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# Economic diplomacy: concept for economic prosperity in Croatia

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## ABSTRACT

The aim of this article is to analyse the Croatian economic diplomacy model to identify the model, revealing its effectiveness and providing possible recommendations for the future research in the area of economic diplomacy. Literature review for Croatia indicates an overall lack of national research on the subject matter from the empirical point of view. Such situation is partially a result of economic diplomacy being a new phenomenon in Croatia and with Croatian political structure struggling many years with internal public administration reorganisation, privatisation process and joining the European Union. Occasional theoretical approaches are presented with analysis coming from the questionnaire surveys. The empirical research contribution of the article highlights the Croatian volume of export of goods and its connection with diplomatic actors. The research is based on the gravity model of international trade and presents empirical findings in the analysis of Croatian economic diplomacy and its effectiveness regarding the Croatian export of goods. The research model confirms positive relationship between Croatian total exports and three independent variables: GDP, distance and staff employed in diplomatic mission.

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## 1. Introduction

Contemporary historical events brought forth changes in economic, social and political order worldwide. Global market integration is an ongoing debate. Nevertheless, the globalisation process as we know it today – influencing income distribution, national commodity and services prices, reallocation of resources within national economies – finds its roots in the nineteenth century (O'Rourke & Williamson, 2002).

The cold war collapse induced economic liberalisation in former communist countries enabling their involvement in global economic flows. Contemporary political and economic occurrences are outcomes of the newest world history records within whom international relations matter. Nowadays, the world economic system alludes

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to a high level of international interdependence, including a number of actors and multiple procedures. There is no possibility to interact globally without a comprehensive economic diplomacy policy (Bayne & Woolcock, 2007; Bergeijk, 2009; Okano-Heijmans, 2011; Rana, 2011). Classic politically-driven diplomacy went through a transformation process. Once the driving force was politics, whereas today economics is the main driver. The balance of power among countries is accounted primarily through economic strength, which is one of the triggers of the economic diplomacy reassessment debate. Rana (2011) goes even further introducing the element of globalised diplomacy dominance.

Croatian historical background and economic size define its engagement in international organisations, diplomatic mission network and overall activities in international discourse to a large degree. Excellent geostrategic position is still not used as an engine for growth and international influence. Croatia was the most developed republic in former Yugoslavia, next to Slovenia. The socialist planned economy, with a social ownership model, transferred and brought changes to the economic system, subsequently transiting to private ownership and an open market economy. International engagement became very important as the limited market size meant the Croatian economy depended heavily on exports and international flows. As a result of international activities, the political structure recognised the need for defining the economic diplomacy concept for Croatia in 2013 (Klisović, 2014). Ministry of Foreign and European Affairs is the leading actor of the economic diplomacy in Croatia. Under bilateral economic cooperation, the Ministry emphasises the main economic diplomacy tasks divided into three broad areas: exports, foreign direct investments and protection of Croatian companies abroad.

The aim of this article is the analysis of the Croatian economic diplomacy model in terms of identifying the model, revealing its effectiveness and providing possible recommendations for the future research in the area of economic diplomacy. As noted by Croatian scholar Žirovčić (2016), without theoretical observations and research analysis it is not possible to influence the political or economic elite or to trigger the discussion. Empirical research contribution highlights the bilateral trade flows in Croatia and its connections with diplomatic actors. Since there is a lack of empirical research in the Croatian literature, this article fills the gap with a research based on the gravity model of international trade, presenting one of the first empirical works in the analysis of Croatian economic diplomacy and its effectiveness regarding the Croatian export of goods.

The structure of the article follows standard scientific paper structure. The introduction proposes the main aim of the research and identifies the gap in Croatian literature regarding the researched subject. The literature review introduces main works regarding the economic diplomacy in the Croatian literature as well as the influential works in gravity model of international trade linked to the economic diplomacy. The methodology reviews the model used for empirical analysis and presents the data sources used for the variables in the model. The results show the empirical analysis and validation of the hypothesis regarding the influence of economic diplomacy actors on the Croatian exports. The discussion part reveals the limitations and further prospects of the research in economic diplomacy in Croatia. The conclusion presents the main findings of the article.

