

## THE ROMANIAN EXTERNAL TRADE AND THE FOREIGN DIRECT INVESTMENTS INFLOWS AFTER 2007. A CRITICAL SURVEY.

Giurgiu Adriana

University of Oradea, Faculty of Economic Sciences

*Focusing more on the evolution of the Romanian external trade and FDI inflows after 2007 – the year of Romania's EU integration - the paper provides insights in the trade and FDI inflows determinants in the context of the convergence process and also in relation to the financial global crisis. As the statistic data envisage, Romanian exports and imports were high over the period 2000-2010, and there were also large FDI inflows in the economy, mostly until 2008. Although the data appear to be encouraging, it seems that Romania did not succeed to maximize the benefits which should result from such a situation. Moreover, the situation after 2008 shows that Romania is in a deep recession accelerated and maintained by uninspired government policy measures with a strong negative impact on the Romanian economy.*

*The aim of this paper is to empirically investigate Romanian export and import demand functions after the year 2007, and to compare them with those of the period 2000-2006, using quarterly data, in correlation with the FDI inflows.*

*The main contribution of the paper is that it is an empirical analysis on Romania's FDI and external trade, providing the impact of the main determinants of export and import of Romania, by using the Engle-Granger two step methods. Following Allard (2009) rather than just providing the elasticity, this method combines the elasticity with the evolution of the explanatory variables to quantify their impact during the analysed period. The analysis aim to cover all possible factors underlying the external sector performance of Romania and thus, they are complemented with country specific analysis. The empirical analysis will therefore provide some interesting insights not only in the context of the convergence process of the country with the Eurozone but also in relation to the exchange rate regime.*

*The theoretical framework relies on the "imperfect substitutes" model (Goldstein and Khan; 1985), and it is used in the paper to estimate the demand functions of the Romanian exports. Furthermore, the effect of the FDI on export performance is also investigated.*

*The conclusion which came out was, on one side that the export growth in Romania since 2007 is mainly due to strong FDI inflows since 2000, while the real exchange rate appreciation seems to not have significant impact on export developments of the country. On the other side, the significant imports growth was due to strong reduction in productivity and in the gross capital formation rate, which combined with the lack of domestic capital, have largely affected the private sector, and mainly the manufacturing one, on which the Romanian economy should rely on, mainly due to its competitiveness.*

*Key words: external trade, FDI inflows, exports, imports, Romania's economy*

*JEL Codes: F14, F15, F21, F43*

### 1. Introduction

Romania registered strong fluctuations in its export, import and GDP growth over the period 2000-2010, along with large FDI inflows and real exchange rate appreciation of the national currency.

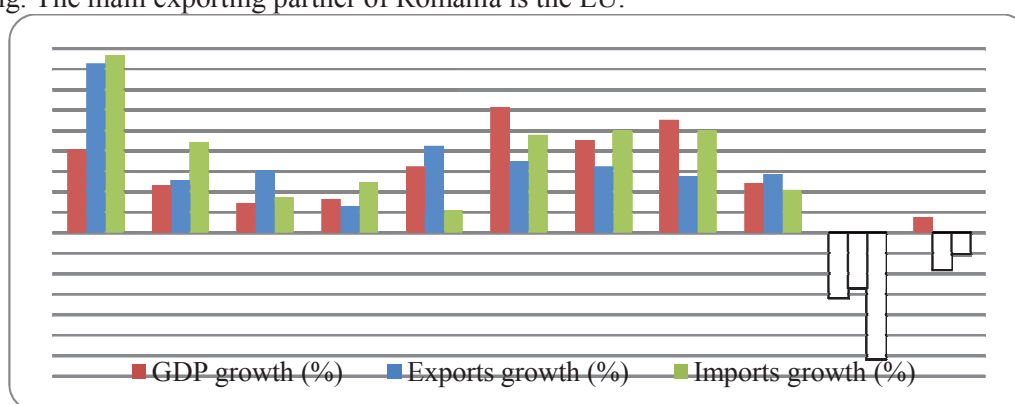
The aim of this paper is to empirically investigate Romanian export and import demand functions after the year 2007, and to compare them with those of the period 2000-2006, using quarterly data, in correlation with the FDI inflows.

