after 2006.[9]

The second dataset is the NBB dataset on Trade in Services, which was collected from 1995 to 2005 in order to compile the Balance of Payments (BoP). In that period every Belgian firm declared to the NBB any transaction above 12,500 Euros (9,000 Euros from 1995 to 2001) in which the counterpart was a foreign entity, without any difference between intra-EU and extra-EU trade. As for goods, the dataset provided by the NBB is organized at month-year-firm-service-country level, we can track firms through the VAT code, the service is classified following the BoP classification (Table 1 provides this classification), the destination or origin country is classified at ISO 2-digit level and we have information on the value of the flow and the number of transactions

[9]For more details on this dataset see Muûls and Pisu (2009) and Behrens et al. (2012) Mion and Zhu (2011) and Bernard et al. (2010).

made. We drop *"Merchanting"* and *"Services between Related Enterprises"* from this dataset because their definition in the NBB classification does not uniquely identify trade in services and includes also values of the goods involved. The definition of trade in services is based on the residence status as in the International Monetary Fund (1993) Balance of Payments Manual (5th ed.) and includes modes one, two and four of Trade in Services defined in the General Agreement on Trade in Services (GATS).[10]

To make the information on trade in goods and services comparable, the main challenge is represented by the differences in the cut-off thresholds. Since we are going to analyze dynamic issues, we need a common cut-off definition constant across goods and services and over time. Two solutions can be implemented: the first would be to apply the rule for intra-EU trade and exclude all firms that did not export at least 250,000 Euros the year before; the second would be to focus only on extra-EU trade and impose a minimum threshold of 12,500 Euros for all transactions for both goods and services. The problem with the first option is that we would not be able to apply the rule for trade in services, for which we do not observe all transactions, but only those above 12,500 Euros. Moreover, in this way, we would lose a lot of small exporters and it might be a limitation for analyzing trade dynamics. Therefore, we opt for the second one and focus the analysis of this paper on extra-EU trade. Following this choice, the results can be more comparable to big countries like US, where trade refers to regions outside US and not within US states, and, at the same time, the analysis focuses on countries in which trade barriers are still effective. On the other hand, firms exporting only in the European market are considered as non-exporters (non-importers) and we use only about 27% of total trade. In order to check if the exclusion of intra-EU trade can pose a problem for the robustness of our findings, in section 5 we discuss the results when considering also intra-EU trade. One last expedient to make services and goods trade fully comparable is to use the product classification at 2-digit level (CN2). In this way, the definition of what is a product using the CN2 classification is as narrow as the definition of a service in the BoP classification.[11] For expositional reasons, in the rest of the paper we will use the expression "number of products" to indicate the "number of services" when we talk about trade in services.

The novelty of using transaction data raises the need for clarification on precisely what a transaction is in our datasets. In general, in this paper, a transaction is defined as the registration by the NBB of a credit (export) or a debt (import), above 12,500 Euros, between a Belgian firm and a non-EU firm, arising from the transfer of ownership of a good in the case of trade in goods and the provision of a service in the case of trade in services. In practice, a transaction for trade in goods corresponds to the declaration of an outgoing (export) or an incoming (import) shipment of products made to the Belgian Customs Authority (that passes on the information to the NBB). For trade in services, a transaction is defined by a declaration made to the NBB about the collection of a

[10]The GATS defines four modes of trade in services: mode 1 (Cross-Border) is when a service is produced in one country and consumed in the territory of another country. Mode 2 (Consumption Abroad) is when the service is consumed in the territory in which it has been produced by the resident of another country. Mode 3 (Presence Abroad) is when the service is provided by a supplier through the commercial presence in the country of the consumer. Mode 4 (Presence of Natural Person) is when a supplier provides the service in another country sending one or more employees to that country. For examples refer to Ariu and Mion (2012) and Breinlich and Criscuolo (2011).

[11]Using this rule, we count 90 products and 49 services.

credit (export) or the solvency of a debt (import) related to the provision of a service. This can be direct, when the Belgian firm makes the declaration directly to the NBB, or indirect, when the declaration is made by the financial institution that is involved in the execution of the transaction.[12] The two definitions might raise issues related to difference in the seasonality of the transactions. We limit the scope of this problem by collapsing the data at the firm-year level.[13] In this way, we also make the dimension of the dataset manageable and for any given firm-year we know for both services and goods trade the export (import) values, the number of products or services exported (imported), the number of export (import) partner-countries and the number of export (import) transactions made. We attach to this dataset balance-sheet information on Belgian firms over the period 1995-2005 coming from the Business Registry covering the population of firms required to file their (unconsolidated) accounts to the NBB.[14] The resulting dataset includes all firms registered in Belgium having limited liability which means 200,000-300,000 firms per year, for a total of about 3 million observations. When compared to most of the firm-level datasets used in the literature, this is particularly good in terms of coverage, since we have almost every firm operating in Belgium and a long time span. Moreover, this is the only available dataset with information on the frequency of trade for services.

3 Static Analysis

In this part of the paper, we provide a comparison of static features of trade in goods and trade in services for the same country. This will allow us to complement existing qualitative comparisons with quantitative insights. In the spirit of the previous literature describing trade at firm level, we focus our attention on trade participation, the characteristics of the firms engaging in trade, size, composition, heterogeneity, concentration and variation of firm-level flows.

3.1 Trade Participation

We start our analysis by looking at the participation of firms in export and import activities separately. In this way, we can distinguish in Table 2, panel a, firms that export only goods (*Goods Exporters*), those that export only services (*Service Exporters*), those that export both (*Bi-Exporters*) and those that do not export at all (*Non-Exporters*). Panel b presents the same type of classification for imports. The first important result that emerges from Table 2 is that, even if we account for services exporters, the percentage of firms that engage in export activities remains a minority of the total number of firms, only 4.16%, very close to the estimates of Bernard et al. (2007) and Bernard

[12]The NBB defines the list of companies that should declare directly, for the other firms not on the list, the financial institution involved in the transaction collects and sends the information to the NBB.

[13]In the rest of the paper we will refer to the number of transactions or equivalently to the frequency of trade as the number of transactions performed by a firm over one year.

[14]For any firm-year, we get information on firms' main sector at NACE 5-digit level, the foundation year and annual accounts figures such as employment, turnover, value added, physical capital, intangible capital and wage. For more information on this dataset refer to Behrens et al. (2012) and Muûls and Pisu (2009).

et al. (2009b) for trade in goods. This means that the participation of firms in service exports is rarer than for goods, with only about 20% of exporters providing services. The second result is that, among exporters, 5.09% of them export both goods and services, and, even if few, they account for 30% of total exports (4.85% being services and 25,14% goods). Therefore, these *Bi-Exporters* make a much bigger contribution to total trade than any other category of exporters. A similar pattern can be observed for imports in panel b of Table 2.

In Table 3, we merge information on exports and imports in order to classify firms taking into account all four trade options they can exploit. Even by accounting for exports and imports together, the share of firms engaging international markets remains very small, at 6.62%. Looking at total exports of services in Table 4 (Panel a), we see that they are mostly concentrated in the hands of firms both importing and exporting services, 86.34% for exports and 83.85% for imports. Looking at goods trade (Panel b) the picture looks similar: imports and exports are in the hands of firms that export and import goods with a share of 83.52% for exports and 84.72% for imports. Moreover, we observe that 48.22% of services exports is carried out by firms that do not trade goods at all and 51.88% by firms that trade also goods. At the same time, 53.36% of goods exports is in the hands of firms that do not trade services at all and 46.64% by firms that trade services too. The observation that there are many firms trading both goods and services might be an indication that there are synergies in trading goods and services together.

These numbers suggest that there are important quantitative differences across goods and services in terms of trade participation: trading services in foreign countries is more difficult than trading goods, so only a smaller share of firms are able to get into foreign markets. This might be the result of higher fixed costs of exporting and importing for services than for goods: a more severe selection process would allow fewer firms to enter the export and import market, making service trading more elitist than trade in goods. This fact can be due to the high restrictions that are still in place for the commerce of services.[15] Thinking in terms of heterogeneous models, higher fixed costs for services trade would imply higher average productivity of firms trading services, less heterogeneity and lower concentration. In the rest of the paper, we will try to find evidence in this direction. At the same time, we find that exports and imports are concentrated in the hands of firms using multiple trade options. In the rest of the paper, we will analyze in more depth the differences across different categories of traders.

3.2 Firms' Characteristics

The previous sub-section highlighted the fact that there is heterogeneity in the choices of which international activity firms can engage. This can be due to the fact that different types of firms choose different trade options. In this sub-section, we try to understand if firms engaging in different trade activities differ in terms of employment, turnover, labor productivity, average wages, capital intensity, intangible capital intensity and age. We follow the strategy of Bernard and Jensen (1999) and we regress these firm level

[15]For instance, the movement of people providing services is hampered by visa requirements and the exercise of some services is restricted by national certifications or professional associations.

characteristics against dummies identifying the different categories of traders and year-industry dummies. We concentrate first on exporters, so as in Table 2 our dummies identify firms that only export goods, only services, both services and goods and the reference category is represented by firms that do not export at all. Table 5 reports the results, panel a for exports and panel b for imports. With few exceptions, we find that *Bi-Exporters* have a premium with respect to *Non-Exporters* that is higher than that of *Services Exporters* in terms of employment, turnover, labor productivity, average wage, capital intensity, intangible capital intensity and age.[16] At the same time, *Services Exporters* have a higher premium than *Goods Exporters* for the same variables. Similar findings apply for imports. One message of these results is that services and goods traders are different types of firms. A second one is that when considering heterogeneous models of trade, a higher fixed cost for services with respect to goods would be associated with less but more productive exporters; indeed, our results point again in this direction.

In order to more finely characterize differences across firms, we consider together export and import participation. Following the classification of Table 3, we end up with 16 categories of traders that define our dummy variables, with the reference category represented by firms that do not trade at all. The results in Table 6 suggest that there is a raking among firms based on how many trade options they use. Firms using all four trade options (importing and exporting both services and goods) have a higher premium with respect to domestic firms than firms using three, two and one. Therefore, by putting together information on export and import activities we can identify firms' characteristics more finely. Once again, we find that firms that choose different trade options have different characteristics.

