

## The Impact of the Monetary Policy Factors on the Foreign Direct Investments: Empiric Evidence from Romania

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**Abstract:** In the first decade of the transition, the monetary policy of National Bank of Romania (NBR) was based especially on some very restrictive monetary tools such as maintaining for a long time a high discount rate and a high rate of the minimum reserves for domestic currency. Their high level, as compared to that of the other economies in transition, has caused the maintaining of high interest rates in the entire banking system, and this has not stimulated the economy and the domestic investments. More than this, these high rates have not succeeded in attracting the foreign investments which dramatically decreased after the boom which took place at the beginning of the '90, because of the domestic economic and politic conditions. So, the monetary policy of NBR did not support the efforts to recover the economy. The re-orientation of the policy of NBR at the beginning of the last decade was meant to support both the objective of the domestic balance and that of the external balance. But, once Central and East European countries will accede one by one to euro-zone, they will lose their monetary instruments to adjust the macroeconomic imbalances and will base only on fiscal and budgetary policy. The aim of this paper is to test empirically the impact of the monetary policy factors on FDIs in Romania and to propose some directions for the Romanian macroeconomic policy. In Romania, empiric results have shown that monetary factors such as higher interest rates and higher inflation attracted FDIs in the last decade. From the regression we found that the fiscal factors (mainly direct taxes) seemed to play a less important role. So, Romania should also focus on improving the other non-financial factors that influence greatly the investment environment here (infrastructure, legal and political stability) in the long-run, after it enters in the euro-zone.

**Key words:** FDIs, Central and Eastern European Countries, monetary policy, Romania.

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### INTRODUCTION

The economic reform of passing to the market economy which took place in Romania was most successfully and rapidly carried out in the case of the foreign trade. Unfortunately, because this reform was not accompanied by the reform of the other sectors of economy from the point of view of rate and development (production, infrastructure, the financial-banking field, monetary and credit policy, insurance, staff training), the deficit of the balance of payments and that of the current account have become lasting and substantial and the exports have become insufficient from the point of view of competitiveness and efficiency. In other words, the reform was not as successful as it was expected to be. Its bad management also contributed to this. During the last two decades, many essential changes have occurred. Their consequences have been only partly assimilated by the economic theory, which still refers to some ideas that do no longer reflect the real, actual situation. The banks can manipulate the economic processes by resorting to various methods and especially to credit, to the rate of interest: the real economy can be oriented using the interest rate and the rate of exchange more efficiently and sounder than the state's plans used to project in the centralized economies. The main tool by which the commercial banks can influence the state of the economy is the bank credit. In its turn, the value of the granted credits is influenced by the rate of the interest earned, which, in its turn, depends on: the economic circumstances, the rate of the inflation, the risk run by the one that grants the loan credit, the supply and demand for the loan capital and, first of all, on the monetary policy of the National Bank of Romania (NBR), which acts on the bank credits by means of its monetary tools. Since the early 1990s developing countries have increasingly liberalized, privatized and deregulated their service industries, with a view to greater participation in the global economy. More welcoming policies on foreign direct investments (FDIs) have been a prominent component of this trend. National policies on FDI typically feature measures aimed at both attracting and discouraging inflows. Policies to attract FDI such as tax breaks, favorable regulatory treatment and subsidies of various sorts are usually focused on manufacturing. Meanwhile, policies restricting inward FDI are mainly concentrated in the service sector. Nowadays the market is more centralized and developing countries are struggling to attract investors in order to foster the economic development. This increased competition lead more countries to present similar conditions before the investors with regard to the fiscal regime, qualification of working force and infrastructure (Bellak *et al.*, 2009). The global financial crisis poses new challenges for the

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foreign investment policies of developing countries in the crisis context when fiscal climate is similar between countries, but the incentives became a burden for national budgets. Keeping public revenues too low to adequately maintain or invest in infrastructure is unlikely to be a successful long run policy. Anyhow, there seems to be a relatively clear division between investment policies of the Central and Eastern European (CEE) countries and of the Western European Countries of EU. While the former may gain most by focusing on infrastructure and R&D policies, in the latter group policies to reduce the share of low-skilled workers, by restructuring the production and increasing capital intensity and through a reduction of labor costs via a decrease in non-wage-labor costs, would attract most FDI (Ionita and Pauwels, 2008). In this context, an analysis focused on the impact of the financial macroeconomic policies on FDIs is very important, not only in the current crisis period, but also in the view of acceding of many Central and Eastern European (CEE) countries to the euro-zone. They will lose then the instruments of the monetary policy and will base only on the fiscal-budgetary policy and wages policy which depends also on the fiscal ratio. But, the current crisis proved that in many cases, even monetary policy seemed to be inefficient to fight against recession and to boost the economic activity, because investors and not only them, but people generally became very prudent for investments and even for consumption (Garmel *et al.*, 2008). The aim of this paper is to test empirically the impact of the monetary policy factors on FDIs in Romania. Using linear regression and VAR techniques, this paper presents the impact of the macroeconomic monetary factors and not only them on attracting the FDIs in Romania, based on monthly data series during 2000-2010. Based on economic literature and on such empiric analysis, the paper will propose some directions for the Romanian macroeconomic policy in the short-run - in the context of crisis - and in a long-run, because the FDIs are the engine for recovery and economic growth. There are also underlined some important directions for a future research regarding the fiscal policy that was not very much detailed in this paper and for a future research regarding the impact of some important non-financial factors (infrastructure, legal and political stability) on FDIs. Section 2 focused on the monetary policy and its instruments for attracting FDIs in Romania and other CEE countries, because in our country, monetary policy greatly influenced FDIs in the last two decades. Section 3 presents the econometric results of the linear regression built for FDIs in Romania and the VARs that show the impact of the monetary and exchange rate instruments on FDIs and comments the findings for Romania. The results for Romania are in line with the literature review and the experience of the European countries in the last decade. Section 4 concludes the paper and presents some important directions for a further research.

