

The pendulum's option

“The pendulum of ideologically motivated preferences has presently reached the extreme right of the perspective on economic rationality, the principle of methodological individualism being responsible for the milestones of a reinvented wonderful new world.”

The epistemic pressures on the conceptual body of Economics arrive from an area not quite tangent to economic practice. The emerging issue is the politics' habit of inventing within the spectrum of the need for notoriety, by personalizing the short cycle in the agenda of institutionalized change. Which signifies, simply put, the recourse to heavy-handedness or ideatic shocks destined to keep the intellectual attention on a creative path to benefit the function of power. Economics could not avoid this perverted command.

The conceptual innovation is thus fuelled by an area which is responsible for the structuring of reality according to principles and doctrinary values that are removed from the procedures of scientific thinking. Instead of the impulses coming from the need for solving the concrete problems of the expectations regarding utility, the notional and cognitive dynamic of Economics places its origin in the tension between the objectives of the policy for the control of freedoms and the insufficiency of the instruments which it needs.

The signal for the insinuation of this mechanism of extra-epistemic conditioning of economic knowledge was first seen in the foundation offered by Economics' dualism of methodological options, which originated in the alternative inclination towards either Marschallian objectualism or Mengerian subjectualism. The stabilization of the functioning of the real pendular motion between opposing structures in the conceptual body of Economics was achieved by the ideological retorsion of the vision on the future of the economy started by Thatcherism, which concords in amplitude and profundity, but in reverse, with the project of subordinating the thematic intention of Economics by the collectivist propensity.

This is how in the last century's second decade – counting either from the beginning or the end – we find mirrored the most extreme, ideologized forms of methodological principles in Economics. Beginning with the second and ninth decades of the 20th century, Economics is forced to forget the space of rationality in order to periodically deal with the space of reductionist-ideological interests, a space which alternatively configured itself on the basis of the principle of collectivism or on the basis of the principle of methodological individualism.

There is no doubt that the source for the most numerous problems of consistency comes from here, especially for the Economics of the last half-century. The political establishment has caught on to the mechanism through which it can affiliate Economics to the societal construct. Unfortunately, Economics loses control over the creation of the specific rationality by taking over formulas for the development of resources belonging to a different field, in place of its own challenges of principle. It must justify, for instance, the political solutions to the distribution of property and to solve the problems of utility as a pillar of wealth.

It is symptomatic that with the resurrection of the methodological principle of individualism, the problem of development has disappeared from the thematic summary of Economics. The theories of development and the entire ideatic ensemble known as Economics of Development – including the actions of the global institutions – have been marginalized, while others such as the decades of development have been condemned even. In these conditions, the failure of the philo-communist experiment appeared as a confirmation of the absolute gain obtained from the pendulation towards the market alternative.

Except that the exaggeration did not stem from moving away from an extreme, but from repeating the mistake of following exclusively the values of the other extreme. The tightness of the control mechanisms was maintained, by moving from the experience of the social control of wealth in order to easily manage individual freedoms, to the corporatist control of individual liberties in order to efficiently administer wealth. Paradoxically, corporatist capitalism defies the market, just as communism has defied society.

The common sense of the pendulum of cognition was thus cyclically breached, the median point being seen as unnatural. The present crisis, whose span surpasses that of any other past crisis, is the cumulated effect of the extremist experiment in moving the pendulum of theoretical visions and of methodological principles. The global crisis appears as the unintentional consequence of the heated partisan battle – a sort of alternate permanent revolution – after the ideological adversary took off in haste or has been long dead. Having more out of one formula, pushing it to become the sole one, is toxic for development.

To come out of the crisis can only mean to keep the just movement of pendulation in the ideological preferences, where the extremes are attenuated by the diversity of the models for combining the economic factors in a natural formula – in other words, the formula which asks for the discernment reserved to common sense, as a natural reason for economicity.

Assumed to be a success of the offensive for bringing down the practices of the welfare state, favouring redistributive formulas which are sensitive to the social perspective in solving the equitability – efficiency dilemma, the dilution of the theory of development has freed up space for the expansion of the visions of market fundamentalism.

The mixture of plans and arguments is not quite natural, but it is the irrational answer of pushing Economics into the role of a science of wealth, where it is preoccupied only with quantitative instruments and short-term performance. To theorise the exuberance was unavoidable, while the age of turbulences became the place to build another awaited golden age.

The pendulum of ideologically motivated preferences has reached thus the extreme right of the perspective on economic rationality, the principle of methodological individualism being responsible, through irrepressible imitation, for the milestones of reinvented wonderful new world.

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Use of fixed income products within a company's portfolio

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Abstract. *Financial instruments have been developed over time from bonds, with a simple structure of cash flows, to yielding instruments that have a complex structure, attracting a much broader range of investors and permitting issuers of bonds to allow reduce the costs of fund raising. To construct investment strategies to control interest rate risk and grow revenues, investors must understand the forces that controls the bond market but also the tendencies.*

The main objective of this paper is to show how they apply to an investment strategy and asset allocation tools available. Fixed income products occupy a large share in total assets, so we want to highlight how to use fixed income products in order to optimize the portfolio of companies. Working hypothesis we chose looks at how the value of financial assets is influenced by macroeconomic factors and market price developments. Investment banks, in particular, put great emphasis on fixed income products and their use by customers. Thus traditional banking and financial products together with fixed income products enables companies to finance current needs, to finance development and to diversify the asset allocation tools.

Keywords: fixed income products; bonds; yield; monetary policy; investment strategy.

JEL Codes: E52.

REL Codes: 8J, 8K.

1. Fixed income products

1.1. Money market

For profits, the risks assumed by an investor, whether individual or company, are directly proportional. For many investors, a volatile market is more than willing to take, so the money market is an alternative not as appealing, but much safer.

But money market is only part of the market fixed income. The latter is often misunderstood as the bond market, but they represent only one type of fixed income instrument. The money market trades instruments with maturity less than one year.

Money market securities are highly liquid and are considered highly reliable by investors. Because of their simplicity as financial instruments, they earn revenue much smaller than other instruments. Money market is used by those entities (companies, institutions, etc.) which need short term financing to cover the gap between operating costs and revenues from sales of products. There are various products that are traded in the money market, offering revenue and a different risk level.

1.2. Bonds

Bonds are financial instruments by which the issuer undertakes to pay the buyer the amount borrowed, called principal, plus regular interest, calculated on the amount borrowed for a period of time. A bond may be standard or not. The standard has a fixed coupon, payable by the issuer periodically and the principal is paid at maturity.

The purpose for an issuer of bonds (whether by the Ministry of Finance of a State, by a bank or a corporation) is to finance its budget projects that invested at a rate expected to be less than the return on investment (this is true at least in the private sector). By issuing bonds, the issuer has direct access to the market and avoids borrowing through banking institutions at a higher interest. The bond holding has creditor status, unlike a shareholder, which has the status of the owner of that corporation. For this reason, bonds are less risky than shares.

1.2.1. Floater bonds reversed (reverse floater)

Are those bonds that have a coupon that positive change if the reference rate decreases, and vice versa.

Some bonds have included coupon formula based on future rates of inflation. Martellini and Priaulet P. and Priaulet S., in "Fixed Income Securities Valuation, Risk Management and Portfolio Strategies", explains that investors who buy such bonds are to protect themselves from future increases in inflation and thus increase its power purchase.

These types of bonds, with coupons linked to inflation, can be used to cover the risk of a portfolio (en., hedge) fluctuations in inflation, to diversify (coupon bonds is correlated with other assets such as shares, bonds with fixed coupons or cash, so helping to diversify the portfolio of assets by spreading the risk) or to improve the management of assets and liabilities (e.g. insurance companies can use these bonds to cover the risk of inflation when damage occurs until they have to pay to the customers).

For coupon bonds floater, there are certain thresholds that can be specified by the issuer, called caps (upper threshold) and floors (lower thresholds). These thresholds helps limit exposure to high fluctuations in the rates of reference, with upper and lower limits for the coupon rate. When both limits are present, the combination of the two is called the collar. Kaplan Schweser, in "Fixed Income", exemplifies this. Thus, consider a coupon bond floater, which has a coupon rate at issuance of 5%, a cap of 7% and 3% floor. If the coupon rate (reference rate plus the margin) rises above 7%, then the issuer will pay only 7% over the period in which the coupon rate is at or above 7%. If the coupon rate is below 3%, the issuer pays 3% coupon long as the coupon rate is at or below 3%.

1.2.2 Price, yield and duration

Next we will show how to calculate bond price, yield and duration. Bond prices represent a percentage of their nominal value (face value). For example, if the price of a bond is EUR 101.5 for bonds denominated in EUR, then it corresponds to the value of 101.5% of the nominal value of 100%.

Bond price

Fixed coupon bond price corresponds to the price at which market actors are ready to buy or sell. The market price (market price) is influenced by several factors:

- time to maturity of the bond (time to maturity);
- return (yield) bonds with the same maturity;
- coupon;
- attached credit risk (credit risk of issuer - established by rating);
- secondary market liquidity for that bond (whether sold or not).

Next we will consider the first three influential factors: time to maturity, yield and coupon. Government securities have credit risk and liquidity risk and therefore less will use them to illustrate how the influence of the first three factors.

To calculate the price of a bond it must be taken into account that for these bonds it will be received a fixed income throughout the bond and face value at maturity. So when you buy a bond one that pays virtually acquired the present value of future cash flows it brings the bond (Choudhry, 2005, p. 15).

Yield (the yield)

When the price of a bond is known, we can calculate the *yield*, it is equivalent to calculating the internal rate of return, IRR noted below, also called *yield to maturity* (YTM). IRR method is used to calculate the yield of a bond (Choudhry, 2005, p. 20). Usually investors want to see return on a bond when requesting quotations in the secondary market.

Yield of any investment is the discount rate that makes the present value of cash flows equal to the cost/price initially. From mathematical point of view, yield of an investment represents the interest in the price equation.

The most common way of measuring efficiency is uniform yield curve (flat yield curve or current yield).

It has the formula:

$$rc = \frac{c}{p} \times 100,$$

where

rc is the *yield* - the current yield, the *bond price* is P and C is the *coupon*.

This calculation assumes that all future cash flows have the same interest discount factor for the entire period until the bond maturity. In fact, for different maturities are paid different rates. Therefore, to use the classical formula for calculating the price of a bond it is assumed a *uniform yield curves (flat yield curve)*. This formula is used to calculate the cost or short-term profit. To measure a bond yield, the most common method is YTM (*yield to maturity*). This method takes into account the coupon payment structure, time to maturity of the bond and profit or loss for the period remaining until maturity.

Duration

To calculate the price sensitivity to changes in market interest there are some concepts. Of these we shall refer in the following to the duration. It measures the price sensitivity to interest rates, that is how price changes in

response to changes in interest rates. This concept is called *Macaulay duration*, after which introduced this concept, Frederick R. Macaulay, in 1938. He made the following statement: *if changes in market interest rates, will be two changes on the bond. First change the price and secondly coupons can be reinvested with another performance. These two effects are always opposite. For example, when rates rise, the bond price drops and future coupons can be reinvested at a higher yield and vice versa. Macaulay duration describes the time that the two variables are compensated each other. In other words, a temporal dimension is measured in years, indicating the time needed to fix bonds to compensate for price changes due to changes in interest rates.*

The model assumes, however, one change in the yield curve, in accordance with the formula:

$$D_{\text{Macaulay}} = \frac{\sum_{n=1}^N \frac{n \times CF_n}{(1+r)^n}}{\sum_{n=1}^N \frac{CF_n}{(1+r)^n}},$$

where

D_{Macaulay} = Macaulay duration;

n = year;

N = total number of years;

CF_n = cash flow at time n ;

r = yield.

When it comes to duration, we do not refer to Macaulay duration, but to modified duration (en., modified duration), namely:

$$MD = D_{\text{Macaulay}} \times \frac{1}{1+r}$$

Modified duration can be used to demonstrate that small changes of the *yield* determines inverse changes of the price (Choudhry, 2005, p. 34).

The main reason for use of the *modified duration* is to measure price volatility or interest rate risk.

Factors influencing the modified duration are:

- Period (in years) that was issued the bond (term of the bond) - since it is higher, the greater the impact of changing rates on bond prices;
- Coupon; a coupon meant that a large part of the bond amount is paid back early to the buyer by the payment of the coupon; so the modified

duration is less, therefore the price sensitivity of higher coupon bonds is less;

- Efficiency of the market (market yield); cash flows are subject to the discount factor using the market yield, the higher the efficiency of the market, the lower the price and modified duration, so the impact of a change of 1% of market efficiency is lower compared to a high level of interest rates than at low levels

1.3. Coverage of interest rate risk

Risks of a portfolio consisting of deposits, government securities and corporate bonds are those relating to interest rate movement.

Due to the close connection between the interest rate and bond price, we have the following situation: a decrease (increase) in interest rates will increase (decrease) the bond prices and volatility levels occur in longer term bonds and those with lower coupons. Therefore, an investor, in order to get the best impact, should buy longer term bonds with smaller coupons.

2. Investment strategies

What influences investment decisions is that markets are considered efficient.

This implies that prices will not remove the economic values that investors determine.

These economic values are actually related to investor's expectations on revenue and risk. If the market price deviates from the expected economic value, then investors act so as to align the two values. Thus, as new information in an efficient market, prices adjust to this information quickly and accurately. In an efficient market economy, assets would remove from their economic values, but enough so that investors want to take advantage of these differences.

Therefore, an effective economic market (*lack of opportunities for arbitrage*) is a passive investment strategy, i.e. expected results are to be in the market, not over it (for example, if the market yield is 5%, then the investor who adopts a passive strategy would yield 5% on the portfolio, no more) (Martellini et al., 2003, p. 211).

On the other hand there are investors who do not accept the *efficient market hypothesis*, and have an *active* investment strategy, taking advantage on their side information, their skills. These investors generate higher costs but marginal gains are higher than marginal costs.

We present below the main aspects that base an investment strategy and how they can use *fixed income products* within the portfolio of a company.

2.1. Investment strategy of a company

To illustrate, we consider the investment strategy of an insurance company present in Romania for the period 2011-2012.

The strategy aims to cover credit risk. According to Order CSA nr.18/2009, credit risk is the possibility of loss or failure, record of not reaching the estimated profits, resulting from fluctuations in rating the issuers of securities or any debtors to which insurance companies are exposed or contractual failure by intermediaries, policyholders, reinsurers or other debtors.

Period of investment/risk horizon:

- all insurance services are usually on long term and therefore typically have an horizon also as long-term investment. Annually it is performed the re-evaluation for the need for enlarging/reducing the investment horizon, according to business line.

Company's investment risks are measured and reported monthly, using quantitative and statistical methods, but also the history of market data.

Economic capacity is the total planned sum for the annual profit, unrealized investment income, reserves for liabilities. This is the basis to evaluate the ability to support a negative event.

Portfolio assets are divided into different classes, closely related to each other. They are: bonds (including funds that invest in bonds), money market instruments (money market instruments with maturity of up to 12 months, i.e. deposits), equity (shares, funds action) and alternative investments.

Risk management is structured so that the potential risk that arises due to fluctuations in prices, interest rates and currency rates to be clear and limited. This risk is reduced by establishing clear boundaries for each class of assets the company can invest in; limits are implemented both for each asset class and for the total portfolio.

Risk affecting the performance makes the distinction between securities valued at market prices (*bond sensitive at prices*) and those valued at *carrying value* (those that have a stable market value or unidentifiable or relevant or should be valued at *carrying value*/or to the value which is in accordance with the accounting rules – "bonds with stable prices-stable-priced-bonds"). To identify the economic risk, all securities will be valued at market value, face value or any other evaluation otherwise decided by the company and potential fluctuations will be reported.

The investment process depends on the approval for strategic asset allocation (Strategic Asset Allocation) and leads to asset management by classes. The second goal of the process is to create a database to allow a quantitative analysis of the portfolio.

2.2. Application of the investment strategy

The insurance company considered as for example seeks lines of investment strategy and adapts them to the economic situation in Romania. Given the need to minimize risk on the asset side, the company can chose to invest mainly in government securities with coupon, to limit setting of its total assets up to 70%. Thus, at the year end the main exposure would be in Lei, due to the percentage of bonds in total assets.

The asset allocation decisions takes account, in addition to strategy, of the macro-economic indicators in Romania.

Central bank interest rate policy has been reformulated since August 2005 with the introduction of inflation targeting mechanism, implemented by exercising a firm control over money market liquidity via open market operations, combined with periods of partial sterilization.

During 2005-2012, National Bank of Romania took these target rate of inflation, as shown in the table below:

Year	Target rate of inflation (%)	Inflation (%)
2005	7.5 ±1	8.7
2006	5.0 ±1	4.9
2007	4.0 ±1	6.7
2008	3.8 ±1	6.4
2009	3.5 ±1	4.7
2010	3.5 ±1	7.9
2011	3.0 ±1	3.1
2012	3.0 ±1	2.4

Source: National Bank of Romania, www.bnro.ro.

National Bank of Romania also changed over time the reference rate, such that from 10.25% in January 2009 it reached 5.25%, last changed in March 2012.

Policies practiced by the central bank before the crisis of 2007-2008, such as the integration of the measures to reduce inflation (exchange rate flexibility, inflation targeting, capital account liberalization) with concerns regarding financial stability (high levels of minimum reserves on 40% for foreign currency and 20% for lei at the end of 2007 – and limiting excessive currency appreciation via massive purchases by the central bank on the market, in 2004-2007), allowed efficient management of monetary policy after the beginning of

the crisis. Therefore the impact of global crisis on Romania manifested indirectly through the economic downturn, the need to adjust the current account deficit and the financial sector, unexposed to toxic assets balance was maintained, with no cases of insolvency where central bank intervention was necessary (Isărescu, 2012, pp. 22-24).

In response to central bank policy rates in the interbank market, yields have fluctuated depending on inflationary expectations, as can be seen in the table below:

interest rate and yields	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
NBR key rate	6,25%	6,25%	6,25%	6,25%	6,25%	6,25%	6,25%	6,25%	6,25%	6,25%	6,00%	5,75%
ROBOR 1M	5,50%	5,50%	4,40%	4,40%	4,40%	4,40%	4,40%	5,40%	6,10%	6,10%	6,10%	5,34%
ROBOR 3M	5,60%	5,60%	5,70%	5,70%	5,70%	5,40%	5,40%	5,80%	6,20%	6,20%	6,30%	5,56%
T-bonds 3y ask	6,90%	6,90%	7,10%	7,10%	7,10%	7,00%	7,00%	7,20%	7,30%	7,30%	6,90%	6,60%
T-bonds 5y ask	7,00%	7,00%	7,10%	7,10%	7,10%	7,10%	7,10%	7,30%	7,40%	7,40%	7,00%	6,80%
T-bonds 10y ask	6,90%	6,90%	7,10%	7,10%	7,10%	7,20%	7,20%	7,40%	7,40%	7,40%	1,10%	6,90%

Source: Economic overview Romania Jan-Dec 2011, Raiffeisen RESEARCH.

According to these data but also with the forecasts made by commercial banks active in the Romanian market, the insurance company considered as for example could have made a forecast for the rate of reinvestment of the assets which were calculated based on income and asset portfolio yields in 2011.

For asset allocation, the insurance company limits followed investment strategy, plans made for the total value of assets and incomes macro and micro-economic indicators.

Thus, investments were directed in governmental securities issued by the Ministry of Finance, purchased on the secondary market via partner banks.

