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TRADE POLICY AND EXPORT COMPETITIVENESS IN ALBANIA: AN ECONOMETRIC INVESTIGATION

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Abstract

This research explains the relationship between export volume and other key independent variables like the Herfindahl-Hirschman Index (HHI), tariff changes, and GDP growth. The HHI, drawn from the World Integrated Trade Solution database, explains changes in market concentration and competitiveness, affecting export volumes. The paper will be looking at the effects of a change in tariffs from Macrotrends and how these changes impact export competitiveness and the flows of trade. GDP growth data from the Bank of Albania acts as a proxy for the general performance of the economy. Multiplicative Linear Regression analyzes the interaction and impacts of these variables on export volumes from 1997 to 2023. Descriptive statistics highlight the dataset characteristics, while correlation analysis seeks to find complex relationships among variables. The negative relationship, statistically significant, between export volume and both market concentration as captured by HHI and tariff rates, while there is no evident effect from GDP growth, emerges from the regression analysis. The results underline the responsiveness of export volume to changes in market structure and tariff policy and indicate that there would be limited power of GDP growth in the studied regression model.

Key Words: *GDP growth, Herfindahl-Hirschman Index, Multiplicative Linear Regression, tariff changes.*

1. INTRODUCTION

Understanding the factors that determine export performance is of paramount importance to the formulation of appropriate trade policy and promotion of strong economic growth. In this study, we explore the complicated relationships between export performance and three important variables: the Herfindahl-Hirschman Index, tariff rates, and GDP growth. For the HHI, which measures the

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level of concentration in the market, it is of paramount importance in determining competitive landscapes that shape a country's export ability and its market power. Tariff rates are simply the measures of the trade policy that indicate cost-competitiveness and the attractiveness of exports inasmuch as they inhibit or facilitate trade flows. Meanwhile, GDP growth shows the general economic ability and how it contributes to the level of export through increased production and innovation. Using comprehensive econometric analysis and data across multiple countries over a long period, this study tries to figure out strong patterns and develop robust predictive models. The latter are envisioned to provide policymakers and other stakeholders with an understanding of the strategies that best suit the improvement of export performance. After all, this study contributes not only to enhancing our knowledge of the macroeconomic determinants of exports but also to providing concrete insights to help design effective policies that promote sustainable economic development through enhanced trade activities.

2. LITERATURE REVIEW

The paper by Erkan & Bozduman (2021) explores the changing landscape of global macroeconomic performance and international competitiveness, with special regard to the values of exports and technological advancement in the exported products from 2000 to 2020. They note a dramatic shift in the rankings, especially how China has emerged as a dominant force, leaving behind the USA, Germany, Japan, France, and England. After making a comparative study on China and Japan export concentration as measured by CR and HHI, it finds that China has diversified its exports well, and the lowering concentration values bring it up in the global export rankings. There is a need for countries to increase export values by diversifying their product range, thus enhancing their influence on the global platform amidst ever-increasing competition.

Salinas (2021) suggest a more subtle approach to export diversification, arguing that the conventional diversification indices should be discarded for the analysis of certain export groups directly related to diversification. According to them, such conventional indices suffer from the fact that they are externally driven by heavy mineral exports and hence dilute accuracy. They thus argue that direct analysis of the levels of superior exports is far more accurate in identifying the determinants rather than depending on the indices. The paper brings out the important role played by horizontal policy variables in modeling the export categories associated with diversification; it indicates that these hold high explanatory power in a gravity equation framework. It brings out the critical role of physical and policy-related connectivity, while calling for the reduction of trade barriers, improvement in infrastructure, and communications technology investment to assist in diversification, even for economies marked by remoteness. Furthermore, strong policy frameworks are essential, citing examples of countries such as Australia, Chile, and New Zealand, which have overcome geographical disadvantages with good policy frameworks. They, however, do caution against the traditional approaches and call for strategies anchored on strengthening horizontal policies, which their statistical analysis indicates is the most fundamental to export diversification.