## **2. The Impact of the Monetary and Exchange Rate Policy on the Foreign Direct Investments in the CEE Region – Case Study Romania:**

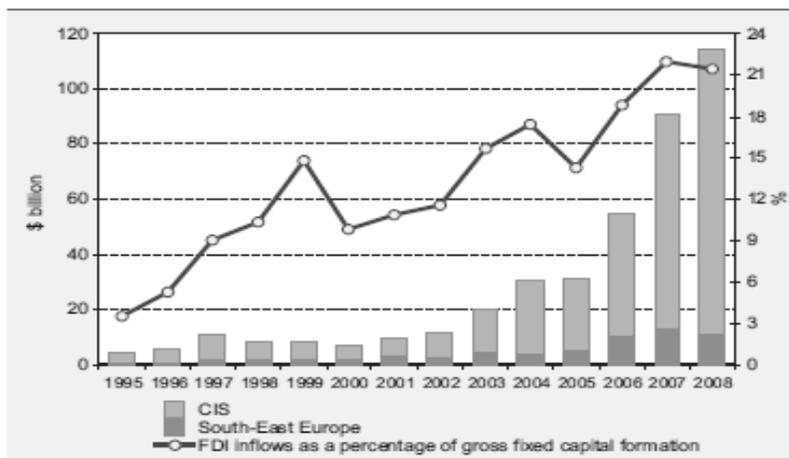
The paper presents the main monetary factors that influence the FDIs and the direction and path of such influence in CEE countries and especially in Romania. In the first decade of the transition, the monetary policy of National Bank of Romania was based especially on some very restrictive monetary tools such as maintaining for a long time a high discount rate and a high rate of the minimum reserves in lei. Their high level, as compared to that of the other economies in transition, has caused the maintaining of high interest rates in the entire banking system, and this has not stimulated the economy and the domestic investments. More than this, these high rates have not succeeded in attracting the foreign investments which dramatically decreased after the boom which took place at the beginning of the ‘90, because of the domestic economic and politic conditions. Moreover, the investments attracted in Romania were not greenfields, but mainly acquisitions or mergers that repatriate their profits not reinvested them in the Romanian economy. The economic reform of passing to the market economy which took place in Romania was most successfully and rapidly carried out in the case of the foreign trade. Unfortunately, because this reform was not accompanied by the reform of the other sectors of economy from the point of view of rate and development (production, infrastructure, the financial-banking field, monetary and credit policy, insurance, staff training), the reform was not as successful as it was expected to be. Its bad management also contributed to this. The banks can manipulate the economic processes by resorting to various methods and especially to credit, to the rate of interest: the real economy can be oriented using the interest rate and the rate of exchange more efficiently and sounder than the state’s plans used to project in the centralized economies. The monetary policy of the National Bank of Romania (NBR) acts on the bank credits by means of its monetary tools such as the minimum reserves, variation of the monetary base (M0), exchange rate and the discount rate (or reference interest rate) to influence the banking non-governmental credits and active interests rates for lending. As it can be noticed from a paper published in 2007 by the author (Rădulescu, 2007), the factor that has the greatest influence on FDI is the evolution of the real ROL-EUR exchange rate, which has an opposite influence on FDI. The following factors, which have a direct influenced on FDI are the interest taken by NBR for the Lombard credit, followed by the evolution of the interest rate granted by NBR for the facilities in case of the deposits made by the commercial banks which influence the direct foreign investments in the opposite way. Thus, NBR must sustain the current appreciation of the ROL as compared to the euro to stimulate the FDI and this fact must be achieved not by the direct intervention of NBR on the market but by increasing the interest for the Lombard credit in order to discourage the credit granting and by reducing the interest for the facilities in case of deposits, so that

BNR should control the liquidity on the market better and eliminate a possible surplus of liquidity when there is no inflation, keeping, at the same time, the appreciation tendency of the ROL which is meant to stimulate the FDI. Romania has a distinct negative place among the countries in the Central and Eastern Europe-and even on the world plane-which have passed from the centralized economy to the market one, by maintaining a high level of the interest for a long period of time, by the very low level of banking intermediation, the few credits offered to companies, by the dramatic depreciation of the exchange rate of the national currency, in fact by destroying this currency. The National Bank is guilty for the long-lasting crisis of the Romanian economy. It has undermined this economy because of some actions:

- It has encouraged and stimulated some high interest rates effectively over very long periods of time;
- It has suffocated the credit both by high interests and specific measures taken in the relations with the commercial banks; thus, NBR has become a huge money trustee by all kinds of deposits;
- It has not supported the national currency, stimulating the dramatic fall of its quotation;
- It has not supervised the banking system in a competent way, because of a faulty management, encouraging frauds, and, in the end, the bankruptcies of some banks which had dramatic consequences on the companies and on the population.

In the first decade of the transition, the monetary policy of NBR was based especially on some very restrictive monetary tools such as maintaining for a long time a high discount rate and a high rate of the minimum reserves in lei. Their high level, as compared to that of the other economies in transition, has caused the maintaining of high interest rates in the entire banking system, and this has not stimulated the economy and the domestic investments. More than this, these high rates have not succeeded in attracting the foreign investments which dramatically decreased after the boom which took place at the beginning of the '90, because of the domestic economic and politic conditions. For one decade, in our country, the discount rate has been much higher than in many other ex-socialist countries. In Romania, in the analyzed period, the rate of the discount was three times higher than that in the Czech Republic, two times higher than that in Hungary, four times higher than that in Slovenia and five times higher than that in Slovakia (Clausing and Dorobantu, 2005). The conclusion is that the central banks from the countries taken into account considered a high rate of the discount as something abnormal, which they either avoided or eliminated after a period of a few years. For the National Bank of Romania, this abnormal thing has become a permanent one and, for a long time, it has been one of the premises of encouraging the high rates of the income in the Romanian market. In Romania, the drop of the credit share of the GDP at levels of 20-25% and even lower during 1990-2004 represents, no doubt, the neglecting of the credit as the main instrument in order to influence the economy and to stimulate the economic growth. The credit share of GDP increased after 2005, until 2008 when the financial crisis erupted and supported economic growth based more on consumption than investments and NBR blocked the domestic credit and commercial banks became reluctant to lending as a result of risk rising. The large and lasting current account deficits in the Central and Eastern European Countries in the transition period caused the imbalance of the savings and investments ratio (the drop of the savings volume and the rise of the investments). The lasting deficits generate borrowings from abroad that are more dangerous for the economy if they are oriented toward consumption and not toward investments. A high investments rate leads to a rise of the productive capacity and to a rise of the export in the future which will makes the burden of the external debt more bearable. A deficit that is generated by the drop of the savings is less sustainable than the one caused by the rise of the investments (and that is the case of Romania). Moreover, the investments in the private productive sector, in the merchandises sector will make the deficits more sustainable (unlike the borrowings directed to the real estate investments) (Elteto, 2010). In the countries where the economic growth was slower the external imbalances were smaller or the current account situation even improved in some cases (Hungary, Bulgaria, Romania) during the '90s. In the '90s, the low rate of savings and investments generated serious problems for the Romanian current account. In some countries in the CEE region, the widening of the public deficits seemed to happened in the same time with the widening of the current account deficits. The current account deficits were structural in the Romanian case. In the last decade, the situation changed for a while, but the crisis re-poses the same problems as in the '90s: the widening of the public and current account deficits as a result of savings and investments diminishing (Fabry and Zeghny, 2006). A decomposition of the external imbalance between savings and investment shows that the main determinant of growing current account deficits has been, in general, a remarkable increase in the average investment rate in CEE and a significant decline in the average saving rate in CEE and CIS in the 1992-2004 period. Using VAR techniques (Pelinescu, 2006) shows that the main cause of the Romanian current deficit is saving rate that increases in time, while the investment rate is much lesser important and its influence decreases in a long run (10 years). This is a bad signal for the Romanian economy which consumes much more, without a sustained policy for attracting investments to modernize the production and services structures. This result is according to the findings in the previous section where it was analyzed the impact of the fiscal policy. We could see there that the indirect taxes (especially VAT) are very important for investments and thus for current account sustainability, because they influence the consumption. The duty taxes has a much lesser influence, because after 2007 when Romania acceded to European Union (EU), they converge

