

## The Determinants of Export Market Shares of European Countries in the Period 2010-2017

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**ABSTRACT:** We investigate the determinants of Export Market Shares of 20 European countries in the period 2010-2017. We perform Panel Data with Fixed Effects, Random Effects, Dynamic Panel at 1 Stage, Pooled OLS, WLS. We found that the “Export Market Share” is positively associated to “General government gross fixed capital formation % of GDP”, “Social benefits paid by general government % of Gdp”, “General government deficit/surplus % of GDP and million EUR”, “Current taxes on income, wealth, etc. % of GDP”, “Employment Rate by Sex, age group 20-64”, “GDP Per Capita”. The degree of “Export Market Share” is negatively associated to “Private sector debt, consolidated % of Gdp”, “Comparative price levels of final consumption by private households including indirect taxes”, “Total general government revenue % of Gdp”.

**KEYWORDS:** International trade, Export Market Share, Exports, European Union, Economic Growth

### I. INTRODUCTION

In this article we estimate the determinant of Export Market Share for 20 European Countries in the period 2010-2017. The research and discussing among the causes of exports is an essential part of the theoretical and empirical framework of international economists. Specifically, in our investigation, and in the analysis of the literature showed in the second paragraph, we find a positive relationship between exports and measures of productivity. Furthermore, we can also consider that the greater the innovation either at a firm level either at a country level the greater the ability to export (Golovko & Valentini, 2011). The fourfold relationship between exports, GDP, productivity, and innovation critically questions the western and especially the European Economy. In fact, the European Economy is characterized by a generalized low productivity low GDP growth, lower innovation in confrontation with U.S.A. and China and in perspective also lower export. The European Economy seems oriented to become a continental system of exchange with a dominance of intra-EU exports and the lowering of extra-EU export. This conditions i.e., the structural dominance of intra-EU exports on extra-EU exports can in the long run reduce the ability of the European Union to compete in the more profitable market of international trade. The European Union seems to incarnate the exemplar case of “secular stagnation” (Summers, 2016).

Furthermore, the political economics of the European Commission with the orientation towards the green and digital economy (Von der Leyen, 2019) can be useful to restore the hegemony of European values in the context of the multipolar globalization in the context of the Sino-American international dialectics (Hanson, 2020), but also seems insufficient to restore the European manufacture industry and to promote the ability of European economies to compete in the knowledge economy. The question of the international competitiveness is rising again for the European countries since the mix of Artificial Intelligence, Machine Learning and Big Data promise to change either the ability of economic organization to produce-by the means of the Industry 4.0-either the life of citizens- through the Society 5.0 (Fukuda, 2020). But, in our analysis, and in the critical review of the literature, we find that only productivity growth can boost exports, and in this sense, even if growth is no more a fashion topic for policy makers, it is necessary to re-embrace a political economy that in some way can re-orient the European Economy towards a new economic growth even in a digital and green institutional framework.

The sequent article sequent as follows: the second paragraph present a critical discussion of the literature, the third paragraph contains the model and analyzes the main econometric results, the fourth paragraph concludes.

## II. LITERATURE REVIEW

(René & Jorge, 2019) affords the question of the determinants of exportation in Mexico in the period 2007-2015. The authors consider internal and external determinants of manufacturing exports. The econometric model used is based on panel data. Results show that:

- There is a positive relationship between the export performance and the share of manufacturing on GDP;
- In the short run the effect of FDI on exports change on a regional basis. Specifically, the regions that are closer to the U.S. border show a positive relationship between FDI and manufacturing exports.
- In the long run there is a positive effect of FDI on manufacturing exportations across various Mexican regions.

(Kalaj, 2015) analyzes the determinants of exportations of Albanian Enterprises. The author uses probit and ordered probit to perform the econometric model. Results show that:

- The introduction of new products or the improvement of existing products is positively associated to a growth in exportations;
- There is a positive relationship between credit and exportations, especially for less productive firms;
- Firms with a higher levels of labour productivity and human capital exports more;
- Foreign ownership and firm size are positively associated to an increasing in exportation.

The author concludes its analysis suggesting that the increasing in FDI could improve the percentage of foreign ownership with a positive effect on the ability of enterprises to export.

(Osakwe, Santos-Paulino, & Dogan, 2018) afford the question of the relationship among trade and export diversification in Sub-Saharan African SSA countries. The authors show that:

- In a non-parametric analysis for developing countries there is a positive relationship between openness to trade and heterogenous exportations;
- In a non-parametric analysis for Sub-Saharan African countries SSA there is a negative relationship between openness to trade and export diversification;
- In a parametric analysis there is a positive relationship between trade liberalization and export diversification for developing countries while in the case of SSA countries there a diversification effect in the short term and a concentration effect in the long run.

But the authors also consider the role of cultural, sociological, and political variables in determining export diversification such as: human capital, GDP per capita and institutions.

(Bakar, Abidin, & Haseeb, 2015) analyze the role of macroeconomic determinants on the exportations between Malaysia and the OIC-countries i.e. countries that participate of the Organization of Islamic Cooperation. The authors consider the period between 1997 and 2012 with a panel data approach. Results show that:

- There is a positive relationship between GDP and the exportation;
- Exportations between Malaysia and OIC countries increase with the degree of trend in output-TRGDP.
- There is a positive relationship between real exchange rate and the ability of Malaysia to export in OIC countries.