3.3 Trade Flows and Trade Margins at Firm Level

The previous sub-section highlighted that different trade statuses identify different types of firms. Accordingly, services trade flows might differ from goods' flows because they are traded by different types of firms. In this subsection, we analyze whether firm-level flows show systematic differences across goods and services for different categories of firms. We decompose (for goods and services separately) exports (Exp_{ft}) and imports (Imp_{ft}) made by firm f at time t into the product of the number of products p_{ft}, number of countries c_{ft}, density d_{ft}, number of transactions tr_{ft} and average transaction size $\bar{x}_{ft}$. Analytically:

$$Exp_{ft} = p_{ft} * c_{ft} * d_{ft} * tr_{ft} * \bar{x}_{ft} \qquad Imp_{ft} = p_{ft} * c_{ft} * d_{ft} * tr_{ft} * \bar{x}_{ft} \tag{1}$$

Where the density, d_{ft}, is counting the number of country-product pairs effectively served by the firm over the total possible amount ($p_{ft} * c_{ft}$). $\bar{x}_{ft}$ is defined as the total exports (imports) over the product between the number of country-product pairs effectively served and the number of transactions made by firm f at time t. With this decomposition, we have four extensive margins (number of transactions, number

[16]Employment is in full-time equivalents, average wage is computed as total wage bill over the number of workers, capital intensity is computed as total physical assets over the number of workers and intangible capital intensity as intangible assets over the number of workers.

of markets, number of products and density) and one intensive margin (the average transaction size per market and product effectively served). Results in Table 7 suggest that differences across goods and services flows remain qualitatively constant comparing the different categories of traders. Moreover, even quantitatively, the differences remain within a reasonable range. The message is that firms' characteristics do not affect the differences across the two trade flows, which remain constant over different types of traders.

The general picture is that total exports (imports) of services, are on average smaller than trade in goods. This is given by a composition effect: firms exporting or importing goods trade more products in more destinations with more transactions. Services traders instead have less geographically widespread exports and imports, fewer products and use fewer transactions. However, the transaction size is bigger for services than for goods. This difference in the number of transactions and transaction size between goods and services reflects the fact that services cannot be provided in different shipments, so every transaction tends to be big and the number of transactions per firm small. Goods instead can be more easily divided into different shipments, so every transaction is of a smaller value and the number of transactions are instead higher. This is a key difference between trade in goods and trade in services that depends on the different nature of goods and services.

A second key finding from Table 7 is that average exports (per country-product or service pairs effectively served) tend to be higher for services than for goods. This means that total exports of goods for the same firm are on average higher only because of a higher dispersion in the country and product margin. However, once we control for these margins, average exports of services are bigger than average exports of goods. This might be an indication that firms trading services expand more easily over the intensive margins than on the extensive ones. This result does not hold for imports, for which, even if very similar, average imports of goods are higher than average imports of services.

A third result that we can extract from Table 7 is that trade in services tends to be denser than trade in goods: firms tend to trade all services they produce to all the partner-countries they have. This is partly because the share of firms trading one product in one country is larger for services. At the same time it might be a signal that the synergies in trade costs across countries might be different for goods and services. For example, a management consultancy firm might also be able to provide legal services, and the synergies of selling them together might be more powerful than for a firm selling two products together. In this way, the consultancy firm would try to sell both services in all foreign countries, thus increasing the density of its trade. Finally, we observe that the number of exported products is smaller than the number of imported ones, indicating that there might be processing trade both for goods and services trade. On the other hand the number of partner countries is larger for exports of goods than for imports, as in Manova and Zhang (2009). These observations might indicate that Belgian firms tend to choose their input product sources from selected countries, while they tend to export in all possible destinations. For services instead, we find that the number of partner countries is larger for imports than for exports.

3.4 Heterogeneity and Concentration of Firm-Level Flows

After having analyzed the average characteristics of firms and trade flows, we turn our attention to the analysis of the heterogeneity and concentration of exported and imported values at firm level. In the heterogeneity analysis, we try to understand to what extent firms that export and import large values are different from those with small values by decomposing firms' flows into their different margins and looking at their distribution across firms. In the analysis of concentration, we try to understand to what extent firms' trade flows are concentrated among a few firms and if there is any difference across goods and services. In Table 8, we use the same decomposition of trade flows into margins used in the previous section and we compare the different percentiles of the distribution for services and goods flows. Results suggest that looking at the ratio between the 99^{th} percentile and the 1^{st}, goods are much more heterogeneous than services in all the dimensions except from the average transaction size. In the case of both for exports (panel a) and imports (panel b) all distributions look close in the bottom part, however when reaching the top part, they diverge sharply. This suggests that firms at the bottom of the distribution look similar for both goods and services. Top firms instead differ enormously and goods traders look much bigger than services traders, suggesting that top services traders do not reach as high volumes, partner countries and products as top firms trading goods. Therefore, goods traders look more heterogeneous than services traders. This finding is in line with the idea that fixed costs might be higher for services trade than for goods trade: a tougher selection process for services would allow fewer, but more similar, firms entering into the foreign market, thus reducing the differences between the smallest and the top ones.

By using the shares of trade for each of the percentiles in Table 9, we can analyze concentration: we observe that the top percentile holds a share of trade of more than 60% for goods and about 50% for services. This suggests that both services and goods are highly concentrated, however, goods prove to be even more concentrated than services. In order to better characterize these top firms, in Tables 10 and 11 we classify firms in terms of how many products they trade and in terms of how many partner-countries they have. We can see that there are fewer firms exporting and importing more than five products to more than five markets for services than for goods. This result confirms the impression that services traders are more sluggish in the product and market margins by experiencing difficulties in expanding the portfolio of services and entering in new markets.

3.5 Trade Variation Across Firms

In order to understand the features of trade variation across firms, we use equations in (1) and, following Bernard et al. (2009a), we regress separately the logarithm of each margin against the logarithm of total firm-level exports (imports) and industry-year fixed effects using simple OLS (for services and goods separately). Every coefficient, coming from a different regression, will tell us the contribution of each margin in the explanation of the across-firm variation in export and import values. Looking at the results in Table 12, we can see that the biggest source of variation across firm-level flows is given by the number of transactions, which means that big exporters (importers) differ

from small ones mainly because of a difference in the number of transactions they make over one year. The contribution to the total variation looks very similar for goods and services, with big exporters trading more products, in more partner countries, making more transactions and having a smaller density than small traders. However, there is an important difference in terms of transaction size: while big traders of goods tend to make smaller transactions than small goods traders, the opposite holds for services: big traders make bigger transactions than smaller ones. The last two findings suggest that the transaction margin is the principal source of variation across firm-level flows and it is a key component to ascertain the differences across goods and services.

3.6 Discussion of the Static Analysis

The static analysis shows that there are many qualitative aspects that are common for services and goods trade. Rare participation, heterogeneity and concentration are key components of trade in services, suggesting that heterogeneous models of trade can represent a solid building block also for trade in services. At the same time our results point to huge quantitative differences across goods and services, which highlight the need to adjust assumptions on trade costs in order to account for a lower participation, less heterogeneity, lower concentration for services trade. In particular, the results point to a higher incidence of fixed costs for services trade. This can result from the fact that services have to comply with tougher regulation, in terms of bureaucratic restrictions of moving people in different countries (e.g. visa requirements), special authorizations (e.g. education requirements or approval of industry associations), or market restrictions (as in the case of telecommunications). Finally, we show that only introducing the frequency of trade into the analysis, we can appreciate differences across goods and services. At the same time, the number of transactions a firm carries out is the main source of variation across firms, therefore it is crucial to embed it in the theoretical frameworks.

4 Dynamic Analysis

Having analyzed the static characteristics of trade in goods and trade in services, we switch in this paragraph to the analysis of dynamic aspects, highlighting similarities and differences across services and goods trade. We first analyze entry, exit and survival in foreign markets and then firms' growth strategies.

4.1 Entry, Exit, and Survival in Foreign Markets

Every year, 43% of service exporters are firms that did not export the previous year (Table 13), and 57% by firms that were already exporting the year before. Of all these firms, 36% will not export anymore the following year, and 66% of them are among new exporters. Looking at figures for goods, we appreciate that entry and exit rates are on average lower, 31% entry and 27% exit, as well as the mortality rate of new exporting firms, which is 59%. Entry and exit are therefore more important for services than for goods and it seems that export markets for services are more attractive but

also more uncertain than for goods, especially for firms that did not export before. A positive finding from Table 13 is that, on average, entries are higher than exits both for services and goods, so there is a net increase in the number of exporters over the period considered. Numbers for imports closely follow those for exports.

How do these new firms enter in foreign markets? In Table 14, we differentiate new exporting (importing) firms in terms of number of partner countries and number of products. Results suggest that almost 80% of new traders export or import a single service in a single market (*Singles*) and they account on average for slightly less than 30% of new entrants' exports or imports. For goods trade *Singles* exporters and importers represent a smaller share, about 70% and they account for only 8% of new entrants' exports and 15% of imports. On the opposite side *Star* firms, those that export (import) multiple products to multiple countries, represent a very small share of exporters (importers), but they account for a big share of new entrants' exports (imports). The two key differences across goods and services are that, first, the share of exports and imports in the hands of *Star* firms is higher for goods, and second, that the contribution of *Stars* to total exports and imports (services and goods together) is much higher for goods *Stars*. These findings suggest that the differences between top goods traders and top services traders are already evident when they start their export or import activities. Looking at firms that will leave the foreign markets in the following year (Table 15), we can see that most exiters, around 80%, are in the category of *Singles*. In terms of export and import contribution, every category of exiter contributes to total trade less than the corresponding category of exporters or importers in Table 14, therefore, there is also a net increase over time in terms of exported values thanks to the entry and exit turnover.

Table 16 presents the share of firms that continue operating in foreign markets after t years of trade. After one year of export activity on average only 36% (39% for imports) of exporters survive and continue exporting services. After ten years, only 3% of the initial number of exporters and importers survive, a very low survival rate indeed. Looking at goods trade, the numbers are slightly higher: after one year, almost 46% of exporters survive (50% for imports), and 6% after ten years (8% for imports). This difference across goods and services remains constant over time and across the different categories of exporters and importers, corroborating the idea that export markets for services are more uncertain than for goods. In the next paragraph, we will focus on these surviving firms and explore their behavior in the international markets.

4.2 Growth Strategies

After having analyzed entry, exit, and survival rates, we focus on the firms that survive and we analyze their growth strategies in foreign markets. In Table 17, we look at the total exports and imports and their margins defined in equations (1) during the export and import maturity of firm, defined as the number of years the firm is active in the export (panels a and b) or import (panels c and d) markets. In order to facilitate the reading of the table, we illustrate first the common patterns of trade in goods and trade in services, and then we describe the distinctive features of each.