The main contribution of the paper is that it is an empirical analysis on Romania's FDI and external trade, providing the impact of the main determinants of export and import of Romania,

by using the Engle-Granger two step methods. According to Allard (2009) rather than just providing the elasticity, this method combines the elasticity with the evolution of the explanatory variables to quantify their impact during the analysed period. The analysis aim to cover all possible factors underlying the external sector performance of Romania and thus, they are complemented with country specific analysis. The empirical analysis will therefore provide some interesting insights not only in the context of the convergence process of the country with the *Eurozone* but also in relation to the exchange rate regime.

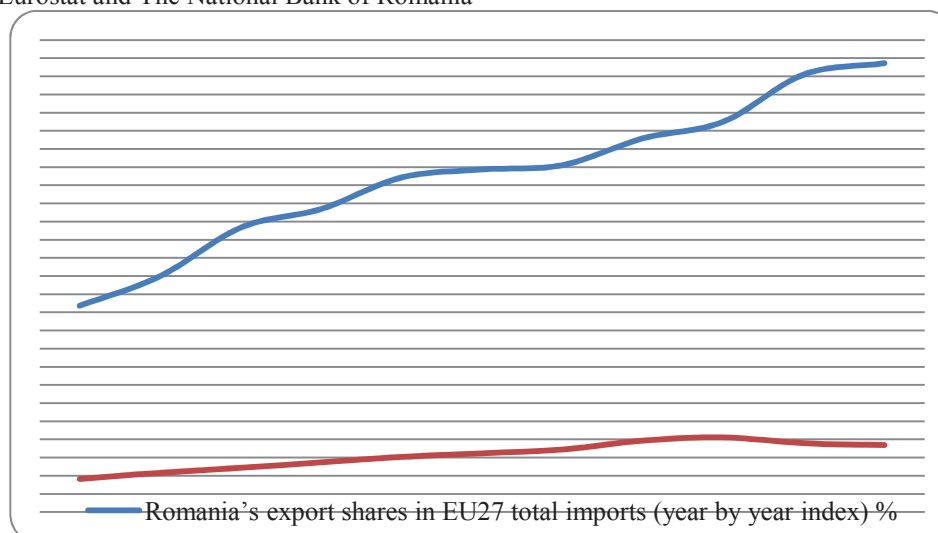
The Romania's exchange rate regime can be characterized as a managed float against the *Euro*. The empirical analysis will therefore provide some interesting insights not only in the context of the Romania's convergence process with the *Eurozone*, but also in relation to the exchange rate regime (Giurgiu, 2008).

As *Figure 1* shows us, since 2000 till the third quarter of 2008 when the global economic and financial crisis affected the Romanian economy, its GDP, export and import growth were very strong. The main exporting partner of Romania is the EU.



**Figure 1. Real Growth Rates of Romanian GDP, Exports and Imports**

Source: Eurostat and The National Bank of Romania



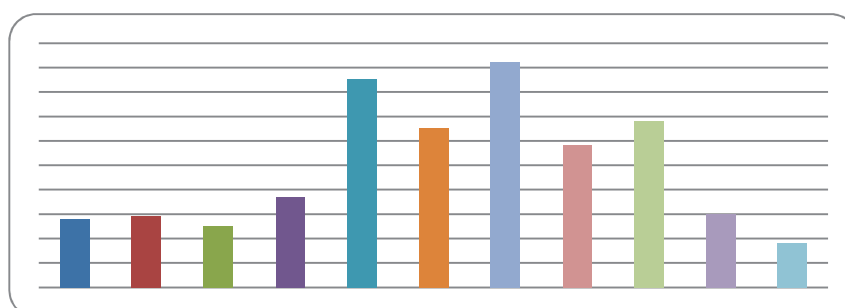
**Figure 2.**

Source: European Commission. *AMECO database*, visited during March/April 2011. [http://ec.europa.eu/economy\\_finance/ameco/user/serie/ResultSerie.cfm](http://ec.europa.eu/economy_finance/ameco/user/serie/ResultSerie.cfm), last update: April 2011; Eurostat. *Intra and Extra-EU trade by Member State and by product group*, visited during March/April 2011. <http://appsso.eurostat.ec.europa.eu/nui/show.do>

Over the period 2000-2008 there was a sustainable increase in the share of Romanian external trade in the World trade, while 2009-2010 registered a slight decrease. Furthermore, the important role played by the EU as a main trading partner is evident by the significant increase of the share of Romania's exports in the EU27 total imports, which was 1,13% in 2000, compared to 2,47% in 2010 (see *Figure 2*).

