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Causality between foreign direct investment in the automotive sector and export performance of Macedonian economy

JEL Classification: *F14; F21; F23*

Keywords: *FDI; automotive industry; export; causality*

Abstract
Research background: Foreign direct investment is perceived as a valuable tool for economic growth. The growth could be realized more or less as a set of benefits depending on the FDIs features. In the period from 2009 to 2016 a remarkable increase in the share of FDIs inflow in automotive sector in Macedonian economy was noticed, from 2.8% to 14.1%. Thus, there seem to be good reasons to examine the issue of how the increased FDI inflow expressed through the remarkable in-crease of FDIs inflow in the automotive sector.
Purpose of the article: The aim of the paper is to analyze the causality between the increased FDIs inflow in the automotive industry and a remarkable export growth. The research interest of the study is to recognize the importance of the FDIs inflow structure as a determinant of the export structure.
Methods: Within the paper a model is developed that identifies the FDIs as a factor of growth of the export performances. A regression analysis is used to examine the correlation between the FDIs inflow and export. In order to examine causality, the Granger causality test is applied between the FDIs inflow and increased export.
Findings & Value added: The results suggest that FDIs create a good basis for quantitative and qualitative shift in the export structure of the Macedonian economy. The paper associates growth of sectoral export with the growth of FDIs in that sector. Due to the increased FDI inflow in the automotive industry, this sector has significantly increased its share in the total Macedonian export. The paper indicates that FDIs can be considered as a way of en-

gagement in the global supplying chains, which additionally influences positively the competitiveness and export performance of the host suppliers.

Introduction

Foreign direct investments (FDIs) could be considered as a factor of development for both developed and developing countries. FDIs and their effects to the host economy are issues of continual theoretical and empirical interest within the scientific and research community on the one hand, and on the other, they can be recognized as a useful tool for developing a strategy for an economy. The research interest could be equally directed to the quantitative and qualitative aspects of FDIs and their interactions with the host environment through founding production facilities, hiring and training workers, establishing linkages with local suppliers and influence on the export performances of the local economy. The FDIs are potentially seen as a source of important productivity externalities for the host economies. FDIs can create or enhance opportunities for value creation by their decisions to invest in a particular location (Pavlinek & Zizalova, 2014, pp. 1–33). The directions and benefits of the FDIs to the host economy depend largely on the structure, local policies, as well the level of development.

The paper is dedicated to make visible the process of relationship between the qualitative shift of FDI inflow and its influence on the quality of the export structure in the Macedonian economy. The challenge for this analysis is twofold.

First, the Macedonian economy as a small, former transition economy experienced insufficient amount and poor quality of FDIs inflow during the whole transition period. Although the FDI based development strategy was declared and determined as the main strategy for economic growth and restructuring, the data for FDI inflow reveals poor results. It was expected that FDI would be a tool for economic restructuring, as was the experience of most of the former transition economies. According to Bandelj (2010, pp. 481) the FDIs for the transition economies from CEE have become one of the basic criteria of successful economic transformation. Economic development requires the transformation of a country's economic structure that involves diversifying into new sectors (Henn *et al.*, 2015, pp. 6).

Due to the limitations connected to the national and regional business and political environment as well the constraints caused by the nature of the FDIs inflow, the Macedonian economy had not experienced FDI based development. The increasing trend in FDIs inflow, since 2010, in automotive sector as a more capital intensive investment, may be seen as a good challenge to examine the influence to the local economy.

Second, the importance of the analysis is determined by the features and tendencies in the export structure and its sensitivity on FDIs inflow structure. Exactly, through compiling the export growth model, the paper tries to identify whether the improvement in the quantity and quality of FDI inflow has boosted the export performances, and in which direction. It enables to examine how the shift in the FDI inflow quality has resulted in the qualitative shift of the export structure.

The academic significance of a contribution to the topic lies in revealing how a structure of FDI inflow can determine and cause significant shift in the export structure in the case of an open, small economy, and how the engagement in the global supplying chain can be used as an export platform.

