COULD THE FALLING MOLDOVAN EXPORTS TO EU IN 2012 AFFECT THE NEGOTIATIONS ON THE DEEP AND COMPREHENSIVE FREE TRADE AREA? FORECASTS FOR 2013

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In this study we identify the reasons and implications of the much worse trend in Moldovan exports to EU in 2012, as compared to other markets. Using a gravitational model we test whether this negative dynamics is mainly determined by the Eurozone crisis repercussions or by the eroded competitiveness of Moldovan goods on the community market. Estimations show that the effect of EU economic crisis prevails, whereas the integration of Moldovan exporters in the EU economy, on the contrary, has increased significantly over the past 2 years. Therefore, the recent negative trend of the Moldovan exports to EU should not pose any danger for the negotiations on the establishment of a Deep and Comprehensive Free Trade Area. Obviously, the competitiveness of Moldovan products is still an issue, while the increased dependency of Moldovan exporters on the EU economy implies certain risks on the background of the current Eurozone crisis. Hence, in order to minimize the costs and maximize the benefits resulting from this process, the Moldovan economy needs significantly comprehensive modernization.

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EXECUTIVE SUMMARY

The purpose of this study is to identify the reasons for the much worse trend of the Moldovan exports to EU in 2012, if compared with other markets. A gravitational model of the Moldovan foreign trade is used in order to test whether the respective trend was determined mainly by the repercussions of the Eurozone crisis or by the eroded competitiveness of Moldovan goods on the community market. It is important that the public authorities interpret correctly this phenomenon, especially during the current negotiations with EU about the potential Deep and Comprehensive Free Trade Area (DCFTA).

Estimations show that the effect of EU economic crisis prevails, whereas the integration of Moldova exporters in the EU economy, on the contrary, has increased significantly over the past 2 years. Therefore, the recent negative trend of the Moldovan exports to EU should not strain the negotiations on the DCFTA establishment. Moreover, it is likely to have net positive effects for our country, as deeper trade integration will support the natural trade between Moldova and EU developed during the previous years.

According to the forecast made on the basis of a structural econometric model, at the end of this year the exports to EU will decrease by 6%-7%, whereas the exports to CIS will increase by 2%-3% if compared with the previous year. Next year we may expect a moderate recovery, with the exports to EU growing by about 5%-6%, and the exports to CIS - by 8%-9%, in y-o-y terms.

Obviously, the competitiveness of Moldovan products is still an issue, especially because of delayed adoption of the European quality standards and other institutional problems, specific for the Moldovan economy over the entire transition period. At the same time, the higher integration of the Moldovan exporters on the EU market implies certain risks given the current Eurozone crisis. To minimize the costs and maximize the benefits of deeper trade integration under these circumstances, the public authorities should promote more consistently the policies aimed at enhancing the local investment climate and facilitating the transfer of technological know-how to the Moldovan economy. Our country will reap the highest benefits from an accelerated economic integration with the European Union only if the Moldovan economy modernizes significantly.

INTRODUCTION

Since 2006 the European Union has been constantly the main sales market of Moldovan exporters. Thus, by the end of 2009 more than a half of Moldovan exports went on the EU market. However, since 2010 the share of EU in total Moldovan exports started to decrease, constituting 46.5% for the first 10 months of this year, whereas during the same period of the previous year it accounted for 49.3%. Moreover, in Q3'12 the volume of exports to CIS exceeded the exports to EU for the first time over the past 6 years. This phenomenon can be interpreted in two ways: (i) competitiveness erosion of Moldovan producers on the EU market due to poor compliance to EU quality standards, or (ii) the repercussions of the sovereign debts crisis from EU cooled down the demand on this market. In case the first factor prevails, the problem is rooted into the systemic deficiencies of the Moldovan economy which is a warning signal for the public authorities on the need to intensify the institutional adjustments and adoption of EU quality standards. Hence, this is an endogenous problem for the Moldova economy and, most probably, this trend will last a long time, given the traditional delayed effect of public policies. If the second factor prevails, the situation is caused mainly by factors that cannot be influenced by the Chisinau authorities. Hence, it is an exogenous shock, meaning that once the EU economy recovers, it will consolidate its position as the main sales market for the Republic of Moldova.

The importance of a correct interpretation of the decrease in Moldovan exports to EU is crucial in the context of the current negotiations on the establishment of a Deep and Comprehensive Free Trade Area (DCFTA) between our country and EU. Thus, if the authorities perceive this trend as an effect of the decreasing competitiveness of Moldovan producers on the EU market, then the dynamics of negotiations and procedures of DCFTA establishment could be slowed down in order to allow the Moldovan companies enough time for making the necessary investments and, thus, mitigate the potential competitiveness shock. Therefore, correct interpretation of this phenomenon is very important for taking appropriate public policy decisions, as well as for an objective understanding of the current situation.

To identify the factors underpinning the rapid fall in the Moldovan exports to EU, we will use a gravitational model of the foreign trade, which will be estimated for 2 periods: 2007-2009 and 2010-2012 (September). This will help us to estimate for both periods of time the elasticity of the Moldovan exports to EU with respect to economic fluctuations in that region. This elasticity may serve as an indicator approximating the level of economic integration of Moldovan exporters on the EU market. Obviously, it could be also influenced by the level of integration, being determined by the nature of the exported products and type of concluded contracts. However, we assume that these factors have a minor influence, as the structure of Moldovan exports to EU has not changed significantly since

2007[1]. Thus, a lower elasticity during the last period could reveal g the shrinking share of Moldovan exporters on the EU market due to competitiveness erosion.