In order to perform the reevaluation of the assets, the insurance company can use two methods: IRR for treasury bills and bonds held to maturity (Helt to maturity) and market valuation of assets available for sale (for those using target price offered by the partner bank on the last day of each month).

3. Conclusions

The asset allocation requires a well structured investment strategy, with limits on every asset classes in order to calculate the risks of financial instruments within the portfolio.

Also, an investor must be well informed about economic development, both at the macroeconomic and microeconomic level.

On the other hand, many companies that have several lines of business, other than investments, prefer a simple strategy, limiting risk as much as possible. In this sense, the insurance company present on the Romanian market invests in fixed income assets, enabling the calculation of income and future cash flows and covers liabilities without any risk. Companies can have stable investment policies, involving portfolios composed mostly of governmental securities in Romania, bought in the secondary market.

In order to meet investment objective is very important the proactivi, the choice of the opportunity and of timing for entering into a transaction of sale or purchase. This implies a constant and a correlation analysis of various sources of forecast, close monitoring of economic indicators and the socio-political situation in Romania, EU and globally, and efficient use of fixed income products.

The maturity degree of the financial and banking markets, the development of banking and investments products, the sophistication of corporate customers as well as retail customers, financial and banking culture, are determinant for hedging and for portfolio diversification.

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An empiric approach of the FDI-taxation relationship in Romania

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Abstract. *In the heart of the debate on the appropriate level of the profit tax burden on host countries lies a challenging question: How does FDI respond to tax rates? Studies analyzing inter-state fluctuation show that, on average, FDI decreases by 3.7% when corporate tax rates increase by one percentage point, other studies show that the FDI decline varies between 0 and 5%. Such variations reflect differences between nations and industries studied, as well as differences between time periods which have been considered. More recent studies show that FDI becomes increasingly sensitive to tax reflecting a growing mobility of capital as non-tax barriers, previously in the way of FDI, are eliminated (OCDE, 2008).*

The present article aims to study the effects of tax upon foreign direct investment in Romania. The period studied prolongs on ten years, from 1999 to 2009, with the aim to observe the effects of modifications upon tax revenues, direct tax and indirect tax on foreign investment in Romania. To study the relationship between the variables, econometric modelling has been used thanks to the software package Eviews 5.0. This paper's main conclusion is that foreign direct investment are not discouraged by the level of tax in Romania, on the contrary, they are stimulated by an eventual increase in tax revenue.

Keywords: foreign direct investment; tax; simple regression; correlation.

JEL Codes: H21, H32.

REL Codes: 8K, 10F.

1. Literature

Theoretically, each Government should be interested in attracting foreign direct investments. These can create new jobs, bring new technologies and can overall encourage economic growth and employment. The registered benefits in internal income are shared between the public sector, labor taxation and profits generated by multinational enterprises (MNE) and other taxable items (tax on properties for example). FDI can affect positively internal income through “spillover effects” that is to say through the introduction of new technologies and qualified labor. Given these potential benefits, policy-makers continuously re-examine fiscal rules, to make them attractive for investors.

At the same time, the Government needs permanently to balance the desire to provide a competitive financial environment for FDIs with the need to assure they can collect an appropriate level of taxes from MNEs. Although it is recognized that taxes represent an important factor concerning investing decisions, it does not remain the most principal determinant. FDIs are also attracted by countries that offer: access to market opportunities and profit, a predictable and undiscriminating legal environment, macroeconomic stability, a qualified and responsible labor market, a developed infrastructure. All these elements will contribute to the long term profitability of a project.

The majority of studies on the effects of fiscal reforms upon FDI ignore the strategies post-tax used by investors to reduce the tax burden. However, tax planning appears to be a significant activity which is expanding, in addition, recent works of the OCDE encourage analysts to take into consideration the effects of such activities when studying the impact of taxes on FDI. Future research in this domain could provide improved estimations of FDI’s sensitivity related to tax burden.

The traditional theory on fiscal competition shows that in an open economy, with perfectly mobile capital, taxes on capital should tend towards zero since it is dominated by taxes on immobile factors that cannot avoid tax through relocation (Diamond, Mirrlees, 1971, Gordon, 1986, Razin, Sadka, 1991, Wilson, 1999). Liberalization of capital flows made this theory the more relevant for profit tax since foreign direct investment (FDI) allows companies to choose where to locate their business for tax reasons. According to Gordon and Hines (2002), “fiscal policies are capable, in an evident way, to affect the volume and location of FDIs; since higher tax rates decrease income after tax, therefore discouraging reinvesting initiative”.

This view according to which FDI should react to taxes on profit is widely accepted in the academic field, as well as operational, even though empiric and theoretic studies show that the real impact is insignificant, maybe even inexistent. First of all, the practice of pricing transfer and according credits between companies allows enterprises to transfer profits where taxes are the lowest therefore breaking the link between the location of the profit and where production is located (Bénassy-Quéré et al., 2004).

Secondly, decisions concerning business location depend on a combination of taxes – public assets existing in the host country (Tiebout, 1956), which weakens the connection between tax burden and FDI in respective countries. In the same perspective, the impact of tax differentials upon the decision regarding FDI's location can be insignificant vis-à-vis of structural determinants such as: proximity to end market the characteristic of competition in the labor and products market etc. (Markusen, 1995).

Thirdly, a higher tax rate can generate greater income before tax, in a general equilibrium model (due to reduced capital stock), but with no measurable effect on income after tax (Scholes, Wolfson, 1990). Eventually, tax differences can represent the result of equilibrium, in conditions of imperfect competition, combining economy of scale with trade costs and/or agglomeration forces (Haufler, Wooton, 1999, Andersson, Forslid, 1999, Baldwin, Krugman, 2004, Ludema, Wooton, 2000). Then, tax difference compensates for differences in income due to geographical position.

Despite these arguments, empirical evidence shows that multinational enterprises (MNE) respond to tax incentives, whether they are contained in tax laws (to avoid international double taxation) or in tax rates. An extensive review of literature is provided by Hines (1999) and Gordon and Hines (2002). According to the meta-analysis conducted by Mooij and Ederveen (2003), semi-elasticity of FDI to tax rate varies from -2.7 to $+13.2$ with an average of -3.3 or -4.0 , depending to the inclusion in the sample of insignificant estimations. Regarding the elasticity of FDI to tax rates, it varies between 0.6 and -2.8 , depending on the estimation method (Desai, Hines, 2001).

Some studies refine these investigations and concentrate on the sensitivity of some categories of FDI to tax: reinvested earnings versus prices of transfer (Hartman, 1984, Slemrod, 1990) or merger and acquisitions versus new factories and expansion of facilities (Swenson, 2001). Desai and Hines (2001) show that FDI in the United States of America are sensitive not only on tax profit but equally to indirect taxes.

A series of works emphasizes the impact of rules to avoid double taxation in accordance with theoretic studies initiated by Hamada (1966) and Musgrave (1969). Concretely, exemption schemes are expected to stimulate the FDI flow towards countries with a lower tax burden as repatriated profits will be exempt from taxation. Inversely, FDI flows from countries that apply methods based on credits should be less sensitive to tax incentives since repatriated profit will be subject to taxation in the country of residence, income tax expenses paid abroad being considered deductible expenses. Empiric results in this regard are not conclusive, probably because the majority of studies concentrate on incoming and outgoing flows from the USA, which do not allow to differentiate the impact of taxes from the impact of other omitted variables (Bénassy-Quéré et al., 2004).

In the framework of a more recent study, Bénassy-Quéré et al. (2004) show that companies' profit should not be exempt from tax (as an effect of fiscal competition) since geographically attractive countries could exploit this advantage, keeping a high level of taxes on immobile factors. Using panel data on bilateral flows of FDI for the period 1984-2000, for 11 countries from the OECD, authors demonstrate that a high corporate tax discourages FDI flows, even when they are considered as control variables for the provision of public assets or severity factors (market's potentials, transport costs, dimension of the investing country, common language – dummy variables). Thus, although the potential of markets matters, it is important and a tax differential concerning companies' profit. In this respect, an asymmetry exists in the impact of tax differentials on FDI flows: while lower tax rates in recipient countries than in the country of origin don't attract in a significant way foreign investment; higher tax rates discourage new FDIs.

As a conclusion, we stress the fact that governments try make their tax administration friendlier, through increasing transparency and the predictability of tax treatment. In January 2008, at its fourth meeting, the OCDE Forum of Fiscal Administration to which tax commissioners from over 40 OECD and non OCDE countries, discussions focused on cultivating and ameliorating relationships between tax authorities and taxpayers. Many countries have introduced procedures under which tax authorities can answer in advance to questions about the tax status of a particular type of investment. Fiscal treaties and mutual understandings are also perceived as key factors in ensuring certainty and stability in inter-state investments (OECD, 2008).

2. Analysis of the impact of tax revenue upon FDIs

The analysis of the impact of tax revenue upon Foreign Direct Investments targets the period 1991-2009, following the effects of tax revenue upon the volume of Foreign Direct Investments in Romania. The method used for the analysis is the econometric modelling obtained using the software package EViews 5.0. Thereupon, I have developed a pattern single factor regressive model.

$$Y_t = \alpha + \beta \times X_t + \varepsilon_t \quad (1)$$

where:

- Y_t represents the dependent variable (FDI);
- α is the free time coefficient;
- β is the coefficient of independent variable;
- X_t is independent variable (tax revenues);
- ε_t is random variable;
- t is the time period (interval 1991-2009).

Specifically, it will seek to quantify the relationship that exists between, on one hand, the volume of foreign direct investments, and, on another hand, revenue from central taxes constituted of tax on profit, income tax, tax on profit from illicit activities, tax on dividend, economic contribution to social fund, other direct taxes, tax on added value, custom duties, excise duties and other indirect taxes (all considered independent variables), related to a physical person as well as legal entity.

The model of the impact of tax revenue upon foreign direct investment is based on a single factor regression model of the form:

$$Y_t = \alpha + \beta \times X_t + \varepsilon_t \quad (2)$$

where Y_t represents a dependent variable – FDI (foreign direct investment), α the free time coefficient, β the free time coefficient, X_t independent variable- TAX_REV (tax revenue), ε_t random variable and t time period (interval 1991-2009).

More precisely, the econometric model will have the following formula:

$$FDI = \alpha + \beta \times VEN_FISC + \varepsilon_t \quad (3)$$

The results obtained by modelling the 19 series are (table 1):

Table 1

**Statistical tests modelling the impact of tax revenue
upon foreign direct investment**

ISD=C(1)+C(2) × VEN_FISC				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1410.579	551.3008	-2.558638	0.0203
VEN_FISC	0.427325	0.055902	7.644166	0.0000
R-squared	0.774635	Mean dependent var		2227.026
Adjusted R-squared	0.761379	S.D. dependent var		2483.854
S.E. of regression	1213.335	Akaike info criterion		17.13943
Sum squared resid	25027094.4616	Schwarz criterion		17.23885
Log likelihood	-160.8246	F - Statistic		58.43328
Durbin-Watson stat	1.316918	Prob (F - Statistic)		0.00001

Source: own processing with the help of the program EViews 5.0.

Analysing the figures presented in table, the following conclusions are reached:

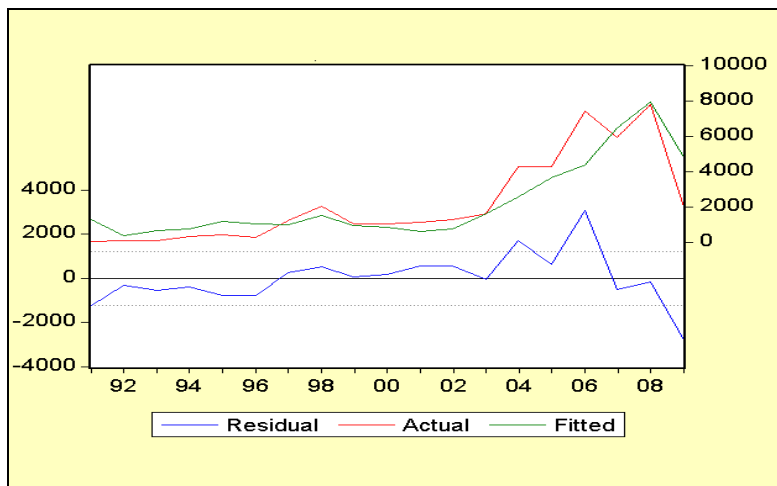
- The value of the standard error of the coefficient of the regression function is inferior to the value of the coefficient, which enhances the reliability of its estimation, conclusion sustained by the low value of the probability;
- The adjusted correlation coefficient, with a value of 76.13%, shows that the statistical relationship between the dependent variable – FDI and endogenous – TAX_REV is strong, modifications on the tax burden corresponding to tax revenue being found in a considerable proportion in modifications of the volume of foreign direct investments;
- The Durbin-Watson test, with a value below the critical limit 2, indicates that residual variables are easily correlated. A possible explanation would be the fact that, on the studied period, the Durbin-Watson test is not significant and cannot be interpreted;
- The F-statistic test, with a rather large value (58.43328), value exceeding the critical limit of 4.41 and Prob (F-statistic) with a very small value of 0.00001 indicates that the regression model is very good. Therefore, it can be said that the model built can be considered representative for describing, on the macroeconomic level, the relationship between tax revenue and the volume of foreign direct investment.

As a result, the model can be written as follows:

$$\text{FDI} = -1410.57897 + 0.4273251437 \times \text{TAX_REV} \quad (4)$$

From this model emerges the fact that, in the case of Romania, taxation generates an extension of foreign direct investment and, more precisely, the fact that *tax influence has an effect of increasing foreign direct investment*. Thereby, it can be observed that a growth of 1u.m. of the tax revenue determines a growth of 0.4273 m.u. of foreign direct investment.

From Figure 1 a tendency of growth for both lines can be observed: the historical foreign direct investment, represented by the red one, and the one of estimated foreign direct investment, represented by the green line. Both valuations follow a similar evolution. The blue line represents the difference between the historical values of the variable Y (foreign direct investment in this case) and the estimated values of the variable Y in the model used. The fact that the blue line is rather close to the axe OX shows that the estimation is very relevant.



Source: own processing with the help of the program EViews 5.0.

Figure 1. Evolution of historical value of foreign direct investment compared to estimated value of foreign direct investment

In the next part of the present study we will test the stability of the equation and of the estimated coefficients with the help of the *CUSUM* test, which is based on the cumulative sum of recursive errors together with a 5% critical lines. The equation parametres are not considered as stable if the cumulative sum of recursive errors goes outside the two critical lines.

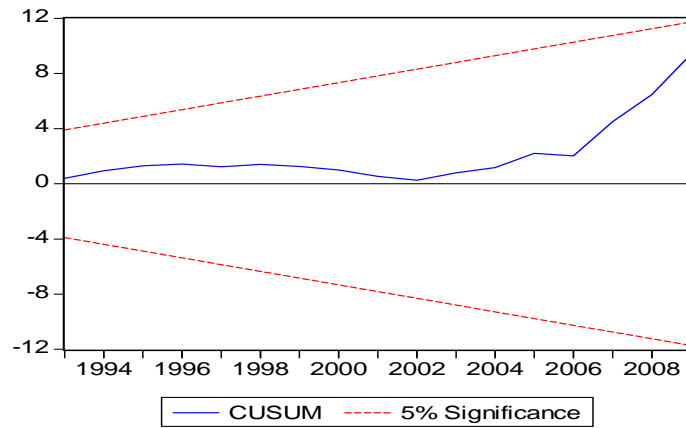


Figure 2. Test of the coefficient's stability with the help of the CUSUM system

In the above figure, we can observe that the cumulative sum of recursive errors does not go outside the two critical lines, the parameters are therefore stable.

3. Analysis of the impact of direct taxes upon FDI

The formula for the impact of direct taxes on foreign direct investments is also based on a single factor regression model:

$$Y_t = \alpha + \beta \times X_t + \varepsilon_t \quad (5)$$

where Y_t represents a dependent variable – FDI (foreign direct investment), α the free time coefficient, β the free time coefficient, X_t independent variable – DIR_TAX (direct taxes), ε_t random variable and t time period (interval 1991-2009).

The model has the following formula:

$$FDI = \alpha + \beta \times DIR_TAX + \varepsilon_t \quad (6)$$

The results obtained by modelling the 19 series are (Table 2):

Table 2

**Statistical tests modelling the impact of direct taxes
upon foreign direct investment**

ISD=C(1)+C(2) × IMP_DIR				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-987.3924	945.3236	-1.044502	0.3109
IMP_DIR	1.056207	0.276591	3.818661	0.0014
R-squared	0.461722	Mean dependent var		2227.026
Adjusted R-squared	0.430058	S.D. dependent var		2483.854
S.E. of regression	1875.172	Akaike info criterion		18.01009
Sum squared resid	59776621	Schwarz criterion		18.10950
Log likelihood	-169.0959	F - Statistic		14.58217
Durbin-Watson stat	0.569008	Prob (F - Statistic)		0.001374

Source: own processing with the help of the program EViews 5.0.

Analysing the figures obtained in the table, the following conclusions can be reached:

- The value of the standard error of the coefficient of the regression function is inferior to the value of the coefficient, which enhances the reliability of its estimation, conclusion sustained by the low value of the probability;
- The adjusted correlation coefficient, with a value of 43%, shows that the statistical relationship between the dependent variable – FDI and endogenous – DIR_TAX is weak; modifications on the tax burden corresponding to direct taxes are found in a smaller extent in modifications of the volume of foreign direct investments;
- The Durbin-Watson test, with a value below the critical limit 2, indicates that residual variables are correlated. A possible explanation would be the fact that, on the studied period, the Durbin-Watson test is not significant and cannot be interpreted;
- The F-statistic test, with a value of 14.58217, exceeds the critical limit of 4.41 and Prob (F-statistic) with a value inferior to 0.001374 indicates that the regression model is good.

Given the difficulty of estimating the constant term coefficient, we disposed of the regression and reviewed it.

As a result, the reviewed formula can be written as:

$$FDI = \beta \times DIR_TAX + \varepsilon_t \quad (7)$$

The results obtained by modelling the 19 series are (Table 3):

Table 3

**Statistical tests modelling the impact of direct taxes
upon foreign direct investment- reviewed model**

ISD=C(2) × IMP_DIR				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP_DIR	0.798956	0.126188	6.331490	0.0000
R-squared	0.427177	Mean dependent var		2227.026
Adjusted R-squared	0.427177	S.D. dependent var		2483.854
S.E. of regression	1879.906	Akaike info criterion		17.96703
Sum squared resid	63612820	Schwarz criterion		18.01673
Log likelihood	-169.6868	Durbin-Watson stat		0.575545

Source: own processing with the help of the program EViews 5.0.

Analysing the figures obtained in Table 3, the following conclusions can be reached:

- The value of the standard error of the coefficient of the regression function is inferior to the value of the coefficient, which enhances the reliability of its estimation, conclusion sustained by the low value of the probability;
- The adjusted correlation coefficient, with a value of 42.71%, shows that the statistical relationship between the dependent variable – FDI and endogenous – DIR_TAX is weak; modifications on the tax burden corresponding to direct taxes are found in a smaller extent in modifications of the volume of foreign direct investments;
- The Durbin-Watson test, with a value below the critical limit 2, indicates that residual variables are correlated.

