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INTERNATIONAL SERVICE TRADE: A CASE STUDY OF INTERNET CONTRIBUTION IN PORTUGAL

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Abstract: **In the literature, there is large evidence that Internet contributes a lot to service trade and productivity augmenting. The aim of the research is to establish the nature of the relationship between internet availability an internet usage and international service trade. To investigate above relationship, we employed the most recent World Bank Database on Portugal from 1991 to 2014 which reflects the period of internet availability. Our dependent variable is proxied with foreign direct investment as a measure of international service trade while internet users, GDP growth rate and population growth rate are used as explanatory variables. Our findings therefore show that internet usage has a positive and significant impact on international service trade over the time period.**

Keywords: **International service trade, Internet, Growth, Development, Portugal.**

1. INTRODUCTION

Growth of trade in service is has not been consistent and even all over the world. Statistics holds that only 20 percent of the world trade is accounted for, out of the whole 60 percent of its contribution to the world production, (B. C. Freund & Weinhold, 2002). One of the main reasons why international trade service has been constrained is because most of the services rendered necessitate a physical contact between the consumer and producer.

According to (Meltzer, 2014), about 2.3 billion of the world population accesses the internet which is projected to reach 5 billion by 2020. Such growth in the internet availability is inextricably tied to its role in information sharing commerce. There is however a disproportionate impact of its availability in developing countries. While about 80% of North American population has an internet access, this value is relatively low in Africa at about 15% (see OECD (2017)). Various social network including such as Facebook, twitter-do not only bring friends together, but also generates a platform for commerce. In particular, the parochial view of the effects of internet on world trade is derived on the experiences of online transactions and purchases. For instance, one of the leading online shopping business venture-the Amazon or eBay has shown a remarkable ease in selling and purchasing online goods while also creating platforms for businesses. Additionally, most online degree programs, health care, financial reporting, conferences, and a host of numerous activities take place on the internet. Internet as a form of new technology as provided a means of exchange that serves as an answer to the problem in international trade services, reduction transportation cost between the producer and consumer, (C. L. Freund & Weinhold, 2004).

There is large evidence that Internet contributes a lot to service trade. Examples are Infosys in India providing software consulting service to international client such as Apple Computers, Microsoft and Lucent Technologies. South African Medical-transcription Company, which receives digital recordings from abroad electronically and transcribing to text file the next day.

The usual question to be answered is, does electronic sharing of information via the Internet solve the issue of geography of service provision significantly. Furthermore, many services need the consumer's needs and feedback for quality improvement, and these can only the obtained if they both speak in the same language. In case of misunderstanding, resolutions will be less problematic if they are both bounded with the same legal system. Lastly, there security concern with external information access of some document or systems. Then, some services involving close communication, and non-standardization contribute to quality; Internet cannot be expected to have a huge impact on international trade.

The aim of this research is investigate the nature of the relationship between trade in services and internet in Portugal. Hence, we wish to further confirm if Internet statistically affects international service significantly in practice, we will estimate a general model of service trade for countries and test if the introduction of data on Internet involvement, as a measure by the number of Internet hosts in a country, is statistically significant. In general, our result shows evidence that Internet is closely related to the growth in service trade. It is therefore expected that a positive GDP growth abroad will have a positive impact on the Portuguese export growth because increase in the demand for internet access increases such chances for advertisement and development of services in the country. Similarly, a growth of population is expected to contribute to productivity through a rise in trade and services. Our findings on the effects of GDP and population growth rate are found to statistically insignificant based on the large p-values. Hence, these variables have no impact on trade and services.

The rest of this research is divided as follows. Following the introduction is literature review in section 2 which analyses a related literature on the subject matter. Section 3 presents the data and descriptive statistics of the variables while sections 4 and 5 is the methodology and empirical findings respectively. We however leave the conclusions for section 6.

2. LITERATURE REVIEW

There are few previous reviews that check the relationship between International trade and Internet introduction. However, just few of these papers have taken advantage of the longer time series that are now available. Some other recent papers have also tried to visit the possible concern around the endogeneity and omitted variables related to Internet involvement.