## 2. Literature review

A literature review for Croatia indicate an overall lack of national research on the subject matter. Such situation is partially a result of economic diplomacy being a new phenomenon even at the European level and at top of that, Croatian political structure was struggling many years with internal public administration reorganisation, privatisation process and joining the European Union. Occasional theoretical approaches are present with several research analysis coming from the questionnaire surveys. The reflections outline results on understanding and perception of Croatian economic diplomacy directly from the actors involved and stakeholders of the process. With the purpose of evaluating the Croatian economic diplomacy performance, it is important to reveal the perception from the leading actors on the concept and general understanding on the subject matter. The structural organisation of Croatian economic diplomacy was analysed through a questionnaire survey analysis by Bilandžić and Barun (2013). The institutions involved in the survey were the Ministry of Foreign and European Affairs, Croatian Chamber of Commerce and Croatian Employers Association. All three questioned organisations have particular departments dealing with international affairs but only partially covering economic diplomacy actions. General research conclusion allude that the selected institutions don't possess organisational structure dealing with economic diplomacy neither understand the complexity of the term economic diplomacy. The second research by Boromisa et al. (2012) reveals the needs of the business sector for commercial diplomacy in Croatia and the efficiency of few relevant institutions included in the process. The questionnaires included responses from the President Office, Ministry of Foreign and European Affairs and diplomatic missions, other ministries, local and regional counties and related business associations. Research revealed similar outcomes as the one from Bilandžić and Barun (2013). Croatian institutions do not possess understanding on the term and lacks systematic organisational structure in economic diplomacy. However, institutions agree on the commercial diplomacy necessity and understand its positive connection with raising exports and foreign direct investment attraction. The difference among the institutions arises in two major questions: (1) Commercial diplomacy being exclusively under the government jurisdiction; and (2) Commercial diplomacy as a bilateral or multilateral activity.

Regarding the model used in this article, prominent research work during the last two decades finds its foothold in the gravity model of international trade introduced by Tinbergen (1962) and Linnemann (1966). The model quantifies factors that explain the volume of international trade in commodities (van Veenstra et al., 2010). Rose's research (2007) is a pioneering work in linking nations exports with destination countries on a sample of 22 countries. By using differences in nation's size of diplomatic mission, the author questions if there is a measurable link between the size of the foreign service and exports. Rose argues that each additional diplomatic mission is positively correlated with higher exports, around 6% to 10%, presuming other factors remain constant. The author acknowledges that only four countries reported the number of diplomatic staff working in economic affairs abroad and treats all missions equally as there is no way to distinguish one from another. Rose's (2007) model was further extended to 36 countries by van Veenstra et al. (2010),

studying export promotion agencies and a network of embassies and consulates through their interaction across countries with different development levels. The research outputs few results. The 10% increase of diplomatic missions employed in a host country is associated with increase in trade flows by 0.5% to 0.9%. However, the influence of staff employed in export promotion agencies showed negative or no positive correlation with exports. The interaction between the two points out the rivalry character implying that the two instruments used together are not efficient. Export promotion agencies showed as important for developing countries, but not for member countries of the Organization of Economic Cooperation and Development (OECD). Furthermore, Bergeijk and Yakop (2011) continued Rose's (2007) research applying the gravity model for demonstrating diplomatic and consular presence in 63 exporting and importing countries. Econometric research model was questioning whether the diplomatic representation is statistically significant explanatory variable in international trade volume. The research work argues that diplomatic presence within higher and high-income countries is of no importance in enhancing trade flows while it is significant for developing countries. The authors confirm the previous research results, diplomatic missions are positively correlated with higher exports, around 6% to 9%. The influence of diplomacy on exports applying gravity model is measured for the group of the OECD and transition countries by Afman and Maurel (2010). Diplomacy intensity is measured by the number of diplomatic missions in importing country. Research results imply the number of diplomatic missions of transition economies are higher than the ones for the OECD countries and diplomatic missions are positively correlated with higher exports in the range between 14.6% and 18.5%. The results show higher percentages than the ones reported by previous researchers. The influence of export promotion agencies on exports was studied by Lederman et al. (2010) on the sample of 103 developing and developed countries. Study results show positive correlation between export promotion agencies and higher exports in an average of 12% with a 10% increase in agency's budget leading to 0.6% to 1% increase in exports.

