THE CORRELATION BETWEEN THE EXCHANGE RATE AND THE DIRECT FOREIGN INVESTMENTS

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Since the fall of the monetary system from Bretton Woods, based on a system of fixed rates, numerous theoretical and empirical articles have emerged through which the volatility of the exchange rate and the commercial influxes was analyzed and the identification of specific connections regarding the transmission of the effects of the modification of the exchange rapport of a currency in economy was tried. The general idea from these works start from the uncertainties regarding the evolution of a currency in comparison to another and their effects on the goods and services balance of a state.
Important works from the domain are evaluated. The authors are renowned researchers in the area of international finances and some of them are part of the personnel of the most important international finance-banking institutions such as the International Monetary Fund and the Bank of International Settlements. The studies regarding the relation between the exchange rates and the direct foreign investments are contradictory: some do not find a significant influence of the exchange rate and other demonstrate that there is a strong connection between the two variables. If a connection between the two variables is established, it remains to be settled if the connection is direct or reversed.
The Granger causality test identified the characteristics of the relation between the direct foreign investments and the exchange rate. The conclusions of the research mark out the complex nature of the relation between the two variables, the results being extremely heterogeneous from one country to another.

Keywords: direct foreign investments, exchange rate, volatility, correlation, impact
J.E.L. classification : E20, E22, E43, E30, G10

Introduction

In the specialty literature, there have been many theories that mark out the bidirectional relation exchange rate-direct foreign investments. The classical theories highlight the fact that the volume of direct foreign investments is influenced by the exchange rate; a depreciated currency encourages the investors to delocalize their operations in the geographical areas where the workforce cost is more reduced.
The exchange rate is influenced by a series of factors, marking out a high interdependence degree and heterogeneous determination degrees. For these reasons, different approaches marking out a holographic dimension of the exchange rate (in terms of exporters/importers, investors or speculators) can demonstrate that on short or longer periods of time, a number of determinant factors can become dominant.
The exchange rate is actually the most synthetic price in economy, being the expression of a generalized equilibrium from the real economy, on one hand, and from the monetary-financial one, on the other hand.

1.Theoretical approaches regarding the causality relation between the exchange rate and direct foreign investments

A debate regarding the advantages and disadvantages of the impact exerted by the floating exchange rate on the international commerce appeared after the fall of the system of fixed rates established at the Bretton Woods Conference.
The volume of transactions on the exchange market increased exponentially based on the role that the American dollar played as pattern gold-specie set by the Bretton Woods Act in 1944 and the proliferation of floating exchange rates, after the fall of the system of fixed rates in 1971. It was due both to the intensification of the globalization process of the financial markets from the last decades and to the explosive development of derived operations in *leverage*. The gap between the Global Brut Product and the market of derived financial products. In this way, the

currency market came to be dominated by speculation operations and the factors that influence the exchange rates diversified and become more and more complicated to quantify.
The opponents of the flexible regime considered that the volatility of the exchange rate has a negative effect on commercial exchanges. In 1973, Wilfred Ethier substantiated a model in which "the behaviour of the merchants implies simultaneously both cover techniques and speculations, both of them correlated in an essential way." There have been various critiques addressed to term markets regarding a series of deficiencies linked to the incapacity of the term markets to act as a convenient cover tool for the volatility of the exchange rate.
The first refers to the fact that term markets are not deep enough to assure an adequate cover against the uncertainty of the exchange rate. The second comprises a complex relation between the exchange rate and prices in which the foreign exchange variations can affect the participants at the operations of international commerce in two ways: - the modification of the pay or cash in sum denominated in the own currency, respectively the modification of the prices of the exported or imported goods denominated in the own currency.
From this perspective, this type of model leads to a double role played by the participants to the international commerce operations – speculators and arbitrators. On the other hand, more studies marked out that the access to term market implies a cost; in this way the access is limited. At the same time, the effect is known by all market participants, but its intensity remains unknown.
Globally, the literature reveals 2 theories regarding the relation between the exchange rate and the direct foreign investments, reflected in 2 corresponding phases: the first comprises models that affirm that the uncertainty/the volatility of the exchange rate can fully be balanced by cover operations (Kogut (1983), Krugman, (1989).
The second phase includes a series of studies with contradictory results (Cushman (1985, 1988) as well as Goldberg and Kolstadt (1995)). Cushman analyzed the percentage modifications at the level of the exchange rate to avoid difficulties implied by non-stationarity and, additionally, he used the real exchange rate and not the nominally rate. Cushman identified a positive relation between the direct foreign investments (ISD) and the volatility of the exchange rate. He explained this finding by the fact that a multinational corporation reduces the exports as response to the exchange risk, but kind of balances this by increasing the foreign capital and production entries. Cushman's conclusions were criticized afterwards because "although innovative at the publication moment…his predictions are surely not compatible with the latest researches" (Jeanneret, 2007). Jeanneret underlined some of the deficiencies of the study conducted by Cushman; the volatility of the exchange rate was probably overestimated because the author counted the standard aberration that corresponds to the level values and not the one that corresponds to the first differences (Jeanneret, 2007).
A more recent study conducted by Chakrabarti and Scholnik (2002) did not mark out a negative relation between the variation of the exchange rate and the direct foreign investments. The author revealed the fact that a significant relation between the two variables cannot be estimated econometrically using the data regarding the influxes of direct foreign investments directed from USA to 20 Organization for Economic Co-operation and Development countries during the period 1982-1995, and to estimate the volatility of the exchange rate in the form of standard deviation at the level of the monthly exchange rate registered during the previous year (for example, in the shape of a panel type regression with fixed or chance effects).
In 2007, Jeanneret revealed a U type curve relation between the volatility of the exchange rate and the direct foreign investments, to create a model of multidimensional real options, based on his empirical findings afterwards.
The degree of financial development of a state is a strong argument that is taken into account when the type of suitable exchange regime is established and chosen, with implications on the fluctuation margin in which the exchange rate of the national currency will be en-framed. Depending on the development degree of the capital market, the participants involved in the