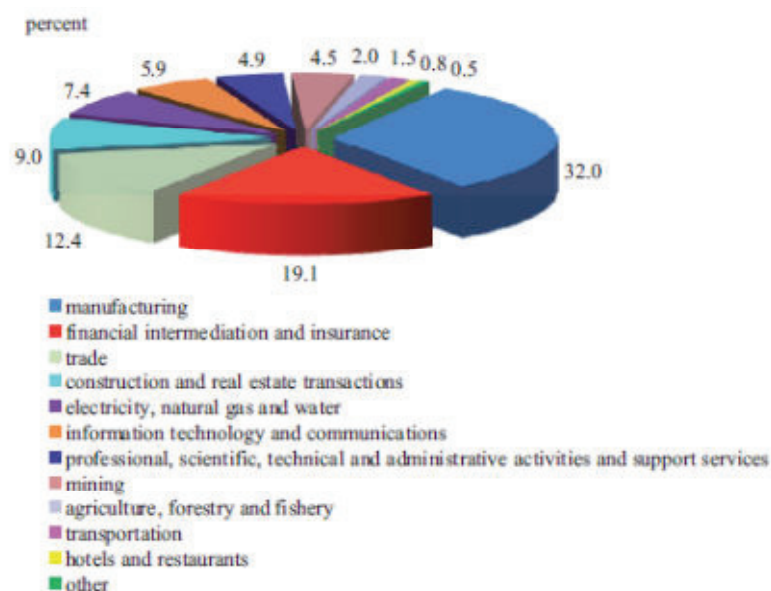
During the period of investigation there was also a trend of real exchange rate appreciation in Romania, which could be explained by the gains of productivity and FDI flows among other factors, along with the *Eurozone* convergence process, in which Romania is engaged to.

Being influenced by particularly large mergers and acquisitions, FDI flows can fluctuate considerably from one year to another – although the main players remain the same from one year to the next. The latest data is presented in *Figure 3*. FDI flows between developed economies were the first to be affected by the financial and economic crisis. The EU-27 was the leading investment partner for Romania during 2000-2010, and the drop in incoming FDI flows was significant in 2009, as FDI inward flows fell to around 50% compared to 2008.



**Figure 3. FDI flows in Romania as percentage of GDP**

Source: Eurostat. *Balance of payments - International transactions*, visited during March-April 2011. <http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tec00046&language=en>



**Figure 4. FDI stock in Romania in 2010, by main economic activity**

Source: The National Bank of Romania. *Investițiile străine directe în România*. Accessed during March-April 2011. <http://www.bnr.ro/DocumentInformation.aspx?idDocument=12144&idInfoClass=9403>

Furthermore, Romania has witnessed major FDI inflows prior to and after its EU accession. In 2007 (the accession year) FDI as percent of GDP in Romania was aprox. 6%. As of 2010, FDI accumulated inflows in Romania amounted to around 52,5 million Euros. A large share of these FDI inflows in 2010 went to manufacturing (32%), financial intermediation (19,1%), trade (12,4%) and construction and real estate transactions (9%), as the *Figure 4* shows us. Flows of FDI (new investments made during the reference period) fluctuate considerably from one year to the next, partly as a function of economic fortunes. FDI flows generally increase during times of rapid economic growth, while disinvestment is more likely during periods of recession as businesses focus on core activities in their domestic market. Equity capital, mainly mergers and acquisitions activity, showed a similar trend dropping by one third in 2009 and continuing to fall in 2010. Inward flows of FDI from the EU-27 (from member countries) also peaked in 2008 and fell even more sharply than outward flows in 2009, down 50 %.

## **2. The theoretical framework and the research methodology**

In a world of increasing globalisation, where political, economic and technological barriers are rapidly disappearing, the ability of a country to participate in global activity is an important indicator of its performance and competitiveness. In order to remain competitive, modernday business relationships extend well beyond the traditional foreign exchange of goods and services, as witnessed by the increasing reliance of enterprises on mergers, partnerships, joint ventures, licensing agreements, and other forms of business co-operation. FDI may be seen as an alternative economic strategy, adopted by those enterprises that invest to establish a new plant/office, or alternatively, purchase existing assets of a foreign enterprise. These enterprises seek to complement or substitute external trade, by producing (and often selling) goods and services in countries other than where the enterprise was first established.