Services and goods exporters (importers) start with relatively small exports (imports), five to six times smaller than the average exporter (importer), but after five

years they become nine times what they where, so up to twice the average exporter and importer. After ten years, the growth rates slow down and the exports and imports tend to either settle at the same level of the fifth year, or decrease a bit. This rapid growth is mostly explained by an increase in the number of transactions a firm makes, while the contribution of the number of products, number of countries and the size of the transaction is limited. Therefore, export and import growth is closely related to the increase in the frequency of trade with existing country-product pairs. This can be the result of both an increase in the number of interactions with existing customers and an increase in the number of customers. By differentiating exporters and importers following the type of entry as in the previous paragraphs, we can appreciate that there are two types of strategies: *Star* firms start with many countries and products and as they mature export experience, they fill country-product pairs that were not active before, thus increasing the density of their exports; all the other firms instead start with few country-product pairs, and then they add new countries and products, thus reducing their export and import density.

The differences in the dynamics of exports and imports across goods and services are mostly related to quantitative aspects of trade. In particular, we find that firms' exports and imports of services are smaller than those for goods in their first year in foreign markets, yet their growth is higher and more persistent and after ten years they become bigger than their goods counterparts. This is mainly because the number of transactions and the transaction size grow relatively more, and this effect is not offset by the higher stickiness in the country and product margins growth. Therefore, we again find evidence that during the entire lifetime of a firm that exports or imports services, there are few changes in terms of number of countries and number of products served.

4.3 Geographic Patterns

In this paragraph, we seek to examine whether there is any pattern in the sequence of country expansions followed by exporting and importing firms. In Table 18, we compute the probability that a firm that is exporting (importing) to a specific continent at time t , then still exports (imports) to that continent in $t + 1$ and adds one other continent to which it was not exporting (importing) in t. We can appreciate that there is no evidence of an export or import platform, the probability of adding one more continent in the following year is similar across the continents. So, when deciding to export to another continent, firms do not seem to follow a specific geographic path. This result is at odds with the study of Eaton et al. (2007), in which they find that the probability of moving from one market to another depends on the initial export market. The difference in the results can derive from the fact that their study mixes both the switch and the addition of one new market for the same firm, while, since we concentrate only on trade expansion, we focus solely on market adding.

4.4 Discussion of the Dynamic Analysis

In the dynamic analysis, we looked at entry and exit dynamics, survival rates and growth strategies. As in the static analysis, we observe many quantitative similarities across goods and services trade and several quantitative differences. The common features are mostly related to the growth strategies: both goods and services start out small, after five years they become twice as big as the average exporter or importer, and in the following years they tend to stop growing and sometimes they experience a slight decline. This growth is mainly caused by an increase in the number of transactions, and the other intensive and extensive margins play only a marginal role. The distinctive features of goods and services are instead mostly related to quantitative aspects of trade. In particular, the dynamic analysis establishes three main differences across goods and services trade: 1) the share of firms entering and exiting export and import markets is bigger for services than for goods; 2) services exporters and importers are smaller when they are new to international markets, but they grow faster and after ten years they are bigger than goods traders 3) trade growth is mostly a result of an increase in trade frequency while the other trade margins play a secondary role, especially for services.

These three facts complement the evidence of the static analysis and provide new insights. Facts 2) and 3) suggest that firms exporting services start out smaller than their goods counterparts, but they grow more rapidly thanks to a higher increase in the transaction margin. This means that differences in export size that we find in the static part (Table 7) are mostly attributable to big incumbent exporters and importers. Therefore, if service exports and imports continue growing at the same pace in the following years, services and goods trade shares should converge, and eventually services might become the main component of world trade.

In the static part, we observe that fewer, but more productive firms export and import services and we suggested that this could be the result of higher fixed costs. Can this still be plausible in light of facts 1) 2) and 3)? The fact that services exporters and importers start small, but they can grow more than goods' traders suggests that the reward of entering the export or import market for services can be very high. Thus, even if fixed costs are higher than for goods, the promise of higher growth might lead to a higher share of entrants. At the same time, we observe that export and import markets are more uncertain for services than for goods, thus leading to a higher share of exits. Moreover if fixed costs can be considered as product-market specific, and they are bigger for services than for goods, we can also explain why services exporters and importers are more sluggish in the country and product dimension. As explained before, this can be due to the fact that restrictions for services are still very high in comparison to goods.

In terms of dynamic models of trade, our findings are in line with a number of papers describing goods trade dynamics. In particular, the large share of firms that enter and exit the export and import markets is related to the empirical and theoretical findings of Freund and Pierola (2010). The fact that firms start exporting and importing small quantities and then they rapidly grow is related to the frameworks of Rauch and Watson (2003), Ruhl and Willis (2008) and Eaton et al. (2009). The high stickiness in the product margin is related to Freund and Pierola (2010). At the same time, our findings are in contrast with some frameworks. Contrary to Buono et al. (2008), we

find that export and import growth is a matter of number of transaction and not of intensive margin. This is because their intensive margin is the product of the number of transactions and the transaction size, thus their intensive margin is embodying another extensive margin, the number of transactions, which is the main factor responsible for trade growth. With respect to Lawless (2009), Albornoz et al. (2012), Segura-Cayuela and Vilarrubia (2008) and Freund and Pierola (2010), we find that the contribution of market expansion to trade growth is more limited.

Our findings suggest that the model of Eaton et al. (2009) can be a good starting point for analyzing trade dynamics also for trade in services. In their model, firms start out small and, if they survive, they grow by finding new clients. To the extent to which we can consider more transactions as meaning more clients, their framework is closely related to our evidence. Modifications are needed in order to incorporate differences between goods and services. In particular, there should be additional features in order to incorporate higher entry and exit, higher growth of services exports and more stickiness in the country and product margins. Again, this can be done by modifying the assumptions on the fixed costs of exports and imports and by supposing different demand for goods and services.

5 Robustness Checks

The main concern regarding the robustness and interpretation of our results is represented by the exclusion of intra-EU trade. This is because any difference between services and goods trade might be driven by differences in the way firms trade in extra-EU markets. At the same time, by focusing only on extra-EU trade, we were excluding from the analysis 70% of total Belgian trade. Therefore, in this section we repeat the analysis including intra-EU exports and imports. In order to save space, we do not include tables, although they are available on request.

5.1 Static Analysis

By including intra-EU trade our results for the static analysis do not change significantly. In particular, we find confirmation that: 1) the share of firms participating to trade in services is smaller than trade in goods, 2) the share of trade in services is smaller than that of goods both across and within firms, 3) heterogeneity across firm level flows is a key component of trade, 4) trade in services is less concentrated than trade in goods, 5) the main determinant of trade variation across firms is represented by the number of transactions, 6) different types of firms choose different trade strategies, but the characteristics of trade in goods and trade in services do not change across different types of traders.

5.2 Dynamic Analysis

In the dynamic analysis, even by including trade with European countries, we confirm the main findings of our analysis. 1) entry and exit shares among firms are larger for service trade, 2) survival rates are higher among goods traders, 3) new services traders start exporting and importing smaller values than new goods traders, but after five

years they become bigger, 4) we do not find any particular country pattern in trade expansion.

6 Conclusions

The key message of this paper is that even if goods and services trade share some qualitative similarities, they differ sharply in quantitative terms and in some key characteristics. In particular, trade participation, heterogeneity and concentration are key components of trade in services, suggesting that heterogeneous models of trade can represent a solid building block for trade in services too. However, huge quantitative differences and some key characteristics raise the need for some modifications to both static and dynamic models of trade in order to match the data. We suggest three main changes: 1) fixed costs at the market-product level and higher for services than for goods; 2) a different demand system for services; 3) the introduction of the transaction dimension. Modification 1) would allow for fewer firms exporting and importing and a lower propensity to introduce new products or explore markets for services. Modification 2) would be needed in order to allow for higher growth prospects associated with higher riskiness, thus higher entry and exit for services. Modification 3) would include the most crucial element of trade in terms of export and import growth and in terms of cross-sectional variation across firms both for goods and services trade.

This paper represents a further advance in the understanding of the differences across goods and services trade and, more generally, of trade characteristics and trade dynamics. We document several differences in the way firms trade services and goods, however, more work is needed in order to understand the factors leading to such differences. In particular, more attention should be paid to the role of trade costs for services, in order to understand which specific forces hamper services flows. Besides, more research is needed in order to gain a better understanding of the cost and production structure of firms trading services. Finally, more work should be done in the direction of analyzing separately the four modes of services trade, in order to understand the dynamics of services that do not require personal interaction versus those that require human proximity. The answer to all these questions would provide a more complete understanding of the services sector and services trade, and it would arm policy-makers with new instruments to better master the liberalization of services trade.

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Table 1: List of Services in the Balance of Payments

Number	Name	Code	Number	Name	Code
1	**Transportation**	205	*5.4*	*Re-Insurance*	257
1.1	*Sea Transport*	206	*5.5*	*Auxiliary Services*	258
1.1.1	Passengers	207	**6**	**Financial Services**	260
1.1.2	Freight	208	**7**	**Computer and Information Services**	262
1.1.3	Other	209	*7.1*	*Computer Services*	263
1.2	*Air Transport*	210	*7.2*	*Information Services*	264
1.2.1	Passengers	211	**8**	**Royalties and License Fees**	266
1.2.2	Freight	212	**9**	**Business Services**	268
1.2.3	Other	213	*9.1*	*Merchanting and other trade-related activities*	269
1.3	*Other Transport*	214	9.1.1	Merchanting	**270**
1.3.1	Passengers	215	9.1.2	Other Trade-Related Activities	271
1.3.2	Freight	216	*9.2*	*Operational Leasing Services*	272
1.3.3	Other	217	*9.3*	*Miscellaneous Business, Professional and Technical Activities*	273
2	**Travel**	236	9.3.1	Legal, Accounting, Management, Consulting and Public Relations	274
2.1	*Business Travel*	237	9.3.2	Advertising, Market Research, and Public Opinion Polling	278
2.2	*Personal Travel*	240	9.3.3	Research and Development	279
2.2.1	Health-related expenditure	241	9.3.4	Architectural, Engineering and Other Technical Services	280
2.2.2	Education-related expenditure	242	9.3.5	Agricultural, Mining, and Other On-Site Processing Services	281
2.2.3	Other	243	9.3.5.1	Waste Treatment and De-pollution	282
3	**Communication Services**	245	9.3.5.2	Agricultural, Mining, and Other On-Site Processing Services	283
3.1	*Postal and courier services*	246	9.3.6	Other Business Services	284
3.2	*Telecommunication services*	247	9.3.7	Services between Related Enterprises	**285**
4	**Construction Services**	249	**10**	**Personal, Cultural and Recreational Activities**	287
5	**Insurance Services**	253	*10.1*	*Audiovisual and Related Services*	288
5.1	*Life Insurance and Pension Funding*	254	*10.1*	*Other Personal, Cultural and Recreational Activities*	289
5.2	*Freight Insurance*	255	**11**	**Governmental Services**	291
5.3	*Other Direct Insurance*	256			

Note: List of Services present in the Balance of Payments. We exclude "Merchanting" (code 270, in bold) and "Services between Related Enterprises" (code 285, in bold) because they can not genuinely be considered as trade in services in the NBB dataset.