international commercial exchanges can protect themselves through hedging operations from the modification of the exchange rate. In these conditions, the volatility of the rate has stronger implications on the international commercial exchanges if the development degree of the financial market is more reduced (Aghion et al., 2009, p.496).
The same idea is developed by Rahman in 2009, paying a special attention to the position towards the exchange risk of the partners involved in the international commercial relations. The same author presents other factors that are worth to be taken into account when realizing the analysis regarding the relation between the foreign exchange and the exports: the existence of multinational corporations involved in international commercial exchanges and the anticipations of the partners regarding the implications linked to the rate modification. Other economists approach the volatility effects from 2 perspectives: the first is the microeconomic one – the activity of the exporting firms depends on the level of the transaction costs influenced, in turn, by the exchange rate, and the second is macroeconomic – the fluctuations of the exchange on long term affects the competitiveness of the products designed for export (Schnabl, 2008, p.74).
The firms register additional costs pertaining to the protection from the exchange risk, the earnings of the partners implied in international commercial relations reducing in this way. The existence of instruments on the financial market allows, in a certain measure, the realization of a certain protection from the exchange risk by paying a bonus according to the value of the contract. Unfortunately, these tools are not used on a large scale, many operators preferring not to protect themselves from the exchange risk.
The biggest part of the works that deal with this subject bring *a reverse connection between the volatility of the exchange rate and the influxes from the balance of goods and services of a certain state* in the forefront. Still, some authors consider that the depreciation of the exchange rate is not enough to reduce the current account deficit if the modification of the rate is not consistent (Gust, 2009, p.173).

2.The effects of the volatility of the exchange rate on direct foreign investments

The reduced volatility of the exchange rate is associated by most economists with high degrees of economic growth, an important volume of direct foreign investments, big deficits of current account and an excess in the credit activity (Arratibel et al., 2010, p.1).
The modern theories underline that foreign investments manifest an impact on the exchange rate, from the financial influxes perspective, a consistent volume of financial influxes denominated in specie determines a stabilization of national currency.
Considering the weight of net capital entries (the difference between the volume of financial influxes direct by the foreign investors in the countries from Central and Eastern Europe and the financial influxes repatriated in their own countries) in Gross Domestic Product as important indicator for the analysis of direct foreign investments, meant to allow the highlight of a proportional relation between Gross Domestic Product and direct foreign investments.
The empirical researches based on Granger's model test a few hypotheses:
(1) The exchange rate has an impact on direct foreign investments
In the context of a weak currency which will probably balance in the future due to a potential stabilization/improvement of the macroeconomic background, the foreign investors will have the motivation to direct the financial influxes to that country because a potential stabilization offers the opportunity to raise the value of the investment.
(2) The direct foreign investments influence the exchange rate
The significant financial influxes directed by foreign investors and denominated in currency encouraged the stabilization of the national currency as a result of the increase of the foreign currency volume.

