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CUSTOMS AND ADMINISTRATIVE PROCEDURES IN THE COUNTRIES OF SOUTH-EASTERN EUROPE

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Abstract
In the last two decades it has been recognized that further liberalization of international trade is possible with undertaking trade facilitation measures. The effects that are expected from the measures in the field of trade facilitation show that they have greater influence over liberalization of trade than all other trade barriers, including tariffs. The field of trade facilitation is connected to administrative and customs measures that are effecting the free movement of goods, especially when crossing borders.

Since all transition periods for liberalization of the movement of goods between the CEFTA-2006 countries have elapsed, further liberalization and enhancing of trade is possible only through undertaking trade facilitation measures. That's why the aim of this paper will be through identification of certain customs and administrative procedures to measure their effects on trade between the countries of the region of South Eastern Europe. In the analysis we plan to include all CEFTA-2006 members, except Moldova, and other countries which are part of this region: Bulgaria, Romania and Greece.

In the study we plan to use the metrics from the section "Trading across Borders" from the World Bank survey "Doing Business". The data that are going to be used are: number of documents, days at the border and costs to export/import, for both exports and imports. The number of documents indicates the number of documents needed to cross the border. The metrics days at the border indicates the numbers of calendar days needed for a product to cross borders. And the last metrics measures the fees levied on a 20-foot container in US dollars.

Customs and administrative procedures are necessary but when used in "unnecessary" manner can become difficult barriers that can undermine trade. That's why we plan to use these metrics in gravity model to estimate the effects of these customs and administrative procedures on trade between the countries of the region.

Key words: *customs and administrative procedures, number of documents, days at the border, costs to export/import, South Eastern Europe, gravity model.*

1. Introduction

In the last two decades it has become prominent that trade facilitation is the field where further liberalization can be obtained. The regulation of international trade done by the rules and procedures of the World Trade Organization mainly addresses tariffs and other non-tariff instruments. On the other hand it has become more evident that nowadays actors in international trade face different types of barriers. These barriers are administrative and sometimes informal but have significant influence over the exchange of goods on the international trade scene. The barriers from administrative nature that mainly address complicated customs procedures and complex documentation requirements have increasing influence over the international flow of goods.

Research done in the region of APEC shows that on average in one trade transaction 27 to 30 actors have been involved, 40 documents have been prepared, 200 data were entered from which at least 30 were entered 30 times and 60-70% were entered at least twice (UN/ECE, 2003 p.4). The losses that companies suffer through delays at borders, lack of transparency and predictability, complicated documentation requirements and other outdates customs procedures are estimated to exceed in many cases the costs of tariffs (Engman, 2010, p.82). Decreasing and lowering of the above mentioned barriers are part of the trade facilitation concept in the multilateral trading system in the process of obtaining international trade liberalization.

Acknowledging the importance of trade facilitation measures is evident in many trade research studies (OECD, 2010; Wilson et al., 2003, 2004, 2005, 2006; Hummels and Schaur, 2012; Djankov et al., 2006 and others). Some of them indicate benefits of trade facilitation, some measure the effects of undertaking trade facilitation measures over trade, and others measure their impact over world income. The relative inconsistence over the composition of trade facilitation measures indicates that one can roughly compare the results of the studies or underlie conclusions for all countries and regions. The only conclusion that is prominent is that undertaking trade facilitation measures is a win-win situation for every country.

For the purposes of the analysis in this paper we decided to look through some administrative and customs procedures. Customs and administrative procedures can be identified as necessary procedures for goods to move across borders. On the other hand, when administrative requirements went beyond what is necessary in a manner consistent with national policy objectives those requirements can become important barriers to trade. In economic literature the effects of customs and administrative procedures are pointed as measures that "thicken" border between countries (Wilson, 2010). In this context reducing the "thickness" of the borders should increase trade flows between countries.