Table 2: Trade Participation, Export and Import Separately

Panel a: Exports					
	Services		Goods		Non-Exporters
		Bi-Exporters			
Share of firms	0.77%	0.21%		3.18%	95.84%
Share of Exporters	18.41%	5.09%		76.50%	
Share of Exports	8.19%	4.85%	25.14%	61.83%	
Number of firm-years	23,327	6,447		96,910	2,920,621
Panel b: Imports					
	Services		Goods		Non-Importers
		Bi-Importers			
Share of Firms	0.67%	0.36%		3.21%	95.75%
Share of Importers	15.78%	8.55%		75.67%	
Share of Imports	6.16%	5.89%	37.44%	49.18%	
Number of firm-years	20,417	11,065		97,920	2,917,903

Note: this table represents separately for exports (Panel a) and Imports (Panel b) and for each category of firm (firms exporting (importing) only services (Services), both services and goods (Bi-Exporters or Bi-Importers), only goods (Goods) and for Non-Exporters (Non-Importers)) 1) the share of firms with respect to the total number of firms 2) the share of exporters or importers with respect to the total number of exporters or importers and 3) the share of total exports or imports. The unit of observation is a firm-year.

Table 3: Trade Participation, Exports and Imports Together

		All Firms						**Traders Only**				
		Services Trade						Services Trade				
		E	I	E-I	D	Tot		E	I	E-I	D	Tot
Goods Trade	E	0.06%	0.06%	0.03%	1.86%	2.01%	E	0.94%	0.86%	0.49%	28.11%	30.40%
	I	0.03%	0.08%	0.03%	2.05%	2.20%	I	0.52%	1.16%	0.52%	30.98%	33.18%
	E-I	0.04%	0.18%	0.07%	1.08%	1.38%	E-I	0.66%	2.69%	1.11%	16.36%	20.81%
	D	0.45%	0.34%	0.24%	93.38%	94.41%	D	6.84%	5.09%	3.67%		15.61%
	Tot	0.59%	0.65%	0.38%	98.37%	100.00%	Tot	8.96%	9.80%	5.79%	75.44%	100.00%

Note: the left table represents the share of Exporters (E), Importers (I), Exporters and Importers (E-I) and Domestic (D) firms in terms of both goods and services trade as % of the total amount of firms in the dataset. The right table does the same as % of the total number of firms that engages in at least one form of trade.

Table 4: Trade Status and Trade Values

Panel a: Services

Total Exports of Services						Total Imports of Services					
	Services						Services				
Goods	E	I	E-I	D	Tot	Goods	E	I	E-I	D	Tot
E	1.15%	-	4.83%	-	5.98%	E	-	0.79%	3.87%	-	4.66%
I	1.27%	-	13.33%	-	14.60%	I	-	1.73%	8.82%	-	10.55%
E-I	1.60%	-	29.60%	-	31.21%	E-I	-	6.37%	32.32%	-	38.69%
D	9.64%	-	38.58%	-	48.22%	D	-	7.25%	38.85%	-	46.10%
Tot	13.66%	-	86.34%	-	100.00%	Tot	-	16.15%	83.85%	-	100.00%

Panel b: Goods

Total Exports of Goods						Total Imports of Goods					
	Services						Services				
Goods	E	I	E-I	D	Tot	Goods	E	I	E-I	D	Tot
E	0.46%	1.15%	0.38%	14.49%	16.48%	E	-	-	-	-	-
I	-	-	-	-	-	I	0.37%	2.00%	1.17%	11.75%	15.28%
E-I	1.37%	16.59%	26.69%	38.87%	83.52%	E-I	1.88%	18.27%	21.79%	42.79%	84.72%
D	-	-	-	-	-	D	-	-	-	-	-
Tot	1.83%	17.74%	27.08%	53.36%	100.00%	Tot	2.25%	20.27%	22.96%	54.53%	100.00%

Note: panel a represents the share of total exports of services (left side) and imports (right side) for each of the firm categories: Exporters (E), Importers (I), Exporters and Importers (E-I) and Domestic (D). Panel b represents the share of trade of goods for the same categories of firms.

Table 5: Firm Characteristics by Trade Status, Export and Import Separately

	(1) Employment	(2) Turnover	(3) Labor Productivity	(4) Wages	(5) Capital Intensity	(6) Intangible Capital Intensity	(7) Age
Panel a: Exports							
Bi-Exporters	2.3856^a	3.9324^a	0.4796^a	0.5323^a	-0.0077	-0.5470^a	0.5729^a
	(0.014)	(0.015)	(0.006)	(0.004)	(0.012)	(0.029)	(0.006)
Service Exporters	1.4161^a	2.2093^a	0.2813^a	0.4423^a	-0.3754^a	-0.6817^a	0.3351^a
	(0.007)	(0.008)	(0.004)	(0.002)	(0.009)	(0.021)	(0.004)
Goods Exporters	1.3146^a	2.0683^a	0.2926^a	0.2814^a	0.0183^a	-0.7365^a	0.3597^a
	(0.005)	(0.005)	(0.002)	(0.002)	(0.005)	(0.014)	(0.002)
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.8546^a	-1.7264^a	-3.0504^a	-3.6978^a	-3.6642^a	-5.5054^a	2.0777^a
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.004)	(0.001)
Firms-Years	1,386,471	2,053,839	1,348,137	1,384,905	1,346,148	319,606	2,806,572
R-squared	0.2116	0.2793	0.1294	0.1425	0.0877	0.1383	0.0784
Panel b: Imports							
Bi-Importers	2.7422^a	4.3119^a	0.4885^a	0.5586^a	0.0170^c	-0.6991^a	0.6034^a
	(0.009)	(0.010)	(0.004)	(0.003)	(0.009)	(0.021)	(0.005)
Service Importers	1.5782^a	2.7031^a	0.3165^a	0.5051^a	-0.5112^a	-0.5754^a	0.3777^a
	(0.009)	(0.011)	(0.005)	(0.003)	(0.011)	(0.025)	(0.005)
Goods Importers	1.2589^a	2.4026^a	0.2324^a	2898^a	-0.0146^a	-0.8637^a	0.3914^a
	(0.004)	(0.004)	(0.002)	(0.001)	(0.005)	(0.013)	(0.002)
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.8084^a	-1.7689^a	-3.0536^a	-3.7079^a	-3.6635^a	-5.4664^a	2.0698^a
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.005)	(0.001)
Firms-Years	1,386,471	2,053,839	1,348,137	1,384,905	1,346,148	319,606	2,806,572
R-squared	0.2436	0.3095	0.1293	0.1491	0.0879	0.1420	0.0824

Note: Robust Standard errors in parentheses, ^{a} p<0.01, ^{b} p<0.05, ^{c} p<0.1. Every column represent a different regression in which the dependent variable is one of the seven firm characteristics (Employment, Labor Productivity, Average Wage, Average Capital, Intangible Capital and Age) and the independent variables are the dummies identifying firms exporting only services (Service Exporters), firms exporting only goods (Goods Exporters) and firms exporting both (Bi-Exporters) in panel a. In panel b instead the independent variables represent firms that only import services (Service Importers), firms that import only goods (Goods Importers) and firms importing both (Bi-Importers). All regressions include industry-year dummies.

Table 6: Firm Characteristics by Trade Status

	(1) Employment	(2) Turnover	(3) Labor Productivity	(4) Wages	(5) Capital Intensity	(6) Intangible Capital Intensity	(7) Age
4 Trade Options:							
S(ie)G(ie)	3.8996^a	5.7647^a	0.6821^a	0.7307^a	0.2395^a	-0.5532^a	0.7658^a
	(0.040)	(0.41)	(0.015)	(0.009)	(0.030)	(0.038)	(0.010)
3 Trade Options:							
S(ie)G(i)	3.1516^a	4.7787^a	0.6043^a	0.7404^a	-0.0841	-0.9461^a	0.6617^a
	(0.062)	(0.064)	(0.030)	(0.018)	(0.066)	(0.071)	(0.015)
S(i)G(ie)	2.9446^a	4.6725^a	0.5497^a	0.5615^a	0.1634^a	-0.8417^a	0.6036^a
	(0.022)	(0.022)	(0.009)	(0.006)	(0.017)	(0.027)	(0.006)
S(e)G(ie)	2.2958^a	3.8838^a	0.4749^a	0.5187^a	0.0552	-0.9896^a	0.5202^a
	(0.050)	(0.049)	(0.021)	(0.013)	(0.041)	(0.053)	(0.011)
S(ie)G(e)	2.1872^a	4.0640^a	0.5128^a	0.6502^a	-0.4134^a	-0.7525^a	0.6201^a
	(0.057)	(0.059)	(0.027)	(0.016)	(0.059)	(0.090)	(0.019)
2 Trade Options:							
S(e)G(e)	1.3763^a	2.7254^a	0.3727^a	0.3981^a	-0.1239^a	-0.5248^a	0.3568^a
	(0.042)	(0.043)	(0.023)	(0.013)	(0.046)	(0.096)	(0.015)
S(i)G(e)	1.7954^a	3.5493^a	0.5728^a	0.5085^a	-0.1391^a	-0.5764^a	0.3383^a
	(0.041)	(0.040)	(0.023)	(0.012)	(0.039)	(0.113)	(0.021)
S(e)G(i)	1.9678^a	3.2725^a	0.4533^a	0.5618^a	-0.1647^a	-1.0203^a	0.4660^a
	(0.064)	(0.063)	(0.029)	(0.019)	(0.059)	(0.082)	(0.016)
S(i)G(i)	1.8081^a	3.3870^a	0.5086^a	0.4948^a	-0.0056	-0.8301^a	0.4297^a
	(0.041)	(0.041)	(0.029)	(0.013)	(0.037)	(0.056)	(0.012)
S(d)G(ie)	1.7925^a	3.2310^a	0.3586^a	0.3353^a	0.0558^a	-0.9859^a	0.4594^a
	(0.009)	(0.010)	(0.004)	(0.003)	(0.009)	(0.017)	(0.003)
S(ie)G(d)	2.1528^a	3.6423^a	0.4107^a	0.6513^a	-0.7707^a	-0.7890^a	0.5027^a
	(0.024)	(0.025)	(0.011)	(0.007)	(0.025)	(0.032)	(0.006)
1 Trade Option:							
S(d)G(i)	0.9276^a	1.8941^a	0.2265^a	0.2104^a	0.0410^a	-0.8521^a	0.3522^a
	(0.008)	(0.007)	(0.004)	(0.002)	(0.008)	(0.017)	(0.002)
S(d)G(e)	0.8686^a	1.9907^a	0.2463^a	0.1921^a	-0.0314^a	-0.7244^a	0.2224^a
	(0.082)	(0.008)	(0.004)	(0.003)	(0.009)	(0.027)	(0.004)
S(e)G(d)	1.3273^a	2.1930^a	0.3372^a	0.4852^a	-0.3648^a	-0.6495^a	0.2445^a
	(0.018)	(0.019)	(0.009)	(0.006)	(0.020)	(0.030)	(0.004)
S(i)G(d)	1.3555^a	2.6807^a	0.3379^a	0.5026^a	0.5487^a	-0.4199^a	0.2495^a
	(0.021)	(0.024)	(0.009)	(0.008)	(0.024)	(0.040)	(0.007)
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.9179^a	-1.6500^a	-3.0389^a	-3.6816^a	-3.6709^a	-5.4221^a	2.0611^a
	(0.001)	(0.001)	(0.001)	(0.008)	(0.024)	(0.004)	(0.001)
Firms-Years	1,386,471	2,053,839	1,348,137	1,384,905	1,346,148	319,606	2,806,572
R-squared	0.1901	0.2424	0.1273	0.1333	0.0876	0.1457	0.0850