(Bouchoucha, 2015) analyzes the role of the real effective exchange rate on exportation in the euro confronting the period before and after the introduction of the Euro. Specifically, the author considers the impact of Real Effective Exchange Rate, weighted GDP and OutputGap on exportations. Four countries are analyzed in the period 1980-2012. The four countries are France, Germany, Italy and Spain. The author posed two research questions:

1. The long run relationship between global exports and exchange rate;
2. The relationship between exchange rate and export performance.

Two measures are used: a global real exchange rate and an intra-European exchange rate. The author finds that the introduction of the Monetary Union has changed either the relationship between exchange rate and exportation either in the case of intra-European and either in the case of global exportation. The Monetary Union has increased the intra-European exportations while has depressed the global exportations.

(Erdey & Pöstényi, 2017) consider the impact of the end of the Communist regime on the ability of eastern countries to participate in the international trade. Specifically, the authors analyze the role of Hungary. During the 90s Hungary become a highly active partner in the international trade with a trade to GDP ratio equal to 1.5 and establishing commercial relationships with more than 190 countries. The authors try to analyze the determinants of the Hungarian exports in the period 1993-2014. Results show that:

- There is a positive relationship between exportation and economic size, common border, and trade agreements;
- There is a negative relationship between exportation and distance.
- Hungarian enterprises tend to trade more with countries with a similar factor endowments.

(Bobeica, Esteves, Rua, & Staehr, 2016) afford the question of the relationship between demand and export for 11 European countries. The results suggest that there is an effect of substitution between domestic and foreign demand. Specifically, the authors find that:

- During crisis foreign demand improves in the case of the reduction of domestic demand;
- During booms domestic demand and foreign demand growth together.

The authors find that the orientation towards foreign demand tends to growth during economic crisis i.e., firms try to react to domestic negative shocks improving exportations.

(Wagner, 2015) affords the question of the relationship between firm age and exportation in Germany. Results show that older firms export more, either in the quantitative sense either qualitatively i.e., export to more distant and heterogeneous countries. Furthermore, the author finds that older firms have more revenues from exportations.

(Heinze, 2018) analyzes the determinants of German exportation since 2000s. Since 2000s German firms have generated a persistent growth in exportations. The improve in German exports has created imbalances in the current accounts either in European Union either in a global perspective. The authors question if the German success in exportation is due to low prices or foreign demand. An econometric analysis is realized for the period 1995-2014. Specifically, the author estimates the relationship among real exports, foreign activity, and real effective exchange rate. Results show that:

- There is a negative relationship between German exportations and price competitiveness;
- There is a positive relationship between German exportations and the income growth rate of trading partners;
- There is no relationship between real exchange rate and intra-EMU exports;
- The real exchange rate explain only a percentage of exportations that is lower than 25%.-

The author concludes suggesting that the real exchange rate alone cannot explain the complexity of the determinant of the success of German's exportations.

(Hanslin Grossmann, Lein, & Schmidt, 2016) analyze the impact of foreign demand and real exchange rate on Swiss exportations controlling by different sectors and export destinations. Results show that:

- Foreign demand elasticity varies across either export sectors either export destinations;
- Different export sectors and different export destinations impact differently on exchange rate elasticity;
- Exchange rates have a lower impact on international trade politics than foreign demand i.e. exportations are more sensitive toward long term changes in foreign demand than to short term modifications in exchange rates;
- Switzerland's exportations are oriented to goods that are determined by long run foreign demand elasticities i.e., Swiss' exportations are less influenced by business cycles.
- Switzerland's exports are less affected by modifications in exchange rate since the Swiss' specialization in the international trade- especially, in the pharmaceutical and chemical sectors-is essentially price-neutral.

(E Magombo & Phiri, 2017) consider the determinants of the Malawi's cotton exports. The authors use the gravity model to estimate the determinants of Malawi's exportations. A panel data with 36 long term trade partners of Malawi is performed. Results show that:

- There is a positive relationship between Malawi's cotton exportation and GDP per capita, price, exchange rate, production index;
- There is a positive relationship between Malawi's cotton exportation and the eligibility for the African Growth Opportunity Act i.e. a program of U.S. Congress to promote the economic and financial growth of Sub Saharan African Countries.

(Alam, Selvanathan, & Selvanathan, 2017) analyze the determinants of the success of the garment industry exportations of Bangladesh. Authors use data from World Bank Enterprise Surveys and secondary data. Results show that there is a positive relationship between garment exportations of Bangladesh and the sequent variables:

- *Labour cost;*
- *Labour productivity;*
- *Firm size;*
- *Availability of domestic input materials;*
- *Firm location in a port city.*

The authors suggest that also the proactive policies of government have had a positive impact on the Bangladesh success in garment exportations.

(Alarcón & Sánchez, 2016) consider the relationship between innovation and exportation in food and agricultural firms. Authors analyze 165 agricultural firms and 783 food companies established in Spain during the period 2006-2011. Data are analyzed through bivariate probit models. The results show that:

- The relationship between innovation and exportation is bidirectional for food companies;

- The relationship between innovation and exportation is univocal for agricultural firms.

The presence of a relationship between innovation and exportation can have an impact at firm's organizational level since innovation requires investments in human, technological and knowledge capital.

