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EXPORT DIVERSIFICATION AND ECONOMIC GROWTH IN TRANSITION: LESSONS FROM THE 2008 FINANCIAL CRISIS IN CEE

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Abstract: This paper examines the role of export diversification for economic growth in CEE transition economies. The results prove that before the outbreak of 2008 financial crisis export specialization rather than diversification was an important growth factor, especially in those countries which followed more specialized export patterns. However, after the outbreak of the crisis the direction of this causal link changed essentially. All three main aspects of export diversification turned out to play a significant role in reducing the growth slowdown effects of the 2008 financial crisis.

Keywords: export diversification, economic growth, CEE transition economies

INTRODUCTION

The debate on export diversification has focused on the question how developing countries can improve economic performance and achieve higher income. The inspection of export data convince the researchers that currently there are almost no large developed countries with the extremely high levels of export concentration (which in turn is typical for most of developing countries). However, this fact does not supply evidence about the causal relationship between economic growth and export diversification. Another hypothetical explanation is that richer countries are more able to diversify their production structures. In spite of this

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uncertainty many economists draw conclusion that higher diversification affects economic growth positively, especially in developing countries. Economic theory deals with channels through which export diversification might positively affect economic growth, e.g. rise in the number of export industries (i.e. horizontal export diversification) can diminish the dependence on a small number of goods while shift from primary into manufactured exports (i.e. vertical diversification) is associated with faster growth since primary export sectors generally do not exhibit strong spillovers [Herzer and Nowak-Lehmann 2006]. Manufactured exports seems to have greater potential effect for sustained learning than traditional primary exports, because more beneficial spillover effects spread to other activities [Matsuyama 1992]. Thus, in endogenous growth models it is recommended to focus on vertical aspect of export diversification. Some researchers underline that export diversification implies improvement in production techniques through knowledge spillovers, which lead to more efficient management, better forms of organization, labour training, and knowledge about technology and international markets [Al-Marhubi 2000]. Chuang stresses that on international competitive markets it is necessary to gain the knowledge about quality, delivery conditions and foreign buyer's specifications, which may take place through a permanent learning process started by exporting activities, especially the diversification [Chuang 1998]. To summarize, in the economic literature it is mostly taken for granted that horizontal and vertical export diversification may positively affect growth. However, there have been only few empirical investigations on the links between export diversification and growth, none of which, as far as we know, focused on CEE transition economies. Moreover, some recent empirical studies (e.g. [de Pineres and Ferrantino 2000]) failed to confirm the positive growth effect of export diversification. Both these facts are the main sources of the motivation to conduct this empirical study.

In order to check the diversification-led growth hypothesis we use CEE time series data from 1995 to 2011. CEE transition economies are chosen for the analysis because countries from this region, especially Poland, diversified to some extend their exports structures horizontally and vertically on the basis of natural resources. The comparative advantage of CEE countries lies mainly in the production of resource– and agriculture–based products. Thus, our contribution is believed to examine if and how diversification of export on the basis of natural resources can accelerate economic growth.

LITERATURE OVERVIEW

Although economists are deeply interested in the links between export and economic growth, the export-economic growth relation is still not justified empirically and desires further empirical investigation. According to Adam Smith foreign trade allows a country to relocate its given resources to provide new and more effective demand for the output of the surplus resources. At this place it is

worth to recall the law of comparative advantages (profits from specialization and foreign trade) which has been formulated by David Ricardo. He investigated in detail advantages and alternative or relative opportunities in the famous example concerning two commodities: wine and cloth, produced by England and Portugal. Myint stresses that a surplus productive capacity suitable for the export market (due to specialization) is a costless way of acquiring imports as well as supporting domestic economic activity [Myint 1958]. It has been proven that marginal factor productivities are significantly higher in the exporting sectors as compared to the non-export sectors [Feder 1982; Kavoussi 1984; Moschos 1989]. In consequence, shifting the existing resources from the less-efficient non-export sectors to the more productive export sectors can accelerate economic growth thanks to more efficient use of resources, the application of technological innovations (which are result of international competition), gains of scale effects following from larger international markets and greater capacity utilization.