This econometric analysis was complemented with an assessment of the framework which currently guides the bilateral trade between Moldova and the European Union. At the same time, we test whether the negative trend in Moldovan exports to EU was correlated with a similar dynamics in the demand for the imported products on the respective market. Moreover, we have identified a series of products, whose weight in the total exports to EU has diminished, while the weight in total exports to CIS has grown, revealing the likelihood of an eventual replacement of the EU market for the CIS one.

The study also includes a forecast of the Moldovan exports to EU and CIS for 2012 and 2013, derived from a Structural Vector Autoregresive model (SVAR model). This helps us to estimate either in the near future the European Union will resume its position of the main sales market for Moldovan exporters or not. Finally, we present the main conclusions and key recommendations for authorities.

THE REGULATORY FRAMEWORK GOVERNING THE BILATERAL TRADE BETWEEN THE EUROPEAN UNION AND THE REPUBLIC OF MOLDOVA

Currently, the bilateral trade regime between the Republic of Moldova and European Union is regulated by a system of Autonomous Trade Preferences (ATP), entered into force in March 2008. It replaced the Special incentive arrangement for sustainable development and good governance (GSP+), valid since January 2006, which, in turn, was a supplement to the Generalized System of Preferences (GSP). The extension of autonomous trade preferences eliminated all of the remaining tariff ceilings for industrial products and improved significantly the access of agricultural products to the EU market. Hence, currently the Moldovan producers can export any product to the EU market, without any quotas of customs duties. Some agricultural products are an exception to this (e.g. fresh meat, dairy products, eggs, wheat, barley, corn, sugar, wines, etc.)[2], which can be exported under this regime up to a certain quota. For that each exporting company is assigned annually certain quotas, depending on its production volumes and/or capacity to use the respective quota[3].

Besides the above-mentioned tariff quotas, the trade regime between Moldova and EU implies another important limitation, specific for countries that encounter significant deviations from the market economy principles - EU Entry Price System[4]. It stipulates a series of entry prices for a wide range of fruits and vegetables, so that if the exporter enters

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[1] The main 5 products (according to the goods classification), which account for over 85% of all exports to EU, remained the same in 2011 and in 2007.
[2] Council Regulation (EC) No 55/2008 of 21 January 2008
[3] Government Decision No 262 of 07.03.2008 on the management of tariff quotas for the export of goods to the European Union
[4] Council Regulation (EC) No 1182/2007 of 26 September 2007

the EU market with lower prices than the established threshold, additional taxes are applied. This measure aims at protecting the EU producers against eventual dumping practices, used by certain exporters. At the same time, the Regulation introducing autonomous trade preferences for the Republic of Moldova also contains a safeguard clause, stipulating that "Where a product originating in Moldova is imported on terms which cause, or threaten to cause, serious difficulties to a Community producer of like or directly competing products, Common Customs Tariff duties on that product may be reintroduced at any time". Except for these provisions, the Moldovan producers have green light to export on the EU market without any tariff barriers.

It is worth mentioning that this preferential trade regime was provided to the Republic of Moldova unilaterally by the EU, our country maintaining the right to keep tariff barriers for a series of products imported from the European community. The main conditions are not to increase the existing duties and not to introduce any new duties for the products imported from the EU, as well as the commitment of the Republic of Moldova to follow the rules of origin and administrative cooperation in order to prevent frauds and promote an efficient economic reform. The failure to fulfill the assumed obligations allows the European Commission to suspend the current preferential regime.

The fact that the EU eliminated the tariff barriers for local exporters, without compelling the Chisinau authorities to do the same for imports from EU is an important advantage for our country, at least for the short run. This is valid especially for the agricultural producers, who have the highest protection measures if compared with other sectors: the customs duties applied by Moldova in 2011 on imported goods averaged at 10.5% for agricultural products and 3.7% for non-agricultural products[5]. The asymmetrical liberalization of the trade regime between Moldova and the European Union allowed exporters to extend their presence on the EU market, while a number of sectors remained protected to be able to cope with the competition with the European producers on the local market. Therefore, maintenance of tariff barriers offers sufficient time for local companies to make the needed adjustments and meet the European standards and norms quality, before the eventual mutual liberalization of the bilateral regime EU-Moldova.

However, despite these short-term advantages, in the long run the cost of protecting local producers is paid by consumers, given the more costly, less diverse and lower quality goods available on the market[6]. At the same time, this conceals the competitiveness problems of Moldovan producers, who are quite vulnerable to the elimination of import duties with the implementation of the future DCFTA, which is being negotiated now.

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[5] World Trade Organization

[6] The simulations on the basis of an Applied General Equilibrium reveals that the consumer prices will decrease significantly when the Deep and Comprehensive Free Trade Agreement is implemented (V. Prohnitchi "Strategic Comparison of Moldova's Integration Opinions: Deep and Comprehensive Economic Integration with the EU versus the Accession to the Russia-Belarus-Kazakhstan Customs Union", Expert-Grup, 2012).