The paper is divided into seven sections. It begins with an introduction. The second section refers to the literature review that has to provide a theoretical background on the FDIs' effect to export in the host country. Then, it is followed by the properties and tendencies of the Macedonian export in the last years. The bases of the paper are the sections of methodology used in the analysis and the results that visualize the correlation and causality between the FDI inflow and export. Finally, the paper is summarized with a discussion unit and derivation of conclusions based on the conducted analysis.

Literature review

Many empirical studies have tried to assess and examine the causality relationship between the FDIs and export growth. They investigate the role of FDIs to the export performance in developed as well developing economies. The results can vary according to the nature, motivation and geographical aspects of FDI. Radulesku and Serbanescu (2012, pp. 26) have examined the effects of FDIs on the host economy and emphasize the export dependency on the type of investment.

Majority of the studies report that FDIs can be considered as a significant "engine of export". FDI inflows may be export-promoting in two ways: directly, through the exports of the multinational's subsidiaries, or indirectly, by engaging the host firms in the supplying linkages and enabled access to world markets. Analyzing the effects of FDI inflows to the export performance of 14 transition economies in Central and Eastern Europe (CEE), Kutan and Vuksic (2007, pp. 430–445) show that FDI has improved the export performance of the host economies by increasing their supply capacities. Greenaway *et al*. (2001) stress the export advantages of FDIs

and their influence on the export performance of local companies. Zysk and Smiech (2014, pp. 7–18) give an extensive overview of the selected recent studies and pieces of research focused on the relationship between FDI and trade. Many bodies of research examine the causal relationship between inward FDIs and the manufacturing export performance. Some of them indicate a two-way causality (Liu *et al*. 2001, pp. 190–202; Zhang & Felmingham, 2001 pp. 82–99; Pacheco-Lopez, 2005, pp. 1–24; Ekanayake *et al*., 2003, pp. 59–72; Baliamoune-Lutz, 2004, pp. 49–56), and the others (Dritsaki *et al.*, 2004, pp. 230–235; Zhang, 2006, pp. 50–55; Khan & Leng, 1997, pp. 40–60) reveal a unidirectional causal relationship between FDI and export with a direction from foreign direct investment to export and a reversely causal relationship.

Remarkable upgrading of export performance, extremely high growth of export and considerable changes in the export structure towards goods with higher added value are results of FDI inflow in CEE countries. Due to the increased FDI inflow in the automotive industry, this sector becomes dominant across CEE, significantly increasing its share in the total export and production (Pavlinek, 2015, pp. 209–255). The direction of the FDI flows is of key importance for the export restructuring and growth of an economy (Damijan *et al*., 2013, pp. 8).

Particular emphasis on FDI is placed on the contribution of FDIs to increasing the productivity and competitiveness of the host industry. The FDIs inflows may raise the productivity of the host companies, forcing them to exit, or by increasing their share in the market of intermediaries. Damijan *et al.* (2011, pp. 486–509) point to the dynamic aspects of FDI in CEE countries by fostering the processes of manufacture restructuring and potentials for future export growth directly through the export performance of FDI's subsidiaries, and indirectly through the knowledge spillover to local suppliers engaged in backward linkages restructuring. Jindra *et al.* (2009, pp. 167–179) consider FDIs as a major force in the economic development of CEE countries. Wach and Wojciechowski (2016, pp. 42–54), detect a significant positive relationship between FDI stock and exports in all CEE countries. Damijan *et al.* (2013, pp. 1–36), examining the determinants of the transition economies' export performance, stress the importance of the "global supplying chains" and the "supply capacity". Using industry-level analysis, they reveal that FDI has significantly contributed to export restructuring in the CEE countries. The effects of FDIs are heterogeneous across countries. Their results show that export restructuring and economic specialization created by FDI during the last two decades in the CEE countries have contributed a lot for their potential to long-term productivity growth. One result of the FDI in CEE countries, according to

Lipsey (2006, pp. 9), is a shift in the export comparative advantages of these countries towards the machinery and transport equipment sector. Global supplying chains and the trade between "headquarter" and "factory" economies are suggested by Baldwin (2012, pp. 15) as a way of increasing competitive advantages of emerging economies.