The statistical results that correspond to the Granger test realized at the level of the countries from Central and Eastern Europe reveal important aspects as far as the relation between the exchange rate and the direct foreign investments is concerned. The probability that corresponds to the null hypothesis allows the acceptance of an impact exerted by direct foreign investments on the exchange rate; on the contrary, the exchange rate does not appear in the shape of a variable that manifests an impact on direct foreign investments. So, the direct foreign investments manifest an impact on the exchange rate in the case of certain countries, whereas in other case, the relation is not validated which marks out that the direct foreign investments and the exchange rate are not linked.

The research has allowed the issuance of an important conclusion regarding the role played by foreign investments in the process to determine the dynamics of the exchange rate at the level of the countries from Central and Eastern Europe.

Although the transition process followed by these countries implies periods of significant depreciation of their national currency, it didn't represent the main stimulus for the delocalization of the foreign investments; on the contrary, the exchange rate seems to be strongly affected by the volume of financial influxes.

The countries in whose case the fact that the direct foreign investments manifest an impact on the exchange rate was confirmed are precisely the ones that managed to attract the highest level of direct foreign investments. This ascertainment is in concordance with the latest research realized at the level of the macroeconomic environment from Central and Eastern Europe. More studies (Yartey, 2007) marked out the fact that during 2004-2007 the registered economic growth took place mainly in the context of the positive effects of the direct foreign investments and of the stabilization of the national currency which gave the possibility to create workplaces, to extend the range of services and products.

The authors marked out that the stabilization of the national currencies was partly artificial, in the sense that it was not based on economic grounds but on external financial influxes that determined the growth of the volume of foreign exchange (Triandafil and Brezeanu, 2009).

In conformity with this idea, we can assess that the foreign investors were mainly motivated by the advantages regarding the reduced cost of the workforce, the high qualification level or a permissive financial fiscal offered by the countries from this area (Kiyota and Urata, 2004).

The conclusions of the study reveal o strong dependence not only of the currencies of these countries but also of the macroeconomic background in rapport with the external financial influxes. In fact, there are some chain propagation effects that can be underlined in: Central and Eastern Europe, the stability of the macroeconomic environment depends on the volatility on the exchange rate very much which, in turns, depends on the volume of financial influxes. This aspect determined real imbalances after the triggering of the financial crisis. The retreat of the financial influxes took place in the context of a strong aversion towards the risk which suddenly led to the depreciation of the national currencies.

The specialty literature has identified by choice 4 factors as determiners that explain the evolution on medium-long term of the real exchange rate:

• the productivity differential (the Harrod-Balassa-Samuelson phenomenon)
• the stockpile of net external actives
• governmental costs
• the exchange rate

The importance of net external actives as determiner of real exchange rate was recently marked out by Lane and Milesi-Ferretti (2000). A country with an increased negative level of net external actives cannot easily finance the current account deficit and cannot support a competitiveness loss associated with a more stabilized real exchange rate.

As a generally valid rule, the level of long term equilibrium of the exchange rate should be consistent with a stable weight of international investment position in Gross Domestic Product.