In their paper, Ding & Liu (2023) assess the impact of US tariff increases from 2018 to 2019 on 500 export enterprises and 300 domestic sales enterprises. They find that tariff increases primarily affected export volumes, not prices. In 2018, export volumes were up nearly 10%, with little change in prices, while in 2019, export volumes fell with little change in prices. Firms adjusted to these volume fluctuations by per capita adjustment of working hours instead of changing the workforce size raising the hours and wages when volumes rose in 2018, and lowering the hours and wages when volumes fell in 2019. The wage cuts were comparatively more surreptitious; they cut cash wages and benefits, of which the latter accounted for 42 percent. Point out that the study emphasizes that though its focus is on direct effects, there will be changes in demand further upstream, and further research on indirect effects is required. It suggests that the policy should not only develop scientific measures to support the enterprises of exports but also develop diversified trade partnerships. Labor regulations should be strengthened to protect the legitimate rights of laborers and prevent excessive cuts in social investment.

According to Häggqvist (2022), both countries imposed taxes on their exports, at varying degrees and intensities, up to the 1860s. Eliminating those duties took place over several steps from 1817 to 1863. Sweden was far slower in making her export entirely duty-free; before 1826, all Swedish exports were taxed. By 1836, most Swedish export was duty-free, although some remained subject to small, nondistortionary rates of tax-about 5 percent ad valorem-and there were higher rates charged on specific goods to limit export volume and guarantee the domestic market's supply or for fiscal reasons. For example, bar iron in Sweden and hides and wool in Denmark remained taxed for much longer. While exports were fiscally more important in Sweden, Denmark shared similar fears that the abolition of export duties would create revenue difficulties. There was no clear distinction between raw materials and the more refined goods; the exports of both countries were predominantly raw materials. Thus, for example, Sweden taxed low rates on iron manufactures and some raw materials before their duty abolition. The abolition of the duty on the key future exports, such as grains and dairy in Denmark and grains and forestry in Sweden, happened early, before the growth in exports. Therefore, it is not clear whether the growth in exports was caused by the reduction or the total abolition of the tariffs. Export taxes had become part and parcel of trade policy, especially in the mercantilist regime that sought export surpluses. Fiscal needs, particularly in periods where states were continually financially strained, dictated trade policy, even in export commodities. Although Denmark was pushing toward a free-trade regime after 1797, fiscal needs in export commodities were still present, if to a lesser degree. These fiscal needs delayed export liberalization in both countries, although the timing differed. This implies a possible political conflict in trade taxation between state revenue generation and export growth promotion, with governments often opting for the former. However, whether export taxes hindered export growth is a theme for further research.

Hayakawa, Ishikawa, & Tarui (2018)conducted an empirical study in which the authors used freight rates and bilateral trade data from almost 150 countries over the period 2000-2007. From the study, it is apparent that Ishikawa and Tarui's prediction can be tested. The reduction in domestic tariffs induces transport firms to decrease freight rates on domestic exports. Consequent to that is the increase in both domestic imports and exports. This reveals an overlooked mechanism endogenous transport costs by which import liberalization improves the exports of a country. Other channels through which reduction in import tariffs can have positive effects on exports are: first, the reduction in the production costs of sectors using imported intermediate goods; second, productivity improvements due to more intense import competition, as noted by

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Cruz and Bussolo, Trefler, and Amiti and Konings. The study, however, admitted that there are more factors to be considered to explain the full interaction between trade liberalization and foreign direct investments.

Within the complex interaction between exports and economic growth, Usman et al. (2012)was particularly interested in studying the Luxembourg economy during the 1974-2009 period using the Ordinary Least Squares method. The empirical findings show that there is a harmonious equilibrium interrelation between trade and economic growth in the long run; therefore, exports have a significantly positive effect on economic growth. This evidence is concordant with other results in previous research studies. Even though the economy of Luxembourg has been hurt a lot due to the global financial crisis of 2008-09, especially because of the increased rate of unemployment, the authors add that the government should react by expanding its export portfolio toward the emerging countries. In addition, diversifying the economy, especially toward financial sectors, will enhance financial development. As the European Union is increasingly expanding, with subsequent increased competition, Luxembourg should innovate its products and services in order to remain competitive in the Euro Zone market. This paper concludes that long-term economic growth depends heavily on internationalizing trade and financial development. Thus, based on the empirical results, it is recommended that Luxembourg increases efforts on trade expansion to enhance economic growth and preserve its economic stability and development.