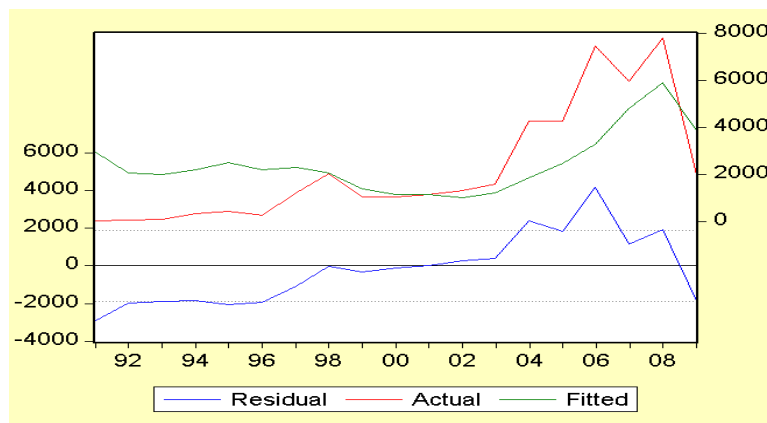
Under this limit, the model can be written as:

$$\text{FDI}=0.7989556028 \times \text{DIR_TAX} \quad (8)$$

From this model emerges the fact that, in the case of Romania, direct taxes generate an extension of the volume of foreign direct investment, and more precisely that direct taxes have the effect of increasing foreign direct investment. Therefore, it can be observed that a growth of 1u.m. of direct taxes induces a growth of 0.7989 m.u. of foreign direct investment.

Explanations that lie at the basis of this model are reflected in the fact that it is possible that other factors are much more important in influencing foreign direct investments than taxes, such as, cost of labor force. It is also possible that the environment enables tax evasion given that the tax rate is low.

From Figure 3 one can notice a tendency of growth for both lines: the one of historical foreign direct investments, represented by the red line, and the one of estimated foreign direct investment, represented by the green line. Both valuations follow a similar evolution and the fact that the blue line is rather close to the axe OX shows that the estimation is correct.



Source: own processing with the help of the program EViews 5.0.

Figure 3. Evolution of historical value of foreign direct investment compared to estimated value of foreign direct investment

To continue, we will test the stability of the equation and of the estimated coefficients, with the help of specific tests. In the figure below, we can notice that the cumulative sum of recursive errors exceeds the two critic lines towards the end of the studied period, the parametres of the equation becoming unstable.

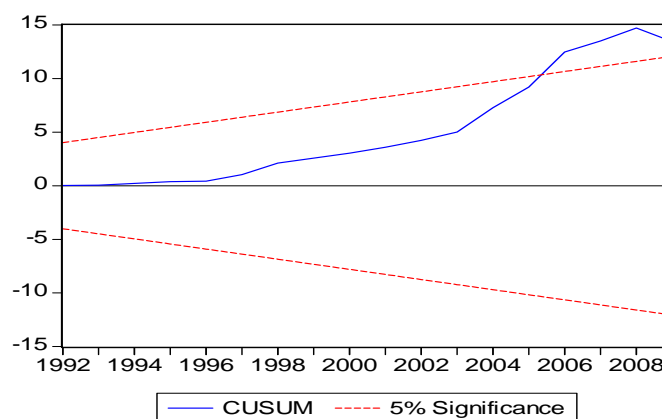


Figure 4. Test of the coefficient's stability with the help of the CUSUM system

4. Analysis of the impact of indirect taxes upon FDI

The formula for the impact of indirect taxes on foreign direct investments is also based on a single factor regression model:

$$Y_t = \alpha + \beta \times X_t + \varepsilon_t \quad (9)$$

where Y_t represents a dependent variable – FDI (foreign direct investment), α the free time coefficient, β the free time coefficient, X_t independent variable – IDIR_TAX (indirect taxes), ε_t random variable and t time period (interval 1991-2009).

The model has the following formula:

$$FDI = \alpha + \beta \times IDIR_TAX + \varepsilon_t \quad (10)$$

The results obtained by modelling the 19 series are (Table 4):

Statistical tests modelling the impact of indirect taxes upon foreign direct investment

ISD=C(1)+C(2) × IMP_IDIR				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1098.148	472.9586	-2.321868	0.0329
IMP_IDIR	0.619691	0.073814	8.395269	0.0000
R-squared	0.805671	Mean dependent var	2227.026	
Adjusted R-squared	0.794240	S.D. dependent var	2483.854	
S.E. of regression	1126.695	Akaike info criterion	16.99127	
Sum squared resid	21580521	Schwarz criterion	17.09068	
Log likelihood	-159.4170	F - Statistic	70.48054	
Durbin-Watson stat	1.910222	Prob (F - Statistic)	0.000000	

Source: own processing with the help of the program EViews 5.0.

Analysing the figures obtained in Table 4, the following conclusions can be reached:

- The value of the standard error of the coefficient of the regression function is inferior to the value of the coefficient, which enhances the reliability of its estimation, conclusion sustained by the low value of the probability;
- The adjusted correlation coefficient, with a value of 79.42%, shows that the statistical relationship between the dependent variable – FDI and endogenous – IDIR_TAX is strong; modifications on the tax

burden corresponding to direct taxes are found in a considerable proportion in modifications of the volume of foreign direct investments;

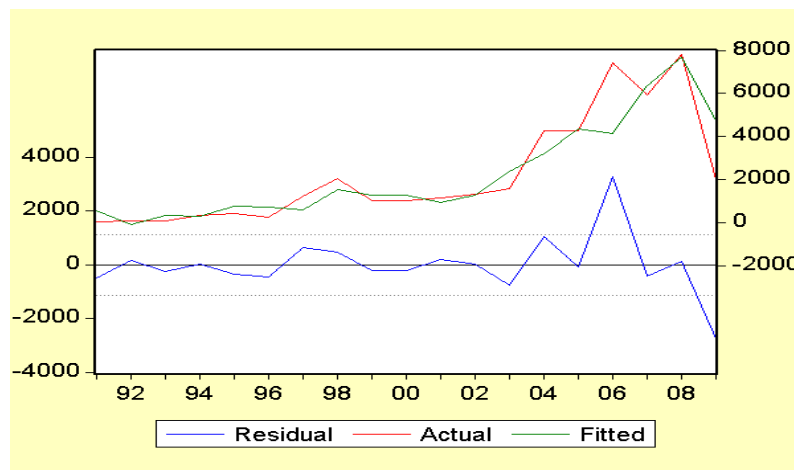
- The Durbin-Watson test, with a value slightly below the critical limit 2, indicates that residual variables are not auto-correlated;
- The F-statistic test, with a rather large value of (70.48054), exceeds the critical limit of 4.41 and Prob (F-statistic) with a value inferior to 0 indicates that the regression model is very good.

Therefore, we can say that the model built can be used to describe, on the macroeconomic level, the relationship between indirect taxes and foreign direct investments. As a result, the model can be written as:

$$\text{FDI} = -1098.147593 + 0.6196905865 \times \text{IDIR_TAX} \quad (11)$$

From this model emerges the fact that, in the case of Romania, indirect taxes generate an extension of the volume of foreign direct investment, and more precisely that indirect taxes have the effect of increasing foreign direct investment. Therefore, it can be observed that a growth of 1 m.u. of direct taxes induces a growth of 0.61969 m.u. of foreign direct investment.

Figure 5 shows us that the estimations are very good:



Source: own processing with the help of the program EViews 5.0.

Figure 5. evolution of historical value of foreign direct investment compared to estimated value of foreign investments

To continue, we will test the stability of the equation and of the estimated coefficients, with the help of specific tests. In the graph below, we can notice that the cumulative sum of recursive errors does not exceed the two critic lines, the parameters of the equation being stable.

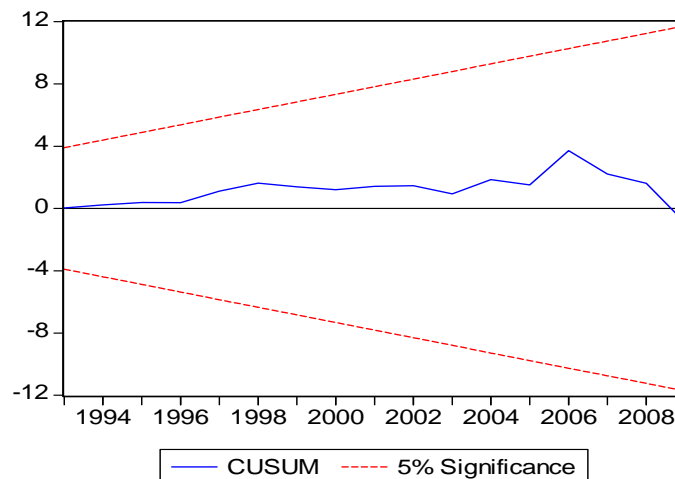


Figure 6. Test of the coefficient's stability with the help of the CUSUM system

Conclusions

Foreign direct investments are important for Romania, because of the „import of know how” and modern technologies which investors bring from their country of origin. Foreign direct investments generate additional collateral benefices for the receiving countries, and not only related to the production of goods and services. They bring technologies from abroad, including equipment and plants themselves, as well as modern production processes, new capital and jobs in countries that desperately need them.

In attracting foreign direct investment, taxation plays an essential role in terms of actual tax rates, multinationals' comportment being modelled by tax issues. In the actual economic situation, in which governments compete to attract multinational companies, ensuring proper tax treatment has become a global phenomenon. "A corporate tax system with reasonable fees, suitable deduction rules and discounts for depreciation is not only attractive for foreign investors, but also stimulates economic growth" (Halmi, 2009, p. 237).

Fiscal policy should aim to maintain budget balance, channelling resources towards the private sector, production, avoiding the accumulation of domestic public debt, broadening and strengthening the tax base, while reducing the level of taxation which leads to a stimulation of foreign direct investment.

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Public-private partnership role in increasing the quality of the health insurance services

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Abstract. *In a context in which the social politics tend to become an optimization instrument for adapting the social security system to the market's forces, and the talk of some analysts about reinventing the European social model, the partnership between the public sector and the private one in the social domain presumes, besides a tight collaboration, a combination of advantages specific to the private sector, more competitive and efficient, with the ones from the public sector, more responsible toward the society regarding the public money spending. The existence of the private health insurances cannot be tied, causally, to a social politics failure, reason for which they don't intend, usually, to replace the public insurances, but rather, to offer a complementary alternative for them. In such a context, the public-private partnership's goal regards both increasing the insurant's satisfaction and increasing his/her access degree to services, and increasing the investments profitability made by the insurant and insurer. We are facing thus a mixed competitive system that combines the peculiarities of the public and private sectors. Interesting is the fact that, although the different meanings for the quality term may generate some problems regarding implementing quality management in the two health insurance sectors, the experts in the area reckon that establishing a good relationship between public buyers and private providers of healthcare can reduce the costs of public health programs. An essential condition for operating efficiently the partnership model is defining correctly the basic medical services packet financed by the public budget. Which doesn't exclude the possibility of administrating by the private insurers, the sums of money gathered from the employees and employers contributions to the health fund, as a recently initiated project of law intends to do in Romania.*

Keywords: basic package; european social model; health insurance; health services; partnership; quality.

JEL Codes: G22, H51, I13.

REL Codes: 11C, 13C.

I. The European social model – a premise for public-private partnership approach

The “European social model” (ESM) was initially used by Jacques Delors in the middle of the 90s (Jepsen, Pasqual, 2005), to define an alternative to the American model of market pure capitalism. The fundamental idea of ESM is that economic and social progress must go together; in other words, the economic growth should be combined with social cohesion.

Although more than a decade has passed from that moment, the term continues to be debated both in an academic and a political environment, maintaining still a vague signification.

Among the most clear official definitions of the term there is the one mentioned in the European Council Presidency’s Conclusions from Nisa from December 2000, where the descriptions of the European Social Agenda stipulates: “the European social model – particularly characterized by a system that offers a high level of social security, by the importance of the social dialogue and the general services which cover the vital activities for the social cohesion – is based, despite the multitude of State Members’ social systems, on a common value foundation” (Păuna et al., 2006).

In the specialized literature (Hay et al., 1999), ESM is mentioned in different areas, able of being identified under distinct presentations that don’t, however, exclude one another.

Thus, we find ESM presented as a model which incorporates certain common characteristics (institutions, values) that are inherent to EU members’ status and that are perceived as a way to regulate the society and the competing economy.

Another set of definitions presents ESM as being included in a variety of different national models, some of them representing good examples for the others.

Most of the authors and political deciders identify ESM, though, with an European political program whose purpose is modernizing and adapting the society to the perpetual changing of economic conditions. The essence of these changes is illustrated by the specialists through the collocation “society based on knowledge/information”. From this point of view, ESM is a phenomenon occurring at a transnational level.

ESM is also presented as a cohesion instrument among the EU member countries which doesn’t exclude though the appearance of other new European social models.

Another ESM approach (Jepsen, Pasqual, 2005) presents the idea of a productive social policy applied to different social models from Europe, to promote flexibility, partnership, to gain labor force in activity, etc. Such a concept implies the orientation of social politics rather toward encouraging the individual's capability of survival in an economy that became more and more dynamic, than using the individual's capability as a reason to take action to correct the market forces.

Rather than being a market corrector, social policy becomes through this new European speech an optimization instrument to adapt the social security system to the market forces. This new ESM approach starts from the idea of a European Political Project whose goal is building a European Identity, not through institutions and common value, but more exactly through common solutions of social politics.

In conditions in which economic pressures become more and more obvious, an adaptation – favorable to activity and innovation – to a new capitalist model is imposed on. The main idea is that solidarity was so much institutionalized that it diminishes people's desire to adapt their behavior to economic requests. Thus, passing from the passive to the active support is required, for implicating people in society's modernization process. Institutions' part is to provide instruments (the ability to attract labor force on the labor market, flexibility) that allow individuals to find ways to adapt to the changing of economical and social conditions (Păuna et al., 2006).

More and more specialists opt for changing the exact rules with different post-regulatory instruments, especially to be able to face postmodern society's variety, dynamic and complexity.

An example regarding this matter – that holds popularity – is a new way of approaching the problems of the European society, with the help of the Open Method of Coordination. It is the “soft” regulating model for coordinating politics of the labor market, of pensions and of health by the EU institutions that uses rather a flexible framework than a “compulsory rigid system”, as a manifestation of Europeanization of the industrial relationships.

Among the newest methods of approach of the ESM model is the one according to which the European speech is based on a European Society Model or, in other words, on a socio-economic model, as long as the models and reforms are linked not only to the social aspects, but also to regulation, incentives and innovation system. The authors (Aiginger, Guger, 1999) of such method of approach by socio-economic model understand the society's responsibility for the individual's wellbeing. The three characteristics – responsibility,

regulation and redistribution – reflect that the European Model is more than a social model in a strict sense.

At economy's scale, Europe is trying to combine the dynamic of market economy growth with the coordination of social dialogue between collective partners. At state's scale, the European countries are not just free democracies but also redistribution states, meaning states of prosperity that are trying to help the disadvantaged persons – that have lost the ability to work from different reasons: sickness, unemployment etc. At society's scale, besides offering individual opportunities of reaching accomplishment (happiness), European societies promote solidarity between individuals which enforces, otherwise, the social cohesion. The essence of European objectives (which denote, in many specialists' opinion, the superiority of European society itself) had been majestically highlighted by Anthony Giddens, who states that “the European social model combines the economical dynamic with the social justice” (Alber, 2004).

In the globalization terms, we cannot talk about absolute virtues of the European social model. Thus, there is a series of specialists that contest or doubt the reality of the European social model. Regardless these ones, the European social model exists under different forms, and is looking for new forms of expression.

Equally true is that, presently, in Western Europe there are many voices that doubt the possibility of maintaining national social protection systems and even governing mechanisms so costly in Europe.

Many politicians and social analysts mention even the reinventing of the European social model, “by making it flexible, but without it losing elements of social solidarity”.

2. Theoretical and methodological coordinates regarding public-private partnership

With a tradition of over 20 years in the world, the partnership between the public sector and the private sector in the social domain begins to be applied in Romania also, after the year 1989, being allowed both by the suffered changes in the governing process, and the reform in the public administration. The authentic partnership assumes, at least in theory, a close collaboration and a combination of specific advantages between the private sector (more competitive and efficient) and the public sector (with responsibilities toward the society concerning public money spending) (Lambru, Mărginean, 2004).

The development of this kind of relationship between the public and private sector is due to the consequences of three factors, namely:

- The fiscal pressure governments are being exposed to;
- The interest manifested by private organizations in the social services domain;
- Developing the idea of complementarity between the two sectors, in organizing and providing such services.

From the theoretical point of view, public-private partnership is sustained by the “public choice theory”, and its functioning is conditioned by partners’ goals compatibility, by decisions coordination and by deciding to put together resources for the realization of shared common goal.

Public-private partnership (PPP) can be applied through social contracting methods, process which assumes social services auction sale by private foreign contractors. What is of extreme importance in this process is the fact that state responsibility doesn’t disappear, and social services efficiency increases.

There are although much more reserved opinions regarding PPP virtues. Thus, even if the starting point is the premise that any company is interested in maximizing its profit and will act in this direction by providing services or products of a higher quality than one that isn’t interested in obtaining a maximum profit, this principle isn’t always applicable in the PPP case for various reasons.

The main problem of PPP is that by this type of contract the active’s ownership is not transferable. Another concept’s problem is the lack of competitiveness. De facto, what happens in most cases is monopoly transfer from the state to a private entity. Companies are motivated to develop their products/services quality only when there are other companies able to take over their activity by offering a better product/service. A last PPP problem is a political one. Any state asset is managed by state clerks. As long as the PPP is owned by the state, the privatization contracts in this regime will be long term instable due to the political risks.

PPP presents a set of problems also from the competition’s point of view (Vass, 2007), more exactly regarding the selection, by the public authority, of the private partnership.

Thus PPP doesn’t represent an optimal solution, but returning to the old system, in which providing social services belongs exclusively to the state, is as much a disadvantage.

Even in the European Union the PPP problem isn’t totally clarified. For this reason, the European Commission organized a series of public

consultations, completed by the Green Card of PPP, which proffer instruments made to ensure that PPP are opened to competition in a transparent legislative environment, namely:

- Clarification of concepts and approaches through an legislative instruments (procedures of private partner selection, legislative frame for works and services concessions, contractual frame and its amendment during the partnership period);
- The interpretive communication;
- Actions of improving the coordination of national level practices or good practices exchange between state members.

According to the European Commission definition, PPP is a cooperation method between public authorities and the business environment made to ensure that infrastructure projects can be realized or that services fruitful to the public can be offered. These forms of partnership can be realized in different areas of the public sector, such as: transportation, health care, education, social security, waste management, water distribution etc.

The types of PPP regulated on European level started from specific approaches on national level and they regard:

- Contractual PPP, realized exclusively based on contractual relationships;
- Institutional PPP, which assumes common participation of public and private partnership in a juridical entity with mixed capital.

The principles to be applied in all forms of public-private partnership in EU concern: transparency, equal treatment, adequacy and mutual acknowledgement.

For the PPP created for contracts qualified to be public contracts there are applied the directives which coordinate offer procedures of public contracts. Work concession is covered only by a few articles lost in the secondary legislation, because the directives concerning public contracts don't cover this area at all.

In any case, the contractual dispositions must be in accordance to relevant community rules, to the equal treatment and transparency principles, in particular. Art. 26 of the 2004/18/EC Directive gives the possibility to the contracting authorities to establish specific conditions concerning contract fulfilling, but these conditions must be compatible with community rights and be indicated in the publicity phase preceding the auction. These conditions may contain, especially, social or environmental considerations.