Beside discussing the general problem of the role of export in stimulating economic growth, economists for many years have been trying to answer the more detailed question whether by export diversification the developing (and less developed) countries can significantly improve economic performance and achieve higher income. Some recent contributions have checked the impact of export diversification on economic growth [Al-Marhubi 2000; de Pineres and Ferrantino 2000; de Ferranti et al. 2002; Balaquer and Cantavellha-Jorda 2002]. Several cross-sectional studies found evidence supporting diversification-led growth hypothesis [Al-Marhubi 2000; de Ferranti et al. 2002]. Using panel data for Latin American countries, de Pineres and Ferrantino reported positive interrelation between export diversification and per capita income [de Pineres and Ferrantino 2000, Chapter 7]. Balaquer and Cantavellha-Jorda detected (using cointegration and causality tests) a positive relationship between changes in exports and economic growth in Spain [Balaquer and Cantavellha-Jorda 2002].

On the other hand, the study by de Pineres and Ferrantino detected no evidence in favour of diversification-induced growth in Columbia and Chile [de Pineres and Ferrantino 2000, Chapters 4, 5]. Moreover, in the case of Chile export diversification seemed to be even negatively correlated with growth. However, the discussed study suffers from several methodological drawbacks. First of all, the authors do not handle an important problem of cointegration, which is important in terms of long-run relationship between export diversification and economic growth. The contributors take into account the problem of nonstationarity by calculating first differences. However, it is well known that if the variables of interest are cointegrated, the standard procedure of taking first differences may lead to loss of long-run information [Granger and Newbold 1974]. Another drawback is that the contributors do not check the respective time series for the presence of structural breaks when testing for unit roots. Ignoring structural breaks also may imply spurious results of unit root tests. The authors did not conduct standard goodness-of-fit tests, which makes their results less reliable.

Herzer and Nowak-Lehmann also investigated the link between export diversification and economic growth. They came to conclusion that export diversification supports the rate of growth in developing countries, nevertheless diversification occurs in horizontal or vertical dimension [Herzer and Nowak–Lehmann 2006].

The more recent empirical evidence [Imbs and Wacziarg 2003] suggests the existence of a nonlinear relationship between export diversification and income. As income per capita increases, export concentration initially falls, but after reaching a certain level of income, export tends to become more concentrated again. However, in the literature there is still no unique view in respect to the question: what are the main factors of export diversification. Moreover, the literature on this topic is rather poor. Cadot et al. investigate the evolution of export diversification patterns along the economic development path [Cadot et al. 2011]. Using a large database with 156 countries over 19 years, they found a hump-shaped pattern of export diversification similar to what Imbs and Wacziarg established for production [Imbs and Wacziarg 2003]. According to the contributors diversification and subsequent reconcentration took place mostly along the extensive margin. This hump-shaped pattern was consistent with the conjecture that countries travel across diversification cones, as discussed in [Schott 2003, 2004] and [Xiang 2007].

THE DATASET AND ITS PROPERTIES

In this paper we used a dataset consisting of a panel of annual observations for new EU members in transition from the CEE region[2] in the period 1995-2011. The data may be classified into three main categories. The first group includes variables which are related to the measures of economic growth of CEE transition economies and various proxies of main growth factors. Since the existing literature has not yet reached a consensus about a typical set of variables that may affect economic growth, we have followed previous papers which have reviewed the existing literature [Bleaney and Nishiyama 2002; Levine and Renelt 1991; Sachs and Warner 1997, among others] and selected a relatively small subgroup from hundreds of the control variables, which are usually considered as important for economic growth. The second group of variables describes various aspects of export diversification. The last group of variables consists of dummy variables which capture the effects of 2008 financial crisis. Table 1 provides details on all the variables.

[2] In the period 2004-2007 twelve countries joined the EU. These were: Bulgaria, Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia. In this paper we focused on all the mentioned economies except Malta and Cyprus since they have never been in a transition phase.

