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Testing the validity of the Linder hypothesis for Croatia

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Abstract

This paper presents empirical evidence on the validity of the Linder hypothesis in the case of Croatia. According to the Linder hypothesis, one of the new theories of international trade, countries with a similar level of income per capita should trade more. In order to investigate the trade pattern of Croatia's international trade, a panel regression model is formulated including 184 Croatia's import partner countries in the period from 2000 to 2016. The Linder effect was displayed and calculated using the Linder variable expressed as an absolute difference between GDP per capita of the importing and the exporting country. The cross-country panel regression model is estimated using Pooled OLS, Fixed and Random effects models. Results of the analysis have shown that the validity of the Linder hypothesis for Croatia cannot be accepted. Instead, the structure of Croatia's trade is in line with the gravity model of international trade.

Keywords: Croatia, gravity model of international trade, Linder hypothesis, panel data.

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Introduction

Early economists asked fundamental questions why countries trade, what are the gains from trade and what determines patterns of international trade. Mercantilists believed that international trade is zero sum game where only exporting country has gains from trade at the expense of importing country. In that time international trade has not yet been recognized as mutually beneficial for all countries involved in the process of trade. Smith (1776) formulated a theory of absolute advantages. He recognized international trade as mutually beneficial for both countries involved in trade but could not explain trade pattern when one country has absolute advantages in production of all goods. Ricardo (1817) created the theory of comparative advantages which stated that country will specialize in production of good in which it have greater relative productivity of labour. Shortcoming of

classical theories of international trade was the restrictive assumption of labour as the only factor of production and explanation of patterns of international trade only from the supply side. Heckscher-Ohlin theory, Heckscher (1919) and Ohlin (1933), argue that relatively capital-abundant country will have comparative advantage and specialize in production and export of capital-intensive good while relatively labour-abundant country will have comparative advantage and specialize in production and export of labour-intensive good. In that framework international trade would happen between rich and poor country. Heckscher-Ohlin theory is arguably the most empirically tested theory of international trade, but empirical results do not give firmly support for this theory. According to Trefler (1995) the precision of this theory in explaining patterns of international trade is no greater than a coin toss.

Leontief (1953) found paradox in the Heckscher-Ohlin theory while attempting to test it empirically on the data for United States. He found that United States specialized in exports of labour-intensive goods and import capital-intensive goods, which is contrary to the Heckscher-Ohlin theory. On the other side, Linder (1961) proposed a possible resolution of the Leontief paradox that questioned Heckscher-Ohlin theory. He stressed the importance of demand side arguing that trade will happen between countries of similar demand structures.

Goal of this paper is testing the validity of Linder hypothesis for Croatia using Linder variable representing absolute difference between trading partner countries gross domestic product per capita and gravity model of international trade. Hypothesis of the paper is:

H1... "Croatia's imports trade pattern complies to Linder hypothesis contrary to gravity model of international trade".

Hypothesis of the paper will be tested using cross-country panel regression analysis on the data for Croatia and its import partners from 2000 to 2016. Paper is structured and organized in six chapters. After the introduction second chapter elaborates theoretical aspects of Linder hypothesis. In the third chapter literature review is presented while methodology and data are explained in the fourth chapter. Fifth chapter displays empirical analysis, results and discussion. Final chapter exhibits concluding remarks.

Theoretical aspects of Linder hypothesis

Linder theory is demand-side oriented which is in the contrast with the supply-side oriented classical theories of international trade. Linder challenged Heckscher-Ohlin theory explaining that it ignored demand-related factors which are important in explaining patterns of international trade. His prediction is that the most of trade should occur between countries of similar demand structures and similar level of economic development. Linder coined his famous hypothesis (Linder, 1961) which stated that "*the more similar the demand structure of the two countries the more intensive potentially is the trade between these two countries*". Linder theory is one of several „new" theories, which have arisen after Leontief testing of Heckscher-Ohlin theory. Some of the rigid assumptions of the Heckscher-Ohlin theory have been questioned out. Other new theories of international trade include gravity model of international trade, Kravis availability theory, theory of intra-industry trade, product life-cycle theory and theory of competitive advantage. Linder variable representing Linder effect catches differences in per capita income between countries implying higher expected trade with smaller difference in national incomes. Per capita income is used as proxy for preferences. According to Linder domestic exporters will export to countries with similar trade preferences as domestic country (Kennedy,

McHugh, 1983). Heckscher-Ohlin theory assumed production and trade of capital-intensive and labour-intensive products while Linder theory made a difference between primary and industrial (manufactured) goods. Pattern of trade in Heckscher-Ohlin theory considered trade between developed and developing countries (North-South trade) while Linder predicted that the most of trade will occur between developed countries (North-North trade). Critics of Linder theory argued that although Linder explained pattern of trade in manufactured products, he did not explain that trade can go in both ways (intra-industry trade). Furthermore, his theory was designed only for developed economies, but not for developing economies.