There are two kinds of FDI, namely the creation of productive assets by foreigners or the purchase of existing assets by foreigners (acquisitions, mergers, takeovers, etc.). FDI differs from portfolio investments because it is made with the purpose of having control or an effective voice in management and a lasting interest in the enterprise. Direct investment not only includes the initial acquisition of equity capital, but also subsequent capital transactions between the foreign investor and domestic and affiliated enterprises. Conventional trade is less important for services than for goods. While trade in services has been growing, the share of services in total intra-EU trade has changed little during the last decade. However, FDI is expanding more rapidly for services than for goods, increasing at a more rapid pace than conventional trade in services. As a result, the share of services in total FDI flows and positions has increased substantially, with services within the EU-27 becoming increasingly international (Giurgiu, 2008; Eurostat. *Balance of payments - International transactions*). All the data used within this paper are expressed in real terms and were collected from the statistics presented by the National Bank of Romania. The investment, import and GDP deflators for Romania were also gathered from the National Bank of Romania, together with the FDI accumulated inflows, expressed in national currency. The Real Effective Exchange Rate for Romania is from the European Commission.

### **2.1 Exports**

The theoretical framework uses the “imperfect substitutes” model of Goldstein and Khan (1985) to estimate the demand function of the Romanian exports, which assumes a two country exports as imperfect substitutes for domestic non tradeable goods. An export demand function has been derived as the outcome of the maximization of foreign households’ utility, subject to their budget constraint:  $X_d = x(Y_f, P_Xh, P_Xc)$ ,  $f_1 > 0$ ,  $f_2 < 0$ ,  $f_3 > 0$  (1), where:  $X_d$ = the quantity of the domestic good which is exported to the foreign market,  $Y_f$ =the real foreign income,  $P_Xh$ =the price of the domestic good,  $P_Xc$ = the price of competing suppliers in the foreign market in a common

currency, and  $f_i$  = the expected partial derivatives of the export function with respect to the  $i$ th argument. We have then incorporated FDI stock as a proxy for quality in the equation (1), in order to investigate if there is a significant effect on export performance:  $X^d = x(Y^f, PX^h, PX^c, FDI)$ ,  $f_4 > 0$  (2). The log-linearization of the equation (2) becomes:

$$X^d = x_0 + x_1 Y^f + x_2 \left( \frac{PX^h}{PX^c} \right) + x_3 FDI, \quad x_1 > 0, x_2 < 0, x_3 > 0, \text{ where all the variables logarithmic.}$$

This equation represents the long-run cointegrating relationship of exports and their determinants.

## 2.2 Imports

To aggregate import demand function for Romania, we used also the imperfect substitutes model, assuming that imports are not perfect substitutes for domestic goods (Goldstein and Khan, 1985). Since the Romanian imports share only a small percent of the total World imports, we can also assume that the World supply of imports to Romania is perfectly elastic, resulting this way a single equation model of the import demand function, which is a function of relative prices and real income (Houthakker and Magee, 1969; Murray and Ginman, 1976; Goldstein and Khan, 1985; and Carone, 1996). In order to model an aggregate import demand function, the log-linear specification is preferred to the linear formula (Khan and Ross, 1977; Salas, 1982), and for Romania, the long-run import demand function will be as it follows:

$$M^d = m_0 + m_1 DD + m_2 \left( \frac{IMP}{GDP} \right), \quad m_1 > 0, m_2 < 0, \text{ where: } DD \text{ represents domestic demand, } GDP \text{ represents the GDP deflator, and } IMP \text{ represents the import deflator.}$$

## 2.3. Empirical Estimation

The empirical estimations include four steps and uses Engle-Granger two steps method. First, the order of integration of the variables is determined, by using Augmented Dickey-Fuller (ADF) and Phillips-Perron (1988) unit root tests. Second, the long-run equation is estimated. Third, as the variables are found out to be co-integrated, the error correction models were specified and estimated. In the short run, the four lags and non-significant lags were included and then, sequentially eliminated. Finally, dynamic contributions were computed for assessing the role of the various explanatory variables in the evolution of exports and imports over the period 2000-2010 (Allard, 2009).

## 3. Results and Conclusions

This paper provides insights in the trade determinants of Romania in the context of its convergence process to the *Eurozone* and also in relation to different exchange rate regimes. The global and domestic acceleration explain a significant part of export and import developments in Romania during the period 2000-2010. The pickup in growth in the EU explains to a large extent the export growth in Romania. This paper also shows that over the period of investigation, Romania was able to increase its external market share, partly due to strong FDI inflows.

The results show us that all of the coefficients are significant except the real effective exchange rate in the export equation in long run, FDI in the export equation in short run and the relative price in the import equation in long and short run. Furthermore, the low price elasticity reflects a different technology content of structure of the exported goods. The accumulated FDI investment also contributed positively to the export growth in Romania.