Table 1. Brief description of data used in this paper

Full name	Abbreviation used	Definition	Unit
ECONOMIC VARIABLES			
Gross domestic product[a]	*Y*	Gross domestic product at constant 2005 prices in US Dollars.	USD
Gross capital formation[a]	*K*	Gross capital formation at constant 2005 prices in US Dollars.	USD
Total labour force[b]	*L*	Total labour force comprises people ages 15 and older who meet the International Labour Organization definition of the economically active population: all people who supply labour for the production of goods and services during a specified period.	-
Tertiary school enrolment[b]	*EDU*	Gross enrolment ratio is the ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the level of tertiary education. This indicator is often used to measure the level of human capital [Barro 1995].	-
Government consumption[a]	*GC*	General government final consumption expenditure at constant 2005 prices in US Dollars.	USD
Inflation, consumer prices (annual %)[b]	*INFL*	Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services.	%
Foreign direct investment, net inflows (% of GDP)[b]	*FDI*	Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments.	%
Money and quasi money (M2) as % of GDP[b]	*M2*	Money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government.	%
MEASURES OF EXPORT DIVERSIFICATION			
Concentration index[c]	*CONCE*	Concentration index, also named Herfindahl–Hirschmann index, is a measure of the degree of market concentration/diversification. It has been normalized to obtain values ranging from 0 (maximum diversification) to 1 (maximum concentration).	-
Number of exported products[c]	*NUM*	As suggested in previous studies [Herzer and Nowak–Lehmann 2006] we use natural logarithm of number of exported products to approximate the horizontal export diversification.	-
Share of manufactured exports in total exports[c]	*MANUF*	As suggested in previous studies [Herzer and Nowak–Lehmann 2006] we use this variable to approximate the vertical export diversification.	-
2008 CRISIS DUMMY VARIABLES			
Indicator of post-crisis period	D_{2009}	This variable was used to capture the possible effects of financial crisis of 2008. It takes the value of 1 starting from 2009 onward and zero otherwise.	-
2009's shock indicator	I_{2009}	This impulse dummy variable captures the negative shock that occurred in 2009. It takes the value of zero everywhere except for a value of 1 in 2009.	-

Source: own elaboration

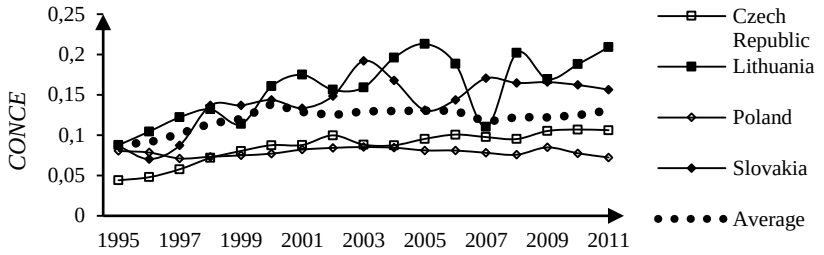
[a] Data gained from National Accounts Main Aggregates Database (http://unstats.un.org/unsd/snaama/introduction.asp)

[b] Data gained from World Development Indicators (http://data.worldbank.org/indicator)

[c] Data gained from United Nations Conference on Trade and Development (UNCTAD, http://unctadstat.unctad.org)

Besides the main group consisting of 10 new EU members in transition we have also decided to consider specific subgroups. In period 1995-2011 some CEE economies followed trade policies characterized with more export diversification while other focused on more specialized export profiles. The highest rise in concentration index was reported for Slovakia and Lithuania, while lowest rise was found for Czech Republic and Poland. The dependencies between levels of concentration index in case of four mentioned economies in comparison to the main group's average are presented in Figure 1.

Figure 1. Concentration index in the group of examined countries



Source: own elaboration

It is worth to note, that almost directly opposite conclusions follow from analysis of share of manufactured exports in total exports and number of exported products (i.e. in period 1995-2011 the levels of these measures in case of Czech Republic and Poland were much higher than the group's average)[3]. To summarize, one may claim that in case of new EU members in transition it is easy to form a subgroup of countries with less diversified export profile (characterized with relatively higher levels of *CONCE* and lower levels of horizontal and vertical diversification) and more diversified export profile (i.e. relatively lower levels of *CONCE* and higher levels of horizontal and vertical diversification). Table 2 contains the details on the groups of countries examined in this paper.

Table 2. Groups of countries examined in this paper

Group name	Symbol	Description
All countries	G_0	The group of 10 CEE transition economies.
More concentrated export profile	G_1	This subgroup consists of all but two countries (Poland and Czech Republic), whose export profiles were found to be most diversified (low values of export concentration indexes, relatively high values of number of exported products and the share of manufactured product on total export).
More diversified export structure	G_2	This subgroup consists of all but two countries (Lithuania an Slovakia), which were found to follow most concentrated export patterns.

Source: own elaboration

In the next section we will briefly present the methodology applied.

[3] Plots of *MANUF* and *NUM* variables are available from the authors upon request.