Note: Robust Standard errors in parentheses, ^{a} p<0.01, ^{b} p<0.05, ^{c} p<0.1. Every column represent a different regression in which the dependent variable is one of the seven characteristics (Employment, Labor Productivity, Average Wage, Average Capital, Intangible Capital and Age) and the independent variables are the dummies identifying the different categories of firms defined in Table 3. S and G indicate if the firm is exporting (e) or importing (i) or both (ie) respectively services and goods. All regressions include industry-year dummies.

Table 7: Trade Margins and Trade Status

Panel a: Exports

	Total Exports		Average Exports		Transaction Size		Number of Transactions		Number of Products		Number of Destinations		Density	
	G	S	G	S	G	S	G	S	G	S	G	S	G	S
4 Trade Options:														
S(ie)G(ie)	51.0210	8.4799	1.0024	1.5923	0.0358	0.2053	733.9982	22.8969	3.3189	1.7060	15.5762	3.2390	0.6309	0.8567
3 Trade Options:														
S(ie)G(i)	-	8.0991	-	2.5223	-	0.1932	-	23.4370	-	1.5137	-	2.9508	-	0.8892
S(i)G(ie)	13.0939	-	0.5839	-	0.0243	-	319.6600	-	2.7069	-	12.2357	-	0.6556	-
S(e)G(ie)	4.4283	0.7772	0.3496	0.4879	0.0224	0.1150	91.0339	4.2541	2.1221	1.1779	5.8144	1.4773	0.7767	0.9647
S(ie)G(e)	1.6578	3.1305	0.3788	0.7649	0.0542	0.1038	34.8486	18.3208	1.9919	1.4904	2.8910	3.1291	0.8387	0.8840
2 Trade Options:														
S(e)G(e)	1.0407	0.3910	0.2985	0.2206	0.0423	0.0683	30.9067	4.4825	1.6742	1.1440	2.5185	1.4756	0.8877	0.9688
S(i)G(e)	2.8238	-	0.4429	-	0.0473	-	74.8683	-	1.9194	-	5.1403	-	0.8292	-
S(e)G(i)	-	0.7764	-	0.5928	-	0.0995	-	4.4567	-	1.1807	-	1.3387	-	0.9737
S(i)G(i)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S(d)G(ie)	5.0454	-	0.3520	-	0.0225	-	120.6926	-	1.8815	-	4.9280	-	0.8331	-
S(ie)G(d)	-	3.3464	-	0.9293	-	0.1161	-	17.5136	-	1.4032	-	2.6443	-	0.9084
1 Trade Option:														
S(d)G(i)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S(d)G(e)	1.0945	-	0.3134	-	0.0318	-	23.1781	-	1.3054	-	2.2410	-	0.9466	-
S(e)G(d)	-	0.4481	-	0.3464	-	0.0875	-	3.6225	-	1.1483	-	1.2661	-	0.9799
S(i)G(d)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	4.1459	2.1571	0.3579	0.6834	0.0291	0.1082	87.3095	9.8330	1.6408	1.2802	4.0194	1.9045	0.8820	0.9448

Panel b: Imports

	Total Imports		Average Imports		Transaction Size		Number of Transactions		Number of Products		Number of Destinations		Density	
	G	S	G	S	G	S	G	S	G	S	G	S	G	S
4 Trade Options:														
S(ie)G(ie)	41.4734	8.5017	3.3318	0.9614	0.0734	0.0973	313.8323	30.8264	4.0410	2.6605	4.8073	4.4901	0.6313	0.7283
3 Trade Options:														
S(ie)G(i)	4.7249	4.9224	2.1792	0.9939	0.3565	0.1045	40.5562	24.4124	1.5165	1.9252	1.5534	3.2488	0.9136	0.8347
S(i)G(ie)	14.3615	0.6924	1.2609	0.2690	0.0270	0.0870	220.3752	4.7940	3.1353	1.4779	3.9655	1.7226	0.6758	0.8896
S(e)G(ie)	6.0381	-	0.8988	-	0.0289	-	104.1976	-	2.2616	-	2.4147	-	0.8135	-
S(ie)G(e)	-	2.3008	-	0.3721	-	0.0610	-	16.9081	-	1.7275	-	3.1846	-	0.8490
2 Trade Options:														
S(e)G(e)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S(i)G(e)	-	0.2692	-	0.1386	-	0.0548	-	3.2484	-	1.2932	-	1.4433	-	0.9293
S(e)G(i)	1.5022	-	0.7992	-	0.0578	-	27.6631	-	1.5509	-	1.5404	-	0.9202	-
S(i)G(i)	3.6454	0.4353	1.2231	0.2328	0.0665	0.0718	59.3110	3.7030	1.8737	1.2451	2.0470	1.2824	0.8767	0.9562
S(d)G(ie)	5.5312	-	0.8510	-	0.0362	-	89.7589	-	2.1489	-	2.5487	-	0.8172	-
S(ie)G(d)	-	3.0945	-	0.6885	-	0.0920	-	18.0921	-	1.5545	-	2.9149	-	0.8836
1 Trade Option:														
S(d)G(i)	0.8017	-	.2953	-	0.0297	-	22.8509	-	1.5093	-	1.6128	-	0.9220	-
S(d)G(e)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S(e)G(d)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S(i)G(d)	-	0.4159	-	0.2426	-	0.0790	-	3.8901	-	1.2233	-	1.4269	-	0.9580
Average	3.9159	1.8733	0.6245	0.4260	0.0367	0.0832	60.9327	10.3538	1.8536	1.4924	2.0970	2.1526	0.8696	0.9031

Note: This table reports for each of the categories of traders defined in Table 3 (S and G indicate if the firm is exporting (*e*) or importing (*i*) or both (*ie*) respectively services and goods) the average exports (panel a) and imports (panel b) and their margins defined in (1). Values are in millions of Euros.

Table 8: Heterogeneity

Panel a: Exports

	Total Exports		Average Exports		Transaction Size		Number of Transactions		Number of Products		Number of Destinations		Density	
Centiles	G	S	G	S	G	S	G	S	G	S	G	S	G	S
1	0.013	0.013	0.013	0.013	0.001	0.003	1	1	1	1	1	1	0.21	0.33
10	0.027	0.023	0.021	0.021	0.002	0.009	1	1	1	1	1	1	0.44	0.63
25	0.102	0.040	0.053	0.035	0.006	0.015	4	1	1	1	1	1	0.66	1
50	0.503	0.122	0.175	0.080	0.013	0.028	13	2	1	1	2	1	1	1
75	2.347	0.556	0.509	0.241	0.027	0.051	44	8	2	1	5	2	1	1
90	10.371	2.5465	1.356	0.701	0.059	0.108	147	25	3	2	11	5	1	1
99	129.225	31.503	7.970	4.990	0.359	0.619	1,644	174	10	4	46	15	1	1
Max	12,166.430	2166.504	2,722.378	1,151.588	49,383	95.965	102,072	8,535	89	26	151	103	1	1

Panel b: Imports

	Total Imports		Average Avg. Imports		Transaction Size		Number of Transactions		Number of Products		Number of Destinations		Density	
Centiles	G	S	G	S	G	S	G	S	G	S	G	S	G	S
1	0.013	0.013	0.013	0.013	0.001	0.002	1	1	1	1	1	1	0.19	0.24
10	0.032	0.025	0.025	0.021	0.003	0.007	2	1	1	1	1	1	0.33	0.50
25	0.117	0.041	0.057	0.035	0.005	0.014	5	1	1	1	1	1	0.50	0.75
50	0.436	0.124	0.154	0.074	0.011	0.027	14	2	2	1	2	1	1	1
75	1.650	0.518	0.411	0.196	0.022	0.049	41	8	3	2	4	2	1	1
90	6.318	2.264	1.077	0.526	0.049	0.103	118	24	5	3	7	5	1	1
99	85.434	37.751	8.593	4.070	0.380	0.549	1,004	192	15	8	16	19	1	1
Max	13,124.740	2,337.889	1,600.344	262.888	133.732	39.279	93,194	3,268	77	29	88	155	1	1

Note: This table reports the different centiles of the distribution for each of the trade margins defined in eq. (1), panel a is for exports and panel b for imports. G stands for goods trade and S for services trade. Values are in Millions of Euros.

Table 9: Concentration

	Exports		Imports	
Centiles	Goods	Services	Goods	Services
1	0.00%	0.01%	0.00%	0.01%
10	0.03%	0.08%	0.03%	0.09%
25	0.12%	0.32%	0.14%	0.35%
50	0.55%	1.26%	0.62%	1.35%
75	2.50%	4.59%	2.68%	4.68%
90	8.77%	12.42%	8.25%	13.08%
99	38.18%	44.30%	36.26%	50.71%

Note: This table presents the shares of exports and imports for the 1^{st}, 10^{th}, 25^{th}, 50^{th}, 75^{th}, 90^{th} and 99^{th} centiles of the export and import distributions.