(C. L. Freund & Weinhold, 2004) was the first to evaluate this issue. With a sample of fifty-six developed and middle income countries between the time frames of 1995 to 1999. Using an Internet measure captures the number of website domain names of each country; for instance, websites ending in ".us" are classed to the United States. But this measure was constrained by limited availability of data. After performing a panel growth regressions and cross sectional traditional gravity estimation, their findings were that only ten percent increase in growth of internet users brought about a one percent export. Also evidence shows that internet have direct impact on effect of international trade.

(Tang, 2006), using a data set between 1975 to 2000, investigated how communications technologies impacts US import of homogenous goods. He finds that all measures of technology such as telephones, mobile phones and computers have a positive and significant impact on the import of differentiated goods in the US, but not those good sold on an organized exchange. Just ten percent increase in export was contributed but internet related connections that lead to an increase in US import by one percent of differentiated goods.

(Vemuri & Siddiqi, 2009) and (Mattes, Meinen, & Pavel, 2012) found a common ground view in their empirical trade research by estimating gravity regression that controls for omitted variables through the inclusion of fixed effects.

(Mattes et al., 2012) built a dummy variable composite ICT index that unite measures of the Internet, mobile phone and education levels for EU countries for the period of 1995 to 2007. They found out that countries with an ICT index above the mean have fifty-two percent higher international trades that those below the mean.

(Vemuri & Siddiqi, 2009) found that ten percent increase in internet adoption increases bilateral trade by two percent, with an estimation that controlled for unobserved international factors.

(Clarke & Wallsten, 2006) addressed the potential endogeneity issue involved in the adoption of internet in international trade. They used a cross-section of 101 countries in year 2002 and took internet host in telecommunications sector. They checked to see the importance of internet between and within developed and underdeveloped countries.

They came to the conclusions that internet adoption increase export from developing to underdeveloped country and nothing else. Furthermore, they stated internet is statistically significate in developing country but otherwise for the developed country.

(Blum & Goldfarb, 2006) used gravity model to test the level of digital goods consumption over the internet. Test proves that there is significant effect between distance and website household visit, even when sunk cost is not involved. (Hortaçsu, Martínez-Jerez, & Douglas, 2009) also share the same view, that distance is a important determinate of trade and internet adoption fills this gap. Example of this is the auction site eBay and MercadoLibre.

According to (Sanders, 2000), "If a French chemicals company want to sell in Chine, it would spend a lot of money to expand in Asia. Now the firm can post on out site and the Chinese buyer looking for PVC is one click away for the French seller" this was found in a survey of 50 global eMarketplaces that internet makes exchange between buyer and seller abroad.

More literature like (Hong & Shum, 2006) found out that the average search cost for textbooks is under $3, which as (Lieber & Syverson, 2011) found, is lower than the cost of transporting to an online retailer. Therefore, Internet has decreased the cost of searching for overseas agents, distributor or retailers. Most countries create a guidance on custom procedures online which makes it safe for online trader selling via the internet local and internationally. Example of this is the European Custom and Information Portal, which which creates and guidance of importation and exportation (European Commission, 2012a). (Brynjolfsson, Hu, & Smith, 2003) committed on the context of online book retailer, that permits increment at the product extensive margin can be reduced through fixed cost of another variety. Therefore, the portion of the cost bears the same on both the domestic and international firms will not affect the international trade.

(Spulber, 2009), was of the view that, Internet has given an opportunity for advertising medium which was less utilized before. The traditional methods of advertisement as been through billboards, television, newspaper which does not spread information as efficiently and adequately as the Internet. The traditional advertisers only focus on sharing information in limited demographic areas of a particular market audience of the market. Internet platform as allowed firms to learn far more important information about their consumer wants and needs using information collated from the history of website visited daily and terms entered in the search engine by the consumers. With the low cost of online advertisement, it can be targeted to specific categories rather than the traditional methods. Hence, the viewers can get basic needed information and that in-turn increases the sale of the producer and these maybe domestic or international (Evans, 2009).