to the EU's ones. If the fiscal policy is tight (the direct taxes are high), the net wages and incomes decreases and so is the consumption, so the burden on the current account through imports is lower, but, in the same time, higher profit taxes means that investments decrease as well. Once Romania will enter the euro-zone, it will lose the monetary policy instruments and should rely only on fiscal policy, namely reducing the debts of the firms in the economy to control the Romanian macroeconomic deficits. From the linear regression that shows the impact of the monetary instruments on the current account deficit (Radulescu, 2007) and on the FDI, presented in this paper, we can see that the real exchange rate was important for the balance of payments only in the '90s, when it was used by NBR to control the current account deficit. After 2001, NBR used the exchange rate as an anchor, and the its depreciation process slowed down significantly. Still, the appreciation of the national currency after 2004 as a result of FDI inflows and income transfers from abroad workers did not affect the negative relation between the movements of the exchange rate and the current account deficit. So, Romania should focus on other instruments for controlling the current account deficit. An important option will be the fiscal policy instruments, direct and indirect, to attract FDI and to control the current account deficit, but their impact is not so strong in the short-run. And the fiscal policy is strongly related to the wages policy. The impact of the fiscal ratio and the net wages on the current account deficit increases for two years and, then, becomes flat (Pelinescu, 2006) and even on non-financial factors that could make Romanian investment climate more appealing for FDIs. First, we should focus on attracting European Funds for infrastructure, for tourism, agriculture. Than the activity of the Romanian investment promoting agency (ARIS) should become more proactive. At the start of the transition more than a decade ago the investment-to-GDP ratio in all transition countries practically bottomed out in line with the drop in output. Moreover, much of the capital stock at that time became obsolete overnight. Afterwards, investment rebounded particularly in the CEE region when economies intensively struggled to transform their economies into market-oriented ones (Oman, 2000). Nevertheless, the rise in total investment in most transition countries during the 1990s was largely concentrated in the business sector. In fact, in most transition countries average government capital expenditure was less than 5 percent of GDP in the period. However, as part of the process of real convergence the investment ratio, also including public investment, may have to rise further to maintain strong economic growth (Hunya, 2009). Measured Romanian investment rates actually showed an increase. The rise of the investments was mostly based on the rapid accumulation of the stock during 1990-1992 when the output was low. After a period of declining of investments in the whole region, investments share of GDP rise significantly starting with 1997-1999, reaching 23% in 2002 due to the foreign investments inflows, relative macroeconomic stability and the liberalization of the capital flows that started in 1999. The investments ratio shows an improvement to 26% in 2006, but the investments decreased after 2008, once the crisis erupted. The fiscal rate did not show important movements during 1996-2007, it maintained between 20% (the lowest level reached in 2000-2001) and 28% (the highest levels reached in 2002-2004). The various structural reforms being undertaken in transition countries should lead to an increase in the marginal productivity of investments. Consequently, the reform of financial markets, particularly in the CEE and CIS regions with respective investment rates of only around 13 and 18 percent of GDP in the 2001-2004 period, were needed to ensure efficient and productive capital allocation. Moreover, in order to spur growth potential and boost the capacity to service future debt repayments in transition countries external borrowing for investment purposes is preferred to borrowing for consumption purposes. In this respect, capital inflows, in particular FDI, have been crucial in supporting these countries' stronger investment needs. In fact, for transition countries it may be optimal to attract foreign savings and direct them to productive investment.



**Fig. 1:** FDI inflows of gross fixed capital formation, 1995–2008, CEE and CIS.  
**Source:** UNCTAD (2009)

CEE has been the most successful region with its net FDI averaging out at almost 5 percent of GDP, whereas the CIS region attracted a net FDI of just above 4 percent of GDP on average in the 1992-2006 period (in the 2000-2006 period the economies most attractive to FDI in the CEE region were Slovakia and Czech Republic with an average net FDI of 8.8 and 8.5 percent of GDP, respectively. In the CIS region, the biggest attractions are Azerbaijan and Kazakhstan with an average of 13.6 and 9.1 percent of GDP, respectively, in the same period). These figures are much higher than in developed countries, especially in the EU-15, which averaged less than 3 percent of GDP in the same period (Fabry and Zeghni, 2006). In 2006, FDIs in South-Eastern Europe and Commonwealth of Independent States (CIS) have increased by 68%, i.e. they were 69 billion USD, representing significant increase as against to previous two years. Trend of growth of FDIs into transition economies has continued in 2007-2008, when record 115 billion USD of FDIs were registered (UNCTAD, 2009) (Figure 1). In Romania, the sharp depreciation of the national currency in real terms in 1996 associated with a rapid rise of the inflation rate and with an important economic and political crisis. After the elections from 1996, when the reformists won, the current account situation improved, but its financing was mainly based on the foreign direct investments that have started to rise since then until 2007-2008. Once the crisis erupted, the macroeconomic situation deteriorated again, the current account deficit worsened and FDIs decreased. FDIs in Romania were attracted by the privatization process that ended in 2005 and by the interest rates that were higher than the international ones. Still, even in the frame of a higher current account deficit, the incomes transferred by the Romanian workers from abroad (3,5% of GDP in 2005) support the current account deficit and this cannot be considered dangerous.