Research overview

Kennedy and McHugh (1980) examined Linder hypothesis for 14 countries in the years 1960 and 1975 using Pearson and Spearman correlation coefficients. The test was a one-tailed test of non-negative correlation versus negative correlation from which it was clear that there was absolutely no evidence of a Linder type effect in explaining trade patterns. The majority of the coefficients had the wrong signs. Kennedy and McHugh (1983) investigated Linder hypothesis for United States in the years 1963, 1970 and 1976 using one-digit SITC manufacturing data. The results gave no support to existence of Linder hypothesis and disapproved Heckscher-Ohlin theory of trade so authors instead of two competing theories suggested implementation of two rival theories into one general theory which would better explain trade patterns. In this way new theory would combine „supply" and „demand" sides of trade theories to better explain trade patterns. Arnon and Weinblatt (1998) tested Linder theory for trade between developed and developing countries. Contrary to economic theory of 1960's they prove validity of Linder hypothesis for both developed and developing countries. McPherson, Redfearn and Tieslau (2001) assayed the validity of Linder hypothesis for six East African countries. For five of them they found an evidence in support of the hypothesis except in the case of Tanzania. The analysis was important because Linder hypothesis was tested exclusively on developing countries and not developed ones.

Choi (2002) tested Linder hypothesis for 63 countries in the period from 1970 to 1992. The results of the analysis pointed to the conclusion of accepting Linder hypothesis. Values of Linder variable showed tendency in growth since 1990's which can be attributed to process of globalization and trade liberalization. Bukhari et al. (2005) investigate the validity of Linder hypothesis for three South Asian countries, namely Bangladesh, India, and Pakistan. The empirical results of the fixed-effects panel data model pointed out to the conclusion that aforementioned developing countries trade intensively with countries of similar development level. Although this research was not applicated to all developing countries, it gives certain setting for testing the validity of Linder theory for entire developing world.

In table 1 is presented literature review of empirical testings on the validity of Linder hypothesis.

Table 1 Literature review of empirical testings on Linder hypothesis

Author (Year)	Data	Sample	Methodology	Research results
Kennedy and McHugh (1980)	1960 and 1975	14 countries	Pearson and Spearman correlations	No evidence of Linder type effect
Kennedy and McHugh (1983)	1963, 1970, 1976	United States	Regression analysis	No support for Linder hypothesis nor H-O theory
Arnon and Weinblatt (1998)	1991	35 countries	Bilateral gravity trade model	In favour of the Linder hypothesis for both developed and less developed countries
McPherson, Redfearn and Tieslau (2001)	1984-1992	6 developing East African countries	Cross-section time-series panel data	An evidence of the Linder effect was found for 5 countries (Ethiopia, Kenya, Rwanda, Sudan and Uganda)
Choi (2002)	1970, 1980, 1990, 1992	63 countries	Gravity type regression model	A favourable result was obtained in support of the Linder hypothesis
Bukhari et al. (2005)	1993-2002	Three South Asian countries	Cross-section time-series panel data	Strong evidence in favour of the Linder hypothesis for aforementioned three countries
Bohman and Nilsson (2007)	2000	57 countries	Income overlap	The results support the Linder hypothesis with strongest results for differentiated products
Haq and Meilke (2008)	1990-2000	52 developed and developing countries	OLS and Tobit estimation	No evidence of Linder effect in differentiated agri-food product trade
Hallak (2010)	1995	64 countries	Sectoral OLS and ML estimates	Support for the sectoral Linder hypothesis
Rauh (2010)	2002-2007	Germany	Panel data, country and time fixed effects	Results reaffirm the Linder hypothesis for Germany in trade with other European countries
Jian (2011)	2000-2009	China and EU countries	Gravity model and panel data analysis	Sign of the Linder hypothesis - countries trade more if the gap of per capita GDP between them is smaller
Bo (2013)	2001-2010	China and its fourteen trading partners	Gravity model approach	Linder hypothesis is supported
Kahram (2014)	1992-2012	Iran and its bilateral trading partners	Fixed-Random effects model	On the one side, for some groups the evidence of the Linder effect was not found. On the other side, in the low-income country group, the effect is very strong and elastic
Atabay (2015)	1996-2010	BRIC countries	Gravity equation panel data	Trade between BRIC countries is getting bigger over the years and the evidence of the Linder hypothesis between these countries has been found
Steinbach (2015)	1995-2012	152 countries, 737 agricultural and food products	Sectoral gravity equation	Similar aggregate preferences are important determinant of bilateral export trade in agricultural and food products - evidence in support of Linder hypothesis
Niem (2016)	1994-2004	China's cosmetic industry and its 14 representative trading partners	OLS fixed effects	Empirical tests support the Linder hypothesis