The action way of the net external actives as weight in Gross Domestic Product manifest by means of 2 channels: (i) the risk bonus and (ii) the payment balance.
The first channel is linked to the portfolio theory and it states that because of the worsening of the international investment position (as Gross Domestic Product weight) of a country, international investors will ask for a higher capacity to provide the capital influxes that are necessary to finance the current account deficit. If the interest rates do not change, the higher risk bonus will determine the depreciation of the currency of the country with net debt to the exterior. So, the interest rate that has to be paid for the accumulated duty as result of consecutive current account deficits has to be counter-balanced by excesses of the commercial balance on long term. This excess can be obtained by depreciating the national currency which will make exports more attractive.
The data series regarding the international investment position are generally relatively short, and even more in Romania's case (there isn't a continuous series in fact). As a result, a frequently used proxy in estimates is obtained by the accumulation of the current account stock – although this way presents drawbacks. Fiscal variables can have a significant influence on the real exchange rate. On long term, the increase of governmental expenses is simultaneously associated with am increase of budget deficit. The general level of economies will reduce supposing that the population does not increase its savings to compensate the decrease from the level of public authorities. As a result, both the current account and the net external actives will worsen. The channels that were earlier described act further on.
From a broader perspective, excessive governmental expenses were interpreted as variable that surprises a multitude of economic distortions, having a negative impact on the perspectives of economic growth and on the real rate. This approach has the hypothesis according to which the increase of governmental expenses and excessive indebtedness will erode the confidence in the national currency as result of the waiting regarding taxes increases in the future at its basis. On short term, though, the effect can be a stabilization of the national currency one both through the effect on the aggregated demand and through the rate of interest increase. The exchange rapport has significant structural implications as, although the workforce from an emerging country is weakly trained, it recovers this gap compared to a developed country through education, international know-how transfer in time; it is very likely that this process improve the competitiveness of exports and to allow the practice of bigger prices as result of a higher quality of goods and services.
As a result, the exchange rapport has a considerable impact on the commercial balance – the most important component of the current account. The worsening of the exchange rapport (that resulted from the modification of the consumers' preferences or from increases of the goods price) should determine the depreciation of the real exchange rate in order to keep the competitiveness of the exports. Since preferences are hard to quantify, the exchange rapport is often approximated with the oil price in literature. The increase of oil price improves the international competitiveness of a country that is dependant on oil imports in a small measure. If this approximation is used in assessments the effect on medium term must be commented because the oil price can float considerably on short term.
Although the under-evaluation of the national currency has positive effects on short term leading to the export increase, to the improvement of the current account situation and to the rise of economic competitiveness, the situation has to be analyzed with the utmost prudence on long term. It needs to be done especially by the countries that recently adhered to the European Union or about do adhere. These countries are to adhere to the Economic and Monetary Union in a future phase and they will have to adopt a fixed rate consequently.
A real stabilization of the national currency realized in the conditions of an exchange market characterized by reduced interventions of the central bank did not affect the external competitiveness due to the fact that the productivity in the tradable sector increased. The rate

under-evaluation from 1999 as result of the strong depreciation of the nominal rate had as consequence an export growth. The imports adjustment due to the decrease of internal demand and the exports increase led to the improvement of the commercial balance account.
The massive capital entries both from direct foreign investments and from other capitals as well starting from 2003 determined a stabilization of the equilibrium exchange rate which lead to a sub-evaluation of the national currency, under-evaluation that decreased in the fourth trimester of the year 2004 when BNR changed its exchange rate policy, passing to a bigger flexibilization of the exchange rate. This flexibilization of the exchange rate was necessary as a phase for the preparation of the passing at the aiming of inflation as strategy of economic policy from 2005 and for the passing over the liberalization step of the capital account from April 2005 – the access of non-residentials to term deposits in lei.
The massive capital entries from the last years due to the improvement of the country rating and the integration in the European Union as well as the stabilization feeling that prevailed in the actions of the participants at the exchange market strongly stabilized the exchange rate.
As far as the exchange rate is concerned, it is estimated a moderate stabilization of the exchange rate for 2012, but it will still contribute to the decrease of import and operated prices wired to the euro currency.
These expectations in the dynamics of the exchange rate are also sustained by a favourable evolution as far as the direct foreign investments are concerned also in the next period and by the keeping of structural tendencies of economic growth, concomitantly with a slowing down in the consumption rhythm.

Conclusions

It is very important to surpass the maximum moment of the capital entries that are envisioned to continue also after the entrance in the European Union from the perspective of correct choosing of central par of exchange at the entrance in the exchange rates Mechanism and ulterior Euro embracement by Romania programmed in the period 2012-2014). This thing is motivated by the capacity to estimate the balanced exchange rate as precisely as possible to have a good foundation of central parity of exchange. The results obtained by econometrical techniques of co-integration in the work lead to the conclusion that a differential increase between the relative prices of the non-tradable goods in comparison to tradable ones in Romania with regard to EU-12 and an increase in the net external actives of the banking system appreciate the equilibrium exchange rate. The national currency had both periods in which it was under-evaluated and periods when it was over-evaluated on the basis of the estimation of the real equilibrium exchange rate. Although the under-evaluation of the national currency has positive effects on short term leading to the export increase, to the improvement of the current account situation and to the rise of economic competitiveness, the situation has to be analyzed with the utmost prudence on long term.
The liberalization of capital accounts and the increase of the volume of international transactions lead to the amplification of the volatility of the exchange rate. At the same time, the proliferation of hedging operations reduced from the vulnerability of the partners implied in the international commerce in the face of exchange risk.
Some particularities, ideas, opinions from the specialty literature regarding the relation between the exchange rate and the direct foreign investments were marked out taking these considerations into account. The theoretical and practical contributions of the authors mark out the preponderance of the negative link between the 2 variables but the relation is not cogent. The obtained results depend on a series of factors: the region about which the analysis is made, the development degree of the capital market, the considered period, the economy cycle.

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