2.1 Internet and Economic Trade:

Internet was introduced about three decades ago and since then it has become viral and ever-increasing the world of global international trade and economic development. Internet trade is now the order of the day as it is being adopted in all economic sectors. Internet has been tagged as the "technological enabler"—technological development that changes how economy activity is organized and improves the production level in most countries. Its introduction has given room for new business to emerge and creation of new process and innovation. While also contributing to the improvement of international competiveness, flexibility and the growth of small and medium scale enterprises. According to (Meltzer, 2014), internet connectivity creates a massive opportunities for businesses to have access to productivity inputs like service delivery, consultancy and others.

Furthermore, according to the Organization for Economic Cooperation and Development (OECD), Internet penetration has increased production effectively than any other technology invented up to date, including electricity.

Since the inception of Internet it has been greatly wide spread—a faster spread rate than any other known technology and as also open new, and fast expanding markets internationally or locally. Over the last five years, traffic online as greatly increase since the its invention in the early 1990s at an annual growth rate of 66 percent (Federal Communications Commission, 2010). More than one-quarter of the world population now (1.7 billion people) are using the internet to communicate, innovate and to trade on a daily basis both locally and internationally as reported by (Miniwatts, Internet World Stats 2009). Most of these daily internet users are new consumers that engage in services like emailing, and also producers use it to sell their goods and services through advertisement, online market and so on.

Internet involvement as also been used by companies as platform to provide services such as applications, search engines and commerce site which are considered substantial for developing and developed economies. These companies act like a intermediaries between the upstream producers and the users which are the consumers, example of companies like these are the likes of Amazon and eBay to mention a few that are based in bringing the sellers and buyers with their platform, companies like Google, Bing and Yahoo Search provide search engine for users to find information they look require on the web. There are also some affiliation that the internet as created which has been explored in the telecommunication company, introduction of "app store" which means application store, that allows computer programmers develop and sell their software thought the telecommunication database and approval to the device buyer; such as social services like Facebook, Twitter among many that promote information sharing, also video and photo sharing sites like Instagram,

YouTube where the consumer create what is been posted, dating sites like match.com and Imo and so on uses this platform for love match making, to consider a few. These companies starts as an idea in the garage and with the help of internet as made it a reality and is serving as a major source of employment and speeding's the economic growth. Internet ad-supported industry has created more than 3 million employments in the United States alone as reported by (Hamilton Consultants 2009). These companies are multinational firms ranging to some 20,000 small business with not less than 500 workers, raising up to $300 billion to the United States Gross Domestic Product (Hamilton Consultants 2009). Soon the Annual Internet based in commercial will reach $1 trillion (Brian Hindley, Fredrik Erixon, 2009). (U.S. Census Bureau 2009) reported that, In the year 2008, online retail sales were over $132 billion.

(Srivastava, lara; Kelly, Tim; Lu, Chin Yung; Yu, 2006) found that internet and telecom services contributed over 3.3 percent to the GDP in 2004, in contrast to 1.8 percent contributed in 1990, these means internet is virtually adopted by every economy both the developing and developed economy all around the world.

(Hamilton Consultants 2009) studied that, Internet corporations in the United States earn large share of their revenue abroad. This is only possible because of the limitless level of Internet, and it has become important to exporters to trade abroad and it's a key driver of international trade. Google Cooperation is one of the beneficiary of internet involvement and earns huge sum of money internationally, generating 53 percent of their total revenue in the 2010 for abroad, and more than half of the Google search engine are been used outside the United State (Google Investor Relations 2010).