METHODOLOGY

In this paper we focus on the Solow growth model. In general, the motivation to perform the research in such a framework is twofold. First, we should note that Solow model is relatively easy to evaluate in comparison to a gamut of endogenous growth models [Greiner et al. 2004]. Secondly, as stated in previous papers [Jones 1995; Parente 2001, among others] there is no evidence that endogenous growth models perform better in empirical applications than the Solow's one. Since in the Solow model the steady state growth rate (SSGR) equals total factor productivity, the permanent growth effect of export diversification should be measured by estimating its effect on Total Factor Productivity [Dollar and Kraay 2004]. Following suggestions of previous studies [Herzer and Nowak-Lehmann 2006] we estimate the extended dynamic production function in which TFP depends on selected growth-influencing variables and chosen measures of different aspects of export diversification. To summarize, the main empirical part of our study was based on an application of the following loglinear specification of the Cobb-Douglas production function:

$$\ln\left(\frac{Y_t}{L_t}\right) = \ln\left(A_0\right) + (c_1 + c_2 X_t)t + \alpha \ln\left(\frac{K_t}{L_t}\right), \tag{1}$$

where $X_t = \left[x_t^i\right]_{i=1,\ldots,k}$ denotes $k \times 1$ vector of growth-affecting variables (measures of export diversification and a set of control variables), c_2 stands for $1 \times k$ vector of parameters. Moreover, we assumed that first eight coordinates of X_t are fixed and satisfy: $x_t^1 = MANUF_t, x_t^2 = NUM_t, x_t^3 = CONCE_t$, $x_t^4 = D_{2009}MANUF_t$, $x_t^5 = D_{2009}NUMBER_t$, $x_t^6 = D_{2009}CONCE_t$, $x_t^7 = D_{2009}$, $x_t^8 = I_{2009}$. The remaining coordinates of vector X_t are the chosen control variables, i.e. $x_t^i \in \{EDU, GC, INFL, FDI, M2\}$ for $i > 8$[4].

If Y_t / L_t and K_t / L_t are cointegrated the model (1) takes the form:

$$\Delta \ln\left(\frac{Y_t}{L_t}\right) = c_1 + c_2 X_t + \alpha \Delta \ln\left(\frac{K_t}{L_t}\right) + EC_{t-1}, \tag{2}$$

where $EC_{t-1} = D_t + \alpha\left(Y_t / L_t\right) + \beta\left(K_t / L_t\right)$ stands for cointegration equation and D_t denotes deterministic term.

[4] Thus, $k \in \{8, \ldots, 13\}$ in case of our dataset. All abbreviations are explained in Table 1.

EMPIRICAL RESULTS

Since both Y_t / L_t and K_t / L_t have experienced significant growth starting from the beginning of transition period, in the first step we have conducted a gamut of panel unit root tests. Table 3 summarizes the outcomes.

Table 3. The results of unit root tests for the group G_0

	Common unit root processes[a]				Individual unit root processes[a]			
	Levin, Lin and Chu[b]		Breitung[b]		Im-Pesaran-Shin[b]		Fisher[c]	
Variable	I.E.	I.E.+T	I.E.	I.E.+T	I.E.	I.E.+T	I.E.	I.E.+T
Y / L	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
K / L	I(1)	I(1)	I(1)	I(1)	I(0)	I(1)	I(1)	I(1)
CONCE	I(0)	I(0)	I(1)	I(0)	I(0)	I(0)	I(0)	I(0)
NUM	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)
MANUF	I(0)	I(0)	I(1)	I(0)	I(0)	I(0)	I(0)	I(0)
EDU	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)
GC	I(0)	I(0)	I(0)	I(0)	I(1)	I(0)	I(0)	I(0)
INFL	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)
FDI	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)
M2	I(1)	I(1)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)

Source: own elaboration

[a] All tests were performed at 5% significance level. "I.E." is abbreviation of "individual effects", while "I.E.+T" is abbreviation of "individual effects and linear time trends".

[b] Autocorrelation was corrected via application of additional lags (SIC criterion was used to choose the optimal lag from the set {1, … ,4}).

[c] Autocorrelation was corrected via application of variance estimators based on Bartlett kernel and bandwidth chosen according to [Newey and West 1994].

As one can see the results presented in Table 3 provide solid evidence to claim that Y_t / L_t and K_t / L_t were I(1), nevertheless the type of unit root structure assumed[5]. In general, all remaining variables were found to be stationary (in each case, this was confirmed by at least three out of four conducted tests). In next step we performed cointegration analysis for the pair of nonstationary variables in the group G_0. Suitable outcomes are presented in Table 4.

[5] In further parts of this paper we focus on homogeneous panels (in respect to slope coefficients), since the availability of the data does not allow to draw reliable conclusions from heterogeneous models.