The goal of this paper is to measure the "thickness" of the borders of the countries in South-Eastern Europe and to indicate how much customs and administrative procedures need to be reformed to increase trade flows. OECD research has done this type of analysis to compare customs and administrative procedures between regions of the world and to show that developing countries have relatively thicker borders than developed countries. The results from the analysis have been used to run simulations using statistical methods to indicate how much customs and administrative procedures need to be reformed to increase trade flows, trade between bilateral partners, trade between product groups and trade effects measured by income of the countries.

2. Methodology of the analysis

In the analysis we use metrics derived from the World Bank and IFC survey "Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises" which is a survey that compares business regulations for domestic firms in 185 economies. For measuring the effects of customs and administrative procedures we use the metrics derived in the section "Trading across Borders" comprised of documentation measure, time and cost metric. The time and cost necessary to complete every official procedure for exporting and importing are recorded, excluding the time and cost for sea transport (World Bank and IFC, 2013). The survey asked local freight forwarders, shipping lines, customs brokers, port officials and banks on both, export and import procedures and requirements.

The document metrics called *number of documents* measures the number of documents needed to perform one shipment or one official export or import transaction. This notion covers bank documents, customs clearance documents, port and terminal handling documents and transport documents. The documents taken into account are those that are needed per each trade transaction and not those that can be valid for a longer period of time.

The second metrics measures the time for exporting and importing recorded in calendar days. The time calculation for one shipment starts from the moment it is initiated and runs until it is completed. The measure does not include the time for sea transport, but incorporates the time for obtaining, filling out and submitting all the documents, time for inland transport and handling, time for customs clearance and inspections and time for port operations and terminal handling (World Bank and IFC, 2013, p. 124).

All fees associated with the above mentioned procedures are taken into account for the metric costs to export/import. They don't include customs tariffs and duties or costs related to sea transport. They are measured as per a 20-foot container in US dollars and only official costs are recorded.

The simulation that we are trying to do is unique by the notion that this type of analysis has never been done for this group of countries of South-Eastern Europe. In the analysis we included six countries which are currently parties to the CEFTA-2006 agreement: Albania, Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Montenegro and Serbia. We

decided to exclude Moldova which although is CEFTA-2006 member doesn't belong naturally to this region and shares small portion of trade with the above mentioned countries. As part of the geographical region of South-Eastern Europe we included data for Bulgaria, Romania and Greece although they are EU members and by some indicators (as GDP per capita in Greece for example) are quite better off than the other countries in the group. We thought that the geographical closeness and sharing same borders can be enhancing factor for increasing mutual trade. And in this context we wanted to analyze the influence of time used for certain customs and administrative procedures over trade.

Table 1 Trading across Borders metrics for the SEE countries

Country	Number of documents Export	Days at the border Export	Costs per container Export	Number of documents Import	Days at the border Import	Costs per container Import
Albania	7	19	745	8	18	730
Bosnia	8	15	1240	9	13	1200
Bulgaria	5	21	1551	6	17	1626
Croatia	7	20	1300	8	16	1180
Greece	5	19	1115	6	15	1135
Kosovo	8	15	1775	8	15	1810
Macedonia	6	12	1376	6	11	1380
Montenegro	6	14	855	6	14	915
Romania	5	12	1485	6	13	1495
Serbia	7	12	1455	7	14	1660

Source: World Bank and IFC (2013)

The analyzed metrics are highly correlated (Table 2). The correlation coefficients for Numbers of Documents *Export* and Number of Documents *Import* (0.902), Days at the border *Export* and Days at the Border *Import* (0.829) and Costs per container *Export* and Costs per container *Import* (0.971) suggest that countries tend to threat imports and exports similarly, even though these metrics are statistically different for exporters and importers. Overall, the large coefficients of correlation suggest that countries with tick borders typically have large values for all metrics for both exports and imports.