Price competitiveness appears not to play a significant role in the Romanian external trade, because during the period 2000-/2010 the evolution of the relative prices has almost no contribution on the country's exports. This way, we can confirm the conclusions reached by Allard (2009) also in the case of Romania. Concerning the imports, strong domestic demand played a key role in Romania, where the price elasticity proved to be relatively low.



The conclusion which came out is, on one side that the export growth in Romania since 2007 is mainly due to strong FDI inflows since 2000, while the real exchange rate appreciation seems to not have significant impact on export developments of the country. On the other side, the significant imports growth was due to strong reduction in productivity and in the gross capital formation rate, which combined with the lack of domestic capital have largely affected the private sector, and mainly the manufacturing one, on which the Romanian economy should rely on, mainly due to its competitiveness.

#### 4. Acknowledgements

The paper presents the author's research results in the post-doctoral research project: "The costs and the benefits of the Romania's EU integration process from the external trade and foreign direct investments perspective", carried out within the project titled: "Economic scientific research, reliance of human welfare and development in the European context", financed by the European Social Fund and the Romanian Government through the Sectorial Operational Programme Human Resources Development 2007-2013 (SOP HRD), contract number SOP HRD/89/1.5/S/62988; beneficiary: Institutul Național de Cercetări Economice "Costin C. Kirițescu" (INCE), Bucharest, Romanian Academy.

#### Bibliography

##### Books

1. Giurgiu, Adriana. *Comerțul intraeuropean. O nouă perspectivă asupra comerțului exterior al României (Intra-European Trade. A New Perspective onto the External Trade of Romania)*, București: Editura Economică, 2008.
2. Goldstein, M., Khan, M.S.. *Income and price effects in foreign trade*, in R.W.Jones and P.B.Kenen (eds.), *Handbook of International Economics*, II, 1985.
3. Krugman, P., Obstfeld M.. *International Economics. Theory and Policy*, Addison-Wesley, 1997.

##### Journal Articles / On-line Journals

1. Allard, C. "Competitiveness in Central Europe: What has happened since EU accession?", *IMF Working Paper*, 2009.
2. Carone, G.. "Modelling the US demand for imports through co-integration and error correction", *Journal of Policy Modelling*, 18(1), 1996:1-48.
3. Funke, M., Ruhwedel R.. "Export variety and export performance: empirical evidence from East Asia", *Journal of Asian Economics*, 12, 2001:493-505.
4. Goldstein, M., Khan M.S.. "The supply and demand for exports: a simultaneous approach", *Review of Economics and Statistics*, 60, 1978:275-286.
5. Houthakker, H. S., Magee, S.P.. "Income and price elasticities in world trade", *Review of Economics and Statistics*, 41, 1969:111-25.
6. Khan, M.S., Ross, K.Z.. "The functional form of the aggregate import equation", *Journal of International Economics*, 7, 1977:149-60.
7. Krugman, P.. "Differences in income elasticities and trends in real exchange rates", *European Economic Review*, 33, 5, 1989:1031-54.
8. Murray, T., Ginman, P.J.. "An Examination of the traditional aggregate import demand model", *Review of Economics and Statistics*, 58, 1976:75-80.
9. Salas, J.. "Estimation of the structure and elasticities of Mexican imports in the period 1961-1979", *Journal of Development Economics*, 10, 1982:297-311.

### **Web pages**

1. European Commission. *AMECO database*. Accessed during March/April 2011. [http://ec.europa.eu/economy\\_finance/ameco/user/serie/ResultSerie.cfm](http://ec.europa.eu/economy_finance/ameco/user/serie/ResultSerie.cfm).
2. Eurostat. *Balance of payments - International transactions*. Accessed during March-April 2011. <http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tec00046&language=en>.
3. Eurostat. *Intra and Extra-EU trade by Member State and by product group*. Accessed during March/April 2011. <http://appsso.eurostat.ec.europa.eu/nui/show.do>.
4. The National Bank of Romania. Accessed during February-April 2011. <http://www.bnr.ro/Baza-de-date-interactiva-604.aspx> and <http://www.bnr.ro/Publicatii-periodice-204.aspx>
5. The National Bank of Romania. *Investițiile străine directe în România*. Accessed during March-April 2011. <http://www.bnr.ro/DocumentInformation.aspx?idDocument=12144&idInfoClass=9403>