Aforementioned researchers applied gravity models on a group of countries connecting their export performance through selected criteria for respective sample. Raneta and Kunchka (2015) analysed the relationship between Ukraine's commercial diplomacy and export flows by applying a simple regression model. Diplomatic representation abroad was analysed through the lens of diplomatic staff distinct from previous research works where diplomatic mission was accounted. The regression analysis covered 78 exporting countries representing 95% of Ukrainian overall exports for one-year period. Research work concludes on the statistically positive relationship between diplomatic staff and Ukrainian exports implying the relationship as weak and the reason for carrying out the cluster analysis. The cluster analysis confirmed the positive relationship, suggesting that an average 10% increase in diplomatic staff will lead to 4.2% to 7.4% in average increase in exports. This article concentrates on the gravity model of international trade for one country, Croatia, and diplomatic staff employed in Croatian foreign missions covering multiple-year period, considering the diplomat engine as one of the main pillars of economic diplomacy.

### 3. Methodology

This article applies the gravity model of international trade in international economics. Gravity theory of trade originates in the work of Tinbergen (1962) deriving from Newton's theory of gravitation. Transferring the Newtonian law in bilateral economic flows, it is supposed that countries encountering closer geographic distance will trade more. Apart from distance, the mass, measured by the gross domestic product (GDP), is the second factor implying the cooperation is stronger if masses (GDPs) are larger. With distance and mass, the model can be extended with a number of variables, depending on the research question addressed.

Croatian export of goods is the dependent variable in our model. Independent variables present factors influencing bilateral flows and are drawn from the relevant research models augmented with Croatian unilateral factor and dummy variables.

Data on GDP and distance, the two starting variables of interest for the gravity model, were drawn from the UNCTAD and World Bank databases. Distance is measured as the geographic distance between the Croatian capital and trade partner's capital applying crow flies approach (Bergeijk, 2009). Measurement does not take into account different barriers and possible transportation means rather takes into account the real distances between trading partners represented by air distance. Diplomatic representations abroad and diplomatic staff statistics was acquired from Croatian Ministry of Foreign and European Affairs. The analysis covers only staff with diplomatic status as administrative, technical or security staff are not included in diplomatic working assignments. One of the limitations of the research refers to this variable, as the Croatian model of economic diplomacy does not have staff dedicated only to economic or commercial activities. Diplomatic staff is included in a broad spectrum of diplomatic activities, whereas economic networking and promotion is not their only working assignment. Nevertheless, the diplomats are the ones living and working in a country of interest and as such found relevant to include in the research model. The number also includes consulates and honorary consulates as well. They perform political and economic networking, which is of relevance to Croatia, being a small country. Consulates deal with consular affairs but are taking part in economic affairs as well, depending on the current situation, working under the rule 'everybody works everything'. Croatian diplomatic network of embassies and consulates was accessed at the Ministry web page and confirmed with the Ministry representative on its accuracy. Potential discrepancies can appear for identified number of the staff employed in diplomatic missions at trading partner countries, for the observed period. The Ministry does not possess one unique base of diplomatic staff per country and given year. The overall diplomatic network has no diplomatic staff dedicated to economic activities only, rather they cover a variety of diplomatic and political activities. Due to budget-restrictions, quite often the diplomats move in a given year from one country to another, depending on the international engagement requirements. Tracing their period of stay for a longer period besides the present one would require a separate analysis. The Ministry reported that since 2012, there is a number of diplomats employed as reported on their web page and confirmed the accuracy for the purpose of our research. However, we were not able to obtain accurate numbers of diplomatic staff for more recent years, therefore our research includes

the period from 2012 to 2016 with 81 trading partner countries importing Croatian export of goods in this period. The similar problem in the research work of Afman and Muriel (2010), where the authors report problems with identifying the number of staff per diplomatic mission, is notable. While non-governmental organisations (NGOs) play an important role in economic diplomacy in developed economies, in Croatia they are not active to the extent where they can affect the international relations through neither decision nor negotiation processes. Therefore, the Croatian NGOs contribution to the research is not significant. The private sector is excluded from quantitative analysis as Croatian Chamber of Commerce performed a research on Croatian export companies during 2017 delivering important findings on the satisfactory level of economic diplomacy performance, elaborated previously.