As a conclusion, the framework of the bilateral trade with the European Union is favorable for our country, at least from 2 perspectives: (i) it reserves the right to maintain for a certain period of time the tariff barriers for imports from EU, protecting thus the local producers, especially the agricultural ones, and (ii) the trade preferences offered through the established conditionalities motivate the Moldovan authorities to implement the necessary reforms and adjust the national economy to EU norms. The most important challenges in this respect are the ability of Moldovan companies to follow the EU quality standards (especially the sanitary and phytosanitary norms for agricultural products), as well as the high requirements of EU retailers (especially regarding packaging and appearance of products). This problem is especially acute in the agrifood sector, which is the most sensitive to liberalization of trade with the European Union due to low competitiveness and relatively high protection through import duties.

THE TRADE SWITCHING BETWEEN EU AND CIS. WHAT MAJOR CHANGES OCCURRED IN 2012?

Since 2006, the European Union has been constantly the major market for the Moldovan exports. This was determined by at least 3 factors: (1) the wine ban imposed by Russia in March 2006 motivated the local producers to try their forces on the EU market, which though has tougher requirements, offer a higher predictability and efficiency than the CIS market; (ii) gradual elimination by the EU of the customs duties on the import of goods originating from the Republic of Moldova, as part of the GSP, GSP+, and ATP systems of preferences, discussed in the previous chapter; and (iii) the arithmetical effect of Romania and Bulgaria's accession to EU in 2008. As a result, EU has become the most important market for the Moldovan economy with the development of some industrial branches targeting strictly this market (e.g. machinery, electrical devices and equipment and spare parts).

Nevertheless, during 2011 and especially 2012 the weight of Moldovan exports to the EU market in the total volume of exports has decreased gradually (Figure 1).

FIGURE 1. WEIGHT OF MOLDOVAN EXPORTS TO EU COUNTRIES IN TOTAL EXPORTS, %
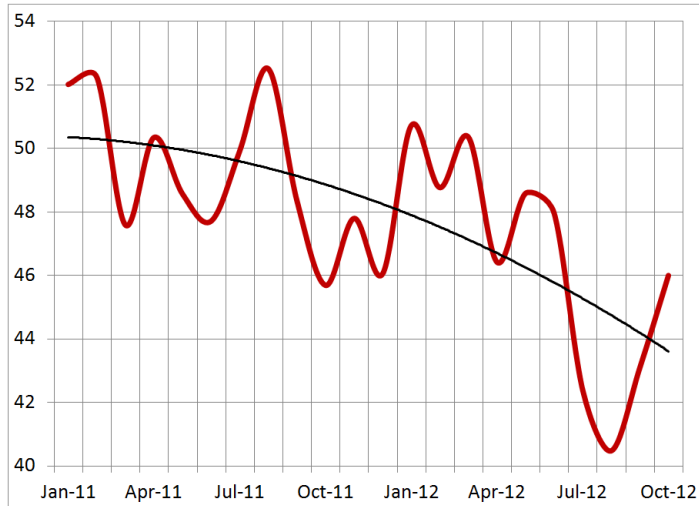
Source: NBS

Thus, during the first 10 months of this year the volume of exports to EU fell by 5.5%, whereas the exports to CIS grew by 5.2% y-o-y. This trend is characteristic for the most important 10 products exported to EU and CIS. They account for over 80% of the EU market and consist mainly of highly processed products, many of them being part of cross-border production chains (e.g. machinery and electrical devices, footwear and accessories, furniture and spare parts, vegetable fats and oils, etc.). The most important 10 products traded on the CIS market account for about 70% of all exports to this market and have a lower level of processing (e.g. vegetable and fruit, beverages, wires, cloths and other textile items, etc.).

It is important that the decrease in the Moldovan exports to the EU market was not accompanied by a similar trend in the total import flows of the EU. Thus, the Moldovan exports to EU decreased at a much higher rate than the decrease in the demand for imported goods on this market. The worsening position of the Moldovan producers on the main EU sales markers is therefore a good reason to worry. Figure 2 reveals that during the first 3 quarters of 2012 the growth rates of exports to Romania, Germany, UK and Bulgaria were lower than the total volume of imports from these countries. The position of Moldovan exporters improved on the Italian and French markets, but to a lesser extent than the losses mentioned above. Obviously, the currently available data are too aggregated and cannot be used for a rigorous analysis of the position of different types of Moldovan products exported to EU. However, the identified gaps should be of major concern for Chisinau authorities.

FIGURE 2. MOLDOVA'S EXPORTS TO AND IMPORTS FROM THE MAIN EU COUNTRIES DURING THE FIRST 3 QUARTERS OF 2012, Y-O-Y GROWTH, %
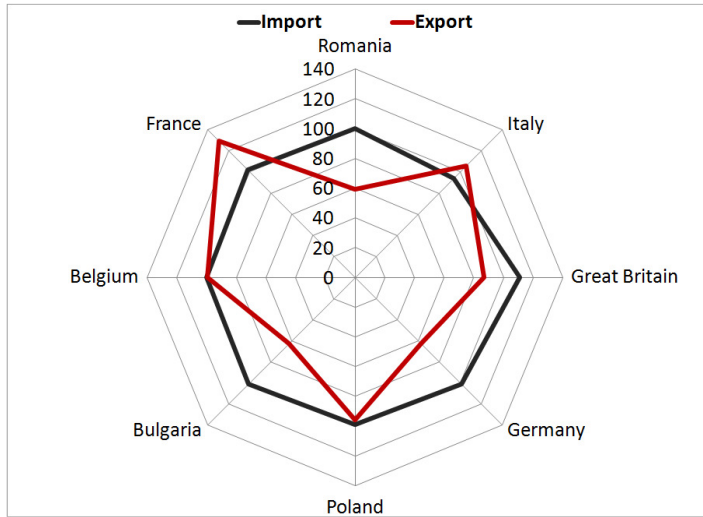
Source: Author's calculations on the basis of the data provided by the NBS and Eurostat