According to the literature and theoretical pieces of research, it is considered that FDIs may create a good base for qualitative change in the export structure of the host economy. Additionally, they may strengthen the competitiveness of local suppliers if they invest in enhancing their labor, technological, knowledge and managerial competences. The quality and structure of the FDI may influence the quality and structure of the host economy export. Some analysis define the size and composition of FDI as crucial factors in shaping the productivity and strengthening the competitiveness of an economy (Christodoulakis & Sarantides, 2011, pp. 1–42). The UNCTAD's (2005, pp. 61) analysis reveal a positive and significant relationship between export performance and FDI, stressing the strong contribution of FDI to the technological upgrading and structural evolution of the export sector

Since the structure of the automotive industry consists of several tiers that represent the value-added chain, FDIs in automotive industry actually open possibilities of engagement of the host economy in the global value chains. According to Baldwin (2011b, pp. 1–32), joining international supply chains is faster and surer route to global markets as a new strategy for 'emerging market economies'. UNCTAD (2012, pp. 88), analyzing the influence of FDI on the transitional economies, emphasizes that FDI as a bundle of assets including access to advanced technology and management techniques, allow developing countries to leapfrog into more sophisticated areas of production.

Qualitative shift of the FDI inflow

The paper is focused on making visible the process of the relationship between a qualitative shift of the FDI inflow and its influence on the quality of the export structure. Most of the FDI inflow since 2010 has been green field investments, and they have been concentrated in the export-oriented manufacturing sector, in contrast to the period before when the market and resource oriented FDIs in financial, transport, mining and textile sectors had dominated.

As an effort to catch up with the neighbors and former transition economies from Central Europe, the Macedonian government has employed

a number of investment incentive schemes to attract FDI. Shaukat and Wei (2005) found that investment incentive policies encourage FDIs, especially in automobile, telecommunications and electronics industries. The improvement of export performances is expected to be one of the positive feedbacks and justification of the provided incentives. The export performances will be also reinforced by the increased possibility of local businesses to be engaged as suppliers of FDIs that are parts of the global value chains in the automotive industry. The incentive schemes, competitive wages and improvement in business environment, which have contributed significantly to the poor FDI inflow structure, need to be restructured and diversified to more technology-intensive production. Investments have gradually branched out of the traditional sectors such as: food, textile industry and metal processing into technology-intensive industries like automotive components that is clearly visible in Figure 1.

International monetary fund (IMF, 2015, pp. 9) has noticed the structural greenfield FDI due to the low labor costs, various incentives schemes, improved business environment as well the opportunities arise by the geographical proximity to assembly plants in Central and Western Europe.

The dominant share of automotive industry in the FDI structure is a significant room for improvement in the overall quality of Macedonian export structure. The FDIs contribute and promote founding of new Reveal comparative advantages (RCA). According to IMF, export performances are improved dramatically driven by the commodity composition effect. Participation in Global supplying chains (GSC) through the significant inflow of FDI in automotive industry has significantly changed the structure of the Macedonian export displayed in Figure 2.

Reflecting the inflow of FDI in the automotive industry and engagement in the supplying chain of the automotive industry, RCA have been arising in medium high technology export. RCA has diversified away from the traditional export products such as textiles, food, tobacco, flat-rolled products of iron or non-alloy steel to the more capital intensive goods such as: the catalyst with precious metal, ignition wiring sets and other wiring sets. According to the Classification by Broad Economic Categories (BEC) the share of capital goods in export structure in 2016 compared to 2015 has been increasing by 20% (Statistical state office, 2017, pp. 9).