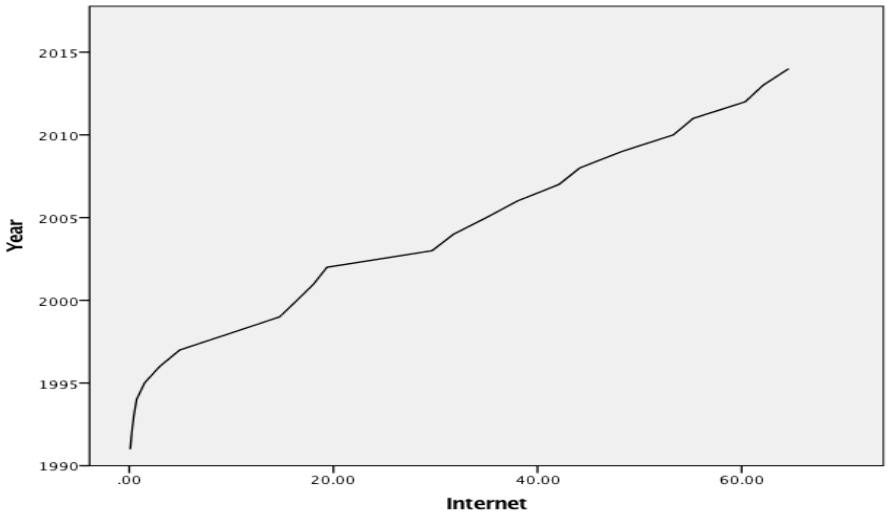
Internet as assisted more in the traditional sectors, which are good and services to aid spread their sales abroad. It as empowered businesses of all level and sizes to attain their dreams of international trade inform of online trade or otherwise.

An Example is a Company in South Africa, where women market and sell hand-woven hammock online around the world from their local business place (Simon Romero (2000).

Finally, Internet has been a dynamic open force for businesses into the global economy, it has helped produce a remarkable growth since its intervention. This economic growth as be fueled and accompanied by the high and increasing demand for internet internationally. Many governments as also aid new trade, or inform of new innovation and as also put in place right control, and restriction of information across the internet.

3. DATA AND DESCRIPTIVE STATISTICS

The data used in this research was sourced from the most recent World Bank Database on Portugal. The data was drawn from 1991 to 2014, which in total makes 24 years observed. Since internet availability is of recent origin, the time period reflects the its availability and subsequent use by users. We are unable to obtain further data on the subject based on the impending constraint of availability. However, for the main purpose of the study, the sample was restricted to Population total for each year (POP), Gross Domestic Product (GDP annual %), Internet users (per 100 people), and lastly Foreign Direct Investment, net inflow (% of GDP). There was no missing data in the observations.



Source: Authors' computations

Figure 1: Internet Users in Portugal Source: Authors' computations

Furthermore, Figure 1 shows the evolution rate of Internet users variable over the years in Portugal. Internet was adopted in the early 1990s for all countries and also in Portugal. However, since then it has been on the increase in the development and economic wise and it also contributes to the FDI as it encourages international trade in the country.

By 2006, there were more than 50% of Internet users in the country. Over time more user exhibits a growth in the number of usage as expected.

4. METHODOLOGY

The quantitative methodology applied in this research is an Ordinary Least Square (OLS) technique, based on a gravity equation of trade (see (Deardorff, Hymans, Stern, & Xiang, 2000; Helliwell, 1996) as to empirically describe a pattern of trade from the distance that exist between countries.

Evolvement of Internet as bridge this gap. The model used in subsequent work with a gravity equation for trade as increased with the size of foreign market and also domestic economy. The empirical fit of the model tends to be very helpful in explaining the inter-relationship that exist between FDI and Internet (as a substitute for distance), GDP and POP (Population).

The gravity equation is basically underlined "gravitational" relationship

$$FDI\ p = \beta_0 + \beta_1\ INTERNET + \beta_2\ GDP + \beta_3\ POP \qquad \text{eq.(1)}$$

Where FDI p is the Foreign Direct Investment in Portugal, Internet User (Internet), GDP is Gross Domestic Product and POP is the Population.