Next we will estimate by sectors if the decline in Moldovan exports to EU, noticed during the past months, was caused by the reorientation of local producers towards the CIS market, where the quality standards are not that severe and the economic dynamics is not that negative. For this we will use an indicator that will approximate the substitutions of exports from EU to CIS. This is based on the assumption that if producers reorient a certain good from the EU to the Eastern market, the weight of the respective good will increase in the structure of exports to the CIS and, at the same time, will decrease in the structure of exports to the EU. The indicator is constituted as follows:

$$(\sigma_i)^7 = \frac{\theta_{t,i}^{EU} \Big/ \theta_{t-4,i}^{EU}}{\theta_{t,i}^{CIS} \Big/ \theta_{t-4,i}^{CIS}},$$

$$where \ \theta_{t,i}^{EU} = \frac{X_{i,t}^{EU}}{X_{total}} \ și \ \theta_{t,i}^{CIS} = \frac{X_{i,t}^{CIS}}{X_{total}}$$

σ_i - index of substituting the exports from the EU to the CIS for product *i*.

$\theta_{t,i}^{EU}$ and $\theta_{t,i}^{CIS}$ - the weight of exports to EU ($X_{i,t}^{EU}$) and CIS, respectively ($X_{i,t}^{CIS}$) in total exports (X_{total}) of product *i*, during period *t*.

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[7] We use weights rather than absolute values to avoid the shocks that are common for all groups of products exported to EU and CIS. For example, the exports of apple to EU could increase due to the appreciation of EURO towards the Moldovan leu. But, the weight of this product, most probably, will remain unchanged because this effect will impact all products exported to EU, which leads to the overall increase in the exports to this market. Hence, in order to identify more accurately the effect of replacing the EU market for the CIS one we will use the weight of each product in total exports to these directions.

$\theta_{t-4,i}^{EU}$ and $\theta_{t-4,i}^{CIS}$ - the weight of exports to EU ($X_{i,t}^{EU}$) and CIS, respectively ($X_{i,t}^{CIS}$) in total exports (X_{total}) of product *i*, during the period *t-4* (the corresponding quarter in the previous year).

Thus, if $\sigma_i < 1$ we may conclude that for product *i* a large number of exporters switched from the EU to the CIS market, and if $\sigma_i < 1$ we have the opposite situation. At the same time, as there may be situations when σ_i can be less than one, if the weight of exports to EU does not change, but the weight of exports to CIS increases, we will eliminate the group of products whose weight in total exports decreased or increased simultaneously on both markets. Hence, we will take into account only the products, whose weight in the exports to the EU diminished with the simultaneous increase of the exports to CIS, or vice-versa. Therefore, if the weight of vegetable fats and oils in the Moldovan exports to EU decreased by 50.7% during the first 3 quarters, while the weight of this product in the exports to CIS increased by 69.4%, we may infer an effect of replacing the EU market for the CIS one for the respective product.

The index was estimated for each category of products according to the CSCI classification for Q3'12 - the period when the exports to CIS exceeded visibly those to EU. The results of the estimations confirm the trends presented in the previous figures: for about 45% of exports to the EU market, the weight in total exports decreased, whereas the weight of exports to CIS increased ($\sigma < 1$). At the same time, a different situation was noticed in the case of a tiny share of exports. The rest have registered a simultaneous increase or decrease in the exports both to EU and CIS and, respectively, are not relevant for the analysis of the substitution effect between the markets.

Therefore, the recent decrease in exports to EU is associated, to a certain extent, with a process of replacing this market with the CIS one. Obviously, we cannot appraise accurately the magnitude of this process, given the insufficiency of more disaggregated data and methodological simplicity. However, considering that the weight of almost half of the exports to EU has diminished in total exports, while their weight in the exports to CIS increased, we may conclude that the reorientation of Moldovan producers from the EU to CIS market took shape in quarter 3, this year.

The main products that switched from the EU to the CIS market are presented in Table 1. Obviously, "footwear and accessories" category contributed the most to the diminution of exports to EU: in quarter 3 this category accounted for about one fourth of the total exports to this market. In absolute volume it dropped by 14.2% y-o-y, while the exports to CIS increased by as much as 49.4% y-o-y. Another important category of products exported to EU - footwear - witnesses a less pronounced decline (-52.1%), with an insignificant increase on the CIS market (+1.1%). A high share of both products is exported in active processing regime which, as a rule, implies importing the raw material, processing and delivering it to the EU partner. Hence, these companies operate on the basis of relatively long-term contracts, and time will be needed to conclude new contracts. Therefore, it is too early to

conclude that these exporters reoriented from the EU to the CIS market. Nevertheless, the currently available data and the trends of the main categories of products exported to these markets reveal that the first preconditions are already in place and that the market substitution process has already started.