(Atif, Haiyun, & Mahmood, 2017) consider the strategic role of exportation as a tool for economic growth also for agricultural economies. The authors analyze the role of agricultural exportations of Pakistan in the period 1995-2014 considering 63 countries in a stochastic frontier gravity model. Results show that the exportation of agricultural goods from Pakistan is positively associated to common border, common culture, colonial history, and preferential trading agreements. The authors also find that there is a negative relationship between common language and Pakistani agricultural exportations.

(Sharma & Dhiman, 2016) analyzes the determinants of the exportations of Indian textile industry. The authors realize a comparative study of different articles and find that the degree of exportations of Indian textile industry are positively associated to GDP, exchange rate, labour, Foreign Direct Investment, and technology.

(Malhotra & Kumari, 2016) analyze the determinant of export performance of a set of Asian countries in the period 1980-2012. Specifically, the authors consider three subregions namely East Asia, Southeast Asia and South Asia. The authors use aggregate data and Ordinary Least Square. They found that the degree of exportations in the Asian countries is positively associated to the sequent variables:

- There is a positive relationship between China exportations and world demand, GDP, FDI and trade openness;
- In the case of Japan there is a positive relationship between exportations on one side and world demand and GDP on the other side;
- The degree of exports of South Korea is positively associated with world demand and trade openness;
- The level of exportations in Indonesia is positively associated to GDP, trade openness and world demand and negatively associated to real effective exchange rate;
- The level of exportations for Malaysia and Philippines is positively associated to world demand, GDP and trade openness;
- The performance of Singapore's exports is positively associated with world demand, GDP, FDI, and trade openness;
- The degree of exports in Thailand is positively associated to world demand, GDP, FDI, trade openness and negatively affected by relative prices;
- The degree of exportations in Vietnam is positively associated with world demand and GDP;
- The level of exports in Bangladesh is positively associated with GDP and trade openness and negatively associated with effective exchange rate;
- The degree of Pakistan's exports is positively associated with trade openness and negatively associated to relative prices;
- The level of Indian exports is positively associated with world demand, GDP, and trade openness;
- The degree of exports of Sri Lanka is positively associated with world demand, FDI and trade openness.

(Taušer, Arltová, & Žamborský, 2015) consider the relationship between the Czech exports and the German GDP. The authors try to investigate if Czech exports depend on German exports or on German domestic demand. If Czech exports depend on German exports than this means that the Czech economy works has a hub integrated in the German supply chain. In the other case the Czech economy works for the satisfaction of the German demand. The results show that the Czech exports and the German GDP are positively related. The Czech economy is an integrated part of the German supply chain.

(Basarac Sertić, Vučković, & Škrabić Perić, 2015) analyze the determinants of export performance of 27 European countries. Specifically, the article considers the manufacturing and the high-tech manufacturing industry. The authors try to estimate the determinants of exports using a function of income, price, industrial production, and labour costs. Panel data models are used to estimate the data in the period 2000-2011. Results shows that:

- Manufacturing exports are positively associated with industrial production and domestic demand;
- There is a positive impact of foreign demand on total manufacturing exports;
- The presence of a stable macroeconomic environment has a positive impact on manufacturing exports.

The policy makers should re-establish the centrality of manufacturing industries not only against the crisis but also for economic development.

(Kiani, Ijaz, & Siddique, 2018) afford the question of the exports of rice and cotton in Pakistan in the period 1984-2014. Data are analyzed using the gravity model. Results show that the exports of cotton trade in Pakistan is:

- positively associated with production, GDP of trade partners and the presence of common boarder;
- negatively associated with the distance with commercial counterparts in the international trade.

(Hoang, Khanh, & Ngoc, 2019) analyze the question of the determinants of Vietnam's agricultural exports in EU. The authors use a GMM model. Results show that the agricultural exports of Vietnam in Europe are positively associated with financial market development, trade freedom, technological readiness, labour freedom. Vietnamese policy maker should implement the appropriate institutional environment to promote exports towards EU based on liberalization of trade, freedom of labour and the improvement of financial development.

(Christodouloupoulou & Tkačevs, 2016) analyze the determinants of exports of European Countries considering the role of price competitiveness in external balances. The authors consider the impact of various harmonized competitiveness indicators on exports of euro area countries. Results show that:

- Harmonized Competitiveness Indicators based on costs and prices have a positive impact on exports of goods;
- There is a positive relationship between Harmonized Competitiveness Indicators based on price measures and exports of services;

But the authors suggest that also non-price-based factors have an impact of boosting European exports.

(Brakman, Garretsen, van Maarseveen, & Zwaneveld, 2020) estimate the existence of a productivity-export nexus for Dutch firms in the period 2010-2016. The underlining idea of the article is that the greater the productivity at a firm level the greater the export orientation. The authors suggest that the positive relationship between the increasing productivity and the export orientation should be considered as an empirical rule rather than a normative axiom. In effect there are many factors that can reduce the export orientation of high productive firms. Results shows that:

- A high-productive firm can export more based on firm size, import status and foreign ownership;
- Location near the border has a positive role in determining the export orientation of high-productive firms;
- Location in peripheral areas reduce the ability of high-productive firms to develop an export orientation.

(Frenkel & Zimmermann, 2020) analyze the determinants of the German exports. The authors use cointegration estimations with data of German exports in the period 1992-2016. Results shows that the German exports are positively associated with world demand, price competitiveness, energy prices and the fragmentation of the production processes.