A unilateral factor, the Croatian minority, was included to analyse possible influence on certain markets, as a significant Croatian minority is present in top Croatian export markets. Dummy variables are neighbouring countries, number of free trade agreements and former Yugoslav republics. Free trade agreements were drawn from the World Trade Organization bilateral and regional trade agreements database, harmonised with Croatian Ministry of Foreign and European Affairs. The globalisation index is extracted from the KOF Swiss Economic Institute and governance indicator from the Worldwide Governance Indicators Project by the World Bank. Croatian minority statistics were taken from the Central State Office for Croats Abroad.

Following the gravity model of trade by Shepherd (2013), the basic gravity model equation reproduces as follows:

$$\log X_{ij} = c + b_1 \log GDP_i + b_2 \log GDP_j + b_3 \log \tau_{ij} + e_{ij} \quad (1)$$

where  $X_{ij}$  represents exports from country  $i$  to country  $j$ ,  $GDP$  stands for country's GDP volume,  $\log \tau_{ij}$  is the distance between the countries,  $c$  is the constant,  $b$  stands for coefficients to be estimated and  $e_{ij}$  for random error term.

The research method for Croatian export flows relies on a relevant scholar works (Afman & Maurel, 2010; Bergeijk, 2009; Lederman et al., 2010; Rose, 2007; van Veenstra et al., 2010) although the model in its narrowest sense is closest to Rose's (2007) research work. Rose is considered as a pioneer in setting the econometric standards in bilateral exports and diplomatic missions correlation. The gravity model explains whether the Croatian economic diplomacy network is positively and significantly correlated to Croatian export of goods. Specifically, the model confirms that the higher volumes of Croatian export of goods is positively correlated to the higher number of diplomatic staff in Croatian missions abroad.

The gravity model is presumed as the optimal one for answering the research question for the following reason. Croatian national economy is not self-sufficient for placing its own products and services. Therefore, an overall national interest and welfare depends heavily on exports. Exporting strategy is of high importance and the EU membership is an advantage for exploring connections within Europe. Croatian economic diplomacy concept introduced in 2013 prioritises support for exporters and facilitating trade (Klisović, 2014). The message is strongly advocated by the national

**Table 1.** Coefficient estimates for independent variables.

Parameter	Estimate	Standard Error	T-Statistic	P-Value
CONSTANT	-33.8615	3.30949	-10.2316	0.000
GDP	1.12487	0.0722422	15.5708	0.000
DIST	-1.75065	0.108462	-16.1407	0.000
STAFF	0.0569068	0.0286428	1.98678	0.0476

Source: Authors' calculations.

**Table 2.** Correlation matrix for coefficient estimates.

	Constant	GDP	Distance	Staff
Constant	1	-0.9709	0.2462	0.4022
GDP	-0.9709	1	-0.4682	-0.5143
Distance	0.2462	-0.4682	1	0.5208
Staff	0.4022	-0.5143	0.5208	1

Source: Authors' calculations.

**Table 3.** Analysis of variance.

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Model	2600.04	3	866.682	205.28	0.0000
Residual	1693.02	401	4.222		
Total (Corr.)	4293.07	404	15.5708		

Source: Authors' calculations.

**Table 4.** R-squared statistic.

R-squared	60.5638
R-squared (adjusted for d.f.)	60.2688
Standard Error of Est.	2.05475
Mean absolute error	1.40109
Durbin-Watson statistic	0.604631 ( $P = 0.0000$ )
Lag 1 residual autocorrelation	0.68921

Source: Authors' calculations.

government decision-makers as well as national economic forums. In general, there is a consensus that economic diplomacy is an important facilitator for raising exports. The empirical results of the gravity analysis are presented for Croatian trading partner countries. To add value to the present research, it is the first gravity model research work providing empirical results on the diplomatic staff performance. We chose multiple linear regression model as the basis of our research for its simplicity and based on the results presented in Tables 1–4. We are of the opinion that performed OLS analysis is relevant in explaining the dependent variable by selected independent variables.

The observed period included the years 2012–2016 and 81 trading partner countries providing 405 observations, relevant for interpreting the research findings. Data for the period after 2016 are not available for the variables concerned. The selected variables estimate a log-linear equation as follows:  $\ln \text{Croatian total exports} = \text{const.} + \ln (\text{GDP CRO} \times \text{GDP Xcountry}) + \ln (\text{POP CRO} \times \text{POP Xcountry}) + \ln \text{Dist} + \text{Staff} + \ln \text{Area} + \text{CROmin} + \ln \text{GLOBind} + \ln \text{GOVind} + \text{dummy Neighbouring} + \text{dummy FTA} + \text{dummy FYR}(2)$

- Croatian total exports stand for exports from Croatia to trading partner country.
- GDP CRO is the Croatian GDP.