TABLE1. THE PRODUCTS WHOSE WEIGHT IN TOTAL EXPORTS TO EU HAS DECREASED IN TANDEM WITH AN INCREASE IN THE WEIGHT OF EXPORTS TO CIS IN Q3, Y-O-Y

CSCI Code	Group of goods	Increase of exports to EU	Increase of exports to CIS
04	Cereals and cereal-based products	-69.6%	+7.5%
28	Metal ores and metal wastes	-57.9%	+417.6%
84	Clothing and accessories	-14.2%	+49.4%
85	Footwear	-52.1%	+1.1%
66	Metal ores items	-40.4%	+8.1%
42	Vegetable fats and oils	-50.7%	+69.4%

Source: Author's calculations on the basis of NBS data

HOW DID THE LEVEL OF ECONOMIC INTEGRATION OF MOLDOVA IN EU CHANGE DURING THE LAST YEARS? ECONOMETRIC ESTIMATIONS

Though the reorientation of some exporters from the EU to CIS market is, for sure, a reason to worry, a much more fundamental problem lies in the factors underpinning these processes. Thus, it is important to determine if the identified trends are caused by a lower competitiveness of local producers on the EU market or it constitutes a natural effect of the lower demand on this market, amid current economic crisis[8]. Therefore, we return to the main question of this study: is the pronounced diminution of exports to EU a problem determined by external or rather internal factors? To answer this question we will compare the elasticity of Moldovan exports to EU with respect to economic fluctuations from that region during 2 period of time: 2007-2009 and 2010-2012 (quarter 3). In this way we will test the hypothesis that the Moldovan economy has recently become less anchored in the European Union from the foreign trade perspective.

For that we will estimate a gravitational model, widely used in the analysis of international trade[9]. The main idea is that the volume of commercial exchanges between two countries is higher if their economies (in GDP terms) are bigger and the distance between them is smaller. This concept was adjusted to the objectives of our study. Hence, the gravitational model estimates the influence of economic fluctuations from the main EU partner countries, as well as the distance between Chisinau and the capitals of the respective countries on the Moldovan exports to these markets (Table 2).

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[8] In late Q3'12 the EU economy recorded a negative GDP growth, y-o-y, for the second consecutive quarter, indicating that it enters the recession phase.

[9] Anderson, J. E. (1979). "A theoretical foundation for the gravity equation". American Economic Review 69, 1, 106-116

Table 2. Analyzed countries and their weight in total exports to EU

Country	Weight, %
Romania	36.8
Italy	17.5
United Kingdom of Great Britain and Northern Ireland	9.9
Germany	8.6
Poland	8.3
Bulgaria	4.4
Belgium	1.1
France	0.7

Source: NBS

For a better specification of the gravitational model we have included a synthetic indicator of aridity, calculated with the following formula:

$$Aridity\ indicator^{10} = \frac{\sum_{i=1}^{4} Average\ temperature\ of\ the\ air\ (April - July)}{\sum_{i=1}^{6} Quantity\ of\ precipitations\ (January - June)}$$

At the same time, we included a binary variable for Romania, which is the main EU trade partner of our country, the commercial exchanges being facilitated by the territorial proximity (joint border) and lack of linguistic barriers. We have also taken into account the effect of the interest rate fluctuations, which, obviously, influence the price of local products on the foreign markets, as well as the exporting companies' revenues, expressed in MDL. Initially we included the MDL/EUR exchange rate, based on the assumption that the depreciation of the national currency has a positive impact on exports by enhancing their price competitiveness on the EU market. However, the tests proved that the model has a better specification if the volatility of EUR/MDL is taken into account, measured by its standard deviation.

Therefore, the formalized specification of the gravitational model is the following:

$$Exp_{i,t} = \beta_0 + \beta_1 PIB_{i,t} + \beta_2 dist_i + \beta_3 arid_t + \beta_4 ro + \beta_5 e\_stdev + u_{i,t},$$

where:

$Exp_{i,t}$ - the volume of Moldova's exports to each of the analyzed countries, expressed in US dollars and transformed in natural logarithms

$PIB_{i,t}$ - Gross Internal Product of the analyzed country, expressed in US dollars and transformed in natural logarithms

$dist_i$ - Distance between Chisinau and the capitals of the analyzed countries, expressed in km and transformed in natural logarithms

$arid_t$ - Aridity indicator

ro - Binary variable, which has the value 1 for Romania and 0 for the other countries

e_stdev - Standard deviation of daily EUR/MDL parity

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[10] We selected the periods of April-July for the average air temperature and January-June for the quantity of precipitations, because the agricultural production depends specifically on these months.

The model is estimated on the basis of seasonally adjusted data, with quarterly frequency, for 2 periods: 2007-2009 and 2010-2012, until the third quarter. We are mostly interested in parameter β_1, which will be used to compare the elasticity of Moldovan exports to GDP fluctuations in the EU countries during both periods. Thus, if its value is higher for the period of 2007-2009 than 2010-2012, we may conclude that in the second period the export-oriented economic sectors have become less anchored in the EU economy.

The gravitational model was estimated on the basis of 3 different methods, which are widely used to analyze panel data: (i) „pooled OLS", (ii) „fixed effects" and (iii) „random effects" (Table 3). We preferred the last method, as the relevant tests suggest that this ensures the most credible and efficient results[11].