(Abidin, Haseeb, & Islam, 2016) afford the question of the determinants of exports in Malaysia, Singapore, Thailand, Indonesia, Philippine, and Vietnam. Data are collected from the period 1990-2013 with the application of the gravity model. Results show that the determinants of exports of Malaysia and the selected ASEAN countries is positively associated with distance, population size, economic size, exchange rate.

(Bensassi, Márquez-Ramos, Martínez-Zarzoso, & Suárez-Burguet, 2015) consider the relationship between transport infrastructures and international competitiveness. The authors specifically stress the importance of the distribution and logistics networks and operators as a tool to improve the ability of a country to challenge international competition. The augmented gravity model is used to analyze the exports of 19 Spanish regions to 64 destination either Spanish either non-Spanish in the period 2003-2007. Results show that the degree of export flows is positively associated with the number, size, and quality of logistic facilities.

(Mohsen, Chua, & Sab, 2017) analyze the relationship between trade liberalization i.e., trade openness and exports in Syria in the period 1980-2010. Authors use cointegration tests and Granger causality. Results show that:

- there is a positive relationship of trade openness and export in the short run;
- in the long run there is a casual relationship- in the sense of Granger- from exports to trade openness.

(Abbas, Sheikh, & Abbasi, 2015) consider the role of firm size and exchange rate on domestic and export sales. Data are analyzed with a panel data in the period 1998-2010 with 205 manufacturing companies. Results show that exports are positively associated to firm size and exchange rate.

(Pradhan & Das, 2016) analyze the determinants of SMEs exports in India. The authors show that SMEs exports in India are subject to regional heterogeneity. The authors analyze data with Functional Linear Regression. Results show that:

- In North India the ability of a SME to have access to export depends positively on young age, ability to acquire external and foreign know-how, having quality certifications, being located in clusters closed to cities;
- In South India, the orientation of SMEs to export depends positively on having quality certifications, cluster localization and proximity to cities;
- In West India, the capacity of SMEs to export is positively associate to the acquisition of external and foreign technical know-how, having quality certification and the proximity to urban areas.



If Indian policy makers are interesting in boosting the ability of SMEs to export, then they should incentivize SMEs to acquire quality certifications; promote the participation of SMEs to local clusters and networks; improve the degree of openness of the knowledge economy to foreign relations.

(Rahman, Shahriar, & Kea, 2019)analyze the determinants of the Bangladesh textile and clothing-T&C exports. The authors use a panel gravity model of Bangladeshi T&C export flows. Data are collected for the period 1990-2017 for 40 commercial partners in international trade. Results show that:

- The Bangladesh's T&C export depends positively fromGDP, real exchange rate and per capita GDP of importers;
- The geographical distance has no impact of T&C exports;
- The main trade destinations for Bangladesh's T&C exports are European Union and North American Free Trade Agreement countries.

(De Matteis, Pietrovito, & Pozzolo, 2016)afford the question of the determinants of export in Italy considering 4.300 manufacturing firms in the period 2000-2013. The authors consider different explicative variables i.e. the distance to foreign markets, human capital, social capital, and the degree of efficiency of the public administration. Results show that:

- The ability of Italian firms to export is positively associate to a set of variables defined at a firm level i.e.size,experience, productivity, capital intensity, innovation, geographical agglomeration, access to credit;
- The orientation of Italian manufacturing firms to export is positively associated to economic characteristics that operate at a provincial level i.e. distance to foreign markets, human capital, social capital, and the efficiency of the public administration;
- There is a positive relationship between the ability of Italian manufacturing firm to export ant their orientation towards innovation i.e. innovation can improve either the quality either the productivity of the firm, and thus, can promote the competitiveness of firms in international markets.

### III. The Model

We estimated the sequent model:

$$\begin{aligned}
 \text{ExportMarketShare}_{it} &= a_{it} + b_1(\text{General government gross fixed capital formation \% of GDP})_{it} \\
 &+ b_2(\text{Social benefits paid by general government \% of Gdp})_{it} \\
 &+ b_3(\text{General government deficitOrsurplus \% of GDP and million EUR})_{it} \\
 &+ b_4(\text{CurrentTaxesOnIncomeWealthEtc\%OfGdp})_{it} \\
 &+ b_5(\text{EmploymentRateBySexAgeGroup2064})_{it} + b_6(\text{GDPPERCapita})_{it} \\
 &+ b_7(\text{PrivateSectorDebtConsolidated\%OfGdp})_{it} \\
 &+ b_8(\text{TotalGeneralGovernmentRevenue\%OfGdp})_{it}
 \end{aligned}$$

We found that the export market share is positively associated with:

- *Gdp per capita*: there is a positive relationship between Gdp per capita and export market share. This means that the greater the ability of a country to produce valued added the greater the ability to export. The positive relationship between productivity and exports has been recognized either at a country level either at a firm level as showed in the second paragraph. If a country is productive then there are greater probabilities to develop an industrial sector that can either satisfy the domestic demand either can be oriented to export. Exports require a productive industrial system at a country level. The relationship between Gdp and "Export Market Share" is biunivocal i.e. countries with greater income per capita export more, and exports improve the income per capita of exporting countries.
- *Current Taxes On Income, Wealth, etc. as aPercentage Of Gdp*:there is a positive relationship between current taxes on income and wealth as a percentage of Gdp and the "Export Market Share". This positive relationship is since the wealthiest European countries also have a more developed public sector financed with taxation. In effect the European countries that export more also have the more developed social policies that are generally sustained with taxes. The positive relationship between taxation as a percentage of Gdp and "Export Market Share" should not be generalized outside the countries of the dataset.
- *Social benefit (other than social transfers in kin) paid by general government % of Gdp*:this variable represents « *Social benefits (other than social transfers in kind) paid by government [...] are transfers to households, in cash or in kind, intended to relieve them from financial burden of a number of risks or needs (by convention: sickness, invalidity, disability, occupational accident or disease, old age, survivors, maternity, family, promotion of employment, unemployment, housing, education and general neediness), made through collective schemes, or outside such schemes by government units.*»(Eurostat,