- GDP Xcountry is the trading partner country's GDP.
- POP CRO is the Croatian population.
- POP Xcountry is the trading partner country's population.
- Dist is the physical distance between Croatia's and trading partner country's capital.
- Staff is the number of staff employed per diplomatic mission abroad.
- Area is the physical size of the trading partner country.
- CROmin represents the Croats living in trading partner country.
- GLOBind is the globalisation index of trading partner country.
- GOVind is the governance index of trading partner country.
- Dummy variables:
  - Neighbouring – 1 for neighbour, 0 for non-neighbour country.
  - FTA – 1 if Croatia and trading partner country have a free trade agreement, 0 if they do not.
  - FYR – 1 if trading partner country was a former Yugoslav republic, 0 if it was not.

### 3. Results

Gravity model results are presented through log-linear equation expressing the bilateral trade relations where country's export flow is positively related to countries' GDP and inversely related to geographic distance between them (Shepherd, 2013; Tinbergen, 1962). The dependent variable is presented through the Croatian export of goods, while independent variables are presented through Croatian and trading partner country's GDP, population, country area, the distance between Croatia and trading partner, staff employed in diplomatic missions, Croatian minorities abroad, globalisation index and governance indicator. Dummy variables are presented through neighbouring status, existence of free trade agreements and former Yugoslav republic. The research results showed the GDP, distance and diplomatic staff as statistically significant independent variables influencing the Croatian export of goods. However, other independent variables proved not statistically significant in their influence of Croatian exports. Therefore, we include in this part only the results for multilinear regression model where all the independent variables proved statistically significant.

The output shows the results of fitting a multiple log-linear regression model to describe the relationship between the Croatian export of goods and three independent variables – GDP, distance and staff per diplomatic mission. The overall number of observations in the model is 405.

Log-linear model explains that raising the GDP by 1% influence increase in the volume of exports on average by 1.125%. If distance raises by 1%, the export decrease by average in  $-1.75\%$ . And if the number of staff increases by 1 unit, or 1 person, the export increases in average by 0.0569% (Table 1).

The correlation matrix (Table 2) reflects estimated correlations between the coefficients in the fitted model. These correlations can be used to detect the presence of serious multicollinearity, i.e. correlation amongst the predictor variables. In this case, there are three correlations with absolute values greater than 0.5, including the constant term.

Since the *P*-value in the ANOVA table (Table 3) is less than 0.05 there is a statistically significant relationship between the variables at the 95.0% confidence level.

The R-squared statistic (Table 4) indicates that the model explains 60.56% of the variability in Croatian total exports. The adjusted R-squared statistic, which is more suitable for comparing models with more than one independent variables, is 60.27%. The standard error of the estimate shows the standard deviation of the residuals to be 2.055. The mean absolute error of 1.4 is the average value of the residuals.

The equation of the model is as follows:

$$\text{CRO TOT EXP} = -33.8615 + 1.12487 * \text{GDP} - 1.75065 * \text{DIST} + 0.0569068 * \text{STAFF} \quad (3)$$

#### 4. Discussion

With the purpose of examining the model assumptions and the afore given outputs, sensitivity analysis is performed. The original model was extended to three additional ones by introducing all the independent variables explained in the methodology part. Variables were chosen based on the literature research on the gravity model of international trade (Afman & Maurel, 2010; Bergeijk & Yakop, 2011; Rose, 2007; van Veenstra et al., 2010) with dummies holding strongpoint in Croatian economic and political context.

The Durbin–Watson (DW) statistic tests the residuals to determine if there is any significant correlation based on the order in which they occur in data file. The DW statistic in all four models implies spatial autocorrelation, which is inherited from the data and not an output of the model. Each of the analysed model had similar values confirming that the model is properly defined. Spatial autocorrelation is an outcome of Croatian close trade relations with particular EU partners, stemming from Croatian geostrategic position, political and historical connections.