Research methodology

The analysis of the influence of the FDI inflow to the Macedonian export is conducted in two steps. The first step involves creating a regression model

for correlation, and it is followed by a causality test analysis. The proposed regression model is based on the predecessor models that examine the influence of FDI to export in two empirical cases. The first is the research of Damijan *et al.* (2013, pp. 1–34) and the model through which they test the impact of FDI inflow on export within the Global supplying chains (GSC) in Central European economies (CEE). The second reference model is a result of the empirical examination by Zhang (2006, pp. 7) in China case, where the FDI is treated as a factor of export performance.

To examine the existence and the rate of correlation between the increased FDI inflow in the automotive sector and the export performances of the Macedonian economy the following model is quoted:

$$Exp_t = \beta_0 + \beta_1 FDIauto_{t-1} + u_t \quad (1)$$

where Exp_t as a dependent variable denotes the total export of the economy and $FDIauto_{t-1}$ stands for the cumulative stock of FDI inflow in the automotive sector. The model has the narrowest shape only to present the relationship between the FDI inflow and export. If the model is exempted from the other factors and omitted variables and measurement or $u_t = 0$, the regression model has taken the following form:

$$Exp_t = \beta_0 + \beta_1 FDIauto_{t-1} \quad (2)$$

The regression model can provide only a partial explanation for the existence of a correlation relationship between the examined variables. The theory also suggest on examining the existence of causal relationship between the FDI inflow and export growth. The application of the Granger causality test actually means a more sophisticated form of regression model, and its purpose is to explain whether changes in FDI inflows in the automotive industry lead to improved export performances. The Granger causality test in the paper is presented through two regression equations, which confirm or reject the null hypotheses and determine the direction of causality.

$$Exp_t = C_1 + \sum_{i=1}^{p} \alpha_i \, Exp_{t-1} + \sum_{i=1}^{p} \beta_i \, FDI_{t-1} + u_i \quad (3)$$

$$FDIauto_t = C_2 + \sum_{i=1}^{p} \gamma_i \, FDIauto_{t-1} + \sum_{i=1}^{p} \delta_i \, Exp_{t-1} + u_i \quad (4)$$

The goal of the Granger causality test is to explain whether the shift in the Macedonian export performance is caused by the change in the struc-

ture of FDI inflow. The Granger causality test within the analysis is used as a complementary method to correlation test.

The estimation and analysis in the paper is performed on the basis of a database available at the National Bank of the Republic of Macedonia and the State Statistical Office. Two sets of data are employed in the analysis. The first set relates to data for FDI inflow in the automotive sector sourced by the National Bank of the Republic of Macedonia for the period 2005–2016. Since 2010, there has been huge shift in the amount of FDI inflow in the automotive sector (Table 1).

Since an investment takes time to materialize (Moran, 2005, pp. 281–313), a time lag for the FDI effect to start is considered within the model . Since there is long-term co-integration between the FDI and export, cumulative stock of the foreign direct investment in automotive sector is taken in the analysis.

The second set of data reflects the size of the export as a dependent variable. The data in Table 2 reveal increasing tendencies in the export of products in the automotive industry. According to SITC classification, the share of the automotive export in the total export has increased enormously, from 4.86% in 2005 to 28.58% in 2017.

Results

In order to investigate the correlation between the increased inflow of FDI in the automotive industry and its influence to structural shift in export composition, an OLS estimation of equation 2 is used. The results in Table 3 reveal a substantial positive correlation between the export growths and the increased FDI's inflow in the automotive sector. The R Square coefficient detects strong and substantial effect of FDI's inflow. It implies that 86% of the export growth is explained with the increased FDI's inflow in the automotive sector. The value of the FDI stock significantly affects the value of exports, which is verified with the probability coefficient equal to 0.0004.

In order to perform Granger causality test, it is necessary to test the stationarity of the time series for FDI and export. Stationarity test is performed using Augmented Dickey-Fuller test (ADF test). ADF test is used to determine a unit root. The results of the test reveal the existence of the unit root, suggesting the necessity for stationarity of the time series. The null hypothesis of a unit root in the time series cannot be rejected at a 5% level of significance. The time series stationarity is met into their first differences (Table 4).