Table 4. The results of Kao residual cointegration test for Y/L and K/L [Kao 1999]

	Lag length selection based on SIC[a]		Lag length selection based on AIC[a]		Lag length selection based on HQ[a]	
Kernel	test statistic	*p*-value	test statistic	*p*-value	test statistic	*p*-value
Bartlett	-2.524	0.005	-3.008	0.001	-3.008	0.001
Parzen	-4.284	0.000	-4.284	0.000	-4.284	0.000
Quadratic Spectral	-4.233	0.000	-4.272	0.000	-4.233	0.000

Source: own elaboration

[a] The null hypothesis refers to lack of cointegration. In each case maximal lag length was set to 3.We assumed that constant is the only deterministic term.

The results presented in Table 4 provide solid evidence to claim that Y/L and K/L are indeed cointegrated around constant. Thus, in the next step we evaluated 2^5=32 different specifications of growth model (2), each of which consisted of one set of control variables. For each specification, we used fixed effects (FE), random effects(RE) and post-Hausman–based[6] estimates to conduct the empirical study in a comprehensive way. Finally, to control for possible impact of heteroscedasticity we also applied robust standard errors[7]. Tables 5-7 contain the empirical results obtained for the groups G_0, G_1 and G_2.

Table 5. The results of estimation of models (2) for the group G_0[8]

	FE			RE			Post-Hausman		
	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels
Measure of export diversification	Mean	% positive		Mean	% positive		Mean	% positive	
CONCE	0.31	100	100, 100, 100 [100, 100, 100]	0.22	100	100, 100, 100 [100, 100, 100]	0.24	100	100, 100, 100 [100, 100, 100]
D_{2009}*CONCE*	-0.20	0	72, 0, 0 [56, 0, 0]	-0.24	0	100, 65, 0 [87, 50, 9]	-0.23	0	75, 28, 0 [65, 34, 9]
MANUF	0.06	100	25, 0, 0 [0, 0, 0]	0.005	65	0, 0, 0 [0, 0, 0]	0.03	71	25(+), 0, 0 [0, 0, 0]
D_{2009}*MANUF*	-0.03	0	9, 0, 0 [0, 0, 0]	-0.02	0	0, 0, 0 [0, 0, 0]	-0.027	0	0, 0, 0 [0, 0, 0]
NUM	0.10	100	75, 50, 12 [85, 60, 25]	0.044	100	43, 0, 0 [47, 3, 0]	0.072	100	60, 31, 0 [68, 43, 9]
D_{2009}*NUM*	0.45	100	25, 0, 0 [12, 0, 0]	0.67	100	75, 50, 18 [97, 21, 0]	0.57	100	40, 18, 9 [50, 3, 0]

Source: own elaboration

[6] In the post–Hausman procedure we performed the Hausman test at 5% level to decide whether fixed or random effects model should be estimated for each choice of the set X_t.

[7] More precisely, we used the robust Huber/White/sandwich VCE estimator [Wooldridge 2009, Stock and Watson 2008, Arellano 2003].

[8] In Tables 5-7 numbers in square brackets refer to results obtained by application of heteroscedasticity robust standards errors. Symbols in round brackets denote the sign of statistically significant coefficients (e.g. "25(+)" denotes finding significant and positive coefficients in 25% of cases).

Table 6. The results of estimation of models (2) for the group G_1[9]

	FE			RE			Post–Hausman		
	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels
Measure of export diversification	Mean	% positive		Mean	% positive		Mean	% positive	
CONCE	0.29	100	100, 100, 97 [100, 100, 100]	0.27	100	100, 100, 100 [100, 100, 100]	0.28	100	100, 100, 97 [100, 100, 100]
D_{2009}*CONCE*	-0.22	0	31, 0, 0 [25, 0, 0]	-0.26	0	85, 6, 0 [54, 6, 0]	-0.23	0	50, 9, 0 [40, 18, 0]
MANUF	0.048	100	0, 0, 0 [0, 0, 0]	-0.007	25	0, 0, 0 [22(-), 0, 0]	0.02	43	0, 0, 0 [9(9-), 0, 0]
D_{2009}*MANUF*	-0.008	50	0, 0, 0 [0, 0, 0]	-0.005	46	0, 0, 0 [0, 0, 0]	-0.013	28	0, 0, 0 [0, 0, 0]
NUM	0.19	100	88, 47, 9 [88, 60, 43]	0.019	60	0, 0, 0 [3(+), 0, 0]	0.058	78	31(+), 21(+), 3(+) [40(+), 25(+),3{+)]
D_{2009}*NUM*	0.85	100	40, 18, 0 [60, 46, 28]	0.92	100	93, 46, 3 [100, 93, 6]	0.91	100	87, 40, 3 [90, 68, 12]