Table 10: Services, Goods and partner-countries, Exports

Panel a: Number of Exporting Firms

# of Services	# of Countries				# of Goods	# of Countries			
	1	2-5	>5	Total		1	2-5	>5	Total
1	94.5%	2.5%	0.2%	80.6%	1	73.0%	10.1%	2.6%	85.5%
2-5	0.9%	1.5%	0.4%	19.2%	2-5	2.7%	6.0%	4.2%	12.9%
>5	0.0%	0.0%	0.0%	0.3%	>5	0.1%	0.3%	0.9%	1.3%
Total	95.4%	4.0%	0.6%	100.0%	Total	75.8%	16.4%	7.8%	100.0%

Panel b: Total Exports

# of Services	# of Countries				# of Goods	# of Countries			
	1	2-5	>5	Total		1	2-5	>5	Total
1	16.1%	21.0%	13.9%	50.9%	1	2.1%	8.5%	16.0%	26.6%
2-5	4.6%	13.9%	22.3%	40.8%	2-5	0.7%	3.0%	44.2%	47.9%
>5	0.0%	0.7%	7.6%	8.3%	>5	0.1%	0.4%	25.0%	25.5%
Total	20.7%	35.6%	43.7%	100.0%	Total	2.9%	1.9%	85.2%	100.0%

Note: This table reports the share of exporters (panel a) and the share of exports (panel b) for each of the categories of exporters (based on the number of services or products exported and the number of partner-countries). For both panels trade in services is on the left and trade in goods on the right side.

Table 11: Services, Goods and partner-countries, Imports

Number of Importing Firms

# of Services	# of Countries				# of Goods	# of Countries			
	1	2-5	>5	Total		1	2-5	>5	Total
1	93.9%	2.6%	0.6%	97.1%	1	76.1%	10.8%	1.6%	88.5%
2-5	1.0%	1.5%	0.2%	2.7%	2-5	3.2%	5.6%	0.5%	9.4%
>5	0.0%	0.1%	0.1%	0.2%	>5	0.1%	1.0%	1.0%	2.2%
Total	94.9%	4.2%	0.9%	100.0%	Total	79.5%	17.4%	3.1%	100.0%

Total Imports

# of Services	# of Countries				# of Goods	# of Countries			
	1	2-5	>5	Total		1	2-5	>5	Total
1	11.8%	19.1%	27.2%	58.1%	1	6.1%	19.6%	26.0%	51.6%
2-5	3.1%	7.9%	9.7%	20.8%	2-5	1.5%	5.9%	5.9%	13.3%
>5	0.0%	2.3%	18.8%	21.2%	>5	0.7%	5.6%	28.8%	35.1%
Total	14.9%	29.4%	55.7%	100.0%	Total	8.3%	31.1%	60.6%	100.0%

Note: This table reports the share of importers (panel a) and the share of imports (panel b) for each of the categories of importers (based on the number of services or products imported and the number of partner-countries). For both panels trade in services is on the left and trade in goods on the right side.

Table 12: OLS Trade Decomposition

Margins:	**Exports**		**Imports**	
	Services	Goods	Services	Goods
Service	0.0759^a	0.1158^a	0.1385^a	0.1730^a
	(0.002)	(0.001)	(0.002)	(0.001)
Country	0.2095^a	0.3457^a	0.2457^a	0.2245^a
	(0.003)	(0.001)	(0.003)	(0.001)
Density	-0.0387^a	-0.0807^a	-0.0835^a	-0.0971^a
	(0.001)	(0.001)	(0.001)	(0.001)
Transaction	0.5739^a	0.7946^a	0.6021^a	0.8082^a
	(0.003)	(0.002)	(0.003)	(0.002)
Transaction Size	0.1845^a	-0.1755^a	0.0971^a	-0.1087^a
	(0.005)	(0.003)	(0.005)	(0.003)
Industry-Year Dummies	Yes	Yes	Yes	Yes
Observations	24,581	85,535	26,473	90,402

Note: Robust Standard errors in parentheses, ^{a} p<0.01, ^{b} p<0.05, ^{c} p<0.1. Every coefficient comes from a different regression in which every margin defined in eq. (1) is regressed against total exports (left panel) or total imports (right panel) together with industry-year dummies.

Table 13: Entry and Exit

Panel a: Exports

.kmsd	Services					Goods				
	Exporters	**Entrants**	**Survivors**	**Exiters**	**Exit by Entrants**	**Exporters**	**Entrants**	**Survivors**	**Exiters**	**Exit by Entrants**
1995	2,230			36%		8,709			25%	
1996	2,125	39%	61%	32%	65%	9,025	33%	67%	24%	64%
1997	2,330	42%	58%	36%	66%	9,670	33%	67%	26%	63%
1998	2,329	39%	61%	39%	61%	9,566	29%	71%	27%	58%
1999	2,162	38%	62%	35%	63%	9,375	29%	71%	25%	58%
2000	2,425	45%	55%	37%	71%	9,908	32%	68%	25%	63%
2001	2,398	42%	58%	35%	64%	10,042	30%	70%	27%	59%
2002	2,988	51%	49%	35%	74%	9,816	29%	71%	32%	50%
2003	3,429	47%	53%	40%	68%	9,095	31%	69%	28%	60%
2004	3,291	41%	59%	35%	64%	9,076	31%	69%	28%	60%
2005	4,067	50%	50%			9,075	31%	69%		
Average	2,707	43%	57%	36%	66%	9,396	31%	69%	27%	59%

Panel b: Imports

	Services					Goods				
	Exporters	**Entrants**	**Survivors**	**Exiters**	**Exit by Entrants**	**Exporters**	**Entrants**	**Survivors**	**Exiters**	**Exit by Entrants**
1995	2,283			35%		9,290			24%	
1996	2,324	40%	60%	34%	64%	9,524	30%	70%	24%	56%
1997	2,409	40%	60%	35%	63%	9,710	29%	71%	24%	56%
1998	2,406	38%	62%	39%	60%	9,875	29%	71%	24%	55%
1999	2,352	41%	59%	35%	64%	10,023	28%	72%	23%	57%
2000	2,502	42%	58%	34%	65%	10,359	29%	71%	24%	57%
2001	2,697	42%	58%	34%	67%	10,106	27%	73%	23%	55%
2002	3,319	50%	50%	35%	73%	9,915	26%	74%	25%	53%
2003	3,708	46%	54%	36%	68%	9,715	27%	73%	23%	55%
2004	3,678	39%	61%	33%	62%	10,113	28%	72%	22%	59%
2005	3,804	40%	60%			10,335	27%	73%		
Average	2,862	42%	58%	35%	65%	9,907	28%	72%	24%	56%

Note: panel a reports for every year the number of exporters, the share of new exporters (Entrants), the share of firms that were already exporting the previous year (Survivors), the share of firms that will not export anymore the following year (Exiters) and the share of exiters that belong to the entrants (Exit by Entrants). Panel b does the same for imports.

Table 14: Entrants Features

Panel a: Exports

	Services				Goods			
	Singles	Multi-Service	Multi-Country	Stars	Singles	Multi-Product	Multi-Country	Stars
New Exporters	79.4%	5.7%	9.0%	5.9%	70.3%	5.0%	14.8%	9.9%
New Entrants Export	29.1%	7.4%	21.2%	42.4%	7.8%	2.0%	28.8%	61.4%
Total Exports	0.5%	0.1%	0.3%	0.7%	0.6%	0.1%	2.1%	4.4%

Panel b: Imports

	Services				Goods			
	Singles	Multi-Service	Multi-Country	Stars	Singles	Multi-Product	Multi-Country	Stars
New Importers	77.3%	6.5%	7.3%	8.9%	74.3%	6.3%	8.0%	11.3%
New Entrants Import	26.4%	8.4%	13.9%	51.3%	14.5%	4.3%	26.8%	54.4%
Total Imports	0.4%	0.1%	0.2%	0.7%	1.1%	0.3%	2.1%	4.2%

Note: this table, in panel a, represents the average share of new exporters with respect to the total number of exporters (first row), share of exports among new exporters' exports (second row) and share of exports on total exports for each of the four categories of new exporters (Singles, Multi-Service, Multi-Country and Stars). Panel b does the same for imports.

Table 15: Exiters Features

Panel a: Exports								
	Services				**Goods**			
	Singles	Multi-Service	Multi-Country	Stars	Singles	Multi-Product	Multi-Country	Stars
Exiters	84.7%	4.9%	7.0%	3.4%	78.4%	4.6%	11.2%	5.8%
Exiters Exports	55.7%	9.5%	22.5%	12.3%	26.7%	5.1%	43.2%	24.9%
Total Exports	0.3%	0.1%	0.1%	0.1%	0.3%	0.1%	0.5%	0.3%
Panel b: Imports								
	Services				**Goods**			
	Singles	Multi-Service	Multi-Country	Stars	Singles	Multi-Product	Multi-Country	Stars
Exiters	82.0%	5.4%	6.0%	6.5%	83.1%	5.0%	5.8%	6.1%
Exiters Import	47.0%	8.8%	22.6%	21.5%	33.9%	5.4%	34.2%	26.5%
Total Imports	0.2%	0.0%	0.1%	0.1%	0.5%	0.1%	0.5%	0.4%

Note: this table, panel a, represents the share of exiters with respect to the number of exporters (first row), the share of exports among exiters' exports (second row) and share of exports on total exports for each of the four categories of new exporters (Singles, Multi-Service, Multi-Country and Stars). Panel b does the same for imports.