The paper authored by Kovač, Palić, & Mihanović (2012) discussed the world economic crisis of the past decade and the pivotal role of international trade in speedier economic recovery. For Croatia, however, it increases exports for stronger economic growth and development. In this sense, the study has shown that while exports in many countries contributed importantly to GDP growth, exports from Croatia were significantly weaker and only contributed moderately to its GDP. Hence, the paper continues, what characterizes the trade of Croatia is low export propensity, combined with a high import propensity, as the imports in the country are significantly higher than its exports. During the recession, however, the import dependence decreased, but this happened due to a decline in trade, not economic recovery. It is further established that several elements restrict Croatia's competitiveness in international markets: fragmented production, improper business ties, low production capacity, and sluggish technological progress. In order for growth to be enhanced, the paper underscores that exports from Croatia have to be increased, especially those of high value, towards achieving better import-export balance and sustained GDP growth. It is very much crucial for an improvement in living standards and for further economic development. The findings call for better integration of Croatia into the global economy to spur on faster development.

The research that Khan & Emirullah (2019) has conducted is an investigation to see the impact that exports have on the economies of Pakistan and India from 1990 to 2016. He applies the Augmented Dickey Fuller test, which makes the data clear of stationarity problems, while the FMOLS technique is the method that makes it possible to estimate coefficients. From the study, he comes up with the fact that exports are positively related to economic growth for the two countries. He also discovered that FDI inflow and human capital investment are in effect positively related to economic growth. In his opinion, policymakers should now begin to work on developing some effective policies to grow the volume of exports, attract foreign direct investments, and develop human capital development to achieve economic growth. Precisely, governments should work on investment policy, which is friendly, in order to attract both the local and international investors. They will also need to enhance the health and education sectors, most importantly in rural areas where most of the populace resides, as well as improve security in order to provide a safe environment that prevents intrusion into citizens' interests or properties, hence the development of economic growth.

3. DATA AND METHODOLOGY

The analytical method for the relationship between export volume and independent variables of the Herfindahl-Hirschman Index, tariff changes, and GDP growth will follow a holistic approach through data from various reputable sources. First, the HHI in the World Integrated Trade Solution database is the measure of industry concentration of the market, which reflects the competitiveness within any given market. This index will give insight into the degree of market power being exerted by firms in export markets and, therefore, their export volumes. Secondly, the data on the change in tariffs that will be sourced from Macrotrends will be factored in. The changes in tariffs normally greatly affect export competitiveness and trade flows. Analysis of how the change in tariffs will affect the volume of exports would, therefore, provide some much-needed insight into the dynamics of trade over this period. Thirdly, from the Bank of Albania, GDP growth data will be used as a proxy for the overall performance of the economy. It reflects the expansion or contraction of the economy, which would affect demand for export. The combined effect of these independent variables will be examined in a Multiple Linear Regression model for the effects on export volumes. The approach here provides a basis for exploring the complex relationships between market concentration, tariff policies, economic growth, and export performance in depth, hence a solid framework of understanding of the drivers of export dynamics from 1997 to 2023.

4. RESULTS

In this section, we will look at graphs that help analyze our data and see the intricate relationships that exist between the Herfindahl-Hirschman Index, the tariff rates, GDP growth, and export volume. With these visualizations, we seek to reveal the patterns and trends that set light to the complex nature of the dynamics governing the competitiveness of the market and economic outcomes.

The following Figure illustrates the dynamics of the relationship between the Herfindahl-Hirschman Index, the tariff rates, and their impact on GDP growth and the volume of exports over the period of time. The HHI, being a measure of market concentration, along with tariff rates, furnishes an insight into the market competitiveness and trade policy. Looking into the correlations between these indicators and GDP growth with export volumes, we can draw inferences regarding the interactions between market structure, trade policy, and economic performance over time.