The causes of high budget and current account deficits in CEE region are explained by excessive expensives generated by a lax monetary or fiscal policy. The economic literature shows that in developed countries, with opened economies, both deficits arise as a result of an expansionist fiscal policy, the current account deficit being explained 50% by the diminishing of the share of budgetary incomes of GDP (Haaparanta, 1996). One of the causes of the high interests existing in Romania for about one decade is the high rate of the minimum reserve requirement. Taking a look at the evolution of the rate of the minimum reserves in Romania, we can notice the fact that the Central Bank has made increasingly use of this tool of monetary policy, especially since 1999, when the rates of the minimum reserve requirement in lei and currency were increased, in order to control as strictly as possible the inter-banking liquidity and to obtain supplementary funds at a low interest. The maximum level reached by the rate of the minimum reserve requirement in lei is 30% and it remained like this for more than one year and a half. It was reduced only in the latter part of 2001. In order to have a clear picture of the financial effort to eliminate the inter-banking liquidity which NBR had to make in 2001 by reducing the rate of the reserves in lei from 30% to 27%, mention can be made of the fact that the liquidity surplus, which was the result of this measure, was of thousands of milliards lei. Thus, this sum had to be absorbed by the market by means of "open market" operations, but at the interest of the market not at that corresponding to the minimum reserves made up by NBR, as it used to happen before reducing the rates. In 2003, because of the fact that NBR had kept its position of net debtor for the banking system, the liquidity policy resulted in implementing a strict monetary control which minimized the excess reserves of the banks. The rate of the minimum reserve requirements in lei decreases in that year to 18% and that rate maintained to low levels 18% and then to 16% until the mid-2006 when it increased to 20%. The rate decreased to 18% again at the end of 2008 to boost credit denominated in RON and even decreased more at 15% at mid-2009 for stimulating credit growth in the detriment of credit denominated in foreign currency. In August 2004, in order to rapidly stop the expansion of the foreign currency credits - considered to be a factor of excessively stimulation of the aggregate demand and, at the same time, a risky element for the financial stability - NBR indirectly increased the cost of the foreign currency credits, modifying from 25% to 30% the rate of the minimum reserve requirements corresponding to the foreign liabilities which are due for payment in two years' time, obtained by the credit institutions starting with the 24<sup>th</sup> of each month. The reserves for foreign currency deposits increase more at 35% and then at 40% at the beginning of 2006 and decreased only at the end of 2009 as a result of NBR's decision to stop the foreign currency credit during the crisis period. In other words, in certain periods a third of the resources of the banks were locked up in accounts as minimum reserve requirement. They could not be used in crediting and financing the national economy, which had a lack of liquidity. Because of this, the level of the interest earned set by the commercial banks was increased. Thus, the access of the companies to the credits was limited a long time and, in the case of those who have made a credit, the cost of this financing has increased, their profits have been diminished and the value of the salaries has diminished and the budgetary deficit has worsen because of the fact that the profit tax was reduced as a result of the decrease of the dutiable income. It is also to be noted the low level of the interest in the case of the minimum reserve requirement, a lot under the market average. For example, in Romania, during 1997-1999, in the case of the minimum reserve requirement, NBR has made up an interest of about 20% out of the interest imposed by the commercial banks in the case of credits. In 2000 and 2001, this value increased to about 40-50 % (apparently, because of the pressures exerted by the IMF). It is obvious that this low level of the interest rate, in the case of the minimum reserve requirement, which is totally insufficient to cover the deposit interests, had

to be covered by the commercial banks using the interest they collected from the credits, which, therefore, they had to increase. In the present, NBR has reduced the level of these rates, and its policy is based on more proper, less restrictive and more flexible tools which do not influence mainly the interest rates in the banking system but which, however, succeed to influence the bank credit and, as we have shown, the external situation, too, which is reflected by the balance of payments, tools such as the facilities in case of deposits granted to banks and their respective interest, the deposits attracted by NBR from the commercial banks and their respective interest, the interest in the case of the Lombard loans, the interest rate made up by NBR in the case of the minimum reserve in lei and currency, all on the background of reducing the reference interest and the minimum reserves in lei and increasing the minimum reserves in currency to limiting the currency credit and stimulating that in lei granted by the banks. These tools, allow the possibility of a proper control of the monetary base M0 and of the liquidity on the monetary market, thus supporting the declared objective of NBR to control the inflation, but, at the same time, reaching the equilibrium of the balance of payments in a sustainable way. Therefore, we can conclude so far that the monetary policy of NBR did not support the efforts to recover the economy. It aimed the pressures on the exchange rate market and, than, aimed inflation rate. Almost during the entire decade, the monetary policy was harsh, restrictive, basically oriented towards controlling inflation, thus neglecting the other macroeconomic variables such as the local savings discouraged by the high inflation, and the investments that would have supported the economic growth. This has caused major imbalances at the macroeconomic level which have reflected in all the levels of economy. Among these imbalances, the most important and the one that lasted the longest period of time was the external one. The re-orientation of the policy of NBR at the beginning of the new decade was meant to support both the objective of the domestic balance and that of the external balance.

### 3. Results of the Linear Regression and VAR Techniques for Romania. Discussion Upon Results:

After presenting the findings in the economic literature regarding the impact of the monetary policy on FDIs, we build an empiric model to study this impact in Romanian case, using monthly data. We used linear regression to build an equation to determine the monthly net FDIs denominated in mil. euro (*SOLDISD\_EURO*) as an endogenous factor. We used as exogenous factors monthly data series during January 2000 - December 2010, such as: monthly real active interest rate of the commercial banks (*MRATADOBACTIVARE*) that is more significant than the monthly NBR's reference interest rate, the variation of the monthly domestic non-governmental credit, also denominated in mil. euro (*DCREDITINTERNEURO*), monthly inflation (*INFL*) measured in variation of CPI, monthly variation of direct budgetary fiscal taxes (*DVENITURIDIRECTEEURO*) denominated in mil. euro, the variation of the monthly fiscal budgetary indirect taxes denominated in mil. euro (*DVENITURIINDIRCTEEURO*), the variation of the monthly NBR's official foreign reserves denominated in mil. Euro (*DACTIVEEURO*), monthly Romanian export denominated in mil. Euro (*DEXTEURO*), monthly import denominated in mil. euro (*DIMPEURO*), monthly minimum reserves ratio for RON (*DRATAREZMINLEI*), monthly minimum reserves ratio for foreign currency (*DRATAREZMINVAL*), variation of the foreign debt service denominated in mil. euro (*DSDEEURO*), the budgetary public spending denominated in mil. euro (*DCHLTUIELIPUB\_EURO*), the variation of the monetary base denominated in mil. euro (*DMOEURO*). So, we used data in real terms for all the series that appear in the equation. We used the state budget fiscal revenues because they represent more than 60% of the total fiscal budgetary revenues and the state budgetary spending because they represent more than 50% of the total budgetary spending. The state budget fiscal revenues include the direct fiscal taxes such as tax on profit and tax on wages and incomes (that represent 25% of the total state budget fiscal revenues) and indirect taxes such as VAT and duty taxes (that represent 75% of the total state budget fiscal revenues). They were denominated in mil. Euro to insure the comparison with the other data series and to be expressed in real terms, just like the other data series. The important elements for the equation have been chosen in accordance with the results obtained at the Granger causality tests. Because of their stationary character, we have used the first difference of the series in the case when the ADF and PP tests have indicated the non-stationarity. All the series with absolute values have been changed into millions of EURO for their comparison, using the ROL-EUR exchange rate, and the interest rates have been converted into monthly values, instead of yearly ones. The real exchange rate has been obtained by correcting the nominal exchange rate with IPC cumulated with the basis in December 1999, monthly data. We found an ARIMA process to determine net FDIs, using the monetary, exchange rate and fiscal and budgetary factors that belong to the macroeconomic policies used for attracting FDIs all over the world. The wages/incomes policy didn't impact greatly on the FDIs as we will see from the VAR presented below, so the monthly net average wage denominated in euro could not be introduced in this equation. We could not also introduce in the equation the real exchange rate RON-EUR, because it is a derived factor, just like net average wage denominated in Euro, and their impact is not significant as we can see from VARs presented below. These two factors influence the FDIs through other factors used in this equation, namely: inflation and NBR's official reserves for real exchange rate RON-EUR and fiscal ratio and inflation for net average wage denominated in euro.