4.1 Coefficients Expectation:

It is therefore expected that the coefficients of internet variable to be positive. This is premixed on the productivity augmenting theory of internet which aids business and users to interact and engage in trade. Hence, the more the internet usage, the higher its impact will be on trade. Similarly, based on the conventional growth theories, a rise in GDP growth rate is expected to impact positively on trade in services. It is also expected that the population variable will have a positive impact on trade or still negative in some instances.

	Mean	Std. Deviation	N
FDI	3.1882	2.31567	24
Internet	27.2485	22.52962	24
GDP	1.2706	2.47704	24
POP	10319160.4583	229960.97028	24

Source: Authors' computations

Figure 2: Descriptive Statistics

Figure 2, show that the sample size explored is 24 - 24 years. This is primarily because internet come to existence in the 1990s and that is why we only have 24. Similarly, the mean and the standard deviations of the variables are shown above with Population - POP - having the largest standard deviation – volatility - of 229960.97.

An important finding can be seen in Figure 3, as shown below. Internet and Population has a positive contribution to FDI, while it is a negative relationship in the case of GDP.

		FDI	Internet	GDP	POP
Pearson Correlation	FDI	1.000	.589	-.439	.456
	Internet	.589	1.000	-.579	.876
	GDP	-.439	-.579	1.000	-.464
	POP	.456	.876	-.464	1.000
Sig. (1-tailed)	FDI	.	.001	.016	.013
	Internet	.001	.	.002	.000
	GDP	.016	.002	.	.011
	POP	.013	.000	.011	.

N	FDI	24	24	24	24
	Internet	24	24	24	24
	GDP	24	24	24	24
	POP	24	24	24	24

Source: Authors' computations

Figure 3: Correlations

Furthermore, it implies that when Internet User increases by 100 users, Foreign Direct Investment (FDI) increases by 5%. Also an increase in the POP by one more foreign investor increases the FDI by 4%. While an increase in the GDP by 1% decreases the FDI by 4%, this maybe because Portugal is a small country with little foreign investments. Thereby, most of the trades are done locally and they the market is saturated that foreign investors are also not interested in trade investment. This can also can be seen from the aspect that among the European Union (EU) countries they are among the least buoyant economy. Also considering the fact that, GDP has a negative relationship with other variables such as Population and Internet User in the correlation regression.

5. EMPIRICAL FINDINGS

The regression result is shown in the Table 1 below.

Table 1: Regression Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	25.574	37.344		.685	.501
	Internet	.074	.041	.717	1.790	.089
	GDP	-.123	.204	-.132	-.602	.554
	POP	-2.349E-6	.000	-.233	-.633	.534
a. Dependent Variable: FDI						

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.611[a]	.374	.280	1.96505	2.160
a. Predictors: (Constant), POP, GDP, Internet					
b. Dependent Variable: FDI					
Source: Authors' computations					

In addition to the theoretical framework, in order to empirical investigate the relationship between international trade and internet penetration in Portugal. As observed from table 1 above, while the internet variable is statistically significant at 10% level, the other coefficients such as the population and GDP are statistically insignificant. Using the standardized estimates, the internet coefficient is positively associated with international trade. By implications therefore, an additional internet use by every 100 persons in Portugal leads to an about 0.7% increase in international trade. This is not surprising as internet connectivity in ushers in novelty in communication and information exchange. Also as mentioned elsewhere in this paper, the initial research question on does electronic sharing of information via the Internet solve the issue of geography of service provision significantly which also. Furthermore, many services need the consumer's needs and feedback for quality improvement, and these can be of note that the effects of internet however have varying effects on goods and services. For instance, internet technology has a profound impact on the efficiency and development of the global market required for trade in goods (see (Rauch, 1999; Roberts & Tybout, 1997)). Trade in services however reflects the transmission of information, ideas to effective transaction and trade.

From Table 2, it was found that the independent variables such as Internet, GDP and Population can only explain 3.7% of Foreign Direct Investment, and this is very small and almost insignificant. The Durbin-Watson shows that, there is no evidence of autocorrelation in our estimation.