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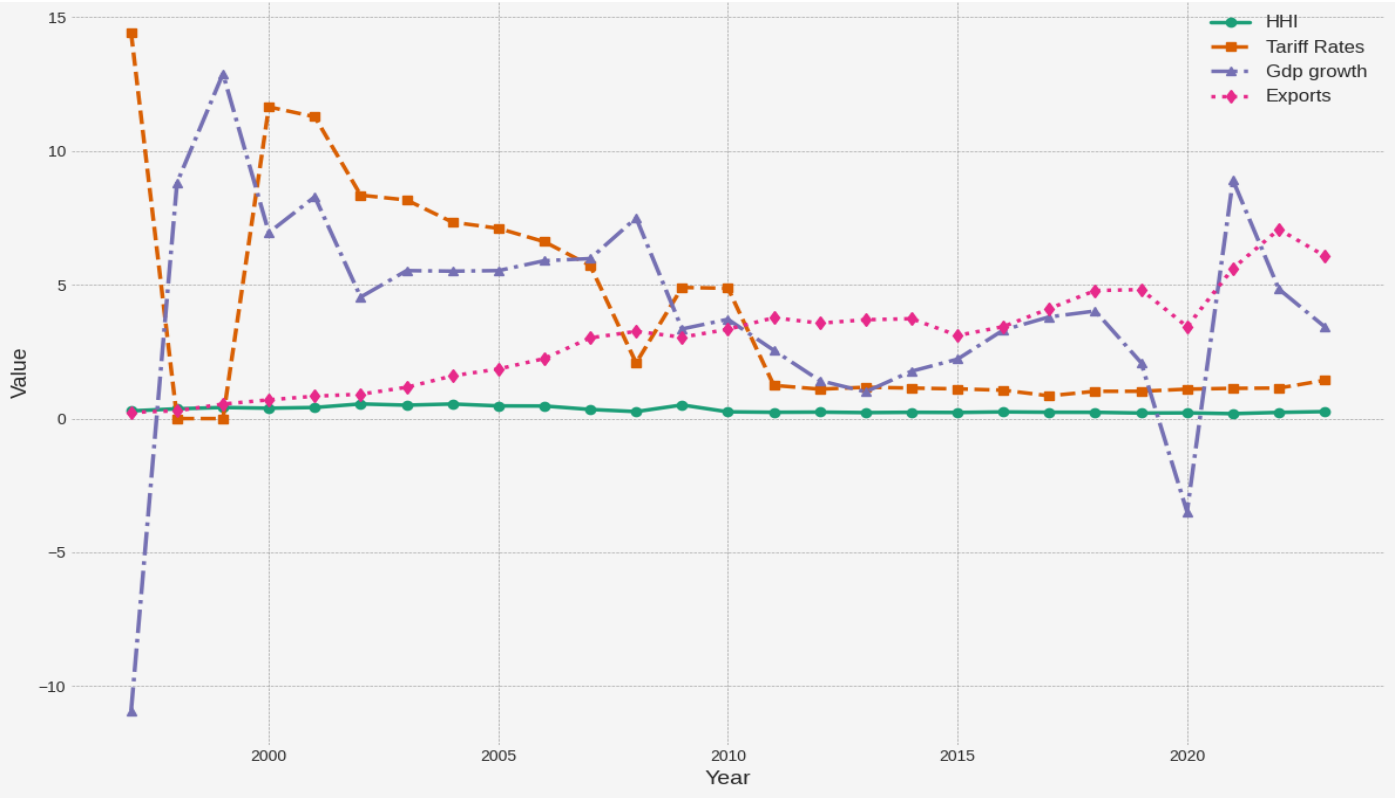
Fig 1. Variables over the years



The first step in our analysis within this section is the presentation of descriptive statistics. These statistics give an all-round view of the dataset, including measures of central tendency, dispersion, and distribution characteristics.