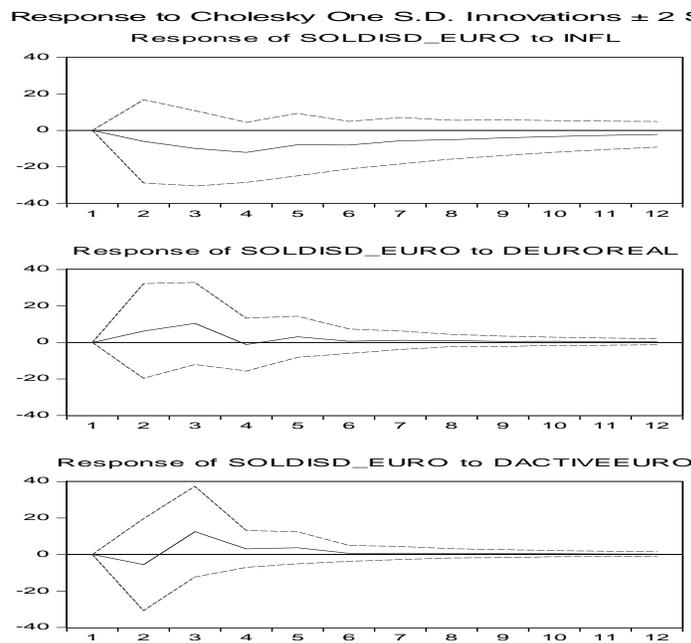
$$\text{soldisd\_euro} = 0.298803 * \text{soldisd\_euro}(-2) + 44.25039 * \text{mratadobactivare}(-2) +$$

$$\begin{aligned}
 & [4.701553] \quad [6.178330] \\
 & 0.043198 * dcreditinterneuro(-4) - 0.117486 * dvenituriirecteeuro(-1) + \\
 & \quad [4.476668] \quad \quad \quad [-3.825285] \\
 & 0.072858 * dactiveeuro + 19.81299 * infl(-2) + 0.060332 * dvenituriindirecteeuro + \\
 & \quad [4.426525] \quad [2.529581] \quad [2.485822] \\
 & 0.054633 * dexiteuro(-1) + 12.22608 * dratarezminval(-4) + 22.30191 * dratarezminlei(-3) - \\
 & \quad [4.404110] \quad [2.793355] \quad [3.129489] \\
 & 0.052788 * dsdeeuro + 0.032951 * dhelutielipub_euro(-3) - 0.020618 * dm0euro(-1) \\
 & \quad [-3.761734] \quad [2.301852] \quad [-2.015409] + \\
 & 0.020743 * dimpeuro(-2) - 0.401873 * ar(1) + 0.999925 * ma(1) \\
 & [1.756587] \quad [-4.115524] \quad [17.14748] \quad [1]
 \end{aligned}$$

**R<sup>2</sup>=0.60, DW=2.00**

The determination coefficient of the equation [1] was 0.60 and proves that the equation is well determined, especially if we consider that we used as exogenous factors only those ones that belongs to the macroeconomic monetary policies (fiscal and budgetary rate policy, monetary and exchange rate policy) and some of the factors of the balance of payments (exports, imports and foreign debt service). Surely, FDIs are influenced by more factors; some of them could not be exactly measured economically. Some of the factors that influence FDIs weren't consider here and they are important for attracting FDIs, such as: corruption, market transparency, political stability, biocracy. Some of them are difficult to quantify and for other there aren't available data. The differences between the coefficients of the factors considered in the above equation come from the construction of the data series. Monthly real active interest rate of the commercial banks, monthly inflation rate, monthly minimum reserves ration in RON or in foreign currency are denominated in percent, while the other data series are expressed in millions euro. The most important factor that influences FDIs is monthly real active interest rate of commercial banks, which impacts on commercial banks lending in the economy. If the interest rate increases, it attracts FDIs. Another important factor is represented by the previous evolution of FDIs. Monthly inflation rate and the minimum reserves ratio in RON and in foreign currency also impact on FDIs. If these ratios increase, they attract FDIs, because the nominal interest rates in the economy increase as well. After them, the fiscal factors follow. The monthly variation of the direct fiscal taxes impact negatively on FDIs, because investors are not attracted by an increase of the tax on profit or on wages/incomes. But, if the indirect fiscal taxes such as VAT increase, the prices rise as well, inflation erupts and so are the interest rates in the economy. So, the FDIs are attracted there by new investment opportunities and by high profits opportunities. Another factor that influences FDIs is the variation of the NBR's official foreign reserves. If they increase, they attract FDIs because the national currency strengthens and the foreign investors become confident in that economy. After the monetary and fiscal factors, come the factors that belong to the balance of payments. So, monthly export impacts on FDIs positively. If the export increases, the nation currency strengthens and investors become confident. Moreover, as we could see from the positive influence of the indirect taxes on FDIs, the foreign investors are not very interested to produce for the local market. They are much more oriented to external markets. So, if exports increase, that attracts foreign investors. The next factor is represented by monthly foreign debt service. If it increases, the foreign investors become prudent and reluctant to that economy, so FDIs diminish. The domestic non-governmental credit comes next as a factor that attracts FDIs. There is the same explication for this just like for the other monetary factors. An increase of the non-governmental credit stimulates investments and consumption and, moreover, that increases the inflation and leads to an increase of the interest rates which attract FDIs. A VAR analysis elaborated in 2009 based on Romanian statistical monthly data of 2000-2007 for testing monetary channels transmission in Romania, (Radulescu and Dascalu, 2009) showed that the transmission channels had features given by the situation and the development of the Romanian economy, thus regarding the traditional channel an important role has the reference interest rate and the interest rate to which the Central Bank draws deposits at present, and regarding the credit channel, refinancing constituted a significant step. In a long run, the changes within the Romanian economy shall lead, as it had happened in other countries, to a reduction of credit channel importance in favor of others. The largest variability to a shock on the domestic non-governmental credit is displayed by the real active interest rate of the commercial banks, this being followed by the variability of inflation rate and the real exchange rate ROL-EUR. Then, follows the state budgetary spending that impacts positively on FDIs. Foreign investors are attracted by the subsidies granted by state or by other facilities granted by state for businesses in the economy and by large public investments in infrastructure, for example. The monthly import effect on FDIs is also positive. For a country like Romania which depends greatly on imports, exports and development are strongly connected to the imports. The variation of the monthly monetary base with 1 lag denominated in mil. euro impacts negatively on FDIs, because in just one month it can't produce a rise of the prices in the economy and a rise of non-governmental credit or of the interest rates in order to attract FDIs. Only after 5 months, the influence of the