TABLE 3. SUMMARY OF RESULTS AFTER THE GRAVITATIONAL MODEL ESTIMATION

	Pooled OLS		Fixed Effects		**Random Effects**	
	2007-2009	*2010-2012*	*2007-2009*	*2010-2012*	***2007-2009***	***2010-2012***
GDP	0.65***	0.67**	-0.1	1.44***	**0.28***	**0.97***
Distance	-1.54**	-1.6*	-0.8	-4.78***	**-0.66**	**-2.29**
Aridity	-1.36	1.85**	-2.58	1.78**	**-1.96**	**1.82***
Romania	1.05*	0.96	-	-	**1.58**	**0.58**
Exchange rate	0.17	-1.1***	-0.21	-0.7***	**-0.19**	**-0.97***

Source: Author's calculations

Note: the coefficients marked with 3 stares (***) are significant at 99% confidence interval, with 2 stars (**) - at 95%, with 1 star (*) - at 90%. The coefficients without stars do not have any explicative value.

Based on the model estimations, we notice a number of major differences between the coefficients estimated for 2007-2009 and 2010-2012. Thus, during the most recent period the dominant factor that explains the variations of Moldovan exports on the community market is the distance to the capital of the trade partner, while during 2007-2009 this variable was statistically insignificant. As the estimated coefficient is negative, we conclude that the bigger the distance between the countries is, the lower are the Moldovan exports to this market, on the average. The importance of this parameter was much higher during the second period, given the more stringent needs to cut costs and, respectively, to maintain the competitiveness of local producers on the EU market. As for the aridity coefficient, during 2007-2009 it had an intuitive (negative) value, suggesting that the Moldovan exports to EU tend to be lower when the aridity level is higher. The situation was totally different during 2010-2012, for which the coefficient had a positive value. This could be explained by the fact that, on the one hand, the effects of the 2012 drought were not yet fully covered during the analyzed period; on the other hand, given that 2012 was an arid year for the regional countries as well, the growth of the aridity indicator is associated with the increase agrifood products' prices, which a number of exporters can benefit of. The

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[11] The null assumption for the Hausman test was not rejected at a 99% confidence interval, which reveals the lack of endogenous problem (the error component is not correlated with certain explicative variables). Therefore, the "random effects" method is more efficient than the "fixed effects". At the same time, the Breusch-Pagan LM test suggest a correlation between the error terms and, therefore, the "random effects" is more appropriate than "pooled OLS".

volatility of EUR/MDL exchange rate is another statistically significant variable included in the model, which has a negative impact on the Moldovan exports to EU.

However, the most important difference between the analyzed periods refers to the notable increase in the elasticity coefficient of the Moldovan exports to the economic fluctuations in EU. Thus, if in 2007-2009 an increase by 1 p.p. in the GDP of the analyzed countries contributed with only 0.28 p.p. to the growth of exports to these markets, than in 2010-2012 this contribution amounted to 0.97 p.p.. This result of the gravitational model suggests that the negative trend of the Moldovan exports to EU during the past months was mainly determined by the worsening economic situation on the EU market, where the crises is gradually exacerbating. For example, Romania and Italy, which absorb more than half of the Moldovan exports to EU, registered negative GDP growth rates at the end of quarter 3 of 2012 (-0.8% and -2.4%, respectively). These trends certainly affected the demand for Moldovan products on the respective markets.

WHAT SHOULD WE EXPECT IN THE NEAREST FUTURE? FORECASTS OF EXPORTS TO EU AND CIS

Next we will forecast the export flows to EU and CIS for end 2012 and 2013 on the basis of a Structural Vector Autoregressive model (SVAR model). We have to stress from the very beginning that, given the current uncertainty at the regional and international macroeconomic environment, forecasting may be a very challenging task. For example, the exports volatility measured by the standard deviations for the first 3 quarters of 2012 is by 7% higher, if compared with the same period of the previous year, with the main contribution belonging to exports to EU, where the volatility increased by as much as 45% y-o-y. This is caused by the repercussions of the sovereign debts crisis from the Eurozone, leading to lower external demand and overall economic activity, as well as to the uncertainly about the effects of economic, monetary and fiscal policies aimed at mitigating the effects of this crisis.

We will start by describing the most important peculiarities of the economic model used to forecast the Moldovan exports to EU and CIS. The model is based on the hollowing assumptions:

- The volume of exports to both regions is determined by the economic activity from the respective regions, measured by the Gross Domestic Product, as well as by the exchange rate of the national currency to the US dollar, volumes of imports from these regions and the world price index of food products. Thus, the exports depend on the foreign demand, prices of the exported products expressed in the foreign currency, imports of raw materials and the general level of prices for food products on the foreign markets. The latter also incorporates the effects of weather

conditions, considering the fact that the arid years are associated with a more rapid increase in the world price index of food products.

- The exchange rate of the national currency to the US dollar is determined by the exports to and imports from the EU and CIS, as well as by the exchange rates for the previous periods.
- The GDPs of CIS and EU are interdependent and also depend on their values from the previous period and the world prices for food products.