From our findings, internet connectivity encompasses both the good and service delivery which lead to a profound positive impact in trade. Given that the population growth rate and GDP are found to be insignificant in our model, we can conclude that these variables have no influence on trade over the time period. Even though it is expected that higher population growth rate should spur international trade since the availability of human transactions is will allow for trade promotion. Similarly, rise in GDP should also have a positive impact on trade, but our empirical finding holds a contrary evidence of insignificance.

6. CONCLUSION

In this paper we have explored the interrelationship that exists between Internet penetration and Foreign Direct Investment of goods and services in Portugal. Earlier studies find a positive and significant relationship between them (Clarke & Wallsten, 2006; C. L. Freund & Weinhold, 2004; Tang, 2006). However, literatures have shown that period before the introduction of Internet and internet related services, international trade has been slow and small.

Form the context explored from World Bank Database, this research paper finds that, Internet have more role to play than what has been illustrated in the literatures. Controlling the independent variables to just internet, GDP and population, we found that, Internet has just a little clear cut contribution in international trade and this is also similar to the findings of other literature. However, this research paper finds that, an increase in adoption of internet will have a positive impact on international trade because it gives more room for international community participate.

In the absence for multilateral trade barriers, we therefore find a stronger effect of Internet in terms of significance and economic development. However, one of the limitation of this study is that we are not including some unobserved bilateral factor that are also correlated with FDI and Internet internationally.

This research paper suggests that one needs the research more to identify the additional contribution of internet on Foreign Direct investment in Portugal. There is also a possibility that, Internet is more likely to impact the economy in some sector which is not in consideration or that is not measured like small local manufactural shipping goods abroad under the custom radar. Internet may also have higher impact in some sectors than some others and such sectoral resource allocation of trade will not be seen in our research conducted.

6.1 Limitation:

Apparent limitation of this study is the small size of 24. Although, the author intends to expand the sample size, however, this becomes nearly impossible since the internet started about 24 years coupled with the fact that the available data are yearly data. The enhancement of the sample size would have been possible if the data are monthly data. Additionally, a robust empirical work on the nature of such relationship can be properly established with Augmented Distributed Lag Model (ARDL) will takes account of the small sample time series properties of the variables into account while checking for stationarity and long-run cointegration of the underlying time series data.

REFERENCES

[1] Blum, B. S., & Goldfarb, A. (2006). Does the internet defy the law of gravity? Journal of International Economics, 70(2), 384–405. http://doi.org/10.1016/j.jinteco.2005.10.002

[2] Brian Hindley, Fredrik Erixon, H. L.-M. (2009). Protectionism Online: Internet Censorship and International Trade Law, 3(12).

[3] Brynjolfsson, E., Hu, Y. (Jeffrey), & Smith, M. D. (2003). Consumer Surplus in the Digital Economy: Estimating the Value of Increased Product Variety at Online Booksellers. Management Science, 49(11), 1580–1596. http://doi.org/10.1287/mnsc.49.11.1580.20580

[4] Clarke, G. R. G., & Wallsten, S. J. (2006). Has the internet increased trade? Developed and developing country evidence. Economic Inquiry, 44(3), 465–484. http://doi.org/10.1093/ei/cbj026

[5] Deardorff, A. V, Hymans, S. H., Stern, R. M., & Xiang, C. (2000). Forecasting U. S. Trade in Services, (467), 1–41.

[6] Evans, D. S. (2009). The Online Advertising Industry: Economics, Evolution, and Privacy. Journal of Economic Perspectives, 23(3), 37–60. http://doi.org/10.1257/jep.23.3.37

[7] Federal Communications Commission. (2010). Connecting America: The National Broadband Plan. America's Plan, ch 4, 1–376. http://doi.org/10.1002/yd.20038

[8] Freund, B. C., & Weinhold, D. (2002). The Internet and International Trade in Services, 92(2).