monetary base becomes more significant than other monetary factors, such as domestic non-governmental credit, as we will see from the VAR analysis presented below and its impact becomes positive on FDIs after 2 months. The DW of 2.00 shows the lack of first order selfadjustment, and to be even more certain, the Q-state test is made. The residuals graph shows the exceeding of the margin only in the second half of 2004 and at the middle of 2008. The errors are bigger in 2004-2005 when the FDIs rose significantly due to the privatization of BCR that was bought by Erste Bank (Austria) and the privatization of the largest Romanian oil company Petrom which was taken by the Austrian Group OMV. The same period Electrica was privatized. So, the largest Romanian bank and the largest Romanian oil and electric companies were bought by foreign investors that period. Smaller errors are in the second half of 2008 when the financial crisis erupted and the FDIs trend inversed in the second half of the year, because the investors became reluctant and prudent. Still, the influence of the fiscal instruments on the FDIs seems to be much lesser than the influence of the monetary factors both in the short-run, but also in the long-run (as we saw from the linear regressions above). Once Romania will enter into the euro-zone it will lose its autonomy regarding the monetary policy and it will need to focus only on the fiscal and incomes/wages policy. In the frame of the fiscal policy, we can see that the influence of the budgetary spending is much lesser than the impact of the budgetary fiscal incomes. We can observe from VAR impulse decomposition (Figure 2) that a shock on real exchange rate EUR-RON and on NBR's official foreign reserves can be absorbed after 5-6 months, but a shock on inflation is more important for FDIs, lasts longer and is absorbed after almost 12 months.

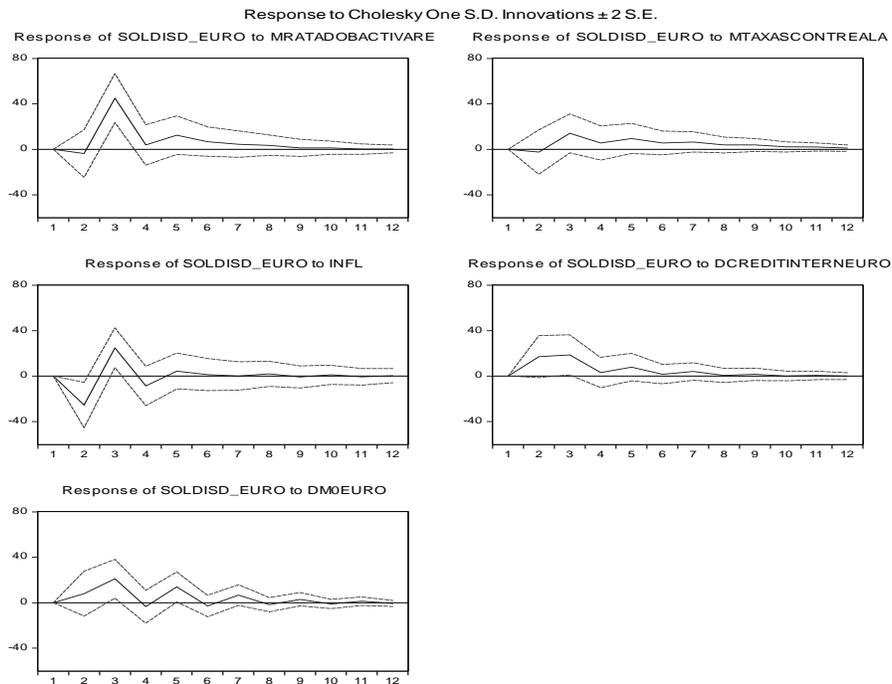


**Fig. 2:** The impact of Infl, Deureal, Dactiveeuro on Soldisd\_Euro.

**Table 1:** VAR decomposition for the impact of monthly inflation, monthly real exchange rate and monthly NBR's official reserves denominated in euro on FDIs in Romania.

Period	S.E.	SOLDISD EURO	INFL	DEUROREAL	DACTIVEEURO
1	129.4784	100.0000	0.000000	0.000000	0.000000
2	130.6227	99.36949	0.216375	0.232362	0.181772
3	135.3121	97.43496	0.735444	0.807160	1.022440
4	135.9703	96.60650	1.523726	0.807054	1.062720
5	136.3548	96.17162	1.847458	0.853258	1.127669
6	136.6136	95.82932	2.193078	0.852368	1.125233
7	136.7432	95.65163	2.364342	0.857594	1.126437
8	136.8480	95.50950	2.501922	0.861779	1.126797
9	136.9116	95.42153	2.589049	0.862677	1.126741
10	136.9550	95.36177	2.646913	0.864357	1.126964
11	136.9839	95.32186	2.686362	0.864892	1.126890
12	137.0027	95.29593	2.711734	0.865440	1.126898
Cholesky Ordering: SOLDISD_EURO INFL DEUROREAL DACTIVEEURO					

The inflationist shock is not so important in the next three months, but it becomes the most important monetary shock in a year. In the very short-run, the real exchange rate is the main monetary factor, but in a year, the inflation and, then, the official reserves variation become the main factors that influence the FDIs. Anyhow, the real exchange rate is influenced by inflation and the variation of the official foreign reserves, so it is a derived factor. Based on those conclusions, we can say that targeting inflation is a good strategy for NBR while the use of the official foreign reserves is used more and more seldom for influencing the exchange rate. The impact of the real active interest rate of the commercial banks and the NBR's reference real interest rate is absorbed in ten months and so is the variation of the domestic non-governmental credit or the variation of the monetary base (Figure 3). So, their impact is more important and lasts longer than the impact of the variation of the official foreign reserves. In a very short-run, FDIs are more influenced by their previous evolution, but this influence decreases in a year. As we expected, the impact of the reference interest rate is lesser than the real active interest rate of the commercial banks which represents the main monetary factor that influences inflation and FDIs. The evolution of inflation and of the monetary base come after the real active interest rate of the commercial banks and the variation of the domestic non-governmental credit comes after them. The factor with the least influence is the NBR's reference real interest rate. Anyhow, the impact of the monetary factors and instruments is more significant than the impact of the real exchange rate and variation of the official foreign reserves. That proves that NBR didn't used exchange rate in the last decade as an anchor and focused on targeting inflation by using the interest rate, monetary base and domestic non-governmental credit.