Table 16: Survivors After t Years of Export/Import

Panel a: Exports										
	Services					**Goods**				
t	All	Singles	Multi-Service	Multi-Country	Stars	All	Singles	Multi-Service	Multi-Country	Stars
0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	36%	29%	56%	62%	76%	46%	34%	61%	75%	80%
2	21%	15%	36%	43%	59%	31%	19%	41%	58%	66%
3	14%	9%	27%	31%	47%	23%	13%	30%	48%	57%
4	9%	5%	21%	22%	37%	18%	9%	23%	40%	49%
5	7%	4%	13%	18%	30%	15%	7%	17%	33%	43%
6	5%	2%	11%	14%	27%	12%	5%	14%	28%	37%
7	4%	2%	9%	11%	23%	10%	4%	11%	24%	33%
8	4%	1%	7%	10%	20%	7%	3%	9%	15%	30%
9	3%	1%	6%	8%	18%	6%	2%	7%	13%	27%
Panel b: Imports										
	Services					**Goods**				
t	All	Singles	Multi-Service	Multi-Country	Stars	All	Singles	Multi-Service	Multi-Country	Stars
0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1	39%	32%	58%	65%	73%	50%	41%	68%	75%	82%
2	23%	16%	37%	46%	56%	34%	24%	50%	56%	70%
3	15%	10%	27%	31%	44%	25%	17%	39%	44%	60%
4	11%	6%	19%	23%	34%	20%	12%	33%	37%	52%
5	8%	4%	14%	18%	29%	16%	9%	27%	31%	46%
6	6%	3%	12%	13%	25%	14%	7%	22%	27%	40%
7	5%	2%	9%	10%	20%	11%	6%	18%	22%	36%
8	4%	1%	7%	9%	18%	9%	4%	14%	19%	33%
9	3%	1%	6%	7%	15%	8%	3%	12%	16%	30%

Note: This table represents the share of firms still active in the export (panel a) and import (panel b) after t years with respect to the initial number of exporters or importers, for all firms and each category of exporters and importers (Singles, Multi-Service, Multi-Country and Stars).

Table 17: Trade Margins Over the Trade Life

Panel a: Services' Exports

	Total Exports					Average Exports					Transaction Size					Number of Transactions					Number of Products					Number of Countries					Density				
t	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars
1	0.42	0.19	0.48	1.16	2.65	0.22	0.19	0.20	0.36	0.42	0.09	0.10	0.05	0.06	0.05	2.66	1.60	4.13	6.85	10.80	1.13	1.00	2.18	1.00	2.33	1.22	1.00	1.00	2.48	2.82	0.98	1.00	1.00	1.00	0.59
2	1.34	0.65	0.96	3.51	2.96	0.57	0.44	0.45	1.16	0.64	0.10	0.10	0.07	0.13	0.08	6.03	3.84	5.40	9.13	16.05	1.25	1.15	1.56	1.22	1.72	1.56	1.29	1.35	2.15	2.60	0.95	0.98	0.95	0.94	0.83
3	2.14	1.17	1.49	4.55	3.89	0.87	0.84	0.63	1.18	0.77	0.12	0.14	0.10	0.08	0.87	9.39	5.66	7.98	14.16	20.95	1.32	1.20	1.63	1.27	1.71	1.89	1.51	1.60	2.55	2.96	0.94	0.97	0.94	0.94	0.83
4	3.78	2.67	1.72	7.97	3.99	1.69	1.99	0.84	2.07	0.79	0.16	0.21	0.08	0.09	0.12	14.52	7.74	10.02	19.77	34.52	1.36	1.26	1.60	1.26	1.66	2.17	1.69	1.76	2.90	3.25	0.93	0.95	0.93	0.93	0.84
5	4.26	3.98	1.47	6.97	4.13	1.83	2.86	0.85	0.91	0.66	0.19	0.29	0.10	0.07	0.07	19.00	10.08	10.20	27.30	42.05	1.39	1.30	1.48	1.30	1.70	2.44	1.92	1.73	3.32	3.48	0.92	0.94	0.93	0.92	0.84
6	4.28	2.71	2.35	9.28	3.82	1.23	1.42	1.53	1.10	0.69	0.19	0.30	0.12	0.07	0.08	20.47	12.13	13.63	32.88	32.66	1.39	1.29	1.67	1.28	1.60	2.64	2.03	1.84	3.72	3.55	0.91	0.94	0.88	0.92	0.86
7	2.62	2.52	1.68	3.63	2.30	1.03	1.22	1.08	0.84	0.83	0.11	0.12	0.14	0.06	0.10	16.74	14.57	9.86	23.00	18.91	1.41	1.37	1.41	1.39	1.53	2.58	2.29	1.64	3.09	3.26	0.91	0.91	0.95	0.91	0.87
8	2.69	2.44	1.67	4.83	1.89	0.86	0.85	1.01	1.19	0.50	0.12	0.13	0.11	0.11	0.09	19.24	17.10	11.36	25.98	22.45	1.42	1.34	1.43	1.53	1.47	2.95	2.59	2.10	3.49	3.74	0.90	0.92	0.91	0.86	0.88
9	3.29	3.34	1.42	6.05	1.19	0.75	0.72	0.88	1.04	0.41	0.07	0.06	0.10	0.07	0.55	21.43	20.01	11.43	33.65	16.62	1.37	1.29	1.67	1.39	1.35	3.16	3.03	2.24	4.07	2.97	0.91	0.92	0.88	0.92	0.90
10	3.94	1.62	1.21	11.92	0.59	0.84	0.92	0.94	1.24	0.17	0.07	0.07	0.12	0.07	0.03	21.91	17.27	12.93	42.52	12.61	1.37	1.47	1.43	1.24	1.33	2.97	2.20	2.50	4.76	2.56	0.91	0.88	0.92	0.96	0.89
	9.24	20.82	3.07	6.01	1.56	8.32	15.05	4.25	2.51	1.57	2.11	2.90	2.00	1.17	1.40	7.14	6.30	2.47	3.99	3.89	1.23	1.30	0.68	1.30	0.73	2.00	1.92	1.73	1.34	1.23	0.94	0.94	0.93	0.92	1.42
	9.46	8.48	2.53	10.28	0.22	3.82	4.84	4.70	3.42	0.40	0.78	0.70	2.40	1.17	0.60	8.24	10.79	3.13	6.21	1.17	1.21	1.47	0.66	1.24	0.57	2.43	2.20	2.50	1.92	0.91	0.93	0.88	0.92	0.96	1.51

Panel b: Goods' Exports

	Total Exports					Average Exports					Transaction Size					Number of Transactions					Number of Products					Number of Countries					Density				
t	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars
1	0.61	0.10	0.35	1.72	3.48	0.15	0.10	0.14	0.39	0.22	0.04	0.04	0.02	0.03	0.01	12.69	2.90	12.99	23.94	83.51	1.21	1.00	2.31	1.00	2.77	1.63	1.00	1.00	3.18	5.18	0.96	1.00	1.00	1.00	0.52
2	1.63	0.22	0.59	2.61	5.00	0.31	0.21	0.25	0.56	0.32	0.03	0.04	0.03	0.03	0.02	36.21	9.54	26.67	40.63	145.71	1.43	1.19	1.96	1.17	2.62	2.53	1.43	1.37	3.55	6.06	0.92	0.96	0.92	0.94	0.71
3	3.36	0.34	0.54	3.54	9.81	0.47	0.31	0.22	0.79	0.49	0.03	0.03	0.02	0.03	0.02	52.62	16.35	28.09	50.89	175.47	1.57	1.27	1.98	1.24	2.82	3.14	1.73	1.64	3.09	6.77	0.90	0.94	0.89	0.93	0.70
4	4.01	0.34	0.55	3.82	10.82	0.51	0.34	0.20	0.85	0.48	0.03	0.03	0.02	0.04	0.02	57.81	20.16	26.05	54.72	170.04	1.60	1.32	2.05	1.27	2.71	3.49	1.93	1.83	4.13	7.01	0.88	0.93	0.89	0.92	0.70
5	5.46	0.43	0.42	4.87	14.16	0.63	0.41	0.19	1.08	0.52	0.03	0.03	0.02	0.03	0.02	65.73	24.24	21.92	62.10	179.67	1.63	1.36	2.09	1.26	2.71	3.83	2.09	1.91	4.30	7.54	0.88	0.93	0.86	0.93	0.70
6	7.59	0.40	0.43	7.17	18.27	0.76	0.38	0.21	1.39	0.63	0.03	0.03	0.02	0.03	0.02	71.77	25.95	25.85	70.59	181.89	1.61	1.36	2.16	1.25	2.61	4.19	2.29	2.18	4.64	7.90	0.88	0.92	0.84	0.93	0.70
7	5.52	0.37	0.43	8.79	6.98	0.77	0.35	0.27	1.42	0.51	0.03	0.03	0.02	0.04	0.02	83.62	25.12	35.32	75.43	234.30	1.54	1.34	2.00	1.23	2.39	4.17	2.30	2.29	4.85	7.22	0.88	0.91	0.86	0.93	0.72
8	2.48	0.27	1.95	2.54	5.32	0.44	0.23	0.27	0.71	0.39	0.04	0.03	0.03	0.07	0.02	51.83	28.58	30.73	43.59	121.56	1.52	1.36	2.11	1.20	2.31	3.78	2.45	2.74	4.04	6.17	0.88	0.91	0.82	0.94	0.73
9	1.92	0.19	2.09	1.50	4.13	0.27	0.18	0.16	0.43	0.26	0.04	0.02	0.01	0.08	0.02	69.25	64.77	27.54	51.10	111.45	1.70	1.46	1.97	1.38	2.39	4.21	2.81	2.77	4.99	6.30	0.85	0.90	0.83	0.89	0.72
10	2.29	0.13	0.67	0.86	7.00	0.21	0.21	0.24	0.21	0.21	0.02	0.02	0.02	0.02	0.02	93.52	134.04	33.44	37.18	100.47	1.66	1.49	1.84	1.32	2.33	4.13	3.04	2.40	4.66	6.16	0.86	0.91	0.88	0.89	0.74
	9.01	4.24	1.20	2.83	4.07	4.20	4.10	1.36	2.77	2.36	0.75	0.75	0.95	1.00	2.00	5.18	8.36	1.69	2.59	2.15	1.35	1.36	0.90	1.26	0.98	2.35	2.09	1.91	1.35	1.46	0.92	0.93	0.86	0.93	1.35
	3.78	1.28	1.91	0.50	2.01	1.40	2.10	1.71	0.54	0.95	0.50	0.50	1.00	0.67	2.00	7.37	46.22	2.57	1.55	1.20	1.37	1.49	0.80	1.32	0.84	2.53	3.04	2.40	1.47	1.19	0.90	0.91	0.88	0.89	1.42