The selection of lag length is one of the most sensitive issues in the causality analysis. If the chosen lag length is less or more than the true lag length, the irrelevant lags in the equation may cause inefficient estimation and provides wrong results. Using Vector Autoregression (VAR) model, the Akaike (AIC) test has been employed in the determination of appropriate lag length. The minimum value of Akaike test is taken as appropriate (Akaike, 1998). Due to the availability of time series, in the analyses is tested lag 1 and lag 2. The results of the test in Table 5 reveal minimum AIC for lag 2.

Johansen co-integration test is applied to see whether there is long-run integration between the time series for FDI_aut and EXP. Two variables will be co-integrated if they have a long-term or equilibrium relationship between each other (Gujarati, 2003). The P-value has the deterministic role in revealing existence or not existence of co-integration between values. The Johansen test in the Table 6 indicates one co-integration between FDI and export

The results of the previous tests are useful tools for the causality examination. Within the Granger causality, causal relationship between the variables under examination, FDI inflows in automotive sector and the export growth are tested and examined. The hypotheses for the causality test are:

H0: FDI_AUT does not influences to EXP

Hypothesize that FDI does not lead to Export. The acceptance or rejection of the hypothesis depends only on the p-value (probability value). If $p<0.05$ then the hypothesis is rejected.

H1: EXP does not influence to FDI_AUT

Hypothesize that Export does not lead to FDI. Again, the p-value is examined to accept or reject the hypothesis (Granger, 2003).

Applying the equations (3) and (4), and revealed time lag = 2 from the AIC test as a minimum time discrepancy between the inflow of FDI and start of the manufacturing process, the results in Table 7 reveal rejection of the H0 and acceptance of the H1.

The p-value suggests the existence of causality only in the first hypothesis, as p is less than 0.05, meaning the rejection of the first null hypothesis. It implies a unidirectional causal relationship between FDIs inflow in the automotive industry to export growth. In the second hypothesis, the associated p-value is higher than 5%, suggesting the acceptance of the hypothesis that export does not cause FDI inflow in the automotive sector. The results

from the Granger causality test reveal a unidirectional causal relationship between FDI inflow and the export with direction from FDI to export.

Discussion

Foreign direct investment is generally perceived to be an instrument of stimulation of economic growth of the host countries. The results in the paper reveal a positive relationship between the inflow of FDI and the export growth in the Macedonian economy. The same results are shared by many studies that examine and research the effects of FDI on growth and export. The recent empirical results of Mahmoodi and Mahmoodi (2016) suggest the evidence for a unidirectional long-run causality between FDI and export in the panel of eight European developing countries: Albania, Belarus, Croatia, Latvia, Lithuania, Poland, Romania and Turkey in the period 1992 to 2013. Mainly as a result of FDI in the automotive sector, automotive industry has become a dominant manufacturing sector in CEE, significantly increasing its share in the total exports, industrial production and job creation (Pavlinek, 2015).

The quantitative and qualitative value of the increased FDI inflow in the Macedonian economy multiplies the benefit, since the FDI has contributed not only to the quantitative, but also to the qualitative shift in the economy. The FDI in the automotive industry leads to changes in the manufacturing structure and enables the integration of the economy into the Global value chains. The changes that happen due to the increase in FDI in the automotive sector may result in a shift in the job content and labour market. FDI inflow in automotive industry, as export oriented FDI, is considered as a useful platform for upgrading local advantages toward higher capital and technology-intensive production. It means not just a location for simple assembling processes and activities, but also as a place for more capital and knowledge intensive activities.

Conclusions

The correlation issue between the move of capital in the form of FDI and the host country has been in the focus of extensive theoretical and empirical research interest, especially in the case of developing and former transition economies. Particular attention is paid to the global supplying chains that could be seen as platforms that enable a host economy to become a part of the FDIs supplying chains and to expand the market access. The main chal-

lenge of the paper is to examine the impact of FDI inflow in the automotive industry to the export performances of the Macedonian economy. Within the paper a model that takes into account only the narrow relationship between the FDI inflow in automotive industry and the export performances is developed, using annual data for the period 2005–2017.