Eurostat, 2021). There is a positive relationship between social benefit and exportation. This positive relationship can be better understood considering that the European countries that have the highest income per capita also have the best social benefit policies, and, as we have shown, Gdp also is positively associated to exports.

- *General government gross fixed capital formation % of Gdp*: this variable is defined as « *General government gross fixed capital formation [...] consists of resident producers' acquisitions, less disposals of fixed assets during a given period plus certain additions to the value of non-produced assets realised by the productive activity of government producer or units. Fixed assets are produced assets used in production for more than one year* » (Eurostat, Eurostat, 2021). There is a positive relationship between general government gross fixed capital formation as percentage of Gdp and “*Export Market Share*”. The positive relationship can be better understood considering that the investment in fixed assets is an essential driver for the economic productivity either at a country level either at a firm level. In this sense general government gross fixed capital formation as percentage of Gdp improves export by boosting productivity growth.
- *General Government Deficit/Surplus % of Gdp*: There is a positive relationship between “*General Government Deficit/Surplus as % of Gdp*” and “*Export Market Share*”. Specifically, this positive relationship can be explained considering that many European countries that have relevant results in the sense of export, also have significant deficit in respect to Gdp. The positive relationship between “*General Government Deficit/Surplus as % of Gdp*” and “*Export Market Share*” cannot be generalized to non-European countries since this is a specific characteristic of the European countries.
- *Employment Rate by Sex, Age Group 24-64*: is defined as « *The employment rate is calculated by dividing the number of persons aged 20 to 64 in employment by the total population of the same age group. The indicator is based on the EU Labour Force Survey. The survey covers the entire population living in private households and excludes those in collective households such as boarding houses, halls of residence and hospitals. Employed population consists of those persons who during the reference week did any work for pay or profit for at least one hour, or were not working but had jobs from which they were temporarily absent [...]* » (Eurostat, Eurostat, 2021). The positive relationship between “*Employment Rate by Sex, Age Group 24-64*” and “*Export Market Share*” can be considered as a specification of the positive relationship between “*Gdp per Capita*” and “*Export Market Share*”. In effect if the employment rate grows there a positive impact on productivity, gdp and exports.

We found that the export market share is negatively associated with:

- *Total General Government Revenue as Percentage of Gdp*: is defined as « *Governments collect revenues mainly for two purposes: to finance the goods and services they provide to citizens and businesses, and to fulfil their redistributive role. Comparing levels of government revenues across countries provides an indication of the importance of the government sector in the economy in terms of available financial resources. The total amount of revenues collected by governments is determined by past and current political decisions. This indicator is measured in terms of thousand USD per capita, and as a percentage of GDP. All OECD countries compile their data according to the 2008 System of National Accounts (SNA 2008)* » (OCSE, 2021). There is a negative relationship between the “*Total General Government Revenue as Percentage of Gdp*” and the “*Export Market Share*”. This can be since while, on the one side government expenditure can boost economic productivity and by this way also can promote exportation, on the other side government revenue can reduce the ability of a country to generate products and service either for the domestic either for the foreign markets.
- *Comparative Price Levels of Final Consumption by Private Households Including Indirect Taxes (EU28=100)*: this variable can be defined as « *Comparative price level indices (PLIs) are calculated for each country as the ratio of the purchasing power parity (PPP) and the exchange rate (XR) in relation to another country (base country) or to the average of a group of countries [...] and thus enable a comparison of the price levels of the individual countries. If the PLI is greater than 100, the country concerned is more expensive in relative terms than the base country (or group of countries); if the PLI is less than 100, the country in question is relatively “cheaper” than the base country (or group of countries). PLIs are presented either in the context of the gross domestic product (GDP), one of its sub-aggregates – first of all, final consumption expenditure of private households (HFCE) – or individual product groups. PLIs permit general statements as to how “expensive” or “cheap” one country is in relation to a base country/group of countries, but due to their statistical instability, they should not be used to draw up stringent country rankings. Rather, it is advisable to compile country clusters with comparable price levels.* » (Statistics-Austria, 2021). The negative relationship between “*Comparative Price Levels of Final Consumption by Private Households Including Indirect Taxes*” and “*Export Market Share*” means that the European countries that in relative terms have the ability to lower the prices also have the greater export market share.