The European Commission highlights the optimal distribution of risks between public and private partnership, a fact considered crucial for the PPP project success.

Also, periodical performance evaluation mechanisms of the owner of PPP contract are important. In this context, the transparency principle requires that risk evaluation and distribution factors, along with performance evaluation, to be communicated through the project's descriptive documents, in the publicity phase preceding the auction.

Regarding the works and services duration period, this must be established according to the project's economical and financial stability guaranteeing need. The duration of partnership relation must be established in such a manner as not to limit the free competition more than is necessary to guarantee the regain of investment and a reasonable profit. An excessive period may break the principles governing the internal market or the CE Treaty article concerning competition.

Due to the fact that activities forming the PPP subject matter are running on a relatively long period of time, the relations in PPP must be able to evolve according to the macro-economic or technologic environment changes, as to the requirements of general interest. As much as they are compatible to the equal treatment and transparency principles, automatic adjustment clauses of the contractual conditions are permissible.

Generally, changes brought to the project's conditions of realization, during its course, which are not included in the contractual documents, influences the equal treatment principle between economic agents. Also, the community rights forbid changes made during the contract's editing, after the final selection of the private partner. Thus, these changes are acceptable only if they become necessary following some unforeseen events, or are justified by public political criteria, social security or public health.

For the institutional PPP case, direct cooperation between public and private partnership, in a juridical entity, allows the first one, thanks to its presence in the shareholding and decision making forums, to maintain a relatively high level of control on the project's realization, and to adapt it during its course, according to the circumstances. More, by cooperating with its private partner, the public partner may gain managerial and technical experience in regard to providing the respective service.

An institutional PPP may be applied, either by creating an entity commonly controlled by the public and private partner, or by the private partner's taking over control over the existent public enterprise.

The European Commission states that rules regarding public acquisitions and concessions contracts are not applied to the transactions by which it is created a public-private mixed entity. But, in case that this transaction is associated with assigning some tasks to the respective entity, an assignment that may be qualified as a public acquisitions or concession contract, it is necessary to be realized by the rules and principles mentioned in the CE Treaty and in the applicable directives.

Under such circumstances, the private partner selection, called to perform the above-mentioned tasks as part of the mixed entity, cannot be based solely on the quality of its capital contribution or on its experience, but it is necessary to acknowledge the economical advantages of its offer, from the perspective of the services that are to be provided.

Creating this mixed public-private entities must, according to the European Commission and the European Court of Justice Jurisprudence, respect the principle of non-discrimination based on nationality criteria, in general, and free capital circulation, in particular. Thus, public authorities cannot condition their participation as a shareholder in such entities by the existence of excessive principles in their favour, that doesn't drift from a normal application of trade companies' right.

If the foundation of institutional PPP is realized by changing the shareholding structure of a public entity, it must be specified that taking the enterprise from the public sector into the private sector represents an economical and political decision, over which state members have exclusive competence.

Also, it must be specified that public acquisitions community right isn't applicable, per se, to the transactions involving an investor's simple capital infusions in a company, either public or private. These transactions are governed by the CE Treaty legislation regarding free capital circulation, according to which the national measures taken must not constitute barriers to investments from other state members.

On the other hand, the Treaty's legislation concerning free establishment must be applied when a public authority decides to cease to a third party, through a capital transaction, a determined influence over a public entity providing economic services that, usually, are the state's responsibility.

3. Health insurance – from the market to the state and back to the market

Health care is not just a personal problem, aiming to reduce the discomfort, to prevent the loss of work capacity or to avoid the premature deaths. In turn, the society is interested in preserving the health status as a

support for prolonging the duration of the active life and increasing the social and economic efficiency, reason for which the increase in the citizens' life expectancy, along with the increase of labor productivity are reference points to any national strategy in the area.

Health care services and health insurances benefit of an increased interest, not only because they cover a distinct category of risks, but also because the involved sector consumes an appreciable amount of resources. A demographic reality marked by the process of population aging, based on the technological development in the domain, makes the demand of health services to present an accentuated dynamic.

The health system forms a particular type of market, whose specific characteristic differentiates it from other markets (Dragomirișteanu et al., 2003).

Health services market is far from being a perfect one. There are several reasons that lead to the considerable standstill of this market, therefore requiring government intervention. These can be structured on three dimensions, respectively: market failures, positive externalities, and medical care costs.

Market failure can be analyzed both from the demand perspective and from the perspective of health care services' offer. Most of the times, the demand of services is characterized by the consumer's ignorance. For instance, this information deficiency may be compensated by mandatory description of the prescribed medicines. Moreover, the uncertainty of the medical care moment of need and of its cost is reduced by social insurances systems that allow the access to services and financially protect the client.

Also, in the structure of the offer show up a series of distorts that may lead to the market failure, particularly with regard to the staff's competence, the used medical equipment and the monopole in the health services network.

The positive externalities refer to the potential effects of the health services on other persons than those whom they are meant for, the government intervention being of nature to expand the positive effects the individualized assistance might have. Starting from the individual evaluation of the costs and benefits in the health care services and from the effect of such services on the community, the government finances – for instance – services to promote the preventive medical assistance at the level of the entire society.

The cost of the medical care is another reason supporting the necessity for government intervention on the medical services market. If the natural option is to minimize the individual costs or, in any case, to fit into a quantum dependent on the incomes that may be allowed to this purpose, the medical system

functionality is dependent on securing a certain level of the funds allowed to this segment of activity.

In other words, the fundamental landmark on the system viability is not the total cost of the care services but the GDP percentage that is allotted to the health care system.

The increase of the salaries for the staff in the medical system, the appearance of some much more performing but more expensive equipments, procedures or medicines, raise other issues on funding the healthcare system, based exclusively on the market mechanisms. Not to mention also the influence produced by maintaining a quasi state monopole in the sanitary units network.

All these elements led to the occurrence of the mechanism based on the intervention of the third paying party who becomes the purchaser of the medical services. The principles of the solidarity are applied and, depending on the situation, of the mutuality, the individual contributions being, periodically, paid to the third party, regardless of using or not the medical services, and the services payment is done by the third party from the collected funds.

The funding by public compulsory insurance is usually imposed by law, who sets the quantum and the periodicity of the contributions, the categories of taxpayers and the margin of the medical services beneficiaries.

Applying the social solidarity principle leads to a quasi-complete covering of the population but, in the same time, induces some distorts in the contribution-benefits ratio by the fact that dimensioning the contributions is usually related to the level of the individual incomes and not to the participants' personal risk.

The advantages of the social health insurances mainly regard the following aspects:

- Increasing the system decentralization;
- Exclusively directing the accumulated funds to the expenses in the sanitary area;
- The possibility for the insurance institutions to impose quality standards for the medical activities;
- Defining, both quantitatively and qualitatively, the packages of services to be delivered to the taxpayers;
- The diversity of the medical services suppliers;
- Configuring some managerial structures closer to the private sector;
- Transparency of the financial flows dedicated to the sanitary system.

Public insurance limits and disadvantages lead to reconsidering the contribution of the private insurance. They are:

- The unbalanced ratio between the insured persons and the taxpayers, the funding of the medical services for pupils, students, unemployed and retired persons being supported by the occupied population;
- The perception of the contributions as a taxation increase (*tax on labour*) that encourages the “black labour”;
- The reduced degree of freelancers’ enrolment in the system.

The existence of the private health insurances cannot be causally tied to a failure of the social policies, reason for which they usually do not intend to replace the public insurances but rather to provide a complementary option to them.

Besides, basic medical care coverage is an exception, available only in countries where they are not provided by the public system, or as a substitute (Colombo, Tapay, 2004). In some health care systems, the private insurances increase the patients’ opportunities of access to the services delivered by hospitals, but in most of the situations they provide a possible additional source of coverage for the medical care costs.

Despite the fact it is based on a contributory system, the voluntary insurance resembles more with the system of direct payment of services by the patients, through its high transparency, a better justification of the ways to spend the funds, doubled by a higher responsibility with regard to practicing the medical act.

A simple review of the main categories of private insurances allows us to state that one of their main roles is to cover the deficit between the market demands and the public system possibilities.

In such a context, a discrepancy between desirability and feasibility can be highlighted, expressed by the public system insufficiently protecting the population through services proper for their wishes.

The demand’s characteristics and the preferences of medical services consumers, as well as the employers’ contribution to cover the costs of health insurances are, also, representative factors of profile market dimensioning.

The increase in performance, expected by the participation of the private sector to the health systems may be evaluated based on several criteria, but the distribution of the performance within the applicants for services raise, additionally, several issues aiming the equity of the health care process, starting with the reality that the private insurances are not available to all segments of

population, especially for those presenting a high risk of sickness, and, in the absence of some governmental interventions, the rights of certain categories of patients may not be put into practice.

Nevertheless, increasing the possibilities of option represent an undisputable fact and, last but not least, reducing waiting periods of time, as a result of services volume increase and the development of diagnose and treatment ability, may be appreciated as a global system performance factor, generated by the contribution of the private sector.

4. The quality of the health insurance services – a common problem of the public and private sectors

For healthcare insurance services, defining the concept of quality itself, can represent a problem, especially because, although part of the public services area, insuring health differs very much from other services alike due to the following characteristics:

- The unlimited demand of services, in conditions of limited financial resources;
- The sensitivity of health services users (clients), with a limited influence over quality;
- The presence off very well skilled specialists;
- The large influence over life quality;
- Satisfying complex needs: users' (patients) expectations and requests, contributors' (insurance companies, public financial resources) requests (Puksic, Goricanec, 2005).

If the 8402 ISO standard defined the quality as being the assembly of properties and characteristics of a product or service that confers to it the ability to satisfy explicit or implicit needs, today it manifests tendencies of enlarging the sense of quality, in a way that it doesn't only mean satisfying the clients but also the general interest.

The situation reached a point where the 9004 ISO standard considered the state should be involved in quality, because through it freedom is promoted, gives a meaning to responsibility, being in the same time an edification factor for society and civilization.

Although quality theory was applied entirely to health insurance services, there are to be noticed a series of peculiarities that drift from the specificity of medical care services.

Thus, the three periods of time of a service's lifetime namely providing, selling and using it, by manifesting simultaneously and in the presence of the provider, determines a direct link between him and the client, the latter being able to immediately analyze the quality.

A large importance has the established relations between services providers and their clients, on a long term, a fact that makes possible the appearance of characteristics like: gentleness, courtesy, honesty and respect.

Services' quality depends also on clients' behavior. As preferences can or cannot be shared, there must be the possibility of offering a series of services to satisfy them all. Assistance must be provided in case the client is ignored, supplementary information must be bestowed, advice, and so on.

As services are unable to be stored up, punctuality and promptitude in providing the service represent their qualitative characteristics, because the client doesn't wish to lose a lot of time.

These characteristics depend also on the sanitary services provider's ability to manage large varieties of request, a fact that commands an adequate design of the clients' receiving points. Thus, as characteristics there can be identified the access time, the waiting time, and the servicing time.

The intangibility of services generates a more rapid services blotting, in the beneficiary's mind remaining only certain aspects. The overall impression is the dominating one. In making an overall impression on a client over the quality of the provided medical service, there is series of factors competing such as:

- The quality of the medical act, determined by the medical personnel's professional preparation and specialization, but also by the endowment of the sanitary unit with high performance equipment;
- The quality of hotel conditions offered by the sanitary unit (food, cleaning).

In this context, the quality of the health insurance services was defined as the total satisfaction of necessities of those that need the most these services, at the lowest cost for the organization, in the limits and directives established by the hierarchically superior authorities and by the buyers (Ovretveit, 1992).

A definition that highlights the main three dimensions of the concept, these being:

- Patient/client quality;
- Professional quality (of the specialists);
- Management quality.

These three quality dimensions are determined by the three groups of interest involved in the health insurance system: the users, the professionals

(the service providers) and management. A through cooperation between these groups represents another fundamental aspect for the success of improving the health insurance services quality (Harvey, Green, 1993).

Different acceptations for the discussed notion may generate problems regarding implementing quality management in the two sectors of health insurance, public and private. We mention that, in ex-communist countries but not only, private health insurance services represent a relatively new component of activity in this domain and can contribute significantly in developing and growing the mentioned activity, exercising – in the same time – an important influence on using the resources and thus, on cost optimization.

Cost control and the impact on environment represent significant aspects regarding the differences and competitiveness between the two sectors, private and public. Capitalizing on the two types of experience and permanent education, allow forming some competitive advantages in both spheres of activity and obtaining some considerable better results than the past ones.

The biggest problem of the public-private partnership in health insurance area remains establishing business relationships between private providers and public buyers. The two parties' methods of approach are, thus, completely different.

The public sector intends to offer health services equal for the entire population, according to the accepted standards (financial and quality) and constitutional or legal rights. The main goal is a just distribution of a public good (health care).

The quality of the health insurance services regards a much larger complex of aspects of the public-private partnership, such as – for example – the ones referring to the manipulation and confidentiality of information.

The confidentiality of the medical act seems to preoccupy people more than other aspects of their private life. Health problems and medical information have a personal character, some of these being considered very sensitive by the ones involved, due to some negative social connotations.

The medical profession has a long tradition regarding the preoccupation to protect the patient's intimacy but, in our era, although the general principles that regard respecting the private life and confidentiality is further applied, the separating line between public and private becomes more and more unclear.

Thus, health insurance companies request the proof of effectuated treatments before realizing the payment, and the integrated systems' benefits of medical information electronic processing are compensated by the risks of interfering in the patients' private life, because the stored information might be

subject to other uses. In addition, medical records contain a detailed history of previous medical analyses and procedures, in the idea of making easier some positive results for future consultations (Marshall, Miller, 2005).

Another connective component of the healthcare insurance services quality problematic is the impact of the environmental factors. Besides, the use of innovating components for increasing the quality and techniques of environment's management for permanently improving the procedures, products or services provided to the clients, allows their beneficiaries a level of satisfaction as high as possible.

Creating, maintaining and improving the quality's and environment's management system, looked upon as an instrument of rational functioning, serves both at systemizing the efforts of increasing the efficiency, and at comparing the two sectors, public and private.

With the quality and environment management systems and using the informational support of economic activity, the following main activities can be done:

- Insuring and permanently improving the health services quality levels;
- Ensuring a constant growth of population's satisfaction, in its entirety, regarding providing health services;
- Optimizing the economical aspect of the health insurance activity (Kralj, Stamenković, 2006).

Not lastly, we will note the fact that one of the virtues of the public-private partnership is in the dissemination speed of the technical progress results and innovation in the health services matter, with evident benefits for the final consumer.

To the new industrial strategies, marketing strategies are superimposed, which regard both practitioners and patients. These strategies must be oriented toward information, training and publicity. Keeping in mind the competition pressure and the tendency of shortening the cycle of life of the products on the medicine market and the therapeutic techniques, a new product's success depends more and more on the business' capacity to quickly launch it on the market (Ristea et al., 2011).

5. The basic health services package – condition for achieving public-private partnership

The constraints on the resources impose a limitation – explicit or implicit – of the available medical services. In the same time, setting some limits for the given benefices in the health sector is of nature to affect the systems of

individual and social values, as well as some sectors and responsibilities of professional rank.

Consequently, it seems natural to us the preoccupation to try to identify which of the medical benefits are essential for the population and for each individual apart, and starting from such analyses, to define the basic health services package that the public service can provide.

In the states with a national health service or with a more comprehensive system of social health insurances and where – especially for political reasons – it is preferred not to define a limited package of basic services, we have to deal with the so-called passive approach, that generated long waiting lists, the decision of rationalising being left to the doctor. Characteristic for the countries in the Central and East-European areas is the frequent use of the unofficial payments as a method of priority access to health services.

The implicit rationalising was for a long period of time concealed by the medical decision and maintained as such by the lack of knowledge in the field of a large category of population. Nevertheless, the level of sanitary education and of public involvement grew during the last years, as well as the resistance of the health sector experts to assume obligations in the process of rationalising the medical services. Consequently, it appeared the need for an explicit definition of the benefices delivered by the health system, even if they do not always respond to the requirements of efficiency and equity.

In this acceptance, the basic package becomes a tool through which the population's wishes and needs are channelled through certain patterns of medical services and, lately, it reflects the citizens' priorities in relation with the types and the level of the services they expect from the health care system.

Even if all society members must have access to the entire spectre of the health services, in terms of quality and regardless of their payment capacity, as a result of the objective limitation of the funding resources of the system, a decision needs to be taken on the sustainable offer of services, concretised in the contents of the basic package.

Usually, defining it is the government's responsibility and such an approach is to be preferred, as in the decision-making) process, there are several aspects to be considered, connected to the ethics, the legality, and the quality of the services, economic and political considerations.

In the same time, considering that it is difficult to reach a consensus in the political process of defining the basic package, it is to be preferred a wider participation of all involved factors: doctors and other experts, citizens,

government, authorities from the public health sector, insurers, medical companies.

There are two approaches used for defining the basic services package, respectively the implicit method and the explicit one. Both methods have advantages and disadvantages. An explicitly defined package may generate several controversies and debates on the services comprised within. A too vague (implicit) approach will allow for subjective interpretations, which may cause significant differences between the offered benefits, selections with high social risk, the rise of the coverage costs and, in some situations, a doubtful quality of the services.

The most important factors that ultimately establish the contents of the basic benefits package concern the level of available financial resources and the number of eligible persons for covering the medical services (the covered target population). In terms of a preset budget, the lower the number of persons included in the system is, the more comprehensive the basic package becomes and vice versa.

The international experience in the field consecrated several methods, techniques and approaches out of which we are going to mention:

- Clear definition of the criteria for including or excluding the categories of eligible persons for services coverage provided by the basic package;
- Identifying a priority list of included products and services (the positive list);
- Identifying a list of excluded products and services (the negative list);
- Designing a model of implicit allowance of the resources on efficiency and efficacy criteria (implicit rationalising);
- Using some financial constraints imposed to the patients (co-payments, contributions et al.).

The criteria used for setting the priorities within the basic package concern: medical necessities, efficacy, efficiency and one's responsibility or, otherwise said, the cost, the quality and the ethical criterion.

As long as the content of the basic package is tightly related to the costs level and to the available resources, an iterative approach of the definition process is necessary. A first stage consists of setting a technical frame, meant to provide the general parameters of the benefits list, which will afterwards be submitted to public debate in order to get a wider consensus.

There are two levels of generality by which the basic services package can be defined: a higher level one, where the legislation sets the essential coordinates,

and a lower level one, where the package of benefices is defined by explicit lists of services or by systems of grouping the services depending on the funding methods. The explicit lists contain recommendations, but also inclusions or/and explicit exclusions of services. The level of detailing, the configuration of the lists and the ways of extending it varies from one country to another. It is preferable that the review of the basic services package to be made on a yearly basis, as much as possible.

The practice of exclusion varies from issuing some negative lists to establishing a national framework in this regard. Most of the countries exclude services such as aesthetic surgery, certain unusual vaccines (such as those for travelling abroad) and the non-conventional treatments (like acupuncture).

With regard to the services delivered to the hospitalised patients, it is noticed a transit from the global budgets and per day payments to the explicit positive lists or to those indirectly determined by the systems of services grouping depending on the funding. Such systems are tools of estimation on the resources consume and, in the same time, they provide the basis of remuneration of the intra-hospital services. Generally, the classification of the care period is accomplished depending on the diagnosis of the most important disease, of the associated sicknesses and of the basic surgical intervention to which it is associated a more or less homogenous consume of resources (medicines, diagnosing procedures etc). Expressing it in monetary units, on funding groups (public, co-payments, and insurances) allows establishing the level of reimbursement of the expenses to the hospital.