Source: own elaboration

Table 7. The results of estimation of models (2) for the group G_2[10]

	FE			RE			Post–Hausman		
	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels	Coefficients		Percentage of coefficients significant at 10, 5 and 1% levels
Measure of export diversification	Mean	% positive		Mean	% positive		Mean	% positive	
CONCE	0.22	100	100, 81, 50 [100, 81, 68]	0.13	100	60, 0, 0 [100, 90, 71]	0.16	100	97, 0, 0 [100, 90, 68]
D_{2009}*CONCE*	0.049	93	0, 0, 0 [0, 0, 0]	-0.03	50	0, 0, 0 [0, 0, 0]	0.004	81	0, 0, 0 [0, 0, 0]
MANUF	0.105	100	84, 40, 21 [25, 0, 0]	0.017	100	0, 0, 0 [0, 0, 0]	0.072	100	53, 37, 21 [18, 0, 0]
D_{2009}*MANUF*	-0.06	0	50, 43, 0 [50, 0, 0]	-0.04	0	0, 0, 0 [0, 0, 0]	-0.058	0	43, 40, 0 [47, 0, 0]
NUM	0.078	100	25, 0, 0 [40, 0, 0]	0.033	78	0, 0, 0 [0, 0, 0]	0.06	93	9(+), 0, 0 [21(+), 0, 0]
D_{2009}*NUM*	0.36	100	0, 0, 0 [31, 0, 0]	0.66	100	50, 31, 0 [87, 50, 12]	0.52	100	25, 6, 0 [53, 21, 0]

Source: own elaboration

The results of our study prove that before the outbreak of 2008 financial crisis export specialization rather than diversification was an important growth factor in CEE transition economies (in Table 5 the mean value of *CONCE* was positive and statistically significant in all research variants at 10% level). This link was

[9] In case of groups G_1 and G_2 the Kao panel cointegration test also pointed at one cointegration vector.

[10] We also examined the possible impact of 2004 EU accession using the D_{2004} variable (defined analogously as D_{2009}). However, the results presented in Tables 5-7 turned out to be robust to inclusion of the EU-accession-related component.

especially strong in those countries whose export patterns were most specialized (comp. statistics on *CONCE* variable presented in Table 6). Moreover, the measure of horizontal export diversification (number of exported products) and the measure of vertical export diversification (approximated by the share of manufactured exports in total exports) were in general statistically insignificant in examined growth models (some evidence of statistical significance was found for the group G_2). However, after the outbreak of the 2008 financial crisis the directions of the causal links changed essentially. All three examined aspects of export diversification turned out to play a significant role in reducing the growth-decreasing effects of the crisis. The results proved that this effect was especially strong in case of those CEE transition economies which followed more diversified export patterns (i.e. group G_2).

CONCLUSIONS

This paper is one of the first contributions which provide detailed insights on the role of export diversification for economic growth in CEE transition economies. The examined growth model took into account three different aspects of export diversification: the general measure of the degree of market diversification (calculated on the basis of Herfindahl–Hirschmann index), the measure of horizontal export diversification (number of exported products) and the measure of vertical export diversification (approximated by the share of manufactured exports in total exports). The empirical results prove that the strategy based on export concentration was promoting economic growth in the stable period preceding the outbreak of the global financial crisis in 2008. After the outbreak of the crisis the situation changed – those CEE transition economies which were characterized by more concentrated export structures experienced stronger slowdown of economic growth. On the other hand, the CEE economies which adopted more diversified policies, in both horizontal and vertical dimensions, were confronted with smaller shocks during the crisis. The empirical results lead to formulation of some policy implications. In upcoming years the export diversification pattern seems to be a suitable policy in case of CEE transition economies since the risk associated with distinct export specialisation is still relatively high. In period 1995-2011 the horizontal aspect was a crucial determinant of dynamics of export diversification in CEE transition economies, especially after EU accession. However, further economic growth (and economic development) of this part of Europe seems to depend on the level of vertical export diversification, which is crucial in terms of technological progress and continuously increasing international competition. One cannot forget that specificity of this group of countries (e.g. small size of most of the economies) makes further diversification of exports a quite difficult task.

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