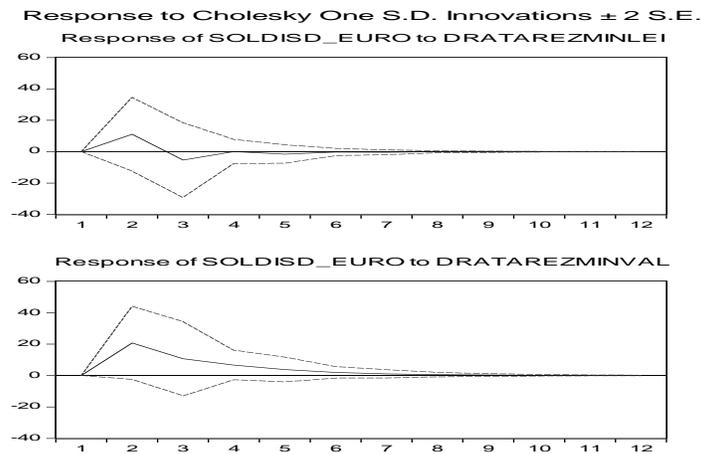
**Fig. 3:** The impact of Mratadobactivare, Mtaxascontreala, Infl, Dcreditinterneuro and Dmoeuro on Soldisd\_Euro.

In the very short-run, we can see from the table 2 that monthly real interest rate is not so important and the main monetary factors are monthly inflation rate, monthly domestic non-governmental credit denominated in and monthly monetary base denominated in euro. After three months, the situation changes completely and the main monetary factor which influences the FDIs becomes the monthly real interest rate of the commercial banks, followed by the monthly inflation rate, then monthly monetary base and the monthly domestic non-governmental credit denominated in euro. The last factor is represented by the NBR's monthly official interest rate that can not influence greatly the interest rate of the commercial banks, because most of the commercial banks on the Romanian banking market are foreign capital owned and respect the orientations of the parent banks abroad, not the NBR's ones.

**Table 2:** VAR decomposition for the impact of monthly real interest rate, monthly real discount (official) rate, inflation, monthly domestic non-governmental credit denominated in euro and monthly monetary base denominated in euro on FDIs in Romania.

Period	S.E.	SOLDISD_ EURO	MRATADOB ACTIVARE	MTAXASCONT REALA	INFL	DCREDITINTE RNEURO	DM0EURO
1	112.2845	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	118.3078	92.67862	0.093137	0.039832	4.652606	2.087304	0.448499
3	134.1691	74.05969	11.35897	1.130966	7.065197	3.551325	2.833854
4	135.9191	73.95151	11.14967	1.268189	7.291518	3.512526	2.826586
5	138.0383	72.00755	11.61995	1.707062	7.172059	3.732611	3.760764
6	138.5186	71.73556	11.77687	1.858445	7.130938	3.721217	3.776966
7	138.9824	71.27784	11.80533	2.065707	7.083433	3.780002	3.987682
8	139.1168	71.15749	11.84720	2.136198	7.089181	3.773992	3.995940
9	139.2171	71.05517	11.83800	2.207283	7.082621	3.780321	4.036607
10	139.2483	71.02326	11.84205	2.229937	7.085163	3.778693	4.040890
11	139.2728	70.99962	11.83807	2.250131	7.085223	3.778905	4.048049
12	139.2797	70.99315	11.83735	2.255799	7.085146	3.778552	4.050003
Cholesky Ordering: SOLDISD_ EURO MRATADOB ACTIVARE MTAXASCONTR EALA INFL DCREDITINTER NEURO DM0EURO							

The impact of the minimum reserves in RON and in foreign currency is absorbed in 5-6 months (Figure 4). A shock on the minimum reserves ratio in foreign currency is more significant for FDIs than a shock on the minimum reserves ratio in RON, because it influences the foreign currency credit that has a great share of the total Romanian non-governmental credit. This one was more important in Romania than the credit denominated in the domestic currency starting with 2004, because people consider foreign currencies to be more stable than the domestic currency that depreciated for a long period of time. Moreover, the real active interest rate for credit denominated in RON was much higher than the one of the credit denominated in foreign currency and higher than the interest rates in CEE countries as we stated previously. NBR decided to increase the minimum reserves rate in the last four years, once the actual crisis erupted to stop the credit denominated in foreign currency and diminished the minimum reserves in RON to stimulate the credit denominated in domestic currency. Still, this measure didn't pay the expected results because the commercial banks became reluctant to lend and the people also became prudent because of the crisis and the deterioration of their real incomes.



**Fig. 4:** The impact of Dratarezminlei and Dratarezminval on Soldisd\_Euro.

**Table 3:** VAR decomposition for the impact of monthly minimum reserves ratio for foreign currency and monthly minimum reserves ratio for domestic currency on FDIs in Romania.

Period	S.E.	SOLDISD EURO	DRATAREZMINLEI	DRATAREZMINVAL
1	128.3441	100.0000	0.000000	0.000000
2	131.3113	96.78608	0.712198	2.501726
3	135.4014	96.19969	0.824342	2.975971
4	135.7699	95.97562	0.819928	3.204455
5	136.0314	95.89916	0.828970	3.271875
6	136.0690	95.87982	0.828760	3.291422
7	136.0861	95.87353	0.829339	3.297134
8	136.0894	95.87200	0.829356	3.298646
9	136.0905	95.87153	0.829389	3.299078
10	136.0908	95.87142	0.829392	3.299191
11	136.0909	95.87138	0.829394	3.299223
12	136.0909	95.87137	0.829395	3.299231
Cholesky Ordering: SOLDISD EURO DRATAREZMINLEI DRATAREZMINVAL				