With regard to services provided to the non-hospitalised patients, there are used explicit positive lists, as well as the grouping systems for expenses reimbursement such as, for instance, the calculation on every sick person (per capita). Usually, the explicit benefices lists are used for direct per service payments. If doctor receive fix budgets or per capita payment, the services package is indirectly restricted to the allotted sum of money, reason for which the services package regulates also the doctor's obligation to provide those services considered to be necessary medically speaking. The specialty services, those of laboratory and the x-rays are paid in the per service system of payment, according to a detailed list of procedures, that can be assimilated to a positive explicit list, as the expenses reimbursement concerns only the procedures included in these lists. If there are established detailed lists in some countries, with all of the procedures, in others there are inserted only the complex services, leaving the setting of priorities to the doctor's choice.

Beyond the technical and methodological issues, defining the basic package is essential because it is either the boundary between the two partners in the expenses of medical services (for complementary and supplementary insurance), or the configuration support for the private substitutive insurance offer.

6. Evolution and tendencies on the Romanian market of health insurances

In Romania, the abandon of the Semaško system, practiced in the communist era and based on universal coverage, state financing, central planning and free access to health services was realized late enough.

No sooner than 1998 had a new law of social health insurances been applied that followed the Bismarck insurance model, with mandatory health insurances and was based on the solidarity principle. As a consequence, the financial resources of the health system have been modified, by significantly reducing the state budget and introducing a sole national fund for social health insurances. Today, the health budget has two sources of income: the state budget and the health insurance fund, the latter representing more than three quarters of the total.

The structural changes in financing and organizing the health services have registered slow rhythms, a fact that concluded in a chronically sub financed state and in a low efficiency system. Regardless of some worthy attempts, for a long time it was noticed the absence of an integrated national strategy for health insurance as a political engagement of the state's authorities, the modifying of real priorities remaining under the influence of economic recession and social tensions.

In 2004, Romania's government issued a decision for approving the national strategy regarding health services and the plan of action for the health sector's reform. On a long term, the strategy's desired effect was improving population's health state and, by this, the life quality. The national strategy's goal regarding health services is to increase population's access to medical-sanitary services of quality and making more efficient the way of providing the hospital's medical-sanitary services.

The most recent legislative approach on the subject is dated from the beginning of the first half of the year 2006 when the Law regarding health reform was adopted, actually a legislative package comprising institutional aspects, systems of organizing and financing, management methods and

models, as well as other technical coordinates that are to sustain the sanitary system reform.

Basically, the discussed law doesn't bring significant changes in administrating and conducting the social health insurance system, these being realized further by the National Institution of Health Insurances – a public institution, autonomous, of national interest, with judicial personality, having as a main activity goal ensuring the unitary functioning and coordinates of the social health insurance system in Romania and which subordinates districts' health insurance institutions and the Health Insurance Institution of Bucharest.

The centralized system inertness, inherited from the communist era, still generates many deficiencies, which the public system cannot overcome unless with the help of the concurrency practices imposed by the co-existence of a private system. In regard, we are looking at the following aspects:

- The infrastructure of the sanitary system is old, dimensioned incorrectly, without respecting the market needs;
- Technology and top equipment acquisition criteria are too less based on economic principles, the political factor having an unjustified influence in this regard;
- Human resources allocation is inefficient, the resources being distributed by national normative;
- Human resources management is also deficient, the number of liberty degrees being reduced enough;
- The discontent of the medical-sanitary personnel, paid insufficiently, has become chronic, parallel with the appearance of the corruption phenomenon;
- The system is rigid, immobile, adaptable with difficulty and sometimes even inadaptable to the patient's needs, thus it is incapable of answering the market's requests;
- The exaggerated centralization is doubled by the management's incapacity in exercising control and by the evaluations, which should be followed by correction measures and adapted to new standards;
- Administrative enforcement of rigid norms and standards, established at a national level, led to an inefficient mixture of abundance and waste in some regions and to chronic scarcity in others;
- The impossibility of cost control led to imposing some unrealistic costs, the small costs of some services compensating for others, that have become artificially profitable;

- Excessive taking of medication, influenced by the fact that the majority of the deciders have exclusively medical preparation, reduced a lot the chances of between sectors approaches, but also the capacity of anticipating population's needs;
- Reduced transparency when using funds is favored by a deficient informational flux, heavy and late enough, as well as by the absence of quality control systems, by specific evaluation standards and procedures.

Private health insurances have developed pretty timidly, in conditions in which the medical services providers' network was prevailing of state, and the legal regulation framework was not facilitating the connection of the two systems.

The first legislative initiative in the domain was materialized only in 2004, through the appearance of the private health insurances Law. Regarding the comprehension the law was permissive, referring both to complementary or supplementary insurances, and the substitutive ones.

Sadly, the above mentioned law covered a series of debatable or even inoperative regulations, reason for which it could not be applied.

Two years later, the private health insurance problematic was resumed through a more ample legislative project that offers a separated title to the domain. The ruler preferred, this time, the use of the voluntary health insurance slogan, reason for which they were defined in the law as facultative insurances, compared to the Law's provisions regarding insurances and reinsurances in Romania.

Instead, out of the voluntary health insurances, the substitutive ones were excluded, the main reason being the insufficient financing of the public system, to this being added the difficulties that would have appeared in the discounting process between the budget of the health insurance institutes and the private insurers.

Under these circumstances and in terms of a deficient and imprecise definition of the basic medical services package discounted by the public system, the volume of the private health insurances registered average values compared to their potential and with the system's financial needs (less than 10 million Euros, respectively less than 0.5% of the subscribed brute primes).

Very recently, a project of law is offering to regulate a new health insurance system functioning method through private insurance institutions (actually, insurance companies authorized by the competent authority).

According to the above mentioned project, companies and employees will be further paying contributions to the National Agency of Fiscal Administration, the money being transferred afterwards through the National Institute of Health Insurance to the health insurers, pro rata with the number of registered insured people. The services required by the sick persons will be discounted by the insurers on account of the contracts signed with the medical services providers.

The project of law encloses also a first definition of the basic services package, which remains to be detailed and on account of which voluntary health insurances will be able to develop.

For family doctors the main change is represented by the possibility of signing contracts with the private institutions, while the hospitals could be transformed in foundations or commercial companies. The income and spending budget will have to be published on their own website or on the website of the supervising authority.

Although the project still presents some unclearness and controversial elements, it is appreciated that it will lead to the most profound reform in health insurance domain in Romania and perhaps one of the most radical in the entire Europe.

7. Conclusions

Even though the debates regarding the European social model are far from being concluded, it is a certainty that in order to be able to face the variety, dynamic and complexity of the postmodern society a new method of approach is needed, more pragmatic, with the main goal to modernize and adapt the social policies to the permanent changes of economic conditions.

Considering the increasing fiscal pressure the governments are being subjected to, the interest manifested by the private organizations in the social services domain is obvious and justified, considering the two sectors are complementary one to the other, in organizing and providing such services.

An analysis to the evolution of health insurance services proves that they oscillated between state and market, and in the end they settled in the concept of public-private partnership, a model in which state's responsibility does not disappear, and the efficiency of social services is increasing.

Of course the public-private partnership does not represent an ideal solution and not even an optimal one in all cases considered, but the recurrence

to the old system, where providing social services is exclusively to the state, is a lot more costing.

Interesting is the fact that exactly the characteristics of the health insurance services – especially the unlimited request of services, with limited financial resources, suggests a combining of virtues of the two sectors to satisfy complex needs that include both the expectations and users' requests, and the domain's contributors and providers requests.

The most accepted definition in the area reveals that the three quality dimensions are determined by the three groups of interest implicated in the health insurance system: users, professionals (services providers) and management, and the complete cooperation between these groups represents a fundamental aspect for the success of improving service quality.

The positioning and percentage of the private sector differs from one country to another, depending on a multitude of factors.

Starting from the Romanian example, it can be appreciated that a sub-dimensioning of its implication is made to prejudice the system from a significant volume of resources. Meanwhile, realizing an authentic partnership is conditioned by the clarification of each sector's implication, reason for which a correct definition of the basic medical services package constitutes an essential condition of the discussed relation.

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The economic integration: concept and end of process

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Abstract. *A crisis that is currently stiffing the Euro Zone does equally suspend and shadows the debate on the European integration, that actually remains a different issue and, why not, still useful. This integration needs some more corrections: the old model revising, updating or readapting to a new reality and answers to questions sticking around this crisis. Reassessing specific concepts just starts here.*

Keywords: integration; European & non-European type integration(s); incipient & advanced integration(s); customs union; economic convergence; monetary union; fiscal union; optimum currency area.

JEL Codes: E00; E52.

REL Code: 20B.

Economy and *economics* are parallel activities, sometimes associating with each other in dynamic, sometimes on the contrary. The economic thinking is likely to form its own scholar staff concomitantly with its own assertion of ideas. The economic integration, in such a context, stays a big project in way, but it still is much too early to talk about its (positive or negative) ending. Away from real effects produced and induced, this integration did for certain do one thing: a specific *economics* and economic thinking area.

1. Basics of integration – Bela Balassa and Jacob Viner

There is a rather interesting scholar names' association to talk about. Firstly, Bela Balassa (1928-1991) was a Hungarian professor of economics that also acquired values of his country's anti-communist revolution of 1956. Then, repression pushed him to leave his country first for Austria. And then, his scientific merits demonstrated in his economic graduation area⁽¹⁾. It is in this context that he produced in 1961 his own model about the *European integration*, that was rather following its evolution ever since – a five steps process: (i) *free exchange area*, (ii) *customs union*, (iii) *common market*, (iv) *economic union*, (v) *economic and monetary union*⁽²⁾.

This was astonishingly looking like a programmatic document for the European Community and later Union and the European Commission should be really proud of this, if it had been its issuer. Actually, the Commission usually abstains from long term programmes issuing, theories and ideologies⁽³⁾.

The Balassa's teoretical contribution to the integration topic development was decissive. First of all, it is correct placing the free exchange area and customs union at the integration's foundation and starting point, plus in their direct succession. Though, these two concepts were not quite „created” by the author, plus concepts arisen in the following model stages are – contrary to the earlier model stages' description – rather arguable. Just taking into account those advanced stages as expected to come in place significantly later from the paper's time (in early sixties)⁽⁴⁾. But Balassa succeeds something else about concepts of *common (unique) market*, *economic* and *economic-monetary union*: to become the *parent* of these titles ever since vehiculated by all, from the EU's official documents to independent scholars, in their papers and debates.

Secondly, I believe in another merit of Balassa, the one of detail matter and of a genius intuition that recalls the way that more than one hundred years earlier David Ricardo had foreseen the huge activity size of international trade as starting from the second part of the 19th century. Or, Balassa was doing something similar in 1961, be it indirectly – through the *monetary union* stage brought in the integration model – he foresaw the draw-back and decline of the

world-wide money order that was very well in place at the time of his elaboration. This is about, of course, the Bretton Woods international Agreement and international monetary system (IMS/1944-1971) – that was the successor of all, the last World War, economic crisis and international monetary system of the *gold standard* (Andrei, 2011). Once more, the presumptive *monetary union* of this European States' formation could not be expected at that time, but as the retort of an equally presumptive doubtful evolving of the international money order. And that whereas the last was no longer at its timid start (1944), not yet in its later (1971) decline either. Just note for the effects area that the European Commission took its first range of monetary measures in 1971, exactly ten years from the Balassa's elaboration. Back in 1961, the Bretton Woods IMS really was on its upward evolving, be it for its short period, as seen from today.

The other scholar name associated with the basics of the *European integration* was coming from the other side of the Atlantic⁽⁵⁾. This is Jacob Viner (1892-1970), a Canadian citizen of Romanian origin that attended a fruitful university professor of international trade career at Princeton University. Unlike Balassa, Viner focuses on the *incipient* part of the integration process and stays in the universal economic thinking with his theory of the *customs union* (Viner, 1950). The scholar reveals that the international economy – and especially a States' formation platform initiative and procedure of this type – is susceptible of producing (among other things) the opposite effects of *trade creation* and *trade perversion*. So, despite his limiting analysis to the incipient integration of his time, the scholar here found, especially in *trade perversion* type phenomena, another larger area of phenomena that belong to the contradictory characteristic of all integration phases and developments all over. See in later years (since 1999-2002) the example of contradictions between the Euro Area and the rest of EU Member States, or the one of the EU extension toward its eastern geographic side (2004 and 2007), versus the “No!” vote against the project of European Constitution on the western (old) side of the Union. See equally the essence contradiction between reinforcement of the Union through its enlargement and its opposite weakening by diluting the overall integration degree. See also the multiple contradictions brought in by the Common Agricultural Policy (Programme) and so on.

Viner, at his time, was just finding the example of the unjust advantage of the inside the Union firms producing and exporting to inside the Union consumers, over all other producers, consumers, State governments and other categories of interests competing in the same area. But my point is that miningless irony and speculations, as presumable on the Viner's demonstration so should be rejected⁽⁶⁾ in favour of a true tragic condition of this process – the

initiator States always feel committed to express attachment to market, competition and all liberal values whereas integration itself comes to undermine them in facts, by its proper functioning.

As summarising from above, there were two scholar names that founded the theory of European integration in the immediate post-World War Two years (fifties and early sixties), as „classics” of this topic. A substantial specific bibliography was gathered ever since, so that we currently live as the generation that feels forced to do two things, in alternative: revise or reject such a theory.

2. Criticism of the Balassa Model

Recall from above the very „genius” of Balassa, claimed for the last integration stage identified in his model on the (*economic and*) *monetary union*. Ironically, the arguable part of the author’s elaboration arises from the same part of the paper.

(1) First of all, now, in 2012, the economic and monetary union is done, as the common currency does its job for one decade time already – can anybody assert that the integration process is also done, be it as restricted on the Euro-Zone?! I mean not at all and some authors argue that the monetary approach currently overpasses the real economic evolving (Dinu et al., 2004). Besides, a fiscal approach is expected to knock at the EU’s door, as similarly to the monetary one once in the past. Plus, it is the shame that Balassa did not approach any of fiscal aspects of the integration, all the less as for a distinct stage, as properly to his view.

(2) Second, the author seems to have missed here another genius ability – let us admit that he has foreseen at least the common currency’s birth (1999-2002), as equivalent to the monetary union stage of his model; or that such a stage could extend to the earlier Maastricht Treaty of the Union (1992), with its “*Convergence Criteria*”. But, there is an obvious mistake: the last were drawn by the *European Monetary Institute (EMI)*, the predecessor of the today *European Central Bank (ECB)*. And whereas the last relates to the common currency period, the previous had also enough to do with the earlier EMS (Andrei, 2009a). An EMS that came up as the retort to its precedent “*Monetary Snake*” of the early seventies. Or, can this context be fully and properly understood? The meaning of this tissue of facts and events is that the monetary approach is far from similar to “the last stage” of the Balassa’s paper of 1961 – no common currency of the two centuries’ joining as possible without its previous EMS of the eighties, and the same EMS cannot ignore the earlier “*Monetary Snake*” either. Actually, the common currency was coming up as the very solution for a previous IMS in collapse danger (McKinnon, 1992) – as

similar structure with the Bretton Woods IMS that had imploded in 1971 (Triffin, 1973).

It is true that the other report, the one between EMS and “Monetary Snake”, was a little different story. The „Snake” was the fastest reaction tool available to Europeans against the sick dollar floating of 1971, whereas previously, the treaties of Rome (1957) – basing the Community-Union – hadn’t mentioned any about money. Later on, during the “Snake”’s working, Europeans realised the sad paradox of their dependence on the US – at least, as for a weakening monetary reference – at the same as previously – when the US had been strong, as during the War and at the end of it. That was why they started working on the next EMS, but so, on the other hand, Balassa both reached his genius of foreseeing the forthcoming monetary union earlier than the EC-EU and made the mistake of shrinking this to the “last stage” of the integration process. By both aspects, the EU integrated and an independent researcher on its evolution do obviously split up from each other. And concomitantly, the very truth here revealing is that the “Monetary Snake” (1971) was becoming the starting point of the monetary approach of the European Integration.

(3) This above is the reasoning of recognising the *monetary approach of the EU as a long-term* one, and so the monetary approach was working concomitantly with other objectives and approaches of the integration, like the common market, so trade and even some fiscal approaches – see the VAT unifying in order to fight the injurious *fiscal competition* among Member States.

But the same reasoning has two parts – the second one “attacks” the structure itself of the Balassa’s description, the *stages* construction idea. Or, it might be correct keeping a stage view on the incipient parts of the integration like the *free trade area* and *customs union* – they might be able to fill the beginning and come in a proper succession with one-another. But things are different for the common (unique) market and economic-monetary union: there cannot be similar “stages”, as long as built on various objectives, but they stay valid concepts. Actually, the very weak point of the Balassa’s shaping view on the European integration seems to be its “stages” idea, together with too much separation between successive stages, as also criticized by Tsoukalis (2000).

(4) In reality, the Balassa’s five stages – or six stages, as also taking into consideration the above presumptive fiscal approach aren’t able to cover the European integration description, but just the *liberal* face of it. And a precision here comes as necessary on the EU’s integration project, as *out of ideologies*⁽⁷⁾ – not even the “free market” here qualifies as basic ideology, but the free economy is approached in a very pragmatic way: no possible integration approach out of a common market! The last also might limit to just a tool of

fulfilling other targets and objectives – see the ones related to welfare and social cohesion. As in theory, integration feels free to become a very „socialist” undertaking – and that might explain its popularity for the socialist and social-democrat political thinkings, as in detail and against the old communism here viewing only the “contemporary capitalism” with its “internal and self-destructing contradictions”.

Or, this above digression is for clarifying the integration as (much) more than building a “larger market economy for its welfare benefits”. The Balassa’s model sees itself overpassed by facts, as correspondingly, but previously overpassed on the objectives area. The European integration economics identifies from its very beginning with “two economics”: (a) the one of *liberal* values – *free trade, common market, competition, economic union, optimum currency area* etc. – and (b) the other, *non-liberal* – see concepts of: *budget(ing), interventionism and policies, regional and sustained development, social cohesion, structural funds* etc. Moreover, the two ranges of concepts specifically play for: objectives (b) and instruments (a), but even more interesting to be revealed is that the Union’s two economic faces of the integration commits itself to work concomitantly: meaning, the (b) objectives group of concepts isn’t conceived to expect the (a) liberal performances to be achieved. In our view, this might be taken as a generous mentality that worth as much as the idea of integration.

3. A new retort picture of the European integration

Bela Balassa ought to remain the parent of the European integration economics ever since his model elaborated in 1961. The age of this paper just requires its criticism and revising, as developed above, and the below lines just come to put the same ideas into a consistent and more comprehensive picture description, the one in which enough items of the primary (Balassa’s) description will keep their initial validity and significance. First of all, as concluded above, it is the previous “five stages” idea that comes to be dropped out.