The formalized definition of the model is the following:

Equation 1: $l\_exp\_sa\_ue_t = \alpha_1 + \sum_{i=1}^{4}\beta_{11}l\_exp\_sa\_ue_{t-i} + \sum_{i=1}^{4}\beta_{12}l\_gdp\_ue_{t-i} + \sum_{i=1}^{4}\beta_{13}l\_e_{t-i} + \sum_{i=1}^{4}\beta_{14}l\_imp\_ue_{t-i} + \beta_{15}food_t + \beta_{16}trend_t + u_1$

Equation 2: $l\_exp\_sa\_csi_t = \alpha_2 + \sum_{i=1}^{4}\beta_{21}l\_exp\_sa\_csi_{t-i} + \sum_{i=1}^{4}\beta_{22}l\_gdp\_csi_{t-i} + \sum_{i=1}^{4}\beta_{23}l\_e_{t-i} + \sum_{i=1}^{4}\beta_{24}l\_imp\_csi_{t-i} + \beta_{25}food_t + \beta_{26}trend_t + u_2$

Equation 3: $l\_e_t = \alpha_3 + \sum_{i=1}^{4}\beta_{31}l\_exp\_sa\_ue_{t-i} + \sum_{i=1}^{4}\beta_{32}l\_exp\_sa\_csi_{t-i} + \sum_{i=1}^{4}\beta_{33}l\_imp\_sa\_ue_{t-i} + \sum_{i=1}^{4}\beta_{34}l\_imp\_sa\_csi_{t-i} + \sum_{i=1}^{4}\beta_{35}l\_e_{t-i} + \beta_{36}trend_t + u_3$

Equation 4: $l\_gdp\_ue_t = \alpha_4 + \sum_{i=1}^{4}\beta_{41}l\_gdp\_ue_{t-i} + \sum_{i=1}^{4}\beta_{42}l\_gdp\_csi_{t-i} + \beta_{43}food_t + \beta_{44}trend_t + u_4$

Equation 5: $l\_gdp\_csi_t = \alpha_5 + \sum_{i=1}^{4}\beta_{51}l\_gdp\_csi_{t-i} + \sum_{i=1}^{4}\beta_{52}l\_gdp\_ue_{t-i} + \beta_{53}food_t + \beta_{54}trend_t + u_5$

Equation 6: $l\_imp\_ue_t = \alpha_6 + \sum_{i=1}^{4}\beta_{61}l\_imp\_ue_{t-i} + \sum_{i=1}^{4}\beta_{62}l\_gdp\_ue_{t-i} + \beta_{63}food_t + \beta_{64}trend_t + u_6$

Equation 7: $l\_imp\_csi_t = \alpha_7 + \sum_{i=1}^{4}\beta_{71}l\_imp\_csi_{t-i} + \sum_{i=1}^{4}\beta_{72}l\_gdp\_csi_{t-i} + \beta_{73}food_t + \beta_{74}trend_t + u_7$

Where:

$l\_exp\_sa\_ue_t$ - volume of Moldovan exports to EU expressed in US dollars, seasonally adjusted series, natural logarithms, period t

$l\_exp\_sa\_csi_t$ - volume of Moldovan exports to CIS expressed in US dollars, seasonally adjusted series, natural logarithms, period t

l_e_t - exchange rate of Moldovan leu to US dollar, natural logarithms, period t

$l\_gdp\_ue_t$ - GDP of EU in current prices expressed in US dollars, series interpolated from the quarterly to monthly frequency and the adjusted seasonally, natural logarithms, period t

$l\_gdp\_csi_t$ - GDP of CIS in current prices expressed in US dollars, series interpolated from the quarterly to monthly frequency and the adjusted seasonally, natural logarithms, period t

$l\_imp\_ue_t$ - volume of Moldovan imports from EU expressed in US dollars, seasonally adjusted series, natural logarithms, period t

$l\_imp\_csi_t$ - volume of Moldovan imports from CIS expressed in US dollars, seasonally adjusted series, natural logarithms, period t

$food_t$ – world price index for food products, expressed in %, period t.

$trend_t$ – linear trend

The Model is estimated for 2005-2012 (September) with a monthly frequency. All variables are endogenous, being defined in the model. The world price index for food products is an exception, being an exogenous variable, defined outside the model. Hence, to forecast the exports the model was populated with the forecasted world price index for food products on the basis of a seasonal ARIMA model. We also included the linear trend as a determinant variable to ensure a better specification of the model.
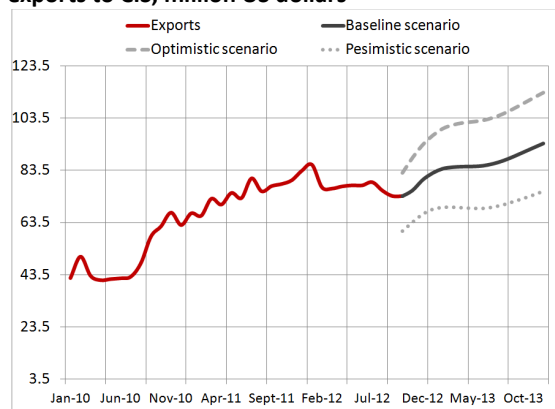
The resulting forecast exports of Moldova to EU and CIS are presented in Figure 3 and Figure 4:

Figure 3. Evolution and forecast of Moldovan exports to EU, million US dollars
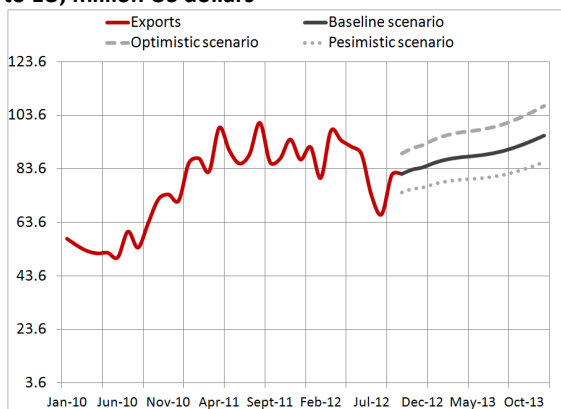
Source: Author's calculations