Econometric Estimations of the Export Market Share											
Variable	Label	Dynamic Panel at 1 Stage		Fixed Effects		Random Effects		Pooled OLS		WLS	
		Coefficient	P Value	Coefficient	P Value	Coefficient	P Value	Coefficient	P Value	Coefficient	P Value
Coefficient		0.736989		22.591700		26.6156000	*	31.008200000	*	42.442000000	***
Gdp Per Capita	A37	0.000245	**	0.000280	***	0.0003242	***	0.000368972	***	0.000382855	***
Total general government revenue % OF gdp	A38	-2.660530	***	-2.266340	***	-2.1693700	***	-2.061010000	***	-1.717690000	***
Current taxes on income, wealth, etc. % of GDP	A41	1.330630		1.005160	***	1.0541300	***	1.103210000	***	0.935604000	***
Social benefits (other than social transfers in kind) paid by general government % of GDP	A42	3.514950		2.550290	***	2.3528000	***	2.131930000	***	1.490660000	**
General government gross fixed capital formation % of GDP	A43	5.212450		3.791370	***	3.6137000	***	3.375920000	***	2.568940000	**
General government deficit/surplus % of GDP and million EUR	A45	1.369570		1.538410	***	1.4004800	***	1.258500000	***	1.271700000	***
Comparative price levels of final consumption by private households including indirect taxes (EU28 = 100)	A46	-0.560045		-0.510270	***	-0.5355540	***	-0.561014000	***	-0.537103000	***
Employment rate by sex, age group 20-64	A57	1.082950		0.753067	***	0.6889300	***	0.620944000	***	0.424863000	**
Export Market Share	A66(-1)	-0.23137	***								

Figure 1. Econometric Estimations of the Export Market Share.

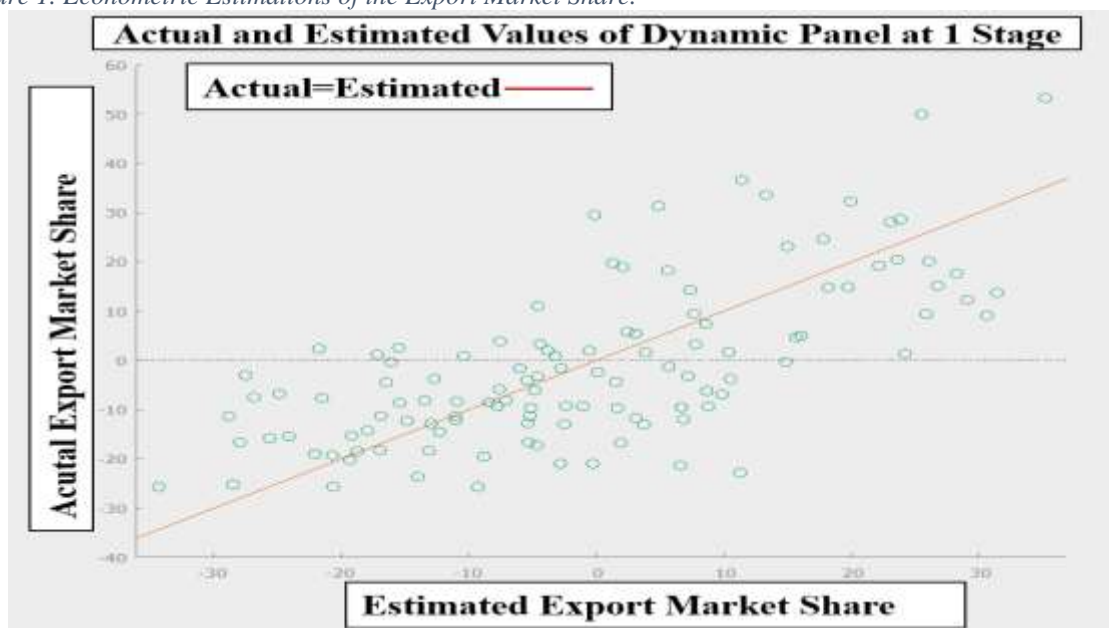


Figure 2. Actual and Estimated Values of Dynamic Panel at 1 Stage.

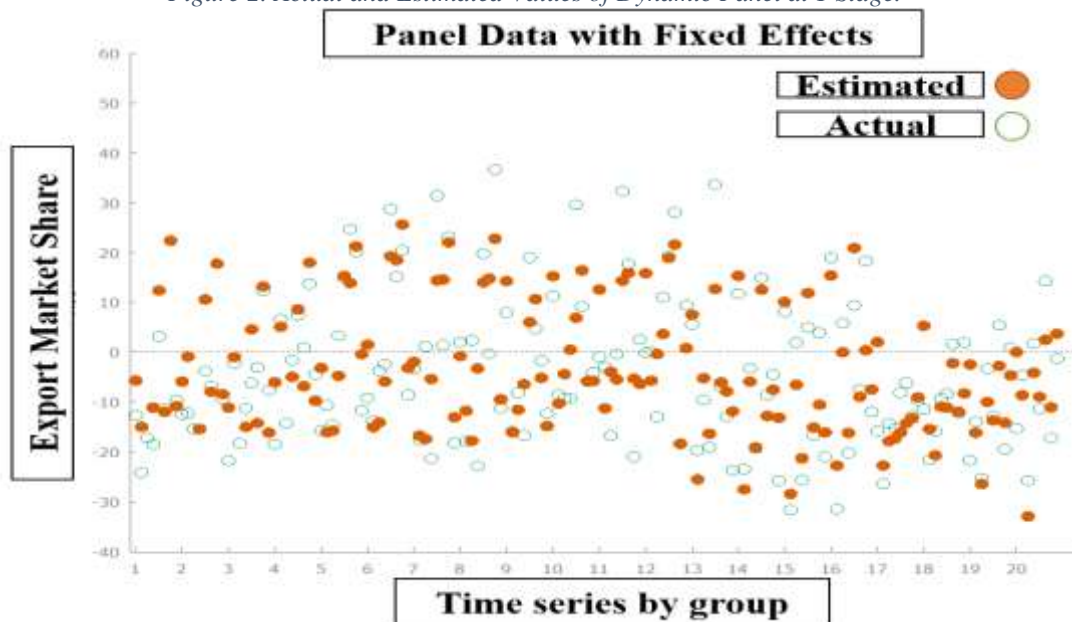


Figure 3. Panel Data with Fixed Effects.