3.1. Just two big stages, instead of the previous “five”

The first two stages of the Balassa’s model – (i) *free trade area* and (ii) *customs union* – worth to be kept as such, plus they can be attributed to a larger stage now to be called *incipient integration*. The primary argument for such a reconsideration consists in the double appropriateness of these *sub-stages* for both the “zero moment” of integration and their succession between, as underlined above. But there is one more equally significant argument to be

considered: the other part of the integration will so come to be called as *advanced* integration and so will regard the other set of Balassian concepts – other than free trade area and customs union – in a larger view, as below explained:

(1) This will make distinct the *European type integration* (see European Community that once became European Union) from the other *States Formations* of integration aimed throughout the world. This is finally succeeding to explain the more than one hundred States enlargement of the integration undertakings world-wide, as opposite to a certain “impopularity” of the European type integration of the EC/EU born once in fifties. The EU’s development did coexist with similar State formations initiatives born in North Africa, Middle East, other Arab zones, Central and Latin Americas (Andrei, 2009a).

There is even a two integration types’ simultaneity on the same European continent since (beside the EU) the *European Free Trade Area (EFTA)* equally exists. Currently, this States association have enough weakened, but the Europe’s recent economic history reveals significant moments in which the EC and EFTA were comparable sizes and so the two integration types were preserving individual specifics as even more obviously – see the time before the UK’s accession to the EC.

Besides, there is a kind of “asymetry” to talk about as between – not exactly the two types, but about – the two philosophies of integration that lay behind. Both integration types contain what was already called above the incipient integration, but this is quite different for each: the one (EU) takes it at incipient integration in a long term evolving concept; the other (the EFTA type) takes the same (free trade area & customs union) as the whole integration process without any evolving on long term programmes and time horizons.

This above explanation already expresses something about integration in its restricted and large senses. For a full view about the large sense economic integration, there is one more step to be accounted: here including the integration out of States formation. This is about IMS again, here including older monetary unions and even the so called *international gold standard* (Metzler, 2006).

(2) The frontier between incipient and advanced integrations – as seen from the EU side – is also the one between the integration moments or type in which Member States can leave the Union whenever national interest or so might require as such – and such facts really occurred (Andrei, 2009a) –, and a European Union situation in which such an initiative reduces to strictly hypothetical (theoretical or impossible) – and there still is no case, despite plenty of vicisitudes of the process evolving.

(3) Thirdly, it is about the difference between an incipient integration dominated by the Member States' initiative – as political, administrative, diplomatic and in international law terms and as an alternative internationalisation – and, vis-a-vis an advanced integration in which it is the events that put pressure on the States' initiative and concomitantly the internationalising aspect wipes out slowly but irreversibly. There might here be repeated the example of the same monetary approach developed by the EU: the “Monetary Snake” of early seventies was proving more or less necessary for the post-Bretton Woods international pressing context and/or the integration evolving, whereas the following EMS (1979-1999) and especially the common currency implementation (1999-2002) proven increasingly needed (Andrei, 2010)⁽⁸⁾. Meanwhile, the advanced integration of EC/EU was entered as in facts; the need for fiscal union seems to reiterate context in the post-common currency implementation time (Andrei, 2009b).

To be added to these above that reshaping the integration dynamic on two stages also wipes the primary model's *frontiers* between each of stages – a complex inter-condition of integration components of every development moment comes instead. The true separation between the newly settled “two stages” rather consists in:

- the *incipient integration* basing on the *customs union* picture; customs union together with its precedent free trade area are the *key concepts* of this section;
- the *advanced integration* basing on the *common (unique) market* concepts; *economic convergence* and *optimum currency area* are the *key concepts* of this other section (Andrei, 2009a).

3.2. The optimum currency area

There is a new precision to be made: the *optimum currency area* (OCA) isn't to be mixed up with terms like “Euro-Zone”, economic-monetary union and “the seventies” (that all mean the same). The OCA is a Mundell-McKinnon (Mundell, 1961, McKinnon, 1992) origin concept that translates an open view upon the euro currency – as a nominal anchor -- outside the Euro-Zone and even outside the EU area – as contrary in a way to the integration trend that economically “closes” the integrated area.

3.3. The “non-liberal” Union

Recall from the above first paragraph end the idea of the “second European economics”. It is paradoxical that an European Union once started from a hundred percent political initiative currently keeps no political thinking

bias, not even for the presumable “free market” ideology – recall that communist regimes, acting contrary to this ideology, were continuously emphasising their ideology and its “superiority” together with every programme option on all time terms, but also recall how strongly the same States, as post-communist States in the early nineties had acted as contrary, for the market economy. The EU slightly, even unnoticeably skipped all debates between liberalism and its opposite, here preferring the pragmatic logic: market and corresponding competition stay *sine qua non* needed to ensuring economic efficiency, growth-development and welfare producing; though, it is the same for differentiations of all kind resulting from market functioning: see regional, individual and for groups on all performings. But the essential difference is between these differentiations acting within a national territory or within a States integrated area: the last faces as much danger of des-integration, as its member States were initially free for their joining together.

The solution here found to the unacceptable welfare and development inter-States and inter-regions differentiation is the one of Tsoukalis (2000) type – see “accomplishing the customs union’s aims by the (next) common market stage structure”. In a similar order, the liberal approach’s inconvenients are assumed to be fought by the other non-liberal one – namely, through interventionism, policies, here including structural and social policies, funds, including structural funds, and approaches. Concretely, the non-liberal regional development is aimed to correct social inconvenients of the liberal approach of the common-unique market.

4. The current development of the European integration

And recall the last lines above for stressing the idea that even a presumable perfect market functioning would be assumed to induce problems in the social area. But our common market isn’t achieved either and despite the highest degree of integration within the Euro-Zone and EU area ever atteint as world-wide, there is still enough to do about (Yves Thibault de Silguy, 1998).

4.1. Imperfections of the unique market: a general view

We just mentioned about the Euro-Zone and EU, and the idea of a difference in terms of integration degrees already starts clarifying. However, the same is similarly about within the Euro-Zone alone, as properly called “economic and monetary union” in the Balassa’s terms – member national economies are not (yet) perfectly convergent between each-other and individual economies still work in different phases of the business cycle. The current

international economic crisis⁽⁹⁾, in a complete and so correct evaluation on the European area, is certainly much more than some States' negligent over-indebtedness – at least, this might hide a precipitate States' intervention on compensating hugely imbalanced private capital outflows and it will be their causes to be searched the really relevant point. Differences in national member States' economic competitiveness are certainly causing part of this kind of current phenomena – and this might become a new example for the Balassa's model's error on placing the common market as the third-intermediary stage of the integration developing.

Whereas these above suggest economic imperfections of the unique market, there are also to be highlighted aspects of the opposite side of the so far integration developed. See just a few of these as obvious as not looking favourable to all parts. A first example might be the foreign direct investments (FDI) inflows in the Central-Eastern European (CEE) countries, as former candidate countries to joining the Union – the old member countries of the EU, and especially the today Euro-Zone member countries had been dominant in the Central and Eastern European (CEE) countries' FDI portfolio for a good while. Then, in the 2004 and 2008 waves of the EU extending to its Eastern side, the same FDI flows sharply dropped down (Andrei, 2008). Or, the explanation of such an event starts where FDI are likely to be considered the internalization of the international competition imperfections and white spots – joining the unique market and its competition curb the FDI process and flows and they are expected to lower even on longer terms.

Another example comes as related to what is happening to the FDI Western-Eastern flow of the EU region, as a whole: some *multinationals* move their fillials within the EU region or off, for the same profound reason of the regional market competition regaining that throughs out the previous investor's specific advantages in a country, region or part of the region – see the examples of previously lower wages and salaries and/or (basic) prices of raw materials in the host countries, as compared to the FDI source countries, that vanished in time⁽¹⁰⁾. And the list of examples is enough able to continue here, but more important to be here extracted is that an imaginable “perfect competition” on the EU (or just Euro-Zone) market would get similar to the image that David Ricardo had on the international trade about two century time ago: producers and exporters of the region would easy work just home and get their revenue and good profit on a stable price area, no investing abroad – now, within the Union region – needed and existent fillials would be eliminated – or re-directed abroad, into the rest of the world, as alternatively, for the Union's case.

4.2. Post-economic and monetary union

Now recall our old approach of the fiscal union and its comparison to the already done monetary approach (Andrei, 2009b). This is the advanced integration phase, the one in which Europe already becomes a distinct space in this world and the one in which – see the above (2) paragraph – there are events pressing on national initiatives of the EU Member States (Andrei, 2009a). The monetary approach took several decades to bring in the common currency and so the last stage of the Balassa's model. But there might be also another debate in this picture: could this monetary union stage be only common currency based, and not alternatively base on national currencies – as in the EMS picture, that was also able to support a coordinated behaviour of those currencies ? So, the conceptual entity difference between the *one-common* and *plural* money that is the *national currencies* alternative is one of the most obvious things in the today Europe, as similar as the Balassa's model's frontier between stages.

In other words, the frontier between EMS and common currency – nearby the larger one between the incipient and advanced integration phases – witnesses that only the common currency drags in the *central bank* type authority for the Union, that is the EBC. The last “absorbs” the central banks of the Euro – Zone Member States into its subordination, more or less as in the American Federal Reserves' way and keeps as primary political objective the *price stability* inside the Zone – actually, this is the *Euro currency's management* before all. In such an order, this is the specific banking status and what all central banks do for their afferent territories (national and/or federal) in the post-war and present economy – this is the ECB for Euro and the Euro – Zone, as well.

Or, despite already told (Andrei 2009b; 2010), it has to be reiterated that this is the very key institution of the newly advanced phase of the integration. The presumable full status of the economic and monetary union's central bank equally includes an equal part cooperation with the *Union's (...) government* – as well as in all State and State federation types structures. Or, here there is the specific of our Union and the way that events push States' initiatives and facts in the current period: the ECB here works together with Member States' governments (instead of the Union's government). All central banks face enough difficulties in this corporatist way of “equal part” relationship with corresponding government – in the same order, but different circumstances, it is even harder for the ECB to deal with a number of national governments in managing the common currency. The Member States' governments have neither a common agreement to represent them vis-a-vis the ECB, nor any other formal structure that could make them a consistent and unitary whole – the truly

rational lonely alternative of this “vicious plurality” here remains the Union’s Government that formally is the European Commission (EC).

Or, the last exerts a kind of “residual” governing, as regarding the common currency management, despite that the EC, as all governments in this world, subordinates the Union’s budget activity – this is not just formal, but real fact, as taken together with that the EU’s budget is itself a “residual” budget in the area. Its tasks limit to funding some EU’s policies, here including the Common Agricultural Programme (CAP) and regional-sustained development. The ECB’s, EC’s and EU’s budget’s inter-relationships disclose that, despite the high stage of integration currently developing on this continent, the real political power inside this Union belongs to individual Member States, as similarly to the pre-integration moments of the immediate post-War and even to pre-War times. And there are not even all EU Member States fairly sharing this political power, but super-powers come back on their old positions. See especially the crucial moments of this international financial crisis, in which no EU’s voice, but the ones of Germany and sometimes of France.

Thirdly, the same EC, ECB and EU’s budget context here rises a question that comes for the first time in the world history: To whom the common currency really belong? Alternative answers naturally being: Member States or their Union legal entity. Whether the answer points to the previous, this is what we actually have and our above description points to a tissue of contradictions of, plus an expectable come-back of the national currencies, be it the way of the former EMS – but this is just shifting two sets of contradictions, the current one here above described and the former one related to the nominal anchor, as perishable and so condemned as much as it already was once; this would be just a turning the history clock back.

Alternatively, whether the answer to that question points to the Union, this is the direction that current events press this time in. First, the EC will strengthen and the Union will so become a federative government structure; the EU’s budget will strengthen at the same by its restructuring from its current residual state; but budget relates to the fiscal system, that here implies the fiscal union, as the exact financial translation of this new order of facts starting from a Union capable to manage its own currency⁽¹¹⁾. It is certain that this new post-monetary approach will take a new couple of decades and the political power structure is here assumed as drastically restructuring (Andrei, 2009b), but the unknown of this development remains in the Union’s authority’s specific weight – the one currently feeding a good part of the already born and vivid Euro-skepticism throughout the area.

Both alternative options are now called to answer a common question: “Believing or not in this (kind of) integration?” The presumable answers, in my

view, will come specifically close to the ones related to the current crisis: did integration contribute to this, in its own way? Does the “Euro-Zone crisis” prove the inconsistency or incomplete EU’s monetary approach up to 2002? Is the presumable fighting of this crisis assumed to step on the integration’s requirements, or, on the contrary, to stop or step-back from this process, as a false and injurious future?

5. About the proper end of the integration process

Recall from above that the alternative non-EU and EFTA type integration is likely to exclude any terms of development, evolution and long-term; on the contrary, the EU integration sees its contradictory development in each Balassa model’s stage, moment and important zone of acting. Since the wrong answer about ending integration together with implementing the monetary union, the same question automatically re-rises. It is for a paper like this, basing on the primary integration model’s criticizing, to complete by its own answer. So, when the European integration would be assumed as fulfilled?

Unfortunately, it isn’t yet the moment of such an answer, but the one of other two preliminary precisions. Firstly, as this EU type integration overpasses the economic area of judgement, the same for this moment that is here searched for. Secondly, there will be an economic, administrative and governing structure to talk about and here recall the way that – on another plan of the same facts – even democracy shouldn’t be called to renew or re-invent its forms. So the governing structure, that fits both the integration’s appropriate end, as aimed, and democracy preserved on appropriate and verified forms. Let us recall that today the EU proved original in the “right way” by succeeding to implement this new type of currency, but its “originality” now prolongates to the “wrong way” of supporting it in the default of some basic tools of the latest, like treasury, central budget and certainly, a well to do government working this way in context.

The conclusion on this above is just one: the *States-federative* structure; no alternative end of the process, except for continuing on an endless contradictory context and series of facts – or these facts include the current situation in which the EU documents seem to avoid any debate and perspective analysis about, here including the fiscal union hypothesis. The end and accomplishment of integration is supposed to come when no any more contradictory pressure of events. As for the past, this new States formation was born conversely than all the other State or federation entities of the world: the central bank – monetary authority – first, for a government – political authority – to come later on, and this to play “equal part” with the monetary authority for

managing the formation's money. This formation would be expected to reach its own identity step by step and this is institutionally complete when there will be all: *government, central bank, money, strong budget and unitary taxation* – or, at least this is what we can currently see around. Of course, the unitary taxation identifies with the *fiscal union*, in which's picture taxes will be paid to Brussels first, and then to Bucharest, Sofia and Berlin, and these latter as rather local taxes, in a new Union's fiscal structure – all these meaning that reinforcing the Union means something we don't like to call "re-centralization".

The last – directly meaning shifting the State authority position to the second level of power – is, more precisely, what strenghtens the contrary pressures of Euro-skepticism, nationalism and anty-Unionism. We live in the period in which these opposite pressures – in favour and contrary to the integration achieved – seem rather comparable, but this might remain meaningless for even the immediate future – here recall that once, in sixties and early seventies the non-EU type integration seamed more successfull even in Europe, events went in the contrary sense just when even the today EU was just incipient integration itself at that time. The present is still able of producing enough surprises, in its turn.

That is why, once getting certain that the current trend of the EU type integration leads to the *States-federative* structure, I personally do not dare to really bet on such a future as similarly – the mass of current and next future developments is able to contain enough unexpected and unexpectedly powerful items acting in all possible directions. See the today crisis moments in which, on the one hand, the Union looks stepping back to national (i.e. German) power re-assertion, on the other the recent *Fiscal Treaty* – that might be able to be a right start on the long way towards the presumable fiscal union, as advanced integration on its old continuous way – came up as sustained by even the same German super-power in the area.

Finally, instead of a „prophecy” in the matter of European integration, let me have two more ideas below in this paper: the one is for a certain aspect, the other reveals another unknown. As for certainty, it is sure that a presumable integration advance on isn't to be taken as an "utopia" of the "old times", and foreseeing or expecting the federative structure in place would be no longer an issue of personal support or ideological option either, in a zone expected to sharp feelings at least on these both sides. Concretely, the Union is a new entity joining a political game together with the State entities, local public administrations and citizens and their groups. Or, this larger context would even allow the Union to act in favour of public administrations, regions and/or citizens in a kind of "theory of games" against the Member States' authority – as by consequence, citizens might not necessarily deplore the national

authority's political step back or hate the "supranational" idea when seeing their own interests in dynamics.

As for less certainty, recall from above the unique market's evolving. This is certainly the liberal part of the process, that is why this looks sometimes contradictory, other times silent advance and with no direct and visible linkages with the here above debated institutional developments. Market gives form to the European region's *demand-supply* on long terms and, irrespective of institutional developing, its component (segment) industries act on more or less market competition.

Notes

- (1) See a career that followed at the Yale University, at the World Bank, as consultant, and finally as a professor at the John Hopkins University (Wikipedia).
- (2) According to B. Balassa: *Towards a Theory of Economic Integration*, Kyklos International Review for Social Sciences, 17 pages, 1961. See also Balassa (1961).
- (3) In the communist style, as for instance.
- (4) And such an aspect comes to be deepened and detailed in the below paragraphs of this paper.
- (5) The curious anecdotic detail is that both classics of the European integration economics (Balassa and Viner) have fulfilled their scientific careers out of Europe, on the Northern American continent.
- (6) See a rather journalist speculation on such "companies taking an unfair profit" from the integration process for really concluding that it was just them initiating a whole integration, as very "convenient" for their own "restraint interests" etc.
- (7) Here recall the old communist ideology joining specific long term programmes of such a type.
- (8) Let us repeat that it was about the imminent collapse of all IMS founded on the nominal anchor that would be the national currency of a Member State (McKinnon, 1992).
- (9) That deserves at least a distinct description, like the one of this paper.
- (10) There is to be understood that the FDI condition is as complex and large that these basic prices can be taken as just part of it (Andrei, 2008).
- (11) The way that simply relates to the correspondence between the aimed money-price stability – the one that also includes a balanced depreciation on longer terms – to a maximum budget deficit of 3%, as related to the annual GDP.

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The long run relationship between foreign direct investments, exports, and gross domestic product: panel data implications

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Abstract. *Foreign direct investment (FDI) is defined as establishing a new company or branch of a foreign company by foreign investor or share acquisitions of a company established in host country (any percentage of shares acquired outside the stock exchange or 10 percent or more of the shares or voting power of a company acquired through the stock exchange (UNCTAD, 2012))⁽¹⁾. This study investigated the long-term relationship between FDI and export volume, FDI and Gross Domestic Products (GDP), and export volume and GDP through cointegration tests. It is conducted the panel data analysis using data for the period of 2000-2010 from 15 countries making direct investment in Turkey regularly since year 2000. Panel unit-root tests showed that variables are stationary for the first difference level. Residual based and error correction based cointegration tests revealed that there is long-term relationship between FDI and export volume, FDI and GDP, and export volume and GDP.*

Keywords: FDI; GDP; export volume; unit root; cointegration.

JEL Codes: C, O1.

REL Code: 10F.

1. Introduction

Economic and social benefits of FDI to host countries may be increased employment, improved performance, higher productivity, transfer of capital and technology, improved managerial skills (Daniels, Radebough, Sullivan, 2009, Karagöz, 2007, Gür, Akbay, 2007, Harrison, 1994, Zhang, 2001). Therefore, FDI may be regarded as having positive effect on growth and exports. As proposed and supported by Hsiao and Hsiao (2006) there exists triangle relationship between FDI, export and growth. This means that FDI has both direct and indirect effects on growth through exports. Besides that, FDI inflows and growth may be interrelated since FDI could be attracted to the growing economies (Hsiao, Hsiao, 2006).