Table 2 Correlations of metrics for customs and administrative procedures

	DOC_EX	TIME_EX	COST_EX	DOC_IM	TIME_IM	COST_IM
DOC_EX	1,000	-,123	,066	,902**	,027	,022
TIME_EX		1,000	-,215	,163	,829**	-,294
COST_EX			1,000	-,025	-,250	,971**
DOC_IM				1,000	,233	-,121
TIME_IM					1,000	-,252
COST_IM						1,000

Source: Authors calculations

3. Explanation of the gravity model

The metrics number of documents, days at the border and costs per container are used in a gravity model to estimate the effect of the corresponding customs and administrative procedures on trade. The main idea of the gravity model is taken from physics. In 1687, Newton proposed the "Law of Universal Gravitation." It held that the attractive force between two objects i and j is given by

$$F_{ij} = G \frac{M_i M_j}{D_{ij}^2} \text{ ,}$$

where F_{ij} is the attractive force, M_i and M_j are the masses, D_{ij} is the distance between the two objects, and G is a gravitational constant depending on the units of measurement (Head, 2000).

The gravity model in economics is introduced by Jan Tinbergen, the first Nobel Prize winner in Economics. He proposed that roughly the same Newton's functional form could be applied to international trade flows:

$$X_{ij} = R \frac{M_i^{\alpha} M_j^{\beta}}{D_{ij}^{\theta}} \text{ ,}$$

where X_{ij} is the flow from country i to country j (or it could represents total volume of interactions between country i and country j), M_i and M_j are relevant economic sizes of two countries (if F is measured as a monetary flow – export values, then M is usually the gross domestic product of each location), D_{ij} is the distance between the two countries (usually measured center to center), and R is remoteness (it measures each importer's set of alternatives). Note that if $\alpha = \beta = 1$, and $\theta = 2$, then the above form becomes Newton's functional form (Head, 2000).

The linear relationship is achieved if natural logarithms of the above form are taken:

$$lnX_{ij} = \rho lnR_j + \alpha lnM_i + \beta lnM_j - \theta lnD_{ij} + \varepsilon_{ij}$$

This is basic gravity model for international trade. In this paper more extended forms of the gravity model are applied, as suggested by Wilson (2010) and Shepard (2012), in order to take care of the influence of some additional important variables for international trade. Six specifications of the model are used:

$$\ln EXP_{ij} = b_1 lnDOCimp_j + b_2 \ln GDPexp_i + b_3 \ln GDPimp_j + b_4 \ln DisRem_{ij} + b_5 LANG + b_6 COLON + b_7 BORD + b_8 YUM + \varepsilon_{ij}$$
(1)

$$\ln EXP_{ij} = b_1 lnTIMEimp_j + b_2 \ln GDPexp_i + b_3 \ln GDPimp_j + b_4 \ln DisRem_{ij} + b_5 LANG + b_6 COLON + b_7 BORD + b_8 YUM + \varepsilon_{ij}$$
(2)

$$\ln EXP_{ij} = b_1 lnCOSTimp_j + b_2 \ln GDPexp_i + b_3 \ln GDPimp_j + b_4 \ln DisRem_{ij} + b_5 LANG + b_6 COLON + b_7 BORD + b_8 YUM + \varepsilon_{ij}$$
(3)

$$\ln EXP_{ij} = b_1 [\ln(DOCexp]_j \cdot DOCimp_i) + b_2 \ln GDPexp_i + b_3 \ln GDPimp_j + b_4 \ln DisRem_{ij} + b_5 LANG + b_6 COLON + b_7 BORD + b_8 YUM + \varepsilon_{ij}$$
(4)

$$\ln EXP_{ij} = b_1 [\ln(TIMEexp]_j \cdot TIMEimp_i) + b_2 \ln GDPexp_i + b_3 \ln GDPimp_j + b_4 \ln DisRem_{ij} + b_5 LANG + b_6 COLON + b_7 BORD + b_8 YUM + \varepsilon_{ij}$$
(5)