Table 1. Descriptive Statistics

	HHI	Tariff Rates	Gdp growth	Exports
mean	0.32	3.96	4.05	2.97
std	0.12	4.08	4.34	1.82
min	0.18	0.00	-10.92	0.23
25%	0.23	1.10	2.39	1.38
50%	0.26	1.24	4.02	3.26
75%	0.41	6.86	5.94	3.75
max	0.55	14.41	12.89	7.07

The table above gives a summary of statistics for four indicators: Herfindahl-Hirschman Index, Tariff Rates, GDP Growth, and Exports. The HHI is 0.32 in average, which means a moderately concentrated market, although it ranges from 0.18 to 0.55; mean tariff rates stand at 3.96% but are variable, with a standard deviation of 4.08 and ranging from 0% to 14.41%; the mean of GDP growth lies at 4.05%, but with a standard deviation of 4.34%, it experiences big fluctuations that go between -10.92% and 12.89%; and exports average 2.97% with a much smaller standard deviation of 1.82% and range between 0.23% and 7.07%. These variables can be put in better context when the medians are considered. The median value for each of these variables HHI: 0.26, Tariff Rates: 1.24%, GDP Growth: 4.02%, Exports: 3.26% indicates that, despite some variability, most values fall within the vicinity of these medians.

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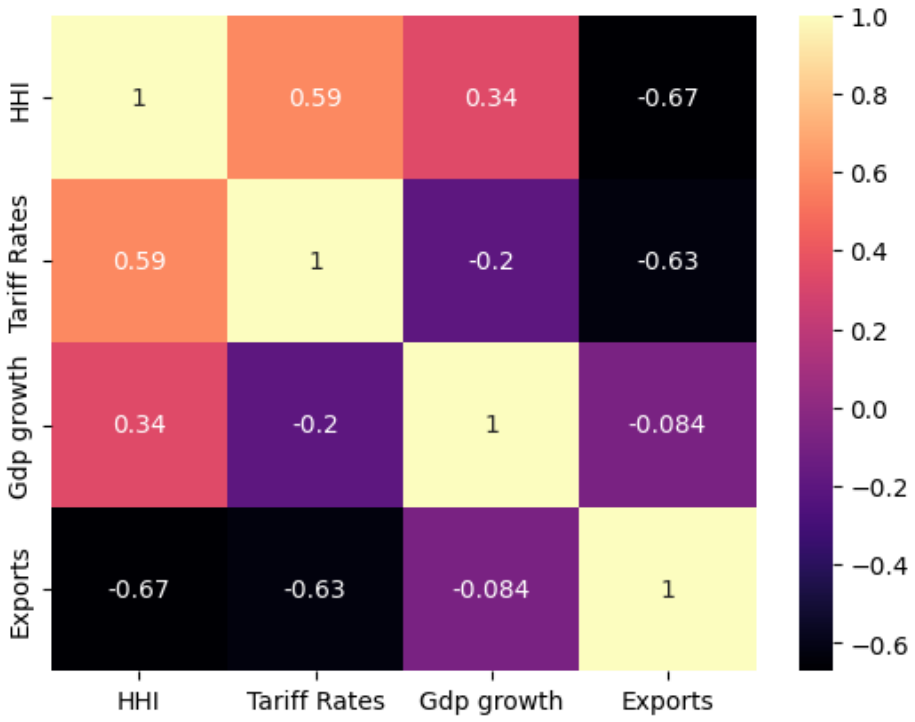
Fig 2. Correlation Between Features



The correlation matrix denotes the relations among four variables of HHI, Tariff Rates, GDP growth, and Exports. HHI shows a moderately positive correlation with the Tariff Rates, suggesting that higher HHI would tend to go with higher tariff rates. On the other hand, it has a strong negative correlation with Exports, meaning that increased HHI goes with the prevalence of reduced export volumes. Similarly, Tariff Rates are related to HHI and Exports, although with slightly weaker correlations than those HHI had with them. In addition, GDP growth presents weak positive correlations both with HHI and Exports, but on the other hand, a weak negative correlation with Tariff Rates. The relationships indicate the complexity of the interaction between market concentration, policies of trade, growth in the economy, and the export performance of an economy.