#### 4. Conclusions:

For most of transitional economies, key resource is labor which is considered to have relatively high education and training levels (comparing to, for example regions with comparable levels of income per capita in South-East Asia and Latin America) and a strong scientific base. The largest FDIs were obtained here in the frame of the privatization process and due to the higher interest rates comparative to the developed economies. The transnational companies exploited the size and growth potential of the CEE markets, but they mainly oriented to exports and to repatriate their profits (Ionita and Pauwels, 2008). In the case of Romania, the transition to the market economy had a surprising evolution. Thus, Romania has a distinct negative place among the countries in the Central and Eastern Europe and even on the world plane which have passed from the centralized economy to the market one, by maintaining a high level of the interest for a long period of time, by the very low level of banking intermediation, the few credits offered to companies, by the dramatic depreciation of the exchange rate of the national currency, in fact by destroying this currency. In the first decade of the transition, the monetary policy of NBR was based especially on some very restrictive monetary tools such as maintaining for a long time a high discount rate and a high rate of the minimum reserves in lei. Their high level, as compared to that of the other economies in transition, has caused the maintaining of high interest rates in the entire banking system, and this has not stimulated the economy and the domestic investments. More than this, these high rates have not succeeded in attracting the foreign investments which dramatically decreased after the boom which took place at the beginning of the '90, because of the domestic economic and politic conditions. But, in the second decade of transition, due to the state-owned companies privatizations and some monetary factors such as higher interest rates and higher inflation rates started to pay off and started to attract larger FDIs. Fiscal factors seem to play a less important role, although it was adopted a flat tax regime in 2005 and we have one of the least taxes on profits in the CEE region (except Bulgaria, Albania, Latvia, Lithuania and Cyprus). The indirect taxes play a more important role in influencing FDIs than direct taxes such as tax on profits, although the impact of the last ones may last longer. The indirect taxes influence the purchasing power of the population and this is an important factor for the CEE region. The influence of the net wages doesn't seem so relevant, because the net wages are a result of the monetary and fiscal policy. The impact of the exchange rate also diminished in the last decade as a result of a more stable framework on the exchange rate market. The NBR's interventions on this market are rarely and less important. In the light of such findings, we are questioning if the fiscal policy will be efficient in attracting FDIs once Romania will enter euro-zone and will abandon the monetary policy, although the horizon of this event seems further and further because of the international developments in the actual crisis period. Moreover, if we consider the other non-financial factors, such as the lack of an adequate infrastructure or the generalized corruption in our country, the end of the privatization process, the legal instability, the Romanian perspectives are not good. The advantage of the low net wages doesn't seem so important anymore. They are a result, not a factor for the financial macroeconomic policies. And the high skilled labor has already leaving Romania and work abroad. Moreover, once EU enlarged, the Asian emerging markets seem closer and multinationals can think of a relocation of their business and could leave CEE region. So, Romania, more than other CEE countries should also focus on improving the other non-financial factors that influence greatly the investment environment here. Only then, the fiscal stimulus can become effective in attracting FDIs and supporting the economic growth in the same time. In crisis context, the incentives are a big budgetary burden for all countries, developed or not.

Because of high minimum reserves ratio imposed by NBR, for a long time a large of the resources of the banks were locked up in accounts as minimum reserve requirement. They could not be used in crediting and financing the national economy, which had a lack of liquidity. Because of this, the level of the interest earned set by the commercial banks was increased. Thus, the access of the companies to the credits was limited and, in the case of those who have made a credit, the cost of this financing has increased, their profits have been diminished and the value of the salaries has diminished and the budgetary deficit has worsen because of the fact that the profit tax was reduced as a result of the decrease of the dutiable income. Having in view the above mentioned facts, modifying the level of the rate of the reserves has a strong influence on the level of interests in the case of the credits granted by the commercial banks. It is also to be noted the low level of the interest in the case of the minimum reserve requirement, a lot under the market average. For example, in Romania, during 1997-1999, in the case of the minimum reserve requirement, NBR has made up an interest of about 20% out of the interest imposed by the commercial banks in the case of credits. In 2000 and 2001, this value increased to about 40-50 % (apparently, because of the pressures exerted by the IMF). It is obvious that this low level of the interest rate, in the case of the minimum reserve requirement, which is totally insufficient to cover the deposit interests, had to be covered by the commercial banks using the interest they collected from the credits, which, therefore, they had to increase. After 2004-2005, NBR has reduced the level of these rates, and its policy was based on more proper, less restrictive and more flexible tools which do not influence mainly the interest rates in the banking system but which, however, succeed to influence the bank credit and, as we have shown, the external situation, too. These tools, allow the possibility of a proper control of the monetary base M0 and of the liquidity on the monetary market, thus supporting the declared objective of NBR to control the inflation, but, at the same time, reaching the equilibrium of the balance of payments in a sustainable way. Therefore, the monetary policy of NBR did not support the efforts to recover the economy. Almost during the entire decade, the monetary policy was harsh, restrictive, basically oriented towards controlling inflation, thus neglecting the other macroeconomic variables such as the local savings discouraged by the high inflation, and the investments that would have supported the economic growth. This has caused major imbalances at the macroeconomic level which have reflected in all the levels of economy. Among these imbalances, the most important and the one that lasted the longest period of time was the external one. The re-orientation of the policy of NBR at the beginning of the new decade was meant to support both the objective of the domestic balance and that of the external balance, by increasing both the domestic and the foreign investments. But the laxer monetary policy has tightened again, after 2009, because of the crisis. So it was the fiscal policy. The external and domestic conditions have worsened again and the investors became more and more prudent and expectative. The Romanian monetary policy is strongly influenced by the economic, financial system structure, by the legal provisions at force. The current research can be improved, the use of VAR methods being objectionable of certain points of view (this method doesn't avoid structural changes within the economy, including them in a pattern, an option being using structural VAR or other quantitative methods to avoid "the critics of Lucas"). Also, if we consider that in the future we will lose monetary policy instruments and base only on the fiscal policy we have to study deeper the impact of taxes and fiscal incentives on FDI. This debate is far from being over. An important direction for a future research could be to examine more closely the effect of tax policy on the composition of FDI (greenfield, reinvested earnings, and mergers and acquisition). By having a better understanding of how tax policies affect the composition of FDI, policy makers in host countries would have a better chance of attracting the right type of investment and maximizing its impact on the economy. The last direction, which merits further attention, lies in the question whether tax incentives should only be directed at (foreign) investors that make the "right things" in the host country, such as environment-safe projects, or those leading to employment or transfers of technology and marketing skills. Tax policy influence the magnitude of which foreign affiliates use skilled labor and transfer new technologies in the host country. Tax policy can be used to regulate some of their activities in the host economy. And last, but certainly not least, an important direction for a further research is to study the impact of non-financial factors (that could be economically measured) on FDIs, because the fiscal conditions have tended to converge among countries. The main limitation here is to find available data for the non-financial factors that impact on FDIs.

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