Source: Authors' collection.

Bohman and Nilsson (2007) invented methodology which takes into account income overlap between countries when testing the Linder hypothesis. Instead of using difference between gross domestic product per capita as Linder variable, their model includes distribution of income in countries.

They identify common market between countries by calculating income overlap while Linder variable is formed in two ways; common market in relation to home market and absolute size of the market. They found positive effect of the Linder variables on export intensity supporting the Linder hypothesis.

Haq and Meilke (2008) tested Linder effect in differentiated agri-food product trade using generalized gravity equation. Linder variable was approximated as absolute difference between trading countries gross domestic product per capita and Balassa index. Data were available for the period between 1990 and 2000 on the sample of 52 countries. Hallak (2010) analysed Linder prediction of trade on a sectoral level. He differentiated between high quality goods and low quality goods and three sectoral categories. He failed to provide support for Linder effect using gravity model on data for 64 countries in the year1995. When analysis was conducted on a sectoral level the results were in favour of Linder hypothesis. Rauh (2010) inspected trade pattern between Germany and European Union countries in the period from 2002 to 2007. He used panel data regression model with time and country-fixed effects. Results affirmed the Linder hypothesis indicating Germany's orientation on exports to EU countries with similar demand structures. Jian (2011) investigated the Linder hypothesis for China and EU and came to the conclusion that there is a sign of Linder effect. The smaller the gap of GDP per capita between China and EU member country, the bigger trade volume becomes. In his model, he also incorporated border effect, endowment and economic size.

Bo (2013) checked Linder hypothesis in the case of China's bilateral trade with its trading partners on the trade data in the period 2001-2010. The fourteen countries that are used in this paper are countries with the highest trading value for China. Gravity model was applied in a panel regression analysis using explanatory variables gross domestic product, differential gross domestic product per capita, real exchange rate, population and distance. The conclusion of the analysis is that Linder hypothesis for China's bilateral trading volume is supported while fixed effects model performed better than random effects model. Kahram (2014) came to conclusion that the Linder effect is very strong for particular groups of study for bilateral trade of Iran, but is not the only factor that affected direction and trading volume of Iran. It is also strongly affected by political factors such as ideology of the Islamic Republic of Iran, international sanctions and economic factors such as differences in economic development between countries, geographical distance between them, common language and borders, etc.

Atabay (2015) found an evidence of Linder hypothesis for BRIC (Brazil, Russia, India and China) countries on data from 1996 to 2010. Trade between these countries is getting bigger over the years and, according to author's belief, BRIC countries have everything they need to become the biggest economies in the world. The novelty in this study is implementation of crisis dummy variable. Steinbach (2015), using a sample of 152 countries, tested the Linder hypothesis for bilateral trade in agricultural and food products. The paper, in which 737 agricultural and food products were taken in consideration, provided the little empirical evidence in support of the theory and showed that similar aggregate preferences are important determinant of bilateral export trade in agricultural and food products. Niem (2016) linked concepts of intra-industry trade and Linder hypothesis. He measured intra-industry trade levels using Grubel-Lloyd index. On the data for China's cosmetic industry on quality differenciated products and its 14 representative trading partners in the period from 1994 to 2004 he came to the conclusion that there is an evidence of the Linder effect.