The regression statistics in Table 2 show that the model is positively correlated between observed and predicted values, for which evidence includes a Multiple R of 0.7305. The R Square of 0.5336 says that about 53.36% of the variance in the dependent variable is explained by the model. The Adjusted R Square of 0.4728 accounts for the number of predictors in the model, which is a bit smaller, yet still quite good, at an explained variance of 47.28%, which is valuable for making model comparisons. The Standard Error of 1.3184 indicates the typical amount by which the residuals deviate from zero; it represents how far each data point falls from the best-fit line in the regression. Given 27 observations, these statistics represent a reasonably good fit to the model, though by no means perfect.

Table 2. Regression Statistics

Multiple R	0.730509882
R Square	0.533644688
Adjusted R Square	0.472815734
Standard Error	1.318398391
Observations	27

The ANOVA results in Table 3 indicate that the developed model of regression significantly explains a huge portion of the dependent variable variance, as attested by the highly significant F-value of 8.77 at $p < 0.001$. From this, it is meant that the set of predictors included in the model as a set have a good relationship with the outcome. In the dependent variable, the regression model explains 15.25 units of the total 85.72 units of variability, with 1.74 units left unexplained in the residuals. Overall, the results point to the fact that this model of regression is statistically significant in predicting the dependent variable.

Table 3. ANOVA

	df	***SS***	***MS***	***F***	***Significance F***
Regression	3	45.75	15.25	8.77	0.0004623
Residual	23	39.98	1.74		

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Total	26	85.72			

The following observations come out from the regression analysis: First, the intercept term of about 5.909 is statistically significant; $p < 0.001$, meaning that the dependent variable has a nonzero value even without explanatory variables. The Herfindahl-Hirschman Index (HHI) is significant, negative, with a coefficient value of about -7.185; $p = 0.040$, a suggestion that an increase in the market concentration negatively affects the dependent variable. Likewise, Tariff Rates express a significant negative relationship with the dependent variable, whose coefficient is approximately -0.157; $p = 0.011$, an indication that high tariff rates correspond to small dependent variable values. However, the coefficient for GDP Growth is statistically not significant, about 0.002; $p = 0.981$, an implication that changes in the GDP growth rate do not have any apparent effects on the dependent variable.

Table 4. Model Coefficients

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	5.90933895	0.788955286	7.490080937	1.30271E-07
HHI	-7.185487715	3.29411511	-2.181310451	0.039638772
Tariff Rates	-0.156558294	0.091524679	-1.710558246	0.010619792
Gdp growth	0.001774419	0.073885704	0.024015735	0.981047205

These results point out that the dependent variable is sensitive to market concentration and tariff policies and that the influence of GDP growth may not be a determinant in the given regression model.

5. CONCLUSIONS

Comprehensive analysis from 1997 to 2023, covering the Herfindahl-Hirschman Index (HHI), tariff changes, and GDP growth, unravels critical insights into the interaction among market structure, trade policies, and economic performance. Descriptive statistics include a moderately concentrated market with an average HHI of 0.32; tariff rates exhibit variability, ranging from 0% to 14.41%. Correlation analysis underscores the complex relationships, including a strong negative correlation of approximately -0.7 of the HHI with exports and a moderately positive correlation of around 0.5 with tariff rates. Further, the regression model explains this dynamic: both HHI and tariff rates indicate a statistically significant negative correlation with export volumes, reflected by coefficients of -7.185 ($p = 0.040$) and -0.157 ($p = 0.011$), respectively. GDP growth, however, does not become a significant determinant in the given regression model, with a coefficient of approximately 0.002 ($p = 0.981$). These results underline the all-important role of market competitiveness and trade policies, guiding policymakers and the interested stakeholders about factors that govern export dynamics and helping them to make informed decisions to improve trade performance.

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