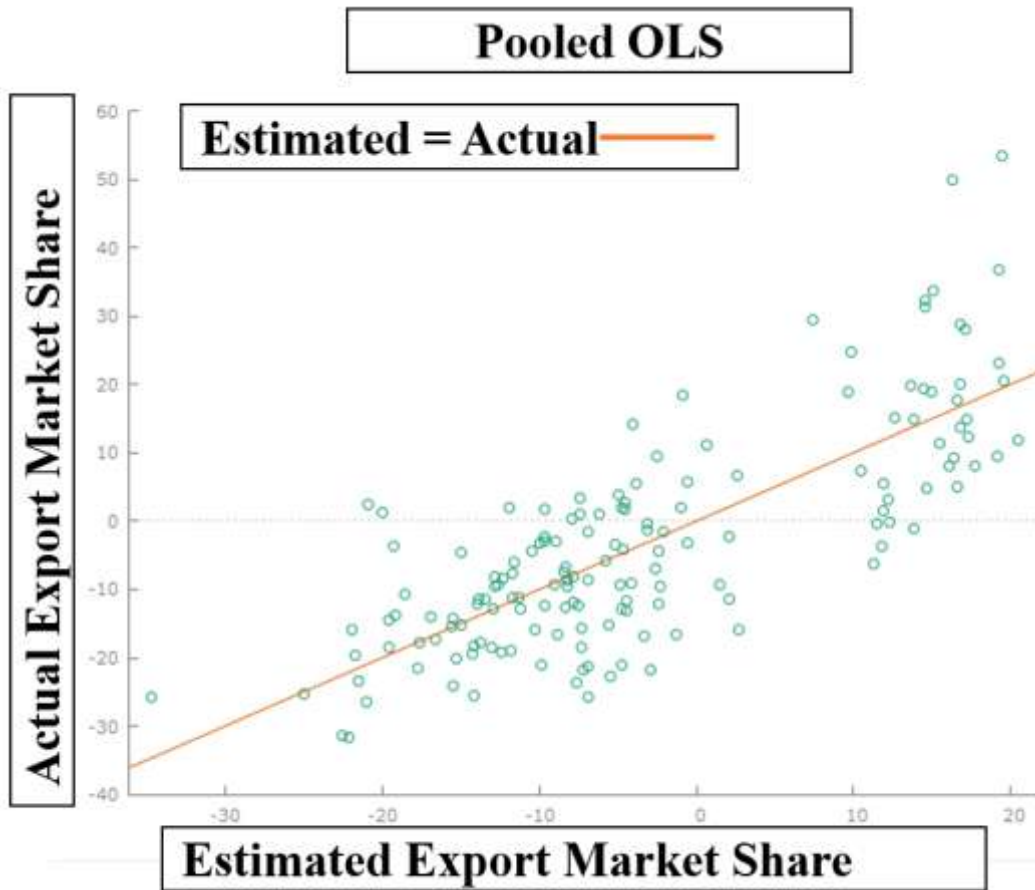


Figure 4. Pooled OLS. Estimated and Actual Values.