FDI and export are also related with each other however, the relationship may be positive or negative depending on whether FDI is market seeking or efficiency seeking (Hsiao, Hsiao, 2006). Some studies (Lipsey, Weis, 1981, 1984, Anwar, Nguyen, 2011) indicated that FDI and export volume are complementary. Thus, FDI and export volume also may be regarded as interrelated.

Moreover, there exists a relationship between export volume and growth. Export-led growth model proposed that exports could affect the output level and the rate of economic growth (Dritsaki, Dritsaki, Adamopoulos, 2004). On the other hand, economic growth could lead to improved skills and technology, which in turn creates comparative advantage for the country that facilitates exports. Hence, a growth-led export is also possible (Giles, Williams, 2001). There is no consensus in the literature on whether export leads to growth or growth influences export. Besides that, bidirectional relationship or no causal relationship between exports and FDI is also possible (Giles, Williams, 2001).

Therefore, the relationship between FDI, GDP and export is unclear. Studies focusing on the long-term relationship between FDI, export volume and gross domestic product (GDP) revealed inconsistent findings. Besides that, most of the studies have conducted on FDI for developed countries. Thus, there is a lack of research on developing countries. In addition, more research focusing on home country based analysis rather than aggregate FDI may be beneficial.

From these points, the purpose of this study is to examine the long-term relationship between FDI and export volume, FDI and GDP, and export volume and GDP through cointegration tests. The study is conducting on FDI inflows to Turkey from 15 countries⁽²⁾ that made direct investments in Turkey for the period of year 2000-2010.

2. Relationship between FDI, GDP and Exports

Many studies (Alfaro, 2003, Borensztein, Gregorio, Lee, 1998, Johnson, 2006, Vu, Gangnes, 2007, Mottaleb, 2007, Hsiao, Hsiao, 2006) have provided empirical support for the direct effect of FDI on growth whereas some other studies (Vuksic, 2005, Kutun, Vuksic, 2007, Lipsey, Weis, 1981, 1984, Anwar, Nguyen, 2011) found indirect effect of FDI through exports. Moreover, the relationship between FDI and growth varies from country to country. For instance, Zhang (2001) investigated the long run relationship between FDI and growth for 11 developing countries in East Asia and Latin America. The results of cointegration tests indicated that there is bidirectional causality between FDI and growth for two countries and unidirectional causality for three countries.

Liu, Wang, and Wei (2001) examined the causal relationship between foreign trade and FDI inflows to China from 19 countries/regions during 1984-1998 through panel data analysis. The results of the study showed that growth in China's export volume affected by FDI inflows to China.

Dritsaki et al. (2004) examined the long run relationship between FDI, growth, and exports through cointegration tests. They investigated FDI inflows to Greece for the period of 1960-2002. Their study revealed that there is a long run equilibrium and causal relationship between those variables.

A similar study (Hsiao, Hsiao, 2006) investigated the relationship between FDI, export, and GDP for eight East and Southeast Asian economies through Granger causality test and panel data analysis for the period of 1986-2004. The results of the study showed that FDI influences GDP both directly and indirectly through exports. In addition, there is bidirectional causality between exports and GDP for the group.

Kutan and Vuksic (2007) investigated the effects of FDI on export potential on 12 Central and Eastern European countries for 1996-2004 period. The study showed that FDI increases local supply, which in turn causes an increase in export volume.

Another study (Miankhel, Thangavelu, Kalirajan, 2009) examined dynamic relationship between exports, FDI and GDP for six emerging countries through vector error corrected model. According to the results of the study, the main factor affecting GDP growth is FDI in India whereas it is exports in Pakistan. The study showed that exports affect GDP growth and output in long run in Mexico and Chile. However, the relationship between those variables differs for the two countries in the short run. The results of the study also revealed that there exists bidirectional causality between FDI and GDP in Malaysia. On the contrary, the study did not find any relationship between these variables in Thailand.

Nishiyama and Yamaguchi (2010) investigated FDI inflows from developed countries to developing countries and indicated that FDI leads to an increase in GDP of developing countries.

Another study by Ekinci (2010) examined the long run relationship between economic growth, employment and FDI for 1980-2010 periods for Turkey. Results of Granger causality test showed that there is a long run relationship between FDI and economic growth. A similar study (Erdal, Tatoglu, 2002) which is investigated FDI inflows to Turkey for the period of 1980-1998 revealed that market size, market growth rate, and openness to abroad have significant positive effects on FDI.

Another study (Vergil, Çeştepe 2006) investigated the affects of exchange rate, economic instability, the openness on FDI inflows to Turkey for 1992-2000 period through gravity model and for 1998-2001 period through time series analysis. The study showed that exchange rate and the openness have significant positive effects on FDI inflows. Results also showed that economic instability, which measured by GDP, has significant negative effect on FDI.

3. Turkey's share in world FDI inflows

When FDI inflows to developing countries are examined, Turkey seems to be an attractive destination among others between years 2002-2007. Table 1 presents Turkey's share of FDI inflows to developing countries. For the last decade, Turkey had the highest share of FDI inflows (4.1%) in 2006 among other developing countries. Then, Turkey's share started to decrease as it was 3.4% in 2007, 2.4% in 2008, and 1.4% in 2009.

Table1

FDI inflows to Turkey					
Year	FDI inflows to Turkey (Billion \$)	Change in FDI inflows to Turkey (%)	World FDI inflows (Billion \$)	Turkey's share of world FDI inflows (%)	Turkey's share of FDI inflows to developing countries (%)
2000	1.0		1401	0.07	0.4
2001	3.4	240	825	0.41	1.5
2002	1.1	-68	628	0.18	0.6
2003	1.7	55	566	0.30	0.8
2004	2.8	65	732	0.38	0.9
2005	10.0	257	986	1.01	2.8
2006	20.2	102	1456	1.39	4.1
2007	22.0	9	2100	1.05	3.4
2008	18.2	-17	1771	1.03	2.4
2009	7.6	-58	1114	0.68	1.4

Source: International Investors Associations (YASED, <http://www.yased.org.tr>).

According to Table 1, Turkey's share of world FDI inflows has similar trend with its share among developing countries. Turkey's share of world FDI inflows was 1.38%, the highest of all, in 2006 while it was 0.35% during 1989-1994. It remains over 1% until 2009, then it decreased to 0.68%.

FDI inflows to Turkey decreased as 58% in 2009. Total world FDI inflows also decreased (37%) in 2009. The reason for this was mainly the uncertainty in world markets because of the financial crisis that has occurred in 2008 in USA and has spread into other developed and developing countries. Since one of the most important factors that discourage FDI is economical and financial instability and uncertainty. FDI inflows to Turkey are mostly from OECD countries. A recession in these countries directly affects their foreign investments, which in turn leads to a decrease in FDI inflows to Turkey.

FDI can be regarded as a bidirectional flow. Since those countries that attract most of FDI generally are the ones that make most of FDI. For instance, in 2009, USA is the first in FDI outflows and FDI inflows in the world. Moreover, as it can be seen from tables 2a and 2b, China, France, Hong Kong, Germany, and Russia are among the first ten countries that both make and attract FDI. Among countries attracting FDI, Turkey ranked 53 in 2002 and 2003, 22 in 2005, 20 in 2008 and 32 in 2009. According to FDI outflows, Turkey had the rank of 44 in 2008 and 45 in 2009.

Table 2a

**The list of first 10 countries
(Inflow FDI)**

2009	2008	Country	Quantity (Billion \$)
1	1	USA	129.9
2	3	China	95.0
3	7	France	59.6
4	9	Hong Kong	48.4
5	4	England	45.7
6	5	Russia	38.7
7	17	Germany	35.6
8	15	Saudi Arabia	35.5
9	14	India	34.6
10	2	Belgium	33.8
32	20	Turkey	7.6

Table 2b

**The list of first 10 countries
(Outflow FDI)**

2009	2008	Ülke	Quantity (Billion \$)
1	1	USA	248.1
2	2	France	147.2
3	6	Japan	74.7
4	4	Germany	62.7
5	13	Hong Kong	52.3
6	11	China	48
7	10	Russia	46.1
8	14	Italy	43.9
9	7	Canada	38.8
10	17	Norvey	34.2
45	44	Turkey	1.6

Source: World Investment Report, 20th anniversary edition, United Nations Conference on trade and development, 2010.

Hence, FDI has many benefits to host countries, it is important to achieve sustainable increase in FDI inflows to Turkey. However, FDI inflows to Turkey have been decreasing and it seems that it is not sustainable increasing for a long time.

4. Methodology

4.1. Data sources

Various databases are used to gather the data required to measure the variables examined in this study. Export volume of Turkey to 15 countries are gathered from Turkish Statistics Institute (TUIK) (www.tuik.gov.tr), GDP values of countries are gathered from United States Department of Agriculture (USDA) (<http://www.ers.usda.gov/data/macroeconomics/>), FDI inflows to Turkey from each country is gathered from OECD database.

4.2. The model, analysis, and findings

Both time series and panel data analysis require some steps to follow. At first, it should be tested that whether the data is stationary or not. In panel data analysis the unit root test requires the determination of dependence among cross sections. Since the method of testing stationary of the data depends on the existence of dependence. There are different tests used for the case of independent cross-sectional units and for the case of dependent cross-section very. If the existence of dependence is rejected then first generation tests should be used such as Levin, Lin, and Chu (LLC, 2002), Harris and Tzavalis (H-T, 1999), Breitung (2001), Im, Pesaran, and Shin (IPS, 2003), Fisher type (Choi 2001) tests, and Hadri LM (2000) test. If cross-sectional units are dependent, second generation tests should be used such as Bai and Ng (2004), Moon and Peron (2004), Phillips and Sul (2003), Pesaran (2003, 2008), and O'Connell (1998) tests (Hurlin, Mignon, 2006).

The time series dimension (T) and the cross section dimension (N) are important issues in the analysis of panel data. There may be four cases related with time and size as (a) $N \rightarrow$ large, $T \rightarrow$ large, (b) $N \rightarrow$ large, $T \rightarrow$ small, (c) $N \rightarrow$ small, $T \rightarrow$ large, (d) $N \rightarrow$ small, $T \rightarrow$ small. Whether the results of cross-section dependence tests, unit root tests and cointegration tests vary for the four different cases have been examined using simulation tests. There have been a relatively rare number of studies examining the fourth case which is both T and N is small. Levin Lin, and Chu (2002) showed that when N is between 10 - 250 and T is between 5 - 250 LLC test may be more appropriate among other unit root tests. IPS test is not as strict as LLC test. Thus, for small samples IPS provides better fit. However, if T is so small, the test becomes weaker. If T is too larger than N, data will have the characteristics of time series.

In order to determine the long run relationship between FDI, GDP and export volume at first, we tested unit roots of the variables. The analysis is

conducted for both cases of existence and nonexistence of trends in the equations. Unit root tests show that variables have unit root meaning that they are stationary or not. The results of the unit root tests are provided in Table 3. As it can be seen from Table 3, most of the test results showed the variables are stationary for the first difference.

Table 3

Level and first difference unit root test results

		<i>Level unit root test results - I(0)</i>					
<i>Variables</i>		<i>LLC (t, p)</i>	<i>H-T (Z, p)</i>	<i>Breitung (λ, p)</i>	<i>IPS (z-t- tilde-bar, p)</i>	<i>Fisher (ADF - Mod. X², p)</i>	<i>Hadri LM (Z, p)</i>
<i>LnExport</i>	<i>With trend</i>	0.7066 (0.7601)	1.8828 (0.9701)	1.9586 (0.9749)	1.2984 (0.9029)	-2.7687 (0.9972)	9.6135 (0.0000)
	<i>Without trend</i>	-6.9662 (0.0000)	1.0144 (0.8448)	2.5724 (0.9950)	-0.7831 (0.2168)	-0.5380 (0.7047)	18.3819 (0.0000)
<i>LnFdi</i>	<i>With trend</i>	-5.2691 (0.0000)	-3.8236 (0.0001)	-1.8102 (0.0351 ^{**})	-2.4133 (0.0079)	0.9398 (0.1737)	1.9146 (0.0278)
	<i>Without trend</i>	-4.9979 (0.0000)	-7.8753 (0.0000)	-3.7551 (0.0001)	-1.4235 (0.0773 ^{***})	1.0863 (0.1387)	2.5230 (0.0058 ^{**})
<i>LnGdp</i>	<i>With trend</i>	-6.2684 (0.0000)	3.3296 (0.9996)	1.6444 (0.9499)	1.1020 (0.8648)	-3.2190 (0.9994)	8.7694 (0.0000)
	<i>Without trend</i>	4.0102 (0.0000)	1.0951 (0.8633)	3.0639 (0.9989)	0.3591 (0.6402)	-1.3953 (0.9185)	18.8476 (0.0000)

		<i>First difference unit root test results - I(1)</i>					
<i>Variables</i>		<i>LLC (t, p)</i>	<i>H-T (Z, p)</i>	<i>Breitung (λ, p)</i>	<i>IPS (z-t- tilde-bar, p)</i>	<i>Fisher (ADF - Mod. X², p)</i>	<i>Hadri LM (Z, p)</i>
<i>Ln_lhrac at</i>	<i>With trend</i>	-8.1603 (0.0000)	-3.7077 (0.0001)	-0.9849 (0.1623)	-5.0598 (0.0000)	11.9530 (0.0000)	-0.0316 (0.5126)
	<i>Without trend</i>	-3.12374 (0.0009)	-10.6064 (0.0000)	-6.0950 (0.0000)	-3.4836 (0.0002)	8.4132 (0.0000)	0.8113 (0.2086)
<i>Ln_DYSY</i>	<i>With trend</i>	-5.2628 (0.0000)	-7.7257 (0.0000)	-4.6519 (0.0000)	-4.9407 (0.0000)	11.2035 (0.0000)	-2.1332 (0.9835)
	<i>Without trend</i>	-5.4789 (0.0000)	-15.0105 (0.0000)	-6.7338 (0.0000)	-4.6027 (0.0000)	18.9599 (0.0000)	-2.7270 (0.9968)
<i>Ln_GDP</i>	<i>With trend</i>	-3.6635 (0.0001)	-1.3862 (0.0838 ^{***})	3.2529 (0.9994)	-3.7858 (0.0001)	0.4816 (0.3151)	0.6951 (0.2435)
	<i>Without trend</i>	-5.5142 (0.0000)	-7.2908 (0.0000)	-6.0416 (0.0000)	-2.9821 (0.0014 ^{**})	3.5296 (0.0002)	2.5118 (0.0060 ^{**})

All unit root tests are implemented with constant and trend in the test regression and take a unit root as different null hypothesis and alternative hypothesis. Null hypothesis of LLC, HT, Breitung test is (H₀) "panels contains unit root", alternative hypothesis (H_a) is "panels are stationary". (H₀) for IPS test is "all panels contain unit roots" and alternative (H_a) is "some panels are stationary". (H₀) for Fisher type test is "all panels contain unit roots" and alternative (H_a) is "at least one panel is stationary". (H₀) for LM test is "all panels stationary" and alternative (H_a) is "some panels contain unit roots". * indicates that null hypothesis is rejected at the significance level of 1%. ** indicates that the null hypothesis is rejected at the significance level of 1% (LM test) and *** indicates that null hypothesis for LM test is accepted at significance level of 1%.

As a second step, cointegration tests are conducted to determine the long run relationships between variables. We employed error correction-based cointegration tests for panel data suggested by Westerlund (2007) and residual based cointegration tests suggested by Pedroni (2004).

Residual based cointegration tests can be proceed under only some restrictive assumptions – such as dynamic homogeneity or local cross section dependence as in spatial autoregressive or moving average models for the case of $N \rightarrow \text{large}$ (>100) ve $T \rightarrow \text{small}$ (<10). The MonteCarlo simulations of Pesaran (2005) show that the cross sectionally augmented panel unit root tests have satisfactory size and power for relatively small values of T and N . For very small sample sizes ($N = T = 10$), truncated version of the cross-sectionally augmented IPS (CIPS) test and the cross sectional augmented version of Choi's inverse normal combination test show satisfactory size properties. The power of these tests critically depends on the sample sizes N and T , and on whether the model contains linear time trend or not. On the other hand, for the case of $N \rightarrow \text{small}$ (<10) and $T \rightarrow \text{relatively large}$ standard time series analysis such as seemingly unrelated regression analysis may be employed (Breitung, Pesaran, 2005).

Westerlund (2007) proposed four panel cointegration tests that are based on structural rather than residual dynamics. They do not impose any common restrictions. Two of them (G_t , G_α) are called as group-mean tests and the other two (P_t , P_α) are called as panel tests. These tests are based on structural base rather than residual dynamics as opposed to cointegration tests proposed by Pedroni (2004). Therefore, these tests don't impose any common factor limitation (Persyn, Westerlund, 2008). General formula of the cointegration test proposed by Westerlund (2007) is presented in equation (1)

$$\Delta y_{it} = \delta_i' d_t + \alpha_i y_{i,t-1} + \beta_i' x_{i,t-1} + \sum_{j=1}^{p_i} \alpha_{ij} \Delta y_{i,t-j} + \sum_{j=-q_j}^{p_i} \gamma_{ij} \Delta x_{i,t-j} + \varepsilon_{it} \quad (1)$$

In the equation (1) i represent the cross sectional data, t represents time, and ε_{it} is the error term. If the results of the analysis shows that if $\alpha_i < 0$ it means that there is error correction and y_{it} and x_{it} are cointegrated. If $\alpha_i = 0$ there is no error correction and the variables are not cointegrated. Two test of Westerlund – called grouped-mean tests (*shown as* G_t and G_α) test the null hypothesis of no cointegration for all cross-sectional units against the alternative hypothesis that there is cointegration for at least one countries (*null hypothesis* $H_0: \rho_i = 0$ for all i versus $H_1^G: \rho_i < 0$ for at least one i). Other two tests which are called panel tests (*shown as* P_τ and P_α) test the null hypothesis

of no cointegration for all cross-sectional units against the alternative hypothesis of cointegration for all cross-sectional units (*null hypothesis* $H_0 : \rho_i = 0$ for all i versus $H_1^P : \rho_i = \rho < 0$ for all i) (Demetriades, James 2011, Persyn, Westerlund, 2008).

Table 4

Results of the cointegration analysis for exports and FDI

$$\ln(\dot{I}hracat_{it}) = \mu_i + \beta_i \ln(DYSY_{it}) + \varepsilon_{it}$$

<i>Statistics</i>	<i>Value</i>	<i>Z-value(significance)</i>
G_t	-10.660	-38.628* (0.000)
G_α	-6.410	0.565 (0.714)
P_t	-7.736	-1.999* (0.023)
P_α	-6.853	-2.108* (0.018)

Table 5

Results of the cointegration analysis for exports and GDP

$$\ln(\dot{I}hracat_{it}) = \mu_i + \beta_i \ln(GDP_{it}) + \varepsilon_{it}$$

<i>Statistics</i>	<i>Value</i>	<i>Z-value(significance)</i>
G_t	-6.037	-18.487* (0.000)
G_α	-8.601	-1.000 (0.159)
P_t	-11.469	-5.684* (0.000)
P_α	-7.124	-2.338* (0.010)

Table 6

Results of the cointegration analysis for FDI and GDP

$$\ln(DYSY_{it}) = \mu_i + \beta_i \ln(GDP_{it}) + \varepsilon_{it}$$

<i>Statistics</i>	<i>Value</i>	<i>Z-value(significance)</i>
G_t	-13.797	-52.296* (0.000)
G_α	-7.441	-0.171 (0.432)
P_t	-27.425	-21.434* (0.000)
P_α	-6.988	-2.222* (0.013)

Null hypothesis $H_0 : \rho_i = 0$ for all i versus $H_1^G : \rho_i < 0$ for at least one i , and $H_0 : \rho_i = 0$ for all i versus $H_1^P : \rho_i = \rho < 0$ for all i .