$$\ln EXP_{ij} = b_1 [\ln(COSTexp]_j \cdot COSTimp_i) + b_2 \ln GDPexp_i + b_3 \ln GDPimp_j + b_4 \ln DisRem_{ij} + b_5 LANG + b_6 COLON + b_7 BORD + b_8 YUM + \varepsilon_{ij}$$
(6)

where EXP_{ij} indicates the export from country i to country j, $DOCimp$ are Number of Documents *Importer*, $TIMEimp$ are Days at the Border *Importer*, $COSTimp$ Costs per container *Importer[1]*, $GDPexp$ is the gross domestic product of the exporter country, $GDPimp$ is the gross domestic product of the importer country, $DisRem$ is product of two variables distance (DIS) and remoteness (RES), and $LANG$, $COLON$, $BORD$ and YUM are dummy variables. The distance (DIS) is calculated as the distance between the capital cities of the two countries. The remotness (RES) is calculated as:

$$Rem_i = \frac{1}{\frac{DIS_{i,j_1}}{GDP_{j_1}} + \frac{DIS_{i,j_2}}{GDP_{j_2}} + \cdots + \frac{DIS_{i,j_r}}{GDP_{j_r}}}$$

The $LANG$ is dummy variable equal to unity between countries that share common language and zero otherwise, the $COLON$ is dummy variable equal to unity between countries that share common colonial history and zero otherwise, the $BORD$ is dummy

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[1] It should be noted that these variables are not bilateral; that is the number of days for an importing country to receive products from a particular exporting country is not known.

variable equal to unity between countries that share common border and zero otherwise, and YUM is dummy variable between countries that where part of ex Yugoslavian market. The specifications (7), (8) and (9), as the first term in the right hand side, used products of the documents of the exporter and importer, time of the exporter and importer and cost of the exporter and importer.

4. Empirical results

Table 3 presents the results of the 1-3 specifications of the gravity model. It uses regression models with fixed effects, based on dummy variable for each country, in order to isolate country specific influences on trade flows. These three specifications provide an evidence that statistically significant influence at 1% level on export from one to another country in SEE region have the following variables: GDP of country importer, adjusted distance by remoteness, existence of common border and membership in the former Yugoslavian market in the past. On the other hand the variables: GDP of country exporter, shared common language, shared colonial history are not statistically significant. The variables: time of country importer (days at border) and cost of country importer have statistically significant influence at 5% level on export, while the variable number of documents at the country importer does not have statistical significance for export.

The estimated coefficients in front of each metric to trade flows indicate the effect of percentage change in the metric on export. For example, a 1% reduction of importers time at border may increase export by hypothetical 2.1%, while a 1% reduction of costs of importer may increase export by 0.9%. The 1% increase of GDP of importing country may increase export by 1.5% (or 1.75% according the third specification). The export can be increased by 1.21% (or 1.57% or 1.34%, respectively in second and third specification) between the countries that share common border. The membership in the former Yugoslavian market in the past may increase export by 0.85% (or 1.22% or 1.47%, respectively in the first and third specification).

Table 3: Empirical results of the gravity model specifications 1-3

Independent variable	Dependent variable in all three specifications is $\ln EXP_{ij}$		
$lnDOCimp_j$	-1.331984 (0.1767)		
$lnTIMEimp_j$		-2.130509* (0.0203)	
$lnCOSTimp_j$			-0.930538* (0.0321)
$\ln GDPexp_i$	0.110343 (0.5235)	0.173364 (0.2876)	0.320289 (0.1309)
$\ln GDPimp_j$	1.581093** (0.0000)	1.534565** (0.0000)	1.756261** (0.0000)
$\ln DisRem_{ij}$	-1.540365** (0.0001)	-1.154644** (0.0072)	-1.559803** (0.0000)
$LANG$	0.057733 (0.9066)	-0.022215 (0.9614)	-0.191595 (0.6764)
$COLON$	0.623032 (0.1524)	0.600677 (0.1428)	0.798595 (0.0698)
$BORD$	1.210727** (0.0059)	1.573348** (0.0004)	1.348672** (0.0016)
YUM	1.220035** (0.0061)	0.855531* (0.0492)	1.475415** (0.0015)
R^2	0.715140	0.728975	0.725959

*Note: p-values are given in brackets. Significance at 1% level=**; Significance at 5% level=*.*

The following three specifications of the model (4-6) are based on new distance adjusted variable. For each metric, the product of the metric is used for both the importer and the exporter, where previously it was only used for the importer. This new version makes it possible to see jointly how changes in the metric affect exporters and importers.