Methodology and data

In order to investigate trade pattern of Croatia's international trade, panel regression model is constructed including 184 Croatia's import partner countries in the period from 2000 to 2016. Panel regression analysis is used in order to take advantage of

cross-section and time-series property of data. All available data for imports are used including those where are no trade from exporting country to Croatia. Omitting these data would lead to biased results and therefore false conclusions about validity of Linder hypothesis in the case of Croatia. Imports are observed as total imports and imports of manufactured products. Manufactured imports are better suited to estimate the validity of Linder hypothesis as stated in original Linder paper. Dependant variable in regression is imports in Croatia while explanatory variables are Linder variable, gross domestic product, distance and dummy variables representing common border, EU and CEFTA membership. Alongside Linder variable, it can be noticed enrollment of the variables GDP, distance and common border describing gravity trade model. Gravity model is introduced by Dutch economist Jan Tinbergen in 1962 (Tinbergen, 1962). It explains the international trade similar to Newton's law of gravity. Trade is proportional to economic sizes of countries and inversely proportional to distance between them. Model is in linear form because log-log or log-linear model could not be made due to numerous zeros for non-trade between trading partners. In equation 1 is presented cross-country panel regression model:

$$
\begin{aligned}
Imports_{ijt} = \ & \beta_0 + \beta_1 Linder_{ijt} + \beta_2 GDP_{jt} + \beta_3 Distance_{ijt} \\
& + \beta_4 Common\_Border\_Dummy_{ijt} + \beta_5 EU\_Dummy_{ijt} \\
& + \beta_6 CEFTA\_Dummy_{ijt} + \varepsilon_{ijt}
\end{aligned}
\tag{1}
$$

where $Imports_{ijt}$- variable denoting imports to Croatia i from country j in the period from 2000 to 2016. Data for Croatia's total and merchandise trade are collected from the World Bank (2018b); $Linder_{ijt}$- variable representing absolute difference between exporting country j GDP per capita and Croatia's GDP per capita. GDP per capita values are expressed in PPP current international dollars. In order to calculate Linder variable data for GDP per capita values for Croatia and exporting countries are provided from the World Bank (2018a); GDP_{jt}- Gross Domestic Product country j (in current US$). Data for GDP values can be found at World Bank (2018); $Distance_{ijt}$ - variable representing distance from Croatia's capital city Zagreb and exporting country j capital city. Data for distance variable are provided from the DistanceFromTo (2018) and expressed in kilometres measured by air distance between capital cities; $Common\_Border\_Dummy_{ijt}$ - dummy variable getting value 1 if Croatia has common border with country j. Croatia has common border with 5 countries: Bosnia and Herzegovina, Hungary, Montenegro, Serbia and Slovenia; EU_Dummy_{ijt} - dummy variable getting value 1 if Croatia and exporting country are both EU member countries. There are currently 28 European Union member countries as of May, 1 2018. Croatia became 28th European Union member country on July 2013. Facts on EU enlargement process are available from European Commission (2018); $CEFTA\_Dummy_{ijt}$ - dummy variable getting value 1 if Croatia and exporting country are CEFTA member countries. Croatia was CEFTA member country from 2003 to 2013, CEFTA Secretariat (2018).

Expected signs of regression are negative for Linder variable, distance and positive for gross domestic product, common border dummy, EU and CEFTA dummies. It is expected that higher value of gross domestic product is positively correlated with higher value of imports in Croatia. On the other side, smaller differences between gross domestic products per capita between Croatia and its partner countries (Linder variable) should be associated with higher value of imports in Croatia, according to Linder hypothesis. Larger distance between countries should be correlated with lower value of mutual trade between partner countries. Non-zero values of dummy variables (common border for Croatia's neighbour countries and

membership in regional economic integrations) should be associated with larger value of imports in Croatia. Cross-country panel regression model is conducted using pooled OLS (POLS), fixed effects (FE) and random effects (RE) models. Hausman test is used when making a decision about suitable model respectively to choose between fixed effects and random effects model. In order to rule out the near singular matrix (or dummy variable trap) in the estimation, dummy variables common_border dummy, EU and CEFTA dummy are excluded from the equation regression for fixed effects model. Those variables do not vary within cross-sections and are therefore not identified in a fixed effects specification. According to (Kahram, 2014) variable distance should also not be used in fixed effects model as it is time invariant. In addition, mixed fixed and random effects are not allowed for unbalanced data so they are not specified in the analysis. Main results and discussion of the paper are given below.

Results and discussion

In Table 2 are presented descriptive statistics of variables total imports, manufactured imports, Linder variable, gross domestic product (GDP), distance variable, common border dummy, EU and CEFTA dummies included in the panel regression analysis.