The basic gravity model of international trade for Croatia showed that the model with country GDP, distance and staff explains the relationship between diplomatic staff and exports while other variables included in the model are of no statistical significance to Croatian exports. Model including all independent variables proved statistically not significant with only four variables (GDP, population, distance, dummy for FYR) statistically significant at 95% confidence level leaving out the diplomatic staff. We also performed stepwise regression in order to find statistically significant variables, however diplomatic staff proved to be statistically not significant. Diplomatic staff proved also as statistically not significant when forcing this variable into the results from performed stepwise regression.

Present model with only the core variables (GDP, distance and diplomatic staff) confirms the hypothesis, that increase in the number of diplomatic staff influences positively Croatian exports. The model was fundamentally developed according to Rose (2007) who questions, whether foreign missions are systematically linked to exports and estimates that each additional foreign mission influence exports positively, around 6% to 10%. Looking from a wider perspective, the gravity model results for Croatia are in line with Rose's research. Furthermore, the Croatian model explains

that raising the GDP by 1% influences exports increase on average by 1.125%. If distance increases by 1%, the export decreases on average by 1.75%. Finally, increasing the number of staff by 1, increases the export on average by 0.0569%. Rose's outputs come from 22 developed countries with high GDP, huge in size and population, with fruitful historical and colonial ties, long tradition in trading, exports and extensive diplomatic network. On the other side, the present analysis included one particular country – Croatia, small in terms of export value, young in liberal economy and inherited trends in trading with particular countries. Unlike Rose's research on diplomatic missions and exports, the Croatian model analyses the relations between diplomatic staff and exports.

Afman and Maurel (2010) gravity model shows higher percentages, foreign missions influencing positively on exports between 14.6% and 18.5%. van Veenstra et al. (2010) in their analysis on joint interaction of export promotion agencies and foreign missions propose that a number of foreign mission country employs abroad, lead to export increase of 0.05% to 0.09%. The next research to reflect on is the analysis of Raneta and Kunychka (2015) on relationship between Ukraine commercial diplomacy and export flows. Diplomatic representation abroad is analysed through the lens of diplomatic staff, not the mission itself. The cluster analysis confirmed the positive relationship suggesting that an average 10% increase in diplomatic staff leads to 4.2% to 7.4% average increase in exports.

Research performed on Croatian example note that, regardless the research limitations of each of the selected researches, conclusions in each positively correlate actors of economic diplomacy to higher exports. Regarding the conclusion and a parallel on the gravity model of international trade on the Croatian example, there is evident positive connection between the diplomatic network and its staff activities and bilateral trade flows.

The potential research limitations refer to the core research model applied, the gravity model of international trade with regard to Croatian diplomatic network. The analysis on number of staff employed in diplomatic missions and their working agenda present the main research limitation. Identifying the number of staff employed per mission showed as heaviest task which led to a reduced period of observation for years 2012-2016. Further limitation is also connected to the staff employed in missions. Diplomat staff covers daily activities in the range from political actions and administration to economic affairs, depending on current political situation and special circumstances within country of destination. There is no dedicated staff to economic performance exclusively making it difficult to assess their effectiveness. Only in the moment when Croatian diplomacy will employ diplomats dealing with economic relations, the more effective evaluation on the model and staff performance will be feasible.

Prospects for the future research reside in the new applied methods in measuring the economic diplomacy performance. The essence of the economic diplomacy model is export strategy and from that perspective gravity model is found as the most appropriate for evaluating the activities performed in this article. Empirical research works at the European level lack a more comprehensive approach in evaluating the economic diplomacy. The gravity model covers the export dimension and includes variables related to export, such as distance, mass, population size, and similar. The model could be upgraded

to more comprehensive research covering the multidimensional concept of economic diplomacy such as foreign direct investments, economic aid, influence in international institutions, etc. Nevertheless, the model presented in this article may serve as the basis for further research in the effectiveness of Croatian economic diplomacy.