Figure 4. Evolution and forecast of Moldovan exports to CIS, million US dollars

Source: Author's calculations

Thus, according to the baseline scenario, by the end of this year the Moldovan exports to EU will decrease by about 6%-7%, while the exports to CIS will increase by about 2%-3% y-o-y. This is caused by the repercussions of the sovereign debts crisis from the Eurozone, which already made the GDP of most EU Member-States to shrink during the third quarter of 2012. However, in 2013 we expect a diving turn of the negative trend noticed since last autumn thanks to the expected economic recovery, as well as the lower comparison base. Therefore, the Moldovan exports to EU are expected to increase by about 5%-6% until the end of 2013, and the exports to CIS - by about 8%-9%-10% y-o-y. It is noteworthy that these forecasts correlate with our estimations of the GDP growth, presented in the latest edition of the periodical publication Moldova Economic Growth Analysis (MEGA)[12]: this year the GDP is likely to decrease by about 0.7%, whereas the expected growth for 2013 is 3.2%, y-o-y. Obviously, the main assumption underlying this forecast is the recovery of the regional economies in the second half of 2013 as a result of the economic stabilization policies implemented by most countries, as well as the lower comparison base. Finally, the forecasts reveal that the total exports of Moldova to EU will exceed slightly the ones to CIS (by about 3%-4%).

CONCLUSIONS AND POLICY RECOMMENDATIONS

As a conclusion, the results obtained by using the gravitational model help us to interpret more accurately the current negative trend of the Moldovan exports to the EU market, which are determined mainly by the foreign context associated with the repercussions of the economic crisis on the EU demand. Obviously, the competitiveness of Moldovan

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[12] MEGA - Moldova Economic Growth Analysis, no.7, 2012

products is still an issue, especially because of the delayed adoption of the European quality standards and other institutional problems, specific for the Moldovan economy over the entire transition period. However, the worsening economic situation in the EU is nevertheless the main factor explaining the negative dynamics of the Moldovan exports over the past months. Therefore, with the EU economic recovery, expected for the second half of 2013, the EU market is likely to resume its position of the main sales market for the Moldovan exporters.

Moreover, the estimated gravitational model reveals a higher elasticity of the Moldovan exports to the economic fluctuations in EU during 2010-2012 than during 2007-2009. On the one hand is points on a deeper anchorage of the local producers in the EU economy, which is a positive aspect in the context of negotiations on the potential Deep and Comprehensive Free Trade Area between our country and EU; but on the other hand, given the difficult and still worsening economic situation in this region, the increasing inter-dependence of the Moldovan exports on the EU economy comes, also, with higher risks for our country. In order to minimize the risks and maximize the benefits from deeper economic integration of the Moldovan economy into the European one, we offer the following key recommendations:

- The recent negative trends of the Moldovan exports to the EU market cannot be used as a reason to slow down the establishment of the future DCFTA between EU and our country. On the contrary, the deeper anchorage of Moldovan exporters on the EU market requires quicker adjustment of the local institutional framework to the EU one.
- In order to enhance the competitiveness of local producers it is necessary to foster investments in their fixed assets.. Hence, it is necessary to improve significantly the local investment climate and facilitate the transfer of technological know-how in the Moldova economy. For that, actions should be taken to eliminate the redundant administrative barriers that hinder the business development, reform the justice sector, protect more efficiently the shareholders' ownership rights (especially of the minority ones) and improve the transparency in the structure of commercial banks' shareholders. If the production processes are streamlined and the European quality standards are fully complied with, it will be possible to maximize the benefits and minimize the costs of a deeper anchorage of the Moldovan economy in the EU one.
- As the EU quality standards are the main barrier hindering the access of Moldovan producers to the EU market, it is necessary to improve significantly the quality infrastructure, paying particular attention to the adoption of sanitary and phytosanitary standards for the Moldovan agrifood products. This is especially related to animal products, which currently are prohibited to enter the EU market.
- It is crucial to facilitate the access to financial sources to ensure the competitiveness of Moldovan exporters on the EU market. Therefore, it is necessary to foster the competition between the banking and non-banking financial sector, which will

decrease the cost of bank loans and extend the range of alternative funding options. At the same time, to mitigate the creditors' risks, the authorities should simplify significantly the procedures of collateral execution when the debtor goes bankrupt.

- The gravitational model proved that during the second period, distance to the sales market was the main factor affecting the volume of Moldovan exports to the EU market. Therefore, the modernization of the road infrastructure will diminish significantly the transport costs and will increase the efficiency of goods transportation, which will positively contribute to strengthening the external competitiveness of Moldovan exporters. The need to improve the road infrastructure is even more acute in the case of our country, where the maritime access is limited, and over 90% of the roads are in a poor condition. As a result, the cost of shipping a container is by 36% higher and the transportation period is twice higher than in Romania[13] Therefore, the investments in this area have an important multiplication effect at the level of the entire economy.
- The bureaucratic requirements necessary for trade-related activities need to be significantly optimized. For example, according to the World Bank report "Doing Business 2013", the average export time is 32 days, while the average time in Eastern Europe and Central Asia is 26 days, and in OECD - 10 days. At the same time, most of the time (20 days) the firms loose for preparing the necessary documents.. Therefore, it is essential to both decrease the number of required papers and the time needed for their preparation.

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[13] According to the World Bank report "Doing Business 2013"