[9] Freund, C. L., & Weinhold, D. (2004). The effect of the Internet on international trade. Journal of International Economics, 62(1), 171–189. http://doi.org/10.1016/S0022-1996(03)00059-X

[10] Google Investor Relations, (2010). Google Announces First Quarter 2010 Financial Results (Apr. 15, 2010), http://investor.google.com/earnings/2010/Q1_google_earnings.html.

[11] Hamilton Consultants (2009), Economic Value of the Advertising Supported Internet Ecosystem 24. Hamilton Consultants, (June 10, 2009). http://docplayer.net/798625-Economic-value-of-the-advertising-supported-internet-ecosystem.html

[12] Helliwell, J. F. (1996). Do National Borders Matter for Quebec's Trade? Canadian Journal Of Economics, 29(3), 517–522. http://doi.org/10.2307/136247

[13] Hong, H., & Shum, M. (2006). Using Price Distributions to Estimate Search Costs. RAND Journal of Economics, 37(2), 257–275. http://doi.org/10.1111/j.1756-2171.2006.tb00015.x

[14] Hortaçsu, A., Martínez-Jerez, F. A., & Douglas, J. (2009). The Geography of Trade in Online Transactions: Evidence from eBay and MercadoLibre. American Economic Journal: Microeconomics, 1(1), 53–74. http://doi.org/10.1257/mic.1.1.53

[15] Lieber, E., & Syverson, C. (2011). Online vs. Offline Competition. The Oxford Handbook of the Digital Economy, (January), 1–43. http://doi.org/10.1093/oxfordhb/9780195397840.001.0001

[16] Mattes, A., Meinen, P., & Pavel, F. (2012). Goods follow bytes: The impact of ICT on EU trade. DIW Working Paper, (1182), 1–25.

[17] Meltzer, J. (2014). Supporting The Internet As A Platform For International Trade Opportunities For Small And Medium-Sized Enterprises And Developing Countries. Global Economy & Development, (February), 69.

[18] Miniwatts, Internet World Stats, (2009), Internet World Users by Language: Top Ten Languages. Int'l Telecomm. Union [ITU], The World in 2009: ICT Facts and Figures 1 (2009), (chart) http://www.internetworldstats.com/stats7.htm;

[19] Org. for Econ. Cooperation & Dev. [OECD], (2007).Broadband and the Economy:Ministerial Background Report 8-9, OECD Doc.DSTI/ICCP/IE(2007)3/FINAL.

[20] Rauch, J. E. (1999). Networks versus markets in international trade. Journal of International Economics, 48(1), 7–35. http://doi.org/10.1016/S0022-1996(98)00009-9

[21] Roberts, B. M. J., & Tybout, J. R. (1997). American Economic Association The Decision to Export in Colombia : An Empirical Model of Entry with Sunk Costs. American Economic Association, 87(4), 545–564.

[22] Sanders, M. (2000). Sizing Global Online Exports, The Forrester Report, Nov 2000, www.forrester.com

[23] Simon Romero, (2000). Weavers Go Dot-Com, and Elders Move, N.Y.Times, available at http://www.nytimes.com/learning/teachers/featured_articles/20000330thursday.html.

[24] Spulber, D. F. (2009). The map of commerce: Internet search, competition, and the circular flow of information. Journal of Competition Law and Economics, 5(4), 633–682. http://doi.org/10.1093/joclec/nhp011

[25] Srivastava, lara; Kelly, Tim; Lu, Chin Yung; Yu, L. (2006). ITU digital.life: ITU Internet Report. Int'l Telecomm. Union, 73, 1–135.

[26] Tang, L. (2006). Communication costs and trade of differentiated goods. Review of International Economics, 14(1), 54–68. http://doi.org/10.1111/j.1467-9396.2006.00560.x

[27] U.S. Census Bureau, (2009). Estimated Quarterly U.S. Retail Sales (Adjusted): Total and E-commerce (chart)

[28] Vemuri, V. K., & Siddiqi, S. (2009). Impact of Commercialization of the Internet on International Trade: A Panel Study Using the Extended Gravity Model. The International Trade Journal, 23(4), 458–484. http://doi.org/10.1080/08853900903223792