## 5. Conclusion

The applied gravity model of international trade shows positive correlation between Croatia's GDP, distance and diplomatic staff. The results confirm the hypothesis that the higher number of economic diplomats employed in diplomatic missions positively influences the exports. The research model confirms positive relationship between Croatian exports and three independent variables: GDP, distance and staff employed in diplomatic missions. The linear model explains that raising the GDP by 1% influence increase in the volume of exports on average by 1.125%. If distance between Croatia and an import destination increases by 1%, the volume of exports decreases by  $-1.75\%$ . Finally, if the number of staff in diplomatic missions increases by 1 unit, or 1 person, the volume of exports increases on average by 0.0569%. The connection is not as strong as it proved to be in relevant research works due to several reasons. The analyses reveal a lack of export strategy, structural economic problems and the exports connected to the historical connections, geostrategic position and inherited trends rather than contemporary market needs and trends. With the aim of examining the model assumptions and the previously mentioned outputs, the sensitivity analysis included additional independent variables, namely the ones used by respective authors reflected to Croatian circumstances, such as size of the population, country area, Croatian minority, globalisation and governance index and dummy variables like neighbouring, free trade agreements and former Yugoslav republics. Contrary to expectations, the sensitivity analysis showed that staff employed in diplomatic missions, in combination with variables usually influencing the export of a country, are not statistically significant for the Croatian export flows ([Appendix Table A1](#)).

## Disclosure statement

No potential conflict of interest was reported by the authors.

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## Appendix

**Table A1.** Analysed export destinations.

Croatian export destination	Merchandise exports in thousands \$, year 2016	No of embassies abroad	No of consulates abroad
Albania	6541,731	38	91
Algeria	3737,583	93	34
Argentina	77690,48	86	52
Armenia	129,555	41	42
Australia	11577,788	80	78
Austria	1353776,44	84	295
Azerbaijan	337317,883	69	17
Bangladesh	16613,806	56	87
Belarus	5495,9	57	86
Belgium	404205,177	84	307
Bolivia (Plurinational State of)	632,01	32	58
Bosnia and Herzegovina	594408,027	44	27
Brazil	98264,008	139	202
Bulgaria	123772,733	77	94
Canada	16091,633	110	129
Chile	2517,667	72	211
China	1016752,933	170	98
China, Hong Kong SAR	47622,195	23 trade offices	–
Cyprus	3331,544	43	129
Czech Republic	504579,707	90	320
Denmark	97108,073	68	370
Egypt	33707,851	127	29
Estonia	2127,166	37	184

(continued)

**Table A1.** Continued.

Croatian export destination	Merchandise exports in thousands \$, year 2016	No of embassies abroad	No of consulates abroad
Ethiopia	442,9	43	48
Finland	31685,004	71	364
France	446612,255	166	574
Germany	3308289,552	155	397
Greece	89913,496	83	178
Hungary	1476380,029	87	251
India	117898,59	123	108
Indonesia	49098,253	95	88
Iran (Islamic Republic of)	4661,287	107	34
Iraq	159179,12	72	15
Ireland	40552,245	61	105
Israel	25877	79	97
Italy	2820719,83	126	516
Japan	39249,372	152	148
Jordan	2358,256	53	46
Kazakhstan	11449,303	63	90
Korea, Republic of	448412,646	118	162
Kuwait	6,282	88	13
Lebanon	196,615	70	62
Libya	153734,269	114	10
Lithuania	25774,3	40	173
Malaysia	16078,867	83	69
Malta	2964,638	24	190
Mexico	17363,17	81	221
Mongolia	3,504	31	82
Montenegro	2487,121	27	50
Morocco	14217,34	94	123
Nepal	93,693	29	56
Netherlands	903745,797	111	299
New Zealand	3936,914	48	79
Nigeria	8677,924	99	11
Norway	35877,653	83	383
Oman	509,629	48	28
Peru	202,649	64	159
Philippines	1900,593	60	186
Poland	642438,782	92	217
Portugal	24799,391	76	260
Qatar	6470,116	100	12
Romania	176754,353	93	227
Russian Federation	576415,128	146	175
Serbia	514288,036	69	92
Slovakia	369372,689	63	175
Slovenia	2411810,567	40	105
South Africa	6049,292	109	99
Spain	420587,746	122	433
Sri Lanka	1620,428	51	104
Sudan	0,117	72	22
Sweden	111969,968	95	335
Switzerland	252146,458	105	215
Syrian Arab Republic	568,32	58	47
Thailand	-	65	128
TFYR of Macedonia	89275,61	41	57
Tunisia	1486,558	59	71
Turkey	277924,873	137	178
Ukraine	38955,052	83	128
United Kingdom	222896,464	152	193
United States	285667,703	170	127
Uruguay	-	53	136