Table 2 Descriptive statistics of variables

Variable	Total imports	Manuf. imports	Linder variable	GDP	Distance	Common border	EU	CEFTA
Mean	1.04E+08	72733253	13883.11	3.13E+11	5974.9	0.0329	0.0349	0.0158
Median	647851	81539	11837.67	1.87E+10	5316.4	0	0	0
Maximum	5.26E+09	4.03E+09	118356.0	1.86E+13	18259.9	1	1	1
Minimum	0	0	22.33732	13196545	117.4	0	0	0
Std. Dev.	3.89E+08	2.97E+08	11399.72	1.29E+12	4114.04	0.1785	0.1835	0.1248
Skewness	6.473048	7.170135	2.937078	8.9853	0.6285	5.2313	5.0679	7.7562
Kurtosis	52.91652	63.83129	16.79538	98.8287	2.9688	28.367	26.684	61.1589
Jarque-Bera	342823	503560	28982.8	1225495	203.8507	97071.14	85560	467078
Probability	0	0	0	0	0	0	0	0
Sum	3.23E+11	2.25E+11	42954349	9.69E+14	18486355	102	108	49
Sum Sq. Dev.	4.67E+20	2.72E+20	4.02E+11	5.17E+27	5.24E+10	98.6373	104.23	48.2239
Obs.	3094	3094	3094	3094	3094	3094	3094	3094

Source: Authors calculations

In Table 3 is displayed cross-country panel regression model for total trade between Croatia and its partner countries. Panel is unbalanced with 3094 observations included. Dependant variable is total import (import_all) while independent variables are Linder variable, gross domestic product, distance variable, common border, EU and CEFTA dummies.

Panel regression model is estimated for pooled OLS, fixed and random effects model. Fixed effects model could not be specified for all independent variables, only for GDP and Linder variable, as reasoned in the methodology section. Statistically significant independent variables in the regression under 1 percent level of significance are GDP, distance, common border dummy, CEFTA and EU dummies for both POLS and RE models. In the fixed effects model variable GDP is again significant. All coefficients except coefficient for Linder variable are consistent with expected signs of regression. Linder variable is not significant in the regression indicating that Croatia did not prefer trade with countries of similar preference structures and equal level of economic development. Adjusted R-squared for POLS is 0.34 meaning that the model is moderately well explained which is in the line with previous researches. In Figure 1 is presented scatter diagram which represents

relationship between total imports and GDP variable. It can be noticed that the relationship is positive; higher values of gross domestic products are correlated with higher imports values.

Table 3 Cross-country panel regression for all goods

Dependent variable IMPORTS_ALL	Panel regression model		
Independent variables	POLS	FE	RE
Constant	1.33E+08 (9.859779)	7.04E+07 (7.911914)	1.38E+08 (3.599368)
LINDER	-415.6058 (-0.825128)	941.9113 (1.553474)	100.6547 (0.175940)
GDP	8.90E-05*** (20.17322)	6.66E-05*** (9.438025)	6.83E-05*** (10.71319)
Distance	-14568.31*** (-9.891849)		-15091.71*** (-2.992470)
Common_Border_Dummy	8.61E+08*** (25.45030)		8.25E+08*** (7.053763)
EU_Dummy	3.53E+08*** (11.06789)		1.64E+08*** (10.80979)
CEFTA_Dummy	-2.48E+08*** (-5.230207)		55799673*** (2.356260)
Adjusted R-squared	0.341739	0.878680	0.093649
S.E. of regression	3.15E+08	1.40E+08	1.38E+09
Prob. (F-statistic)	0.00000	0.00000	0.00000
Mean dependent variable	1.04E+08	1.04E+08	12733182
S.D. dependent variable	3.89E+08	3.89E+08	1.45E+09
Akaike info criterion	41.97830	40.40478	
Durbin -Watson	0.091375	0.442597	0.424298
Observations	3094	3094	3094
Correlated random effects (Hausman test)	Chi-Sq. Statistic (2.410675) , Prob. (0.2996)		