During the whole period of transition, the export structure of the Macedonian economy was displaying significant monotony, where low capital intensive goods dominated. The qualitative shift in the structure of FDI inflow has resulted in the change of the export content toward more capital intensive products. Using the regression analysis, the paper examines the contribution of FDI inflow in the automotive sector to the performance and structural change of the Macedonian export. The results of the analysis reveal a significant impact of the FDI inflow to the quantitative and qualitative shift in the export structure. On the basis of co-integration test analysis, a long-term relationship between the FDI inflow and export performances is confirmed. The dramatic improvement in the export performances is additionally supported by the results of the Granger causality test, which verifies existence of an intensive unidirectional causality between the FDI inflow and the export performances.

The findings in the paper could be considered as a useful tool for the policymakers in the process of reassessing and developing strategy for the future incentive scheme to attract FDI.

The higher technology intensive FDI's inflow in the automotive sector should be seen as a prerequisite for shift to a more technology-intensive export structure. Since the paper's findings have verified the changes that increased FDI inflow in automotive sector cause to the export, further research may be directed towards examining the influence of FDI on the automotive industry to the manufacturing structure, and the changes to the content of the labor market in the Macedonian economy.

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Annex

Table 1. Stock of FDI inflow in automotive industry (in mill/euro)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
12.6	12.8	12.9	88.4	88.4	165.1	249.8	264.5	360.7	449.9	557.6	655.9

Source: National Bank of the Republic of Macedonia.

Table 2. Comparison between the total export and the automotive export (in mill/euro)

Year	Total Export	Automotive export
2005	1,644.36	80.00
2006	1,917.51	85.45
2007	2,477.14	95.06
2008	2,697.56	104.73
2009	1,937.04	90.33
2010	2,534.89	132.93
2011	3,214.91	231.90
2012	3,123.95	288.48
2013	3,235.21	409.02
2014	3,746.61	765.40
2015	4,051.23	966.80
2016	4,329.27	1,174.0
2017	5,007.20	1,431.48

Source: National Bank of the Republic of Macedonia and State Statistical Office.

Table 3. Regression analysis of the export dependency on FDI inflow in the Macedonian economy

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2285.971	183.9335	12.42825	0.0000
FDI_AUT	3.036723	0.525451	5.77926	0.0004
R-squared	0.806763			
Adjusted R-squared	0.782608			
S.E. of regression	350.1469			
Sum squared resid	980822.7			
F-statistic	33.39992			
Prob(F-statistic)	0.000415			

Table 4. Unit root test with the differentiation for FDI_AUT and BRT_EX

Null Hypothesis: D(FDI_AUT) has a unit root			
Exogenous: Constant			
Lag Length: 1 (Automatic - based on AIC, maxlag=2)			
		t-Statistic	**Prob.***
Augmented Dickey-Fuller test statistic		-6.253709	0.0016
Test critical values:	1% level	-4.582648	
	5% level	-3.320969	
	10% level	-2.801384	

Null Hypothesis: D(BRT_EX) has a unit root			
Exogenous: Constant, Linear Trend			
Lag Length: 1 (Automatic - based on AIC, maxlag=2)			
		t-Statistic	**Prob.***
Augmented Dickey-Fuller test statistic		-7.715274	0.0012
Test critical values:	1% level	-5.521860	
	5% level	-4.107833	
	10% level	-3.515047	

Note: *p-values.