Panel c: Services' Imports

	Total Exports					Average Exports					Transaction Size					Number of Transactions					Number of Products					Number of Countries					Density				
t	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars
1	0.36	0.15	0.54	0.83	1.83	0.18	0.15	0.22	0.28	0.30	0.08	0.09	0.05	0.05	0.04	2.57	1.47	3.97	5.87	9.45	1.20	1.00	2.20	1.00	2.53	1.27	1.00	1.00	2.51	3.02	0.96	1.00	1.00	1.00	0.54
2	0.86	0.37	0.81	1.97	2.14	0.31	0.24	0.36	0.52	0.41	0.08	0.08	0.08	0.06	0.08	5.54	3.39	5.32	9.27	12.18	1.41	1.24	1.70	1.29	2.10	1.69	1.31	1.37	2.47	2.93	0.92	0.95	0.91	0.92	0.77
3	1.35	0.58	1.36	2.93	2.55	0.39	0.32	0.47	0.55	0.44	0.08	0.08	0.07	0.07	0.07	8.66	5.29	8.22	15.25	14.48	1.53	1.33	1.86	1.43	2.09	2.07	1.54	1.56	3.09	3.24	0.89	0.93	0.89	0.89	0.77
4	1.86	0.79	1.97	3.83	3.16	0.48	0.38	0.61	0.74	0.50	0.07	0.07	0.09	7.00	0.05	13.26	6.84	11.96	25.25	22.11	1.63	1.41	1.92	1.52	2.11	2.33	1.71	1.76	3.72	3.26	0.87	0.91	0.88	0.86	0.77
5	3.11	1.06	2.57	6.36	5.60	0.61	0.46	0.54	0.87	0.77	0.07	0.09	0.08	0.05	0.05	16.93	9.34	14.81	32.82	23.41	1.67	1.50	1.91	1.54	2.05	2.79	2.04	2.09	4.54	3.58	0.86	0.89	0.87	0.86	0.78
6	4.47	1.31	2.68	9.51	7.81	0.76	0.54	0.47	0.93	1.18	0.08	0.08	5.00	0.06	0.10	21.63	11.74	14.44	40.85	30.48	1.72	1.57	1.72	1.55	2.13	3.31	2.26	2.24	5.53	4.25	0.84	0.87	0.86	0.85	0.77
7	3.26	1.63	0.99	4.81	5.96	0.64	0.48	0.50	0.80	0.85	0.07	0.07	0.09	0.06	0.07	20.12	14.76	11.64	27.66	28.10	1.83	1.65	1.88	1.68	2.17	3.58	2.95	2.06	4.76	4.58	0.82	0.84	0.85	0.82	0.76
8	3.15	1.93	0.90	5.17	4.61	0.49	0.41	0.37	0.81	0.47	0.06	0.06	0.05	0.06	0.05	24.71	16.85	11.16	35.03	35.33	1.84	1.62	1.86	1.57	2.29	4.17	3.27	2.30	5.50	5.44	0.82	0.84	0.86	0.85	0.74
9	3.10	1.70	1.51	5.94	3.61	0.45	0.28	0.79	0.69	0.33	0.04	0.04	0.06	0.07	0.02	27.08	23.16	14.96	31.41	34.58	1.81	1.72	1.92	1.41	2.18	4.52	4.11	2.88	4.68	5.67	0.82	0.82	0.81	0.91	0.76
10	4.00	1.17	0.89	15.35	2.37	0.54	0.34	0.54	1.34	0.27	0.06	0.08	0.07	0.07	0.02	26.89	16.98	10.94	56.72	32.33	1.74	1.75	1.41	1.39	2.25	5.19	4.18	3.00	7.89	6.41	0.83	0.83	0.88	0.86	0.76
	8.71	6.99	4.76	7.70	3.06	3.39	3.07	2.45	3.11	2.57	0.88	1.00	1.60	1.00	1.25	6.59	6.35	3.73	5.59	2.48	1.39	1.50	0.87	1.54	0.81	2.20	2.04	2.09	1.81	1.19	0.90	0.89	0.87	0.86	1.44
	11.18	7.72	1.65	18.57	1.30	3.00	2.27	2.45	4.79	0.90	0.75	0.89	1.40	1.40	0.50	10.46	11.55	2.76	9.66	3.42	1.45	1.75	0.64	1.39	0.89	4.09	4.18	3.00	3.14	2.12	0.86	0.83	0.88	0.86	1.41

Panel d: Goods' Imports

	Total Exports					Average Exports					Transaction Size					Number of Transactions					Number of Products					Number of Countries					Density				
t	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars	All	Singles	Multi-S.	Multi-C.	Stars
1	0.63	0.19	0.55	1.80	3.50	0.25	0.19	0.22	0.56	0.49	0.05	0.06	0.02	0.04	0.02	12.04	3.81	19.23	22.26	70.30	1.25	1.00	2.26	1.00	2.98	1.30	1.00	1.00	2.43	3.18	0.96	1.00	1.00	1.00	0.52
2	1.84	0.67	1.44	3.26	6.25	0.54	0.39	0.40	1.11	0.84	0.04	0.04	0.02	0.07	0.03	32.88	11.73	42.55	40.19	117.18	1.52	1.20	2.06	1.23	2.90	1.63	1.23	1.33	2.21	3.17	0.92	0.96	0.91	0.94	0.68
3	2.44	0.94	2.07	3.95	6.55	0.67	0.48	0.54	1.34	0.92	0.03	0.03	0.02	0.06	0.03	45.24	18.59	51.34	48.16	128.77	1.69	1.31	2.21	1.29	2.99	1.81	1.35	1.48	2.25	3.22	0.89	0.94	0.88	0.93	0.69
4	2.53	1.01	2.60	2.89	6.29	0.62	0.50	0.64	0.86	0.78	0.03	0.03	0.02	0.04	0.02	55.42	25.65	63.64	56.91	134.60	1.81	1.40	2.34	1.35	3.00	1.98	1.47	1.55	2.48	3.32	0.87	0.93	0.87	0.91	0.68
5	2.83	1.32	2.70	2.52	6.90	0.64	0.50	0.67	0.72	0.93	0.02	0.03	0.02	0.03	0.02	61.37	28.93	71.59	50.76	144.98	1.89	1.46	2.25	1.40	3.11	2.07	1.56	1.62	2.51	3.30	0.86	0.92	0.87	0.90	0.69
6	3.38	1.28	3.64	2.99	8.57	0.70	0.51	0.76	0.78	1.06	0.02	0.03	0.02	0.03	0.02	65.29	33.01	80.64	59.73	139.11	1.97	1.51	2.34	1.43	3.23	2.18	1.64	1.68	2.60	3.45	0.85	0.91	0.86	0.88	0.67
7	3.68	1.72	4.13	3.75	7.97	0.79	0.52	0.71	1.07	1.25	0.03	0.03	0.02	0.03	0.03	64.14	35.01	91.74	69.74	115.08	2.02	1.56	2.50	1.44	3.22	2.23	1.69	1.77	2.63	3.46	0.84	0.90	0.85	0.89	0.67
8	3.89	1.96	5.19	3.40	7.89	0.69	0.53	0.89	0.69	0.95	0.03	0.02	0.07	0.02	0.03	65.20	41.03	80.99	73.22	106.89	2.03	1.61	2.61	1.43	3.08	2.22	1.74	1.77	2.47	3.31	0.84	0.89	0.84	0.89	0.70
9	4.04	1.34	2.05	3.79	10.49	0.64	0.43	0.58	0.86	0.98	0.03	0.03	0.04	0.03	0.02	67.32	34.16	62.61	103.84	118.24	2.04	1.63	2.44	1.37	3.07	2.22	1.75	1.70	2.61	3.15	0.84	0.88	0.85	0.91	0.72
10	3.26	1.06	2.56	3.05	7.65	0.51	0.34	0.90	0.63	0.62	0.02	0.02	0.02	0.02	0.02	56.53	37.00	74.61	51.06	90.00	2.05	1.70	2.41	1.42	2.90	2.21	1.88	1.39	2.62	2.86	0.84	0.87	0.91	0.87	0.74
	4.50	6.81	4.91	1.40	1.97	2.56	2.63	3.05	1.29	1.90	0.40	0.50	1.00	0.75	1.00	5.10	7.59	3.72	2.28	2.06	1.51	1.46	1.00	1.40	1.04	1.59	1.56	1.62	1.03	1.04	0.90	0.92	0.87	0.90	1.33
	5.19	5.47	4.65	1.70	2.19	2.04	1.79	4.09	1.13	1.27	0.40	0.33	1.00	0.50	1.00	4.70	9.71	3.88	2.29	1.28	1.64	1.70	1.07	1.42	0.97	1.70	1.88	1.39	1.08	0.90	0.88	0.87	0.91	0.87	1.42

Note: This table represents the evolution over time of the total exports (panel a) and imports (panel b) and their margins defined in (1), for all firms and each category of exporters and importers (Singles, Multi-Service, Multi-Country and Stars). In the last two rows of each panel present the ratio between the 5th year and the 10th year with respect to the 1st. Values are in millions of Euros.

Table 18: The Dynamics of the Continents Served

Panel a: Exports

		Services t						Goods t					
		East Europe	**North America**	**South America**	**Asia**	**Africa**	**Australia**		**East Europe**	**North America**	**South America**	**Asia**	**Africa**	**Australia**
	East Europe	100%	9%	7%	11%	8%	6%	Europe	100%	7%	6%	8%	7%	4%
	North America	9%	100%	4%	11%	8%	5%	North America	6%	100%	6%	7%	5%	4%
t+1	**South America**	3%	3%	100%	6%	7%	7%	South America	4%	5%	100%	5%	5%	7%
	Asia	7%	8%	5%	100%	7%	6%	Asia	6%	6%	3%	100%	6%	3%
	Africa	5%	5%	8%	10%	100%	7%	Africa	6%	5%	5%	7%	100%	5%
	Australia	3%	3%	4%	6%	4%	100%	Australia	4%	5%	6%	4%	4%	100%

Panel a: Imports

		Services t						Goods t					
		East Europe	**North America**	**South America**	**Asia**	**Africa**	**Australia**		**East Europe**	**North America**	**South America**	**Asia**	**Africa**	**Australia**
	East Europe	100%	9%	6%	9%	7%	5%	Europe	100%	8%	6%	8%	6%	8%
	North America	8%	100%	4%	9%	7%	2%	North America	6%	100%	5%	6%	5%	5%
t+1	**South America**	5%	5%	100%	7%	8%	6%	South America	3%	3%	100%	3%	6%	6%
	Asia	7%	8%	4%	100%	6%	5%	Asia	6%	7%	5%	100%	5%	6%
	Africa	7%	7%	7%	8%	100%	7%	Africa	4%	3%	6%	4%	100%	5%
	Australia	5%	4%	10%	6%	6%	100%	Australia	2%	3%	5%	2%	4%	100%

Note: This table represents the probability that a firm exporting (panel a) or importing (panel b) in one continent in two subsequent years (t and t+1) adds one more continent in t+1.

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