Source: Authors' calculations.
OLS show White heteroskedasticity, standard errors and covariances are consistent, t-statistics is presented in parentheses, *** significant at 1 percent, **significant at 5 percent and * significant at 10 percent level.
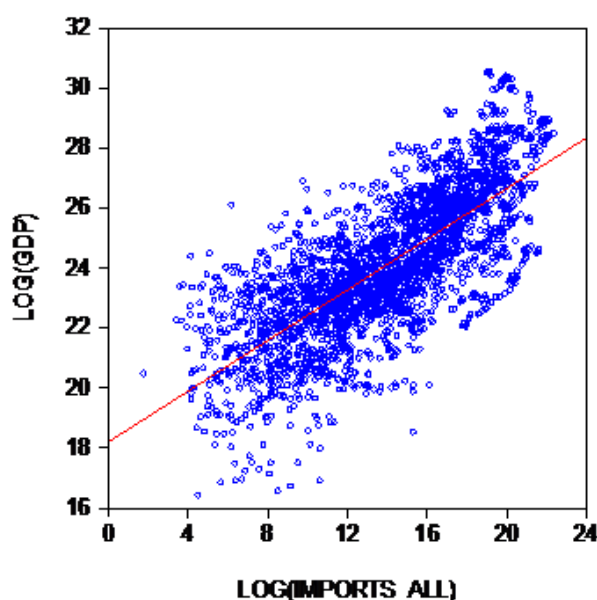

Figure 1 Total imports vs GDP variable
Source: Authors' calculations.

In Figure 2 is presented scatter diagram for relationship between total imports and distance variable. Relationship is as expected negative indicating lower value of imports as distance between trading countries is larger.
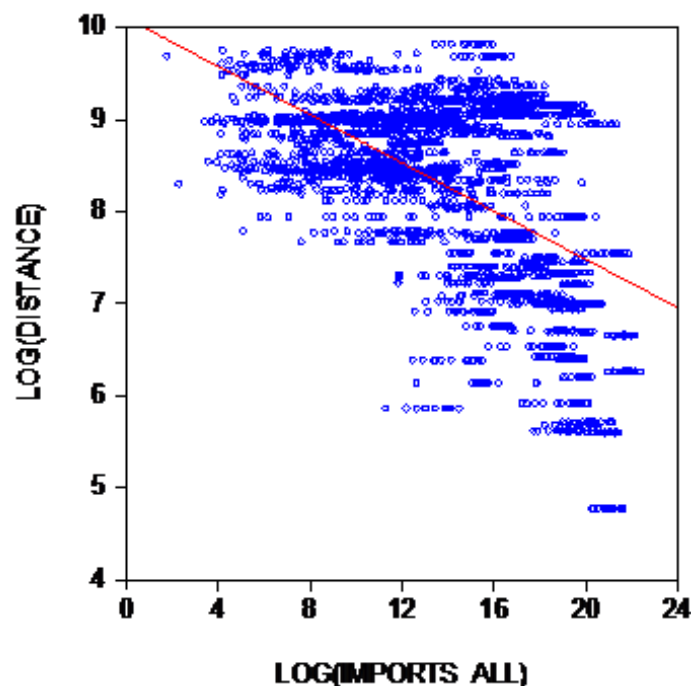
Figure 2: Total imports vs distance variable

Source: Authors' calculations

In Table 4 is presented cross-country panel regression for trade in manufactured goods between Croatia and exporting countries. Linder hypothesis is originally formulated for manufactured goods so this modification in the regression model contributes in the positive way in estimation of the validity of the Linder hypothesis.

Table 4 Cross-country panel regression for manufactured goods

Dependent variable IMPORTS_MAN	Panel regression model		
Independent variables	POLS	FE	RE
Constant	76938892 (7.351848)	49280134 (8.100681)	94694492 (3.157316)
LINDER	432.8292 (1.103652)	699.3433 (1.687864)	297.8475 (0.747753)
GDP	7.32E-05*** (21.28987)	4.39E-05*** (9.100660)	4.67E-05*** (10.42843)
Distance	-9837.867*** (-8.579168)		-10603.87*** (-2.663914)
Common_Border_Dummy	6.00E+08*** (22.77382)		5.71E+08*** (6.188568)
EU_Dummy	2.57E+08*** (10.36300)		87195816*** (8.332517)
CEFTA_Dummy	-1.96E+08*** (-5.310161)		27353295* (1.675840)
Adjusted R-squared	0.315351	0.896621	0.073256
S.E. of regression	2.46E+08	95400404	94884317
Prob. (F-statistic)	0.0000	0.0000	0.0000
Mean dependent variable	72733253	72733253	77396471
S.D. dependent variable	2.97E+08	98559915	98559916
Akaike info criterion	41.47783	39.64330	
Durbin -Watson	0.070433	0.437722	0.406988
Observations	3094	3094	3094
Correlated random effects (Hausman test)	Chi-Sq. Statistic (4.474261) , Prob. (0.1068)		

Source: Authors' calculations.
OLS show White heteroskedasticity, standard errors and covariances are consistent, t-statistics is presented in parentheses, *** significant at 1 percent, **significant at 5 percent and * significant at 10 percent level.