Table 5. VAR model for evaluation lag length

	BRT_EXD	**FDI_AUT2D**
BRT_EXD(-1)	-0.096823	0.165014
	(0.19875)	(0.06950)
	[-0.48715]	[2.37441]
BRT_EXD(-2)	-0.864471	-0.056232
	(0.25501)	(0.08917)
	[-3.38996]	[-0.63063]
FDI_AUT2D(-1)	4.158750	0.241281
	(1.04725)	(0.36619)
	[3.97111]	[0.65890]
FDI_AUT2D(-2)	3.343660	0.468271
	(0.84574)	(0.29572)
	[3.95355]	[1.58348]
C	4285.186	-155.5850
	(734.953)	(256.986)
	[5.83056]	[-0.60542]
Determinant resid covariance (dof adj.)		58012540
Determinant resid covariance		8158013.
Log likelihood		-86.36106
Akaike information criterion		24.09027
Schwarz criterion		24.18957

Table 6. Johansen test of cointegration

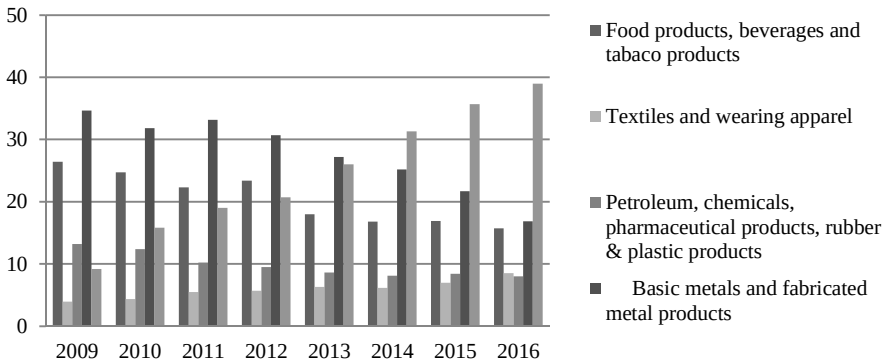
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.971529	29.61857	15.49471	0.0002
At most 1	0.133623	1.147486	3.841466	0.2841
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.971529	28.47108	14.26460	0.0002
At most 1	0.133623	1.147486	3.841466	0.2841
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
** p-values				

Table 7. Granger causality test between FDI inflow in automotive sector and export

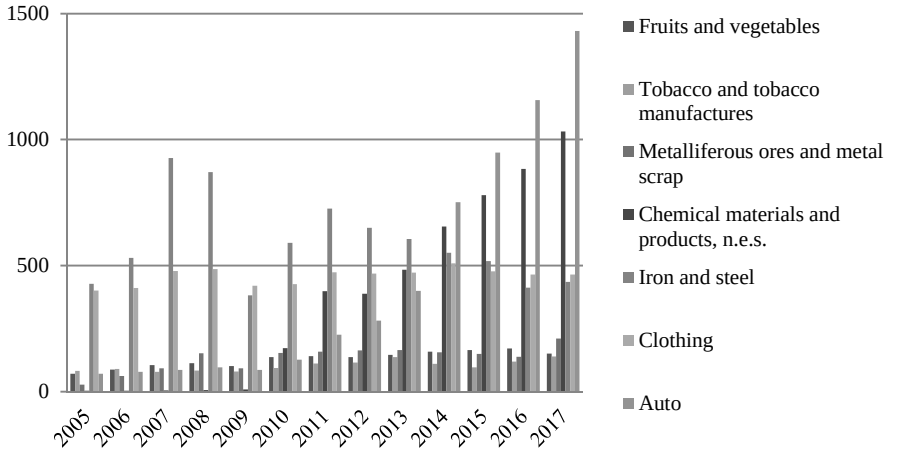
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
FDI_AUT does not Granger Cause EXP	10	92.5696	0.0001
EXP does not Granger Cause FDI_AUT		0.98957	0.4344

Figure 1. FDI inflow structure in manufacturing sector in Republic of Macedonia (in %)



Source: own calculation based on data from National Bank of Republic of Macedonia.

Figure 2. Changes in the Macedonian export structure of goods according to SITC in the period 2005-2017 in millions EUR



Source: own calculation based on the data from National Bank of Republic of Macedonia.