The new regressions give new elasticities for the metrics (Table 4). The new elasticities are smaller than the previous ones. 1% Reduction of the time at the border may increase export by 1.82% and 1% reduction of the costs may increase export by 0.7%. According to Wilson N. (2010) these new estimates suggest that trading partners are less responsive to changes in metrics and they have to undertake greater reforms to get the same level of benefit. The variable number of documents is not statistically significant.

The significance of the variables is the same in both specifications of the model which indicates the robustness of the results. GDP of the country importer, adjusted distance by remoteness, common border and participation in the former Yugoslavian market are statistically significant at 1% level of export. GDP of the country exporter, shared common language and shared colonial history are not statistically significant.

Table 4: Empirical results of the gravity model specifications 4-6

Independent variable	Dependent variable in all three specifications is $\ln EXP_{ij}$		
$(\ln(DOCexp)_j \cdot DOCimp_i)$	-1.598834 (0.0579)		
$(\ln(TIMEexp)_j \cdot TIMEimp_i)$		-1.828631* (0.0119)	
$(\ln(COSTexp)_j \cdot COSTimp_i)$			-0.702109* (0.0215)
$\ln GDPexp_i$	0.196517 (0.2802)	0.339345 (0.0885)	0.464076 (0.0663)
$\ln GDPimp_j$	1.585651** (0.0000)	1.549129** (0.0000)	1.722473** (0.0000)
$\ln DisRem_{ij}$	-1.254062** (0.0040)	-0.929173* (0.0458)	-1.267923** (0.0019)
$LANG$	0.121028 (0.8021)	-0.014776 (0.9741)	-0.153915 (0.7360)
$COLON$	0.845104 (0.0677)	0.800777 (0.0610)	0.951300* (0.0401)
$BORD$	1.286104** (0.0028)	1.650690** (0.0002)	1.463061** (0.0007)
YUM	1.282622** (0.0038)	0.940497* (0.0269)	1.438586** (0.0015)
R^2	0.722111	0.732542	0.728584

*Note: p-values are given in brackets. Significance at 1% level=**; Significance at 5% level=*.*

5. Conclusion

The aim of this paper was to analyze the significance of certain customs and administrative procedures and their influence over trade for the countries in the South-Eastern Europe. The model specifications have shown that days at the border and costs paid during import have more significant influence over trade than the number of documents needed to cross borders. Best results and biggest increase of export is hypothetically possible by decreasing the time spend at the border. 1% Reduction of the time spent at the border may hypothetically increase trade by 1.82 to 2.1%. This result is one in series that indicate the importance of time as a barrier in trade.

The results have shown another interesting point. Sharing the same border and being part of the former Yugoslavian market have shown to be statistically significant for the trade between this group of countries. This notion should also be taken into consideration by separate countries when preparing future trade policy directions. These results may be most useful for undertaking future prospects among the CEFTA-2006 members. Since all transition periods for trade liberalization have elapsed future trade benefits can be obtained

by undertaking trade facilitation measures and reducing customs and administrative procedures.

The paper doesn't say anything about how to obtain 1% reduction of the time spent at the importers borders. It doesn't say anything about what type of reform is needed or the amount of costs for such reduction. These types of answers are possible by undertaking deeper analysis of the measures affecting trade between these countries.

The results from this paper can only be considered as indicative of the direction and relative importance of different customs and administrative procedures on trade. They, nevertheless, indicate that improving the efficiency of such customs and administrative procedures can facilitate trade and help promote export growth.

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