Results are similar with previous ones for total goods trade. The exception is CEFTA dummy variable which is significant under 10 percent of significance in RE model. Chi-Square statistics for Hausman test is 4.474261 with probability of 0.1068 indicating that random effects model is preferable over fixed effects model. According to null hypothesis preferred model is random effects model while alternative hypothesis chooses fixed effects model as suitable. In Figure 3 is presented scatter diagram for relationship between manufactured imports and Linder variable. It can be seen that imports did not depend on absolute difference between partner trading countries gross domestic product per capita.
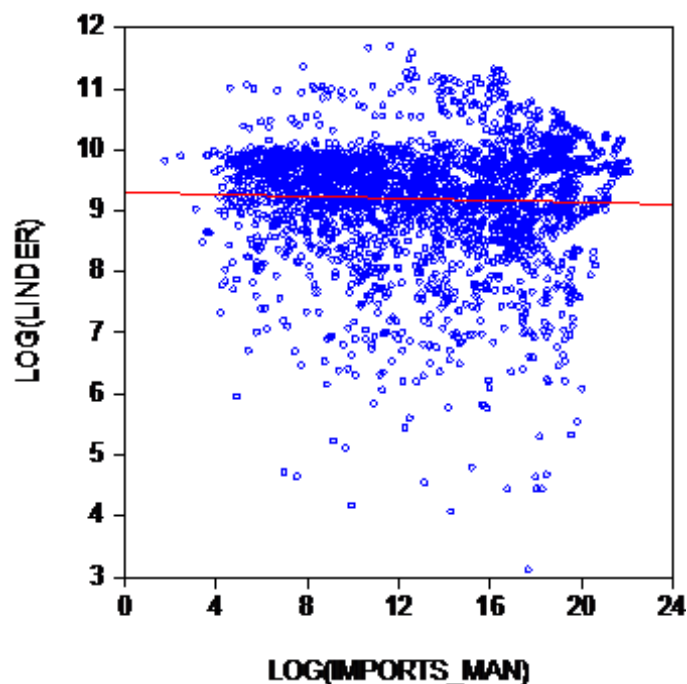

Figure 3: Manufactured imports vs Linder variable
Source: Authors' calculations.

It can be concluded that validity of Linder hypothesis cannot be accepted in the case of Croatia, instead pattern of trade is in the line with gravity model of international trade. Croatia imports relatively more from countries of larger economic size than countries of similar level of gross domestic product. Distance is also limiting factor that negatively affects volume of international trade.

Limitation of the analysis can be attributed to the use of absolute difference measure of GDP per capita between trading countries as approximation for Linder effect. It diminishes in a certain way the impact of larger economic size on importing country. In addition to existing measures of Linder effect, such as overlapping demands and Balassa index, we suggest the usage of relative difference between gross domestic products between trading countries as approximation for Linder variable. It should have better performance than absolute difference but further investigations should be made taking into account different countries and different time periods.

Conclusion

Goal of this paper was to empirically investigate validity of Linder hypothesis in the case of Croatia. Linder prediction is that the most of trade should occur between countries of similar demand structures and similar level of economic development.

Dependant variable in regression was imports in Croatia while explanatory variables were Linder variable, gross domestic product, distance and dummy variables representing common border, EU and CEFTA membership. Panel regression model was estimated using pooled OLS, fixed and random effects model. According to Hausman test, random effects model was better suited to data. Linder variable was not significant in the regression indicating that Croatia did not prefer trade with countries of similar level of economic development and similar preference structures. Therefore, the validity of Linder hypothesis cannot be accepted in the case of Croatia. Structure of Croatian imports trade is more in the line with gravity model of international trade; higher value of partner country's GDP per capita increases mutual trade while distance between them diminishes it. Contribution of research is comprising explanation of pattern of trade between Croatia and its trading partners and adding to the existing literature about Linder hypothesis testings in developed and developing countries. This can be useful for country policy makers when making strategic long-term decisions about country trade policy. Limitation of the research is related to the use of absolute difference measure of GDP per capita between trading countries as approximation for Linder effect which diminishes the importance of economic size.

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