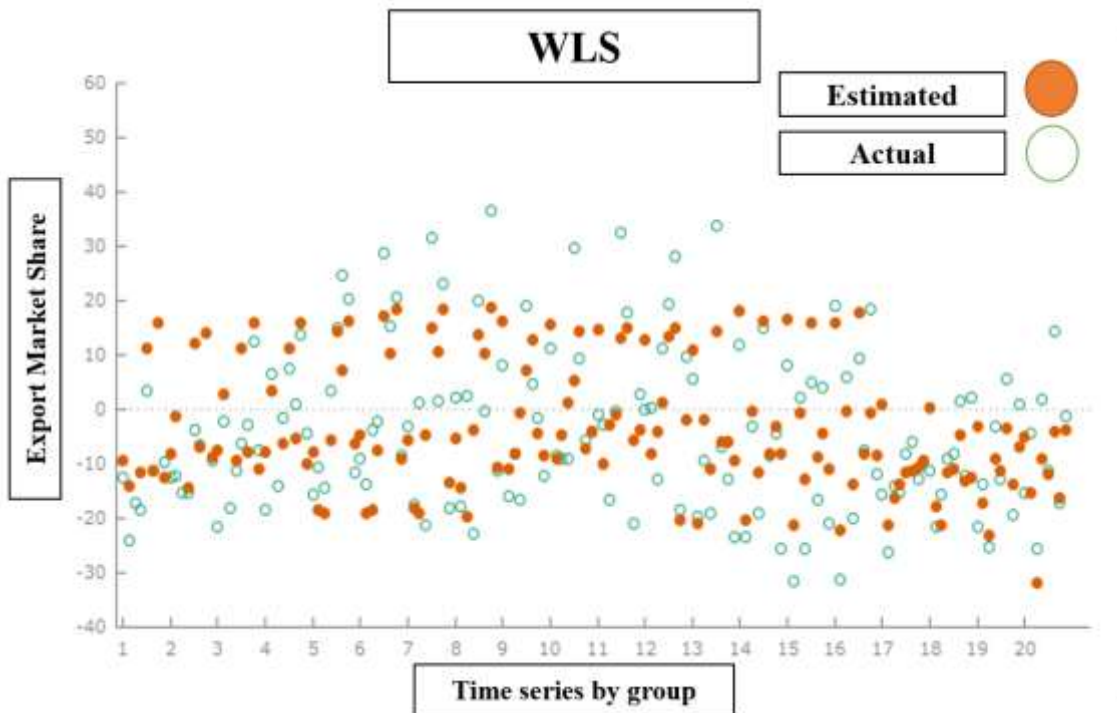


Figure 5. WLS. Estimated and Actual Values.

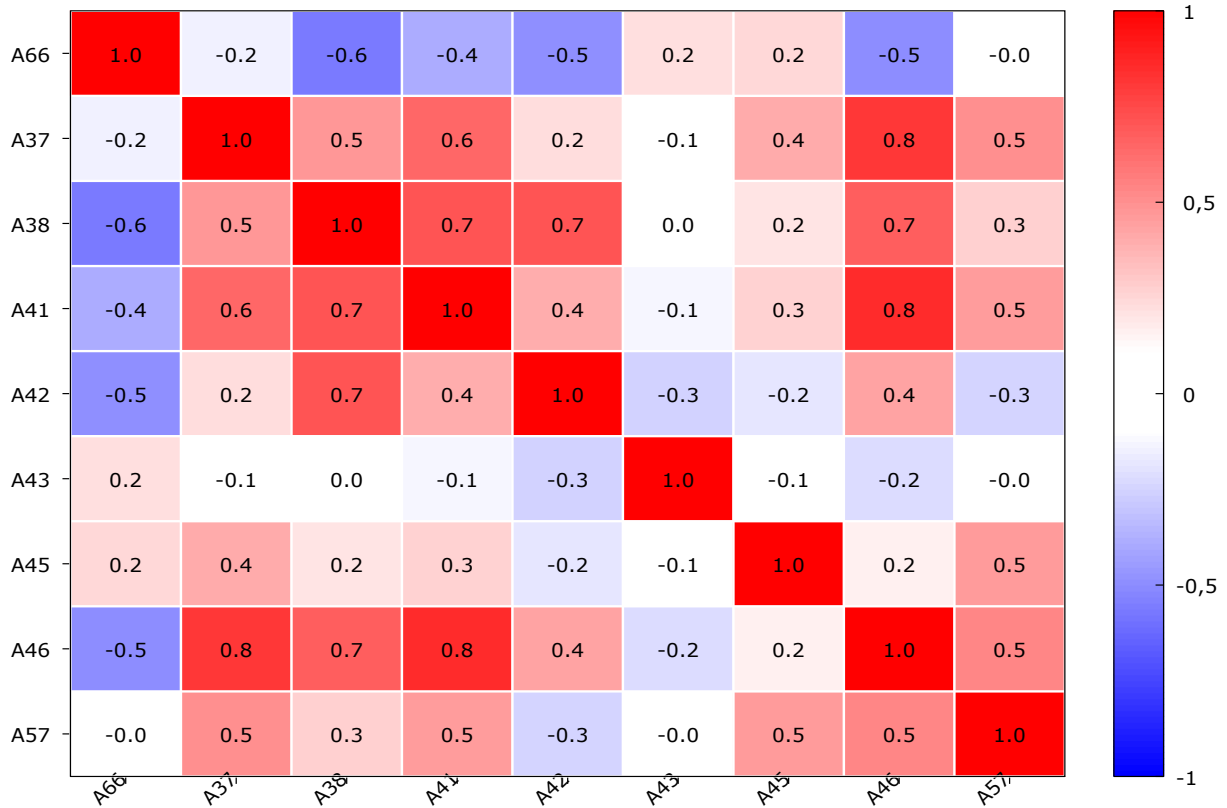


Figure 6. Correlation Matrix.

**IV. CONCLUSION**

In this article we have investigated the determinants of Export Market Shares for 20 European Countries in the period 2010-2017. Methodologically, we use Panel Data with Fixed Effects, Random Effects, Dynamic Panel at 1 Stage, Pooled OLS and WLS. We found that the Export Market Share is positively related with Gdp growth and measures that approximate productivity and the ability to produce economic value added. This clearly means that among the European countries that who produce more tends also to export more. The positive relationship among Gdp growth, productivity and export also is analyzed in the scientific literature as discussed in the second chapter. Our research suggest that if European countries are interested in having a rule in the context of international trade they should invest more in creating the conditions for a deeper growth in productivity especially in the context of Industry 4.0 and Society 5.0.

**V. INDEX OF FIGURES**

Figure 1. Econometric Estimations of the Export Market Share. .... 183  
 Figure 2. Actual and Estimated Values of Dynamic Panel at 1 Stage. .... 183  
 Figure 3. Panel Data with Fixed Effects. .... 183  
 Figure 4. Pooled OLS. Estimated and Actual Values. .... 184  
 Figure 5. WLS. Estimated and Actual Values. .... 184  
 Figure 6. Correlation Matrix. .... 185

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