Four tests statistics proposed by Westerlund (2007) test whether two variables move together in the long run or not. For small panel data sets the results may be sensitive to some parameters like lag length and kernel width. When short term dynamics are restricted and short kernel windows are used, G_α statistics don't reject "there is no cointegration" hypothesis (H_0) (in Table 4 $G_\alpha : 0.565 (0.714)$; in Table 5 $G_\alpha : -1.000 (0.159)$; in Table 6

G_α : -0.171 (0.432)). According to other test statistics, it can be concluded that related variables are cointegrated.

Pedroni (1997) proposed seven test statistics which are different from statistics proposed by Westerlund (2007). Four of them (*Panel v*, *Panel rho*, *Panel PP*, *Panel ADF*) show in-group test statistics and the other three (*Group rho*, *Group PP*, *Group ADF*) show between group test statistics. Pedroni (1997) indicated that when $T > 100$ all test have same power. However, $T < 20$ panel-ADF and group- ADF test statistics provide more significant results.

Table 7

The results of pedroni cointegration tests

<i>The results of cointegration test between export and FDI</i>					
<i>Trend assumption: No deterministic trend</i>			<i>No deterministic intercept or trend</i>		
<i>Statistics</i>	<i>Value</i>	<i>Significance</i>	<i>Statistics</i>	<i>Value</i>	<i>Significance</i>
<i>Panel v</i>	-1.195669	0.8841	<i>Panel v</i>	-1.898237	0.9712
<i>Panel rho</i>	0.885012	0.8119	<i>Panel rho</i>	-3.847983	0.0001
<i>Panel PP</i>	-1.004984	0.1575	<i>Panel PP</i>	-4.773143	0.0000
<i>Panel ADF</i>	-2.189374	0.0143	<i>Panel ADF</i>	-4.949674	0.0000
<i>Group rho</i>	2.546558	0.9946	<i>Group rho</i>	1.026202	0.8476
<i>Group PP</i>	0.081351	0.5324	<i>Group PP</i>	-3.079519	0.0010
<i>Group ADF</i>	-0.541356	0.2941	<i>Group ADF</i>	-3.318541	0.0005
<i>The results of cointegration test between export and GDP</i>					
<i>Trend assumption: No deterministic trend</i>			<i>No deterministic intercept or trend</i>		
<i>Statistics</i>	<i>Value</i>	<i>Significance</i>	<i>Statistics</i>	<i>Value</i>	<i>Significance</i>
<i>Panel v</i>	1.522101	0.0640	<i>Panel v</i>	-1.441561	0.9253
<i>Panel rho</i>	0.001996	0.5008	<i>Panel rho</i>	0.018361	0.5073
<i>Panel PP</i>	-2.320487	0.0102	<i>Panel PP</i>	-1.472580	0.0704
<i>Panel ADF</i>	-5.322458	0.0000	<i>Panel ADF</i>	-1.107627	0.1340
<i>Group rho</i>	1.387814	0.9174	<i>Group rho</i>	2.831418	0.9977
<i>Group PP</i>	-2.759424	0.0029	<i>Group PP</i>	-0.876507	0.1904
<i>Group ADF</i>	-7.447482	0.0000	<i>Group ADF</i>	-0.777268	0.2185
<i>The results of cointegration test between FDI and GDP</i>					
<i>Trend assumption: No deterministic trend</i>			<i>No deterministic intercept or trend</i>		
<i>Statistics</i>	<i>Value</i>	<i>Significance</i>	<i>Statistics</i>	<i>Value</i>	<i>Significance</i>
<i>Panel v</i>	-1.518229	0.9355	<i>Panel v</i>	0.276096	0.3912
<i>Panel rho</i>	-2.218719	0.0133	<i>Panel rho</i>	-4.239070	0.0000
<i>Panel PP</i>	-5.088501	0.0000	<i>Panel PP</i>	-4.959232	0.0000
<i>Panel ADF</i>	-5.712873	0.0000	<i>Panel ADF</i>	-5.338893	0.0000
<i>Group rho</i>	0.630470	0.7358	<i>Group rho</i>	-0.137327	0.4454
<i>Group PP</i>	-7.720140	0.0000	<i>Group PP</i>	-4.379672	0.0000
<i>Group ADF</i>	-6.910554	0.0000	<i>Group ADF</i>	-6.084279	0.0000

The results of Pedroni cointegration test statistics are presented in Table 7. According to the results, there is a statistically significant cointegration between exports – FDI, exports – GDP, and FDI – GDP. In other words, these variables move together in the long run.

5. Conclusions

The relationship between FDI and trade volume is complex in its nature since which one affects another is not certain. It is not easy to determine whether FDI and trade are substitutes or complementary (Liu et al., 2001). Most of the industrial companies still use traditional market entry methods. They prefer trade to other entry methods since it is perceived as a less risky and easier entry method according to FDI and other entry methods. Through trade, companies gain experience and knowledge about foreign markets' economical, political, and social environment. Then, they perform FDI. The purpose of FDI is not solely meeting the demand of the host country but also exporting to other countries. Thus, FDI may be an essential factor contributing to host country's exports. From this point, while initially trade leads to FDI afterwards FDI leads to more trade. It seems rational to expect a similar relationship between FDI and GDP. Our results showed that export – FDI, export – GDP and FDI – GDP are cointegrated in the long run. Thus, the results supported above mentioned theoretical propositions.

Notes

- (1) See http://www.economy.gov.tr/upload/380BE181-C6CE-B8EF-37B940FAAD239BA2/FDI_Law.pdf.
- (2) Austria, Belgium, Canada, Denmark, France, Germany, Ireland, Italy, Japan, Netherlands, Spain, Sweden, Switzerland, United Kingdom, United States.

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Spending Power and match attendance: is Romanian football a normal or an inferior good?

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Abstract. *Drawing on a database containing information on spending power of individuals and match attendance in the national football championship for 2006-2010, this research has the purpose to find out whether Romanian football is a normal or an inferior good. For making the correlation between the two economic proxys, the bivariate analysis function in SPSS was used. The results show a significant and negative correlation between the variables, indicating that football is an inferior good. In the discussion section, the paper presents some of the reasons that made local soccer reach inferiority and shows suggestions that could be implemented in order to not allow further coverage and attendance losses to occur due to the inferior status. The paper contributes to a better understanding of the local football industry, the latter one lacking economic and business oriented management which could make it more performant.*

Keywords: championship; football; inferior good; match attendance; spending power.

JEL Codes: C20, D10, L83, M31.

REL Codes: 5K, 9C, 14G.

1. Introduction

Attendance at football matches is a function of the prices clubs charge for admission into the venue (Feehan, 2006). While adding a variable regarding consumer wealth – such as earnings, spending power, wage rate, or unemployment, for example – in the demand function, it can be determined whether attendance at a football game is a normal or an inferior good. A normal good has a positive relationship, meaning that an increase in the consumers' earnings leads to an increase in demand, while an inferior good has a negative relationship, thus an increase in earnings translating into a decrease in demand. Hence, the income elasticity for inferior goods is negative (Downward, Dawson, 2002). For example, if the demand for match tickets has an income elasticity of 3.6%, then a 1% increase in costumer incomes will result in a 3.6% decrease for the demand of match tickets, thus a 3.6% decrease of attendance.

The purpose of this paper is to find out whether Romanian football is an inferior or a normal good. Not the entire structure of Romanian football is analyzed, but the research focuses on Liga 1, the top tier of the Romanian professional football league. Since the 2006-2007 season, eighteen teams participate yearly in Liga 1, a competition which is tied to the lower tiers through a promotion-relegation system. The hypothesis is that Liga 1 football is an inferior good, as previous research has shown that in weakened economies – such as the Romanian economy at the moment – people tend to increase the consumption of sports when their income drops (Roșca, 2012).

2. Literature review

Existing literature was not able to clear whether professional sports spectating was a normal or an inferior good (Feehan et al., 2003). Cairns' (1990) analysis shows that whereas basketball and Australian-rules football are normal goods, hockey is an inferior good. Matters get complicated for football (soccer), for which Cairns also couldn't tell what type of good it was, due to the mixed results obtained.

Downward and Dawson (2002) believe that it is difficult to estimate the status of spectator sports, and that results should not be taken for granted. Indeed, a whole of other aspects non-identifiable with quantitative approaches may influence ticket demand. As Cairn showed, different sporting disciplines can have different elasticities. This made Baimbridge et al. (1996) believe that spectator sports are both normal and inferior goods, depending on the games that are analyzed. For example, while Bambridge et al. find rugby league

matches to be a normal good, Bird (1982) shows that association football is an inferior good. Then, the period analyzed in the research may also bias results. Changes in the quality of life, once, and in the quality of the offered spectator sport, twice, may provide different results if the research is being made at different dates, especially if the distance between the researches is considerable. Therefore, qualitative approaches should also be taken into consideration when discussing the issue of elasticity in sports.

On the one hand side, spectator sports have been traditionally associated with inferior goods, the relationship between attendances and income levels being often an inverse one (Westerbeek, Smith, 2003). As people get wealthier, they afford to buy other forms of leisure as well, such as going on a trip, going to the movies, or acquiring a laptop or a TV set with a DVD player, and are less interested in going to sporting events. During the history, at least up to the 1990's, attendances at sporting events were formed, in high proportion, by the working-class (Jones, 1992). The social structure of attendances slightly changed over the last two decades, with the exclusion of the middle-class (Collins, Kay, 2003, Wagg, 2004), but sports often continued to maintain their inferior good status, although Szymanski (2009) believes that English football has lost its inferiority, becoming a normal good, mainly after the changes implemented through the Taylor Report took effect.

Bird (1982) tried to find out the full cost of attending a football game, by taking into consideration transport costs in order to determine the whole expenditures a fan has with going to a game. In his paper, Bird created a demand equation for English Football League attendances between 1948 and 1980. The low price elasticity for demand of football tickets, and the negative income elasticity determined Bird to mention that attending football games is an inferior good. However, some researches made since Bird's paper question the validity of his thesis. Dobson and Goddard (2011) believe that using only income as a variable is not enough to determine whether this was the influence which caused attendance figures to change. Feehan (2006) also thinks that the decision regarding normality or inferiority should be taken only after determining the total cost of attending a game, thus including not only the ticket cost, but also match-related costs, such as transport costs, participation-related costs (of buying club-branded memorabilia or refreshments while at the game, or parking costs), and opportunity costs. Several other factors apart from consumers' income may influence attendances to change, such as weather conditions, broadcasting or non-broadcasting of the game, quality of the opponent or the team's success in recent games (Garcia, Rodriguez, 2002). Bird's approach, encouraged by Feehan, was taken up by Marburger (1997),

who demonstrated that complementary consumption (consumption related to attending a football game, thus the rest of costs involved in spectating excepting ticket purchase costs) has chances to produce inelastic demand.

3. Methodology

Economic proxys used in research to test the status (normality or inferiority) of spectator sport goods vary. In Bird's (1982) study, real consumer expenditure is aggregated from different separate costs of attending a match, in order to form the price of attending a match, whose correlation with income is then tested. Borland's (1987) proxy is represented by regional average earnings, and Hynds and Smith (1994) divide average wage rates by a retail price index to show that attendance at cricket tests is only insignificantly influenced by income. Simmons (1996) uses wage rates as well, but showing that these strongly and positively influence attendance at football games, while Jenet (1984) and Baimbridge et al. (1996) both use unemployment, coming however to different results: the first shows that football is a superior good, while the second shows rugby is an inferior good. A handful of proxys can be used as long as they are indicators of the spectator's quality of life, most of the variables concerning fan's wealth. Such being the case, the independent variable used for this study is spending power. The assumption is that spending power has an influence on the dependent variable: average match attendance. To test the relationship between the two variables, a bivariate correlation was done in SPSS.

No final data on spending power was found, so raw data had to be computed in order to obtain the necessary information. Spending power (2006-2010) has been calculated through the consumer price indices (CPI) provided by the Romanian National Institute of Statistics (2011). A base and a target year were first chosen. Then, the CPI of the base year was divided to the CPI of the target year, and the result was multiplied by 100. The difference to one hundred represented the spending power modification for that year. Each time, the difference between the base year and the target year was exactly one year, which made it possible to have five pieces of information on spending power, for each football season between 2006 and 2011.

The second indicator, average game attendance per season, was obtained by dividing the entire number of spectators who attended the Liga 1 matches during a season to the total number of games played in that season: 306. Attendance data was collected from the websites www.transfermarkt.de and www.onlinesport.ro. Once data for the years 2006-2011 was found for both variables, SPSS was used to correlate the two variables.

4. Data analysis and discussion

The results of the analysis, highlighted in Table 1, confirm the research hypothesis, Romanian football being indeed an inferior good. The figures in Table 1 show that there is a reasonably strong and negative correlation between spending power and game attendance. The Pearson correlation is close to 1 ($r = -,829$), which means that the modifications in one variable are powerfully tied to the modifications in the other variable. Next, the Pearson correlation is negative, which means that the two variables are indirectly proportional. Thus, the second variable transforms in the opposite direction of the other's variable modification.

There are two possible meanings of the results:

I. The spending power of consumers decreases when they buy match tickets and increases when they stop going to matches;

II. If the spending power of Romanian consumers increases, the attendance at football games would decrease.

Table 1

Correlation between the spending power (Var 1) and the average game attendance in Liga 1 (Var 2)

		VAR00001	VAR00002
VAR00001	Pearson Correlation	1	-.829
	N	5	5
VAR00002	Pearson Correlation	-.829	1
	N	5	5

As the first meaning is obvious (spending power increases when people save money from going to matches and decreases when they spend the money), I shall concentrate on analyzing the second meaning. The inferiority of Romanian football means that people who go to the matches of Liga 1 do so because they don't afford to buy more enjoyable entertainment. Would they have more money, consumers would quit attending football matches for buying better entertainment. The choice of up-market leisure activities is encouraged by several factors that changed the local landscape of spare time consumption:

- the poor quality of the game and its surrounding stakeholders, hence the low value fans can extract from spectating a football match;
- the technological developments which turned football fans into digital devices (smartphones, tablets etc.) and online entertainment fans;

- the increasing rows around Romanian football and the tabloidization of the local sporting press, both annoying fans;
- the emergence of a „mall culture” during the local economic boom of 2003-2008 which influenced consumer preferences, leading to people spending more time in shopping and entertainment malls;
- the foreign direct investments done in Romania during 2003-2008, which led to the emergence of foreign entertainment brands on the local market;
- the freedom of choice from a rich supply of entertainment activities Romanians earned after the fall of the Communist regime;
- and, last but not least, the severe effects the latest financial crisis had on households’ spending power.

The aggregated effect of at least two or more of these changes led to a shift in consumer tastes, which are no longer oriented to football consumption as they used to be several years ago. Facing this crowded marketplace (Byon et al., 2010; Rein et al., 2006), which provides consumers with a variety of leisure activities to choose from at the expense of football, sport marketers need to use relationship marketing not to lose costumers. Relationship marketing can increase fan loiality in several ways. For example, it can help by adding value to the brand of a club. Creating a meaningful and rich brand identity, which to offer positive brand associations, would lead to an improved brand awareness and a higher brand fidelity, that can make fans support their beloved team even when faced with other possibilities of entertainment, because they can draw benefits from cheering for the football brand. However, for this to happen, some changes have to occur in the way Romanian clubs are run. More value has to be offered to costumers, thus, first of all, a better sporting performance has to be produced. This requirement is hard to meet when not less than thirty managerial changes are made during a season, as was the case in 2010/2011 (Gazeta Sporturilor, 2011). The boards of the clubs shall guarantee steady positions to the coaches, if not for a sequence of years, then at least for one season. If disrupted by too many managerial changes over a short period, players will be confused and they won’t perform good on the pitch, which will lead to fan unsatisfaction. Club directors should create a supportive environment for their managers. The tool for doing this is internal marketing, which can consolidate the inner relationships in the club and set the standards for performance.

5. Conclusions and further research

The short-run nature of this research does not produce much variation in data concerning spending power. For a more reliable outcome, data spreading over more years, even decades, should be used, as economic variables act on long-term: the economic situation of a community is influenced by changes accumulating over more years, while sport-related changes, such as the decision to attend a game or not, are short-term influenced, like when a team plays a good game which convinces the fans to attend the game next week as well. Also for a more reliable result, a multivariate research may be done, with other variables apart from spending power being correlated at the same time (for example average hours spent per day in front of the television or on social networks, money spent on other forms of entertainment, like cinema, theatre, or on going out etc.), so as to see which of them really has an impact on consumers' decisions to attend games or not.

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The readiness of employees for the future society. Case study

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Abstract. *The main components of sustainable development – economy, ecology and equity – have a special significance to contemporary cities, given their huge consumption and distribution of goods and services, with an ecological impact exceeding their own location. The sustainability challenge to cities, going hand in hand with the quality of life, makes it necessary to consider a series of social, economic, ecological, cultural, political and institutional measures adapted to both global trends and local characteristics.*

Based on these overall considerations this paper aims to investigate the implications of smart solutions for sustainable city development and to gauge the readiness of employees for smart solutions. These solutions concentrate on the core area of the city administration, education, health, transportation, etc. With this purpose in view, the framework for a case study is built up employing a quantitative and qualitative research for a mid-sized Romanian city. Exploratory research techniques combined with applying a survey methodology have been used for studying the preparation of employees for the smart solutions. A set of derived procedures have been employed for collecting and analyzing more than 400 observations from a heterogeneous population. They have been correlated with indicators able to characterize the sustainable city development, so as to point out the impact of the smart solutions and the possibilities to use their facilities in this respect. The results show that

smart solutions are highly recommended for the future sustainable development and they are almost ready to penetrate the city from a technological perspective but information and understanding of citizens with regard to this new way of evolution are still lacking.

Keywords: sustainable city; smart solutions; indicators; social impact; readiness of employees.

JEL Codes: R15, O30.

REL Codes: 8E, 18D.

1. Introduction

The last century has recorded an explosive growth of population in cities (Figure 1), more than 50 percent of the world's population living in urban areas (Leeuwen, 2006, p. 268). Urbanization is the most important social process that influences the economic development and the state of environment. As a result, the world must invest in finding new solutions for development without disturbing the environment.

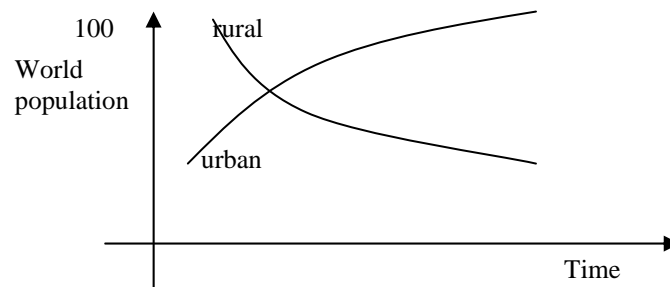


Figure 1. *The urban explosion*

In this case the main components of sustainable development – economy, environment or ecology and equity – have a special significance to contemporary cities. For cities it is very important how they manage environment, infrastructure and resources.

The city development involves factors such as the economy of the city and the availability of jobs and services, the health and attraction of the urban environment, the availability of resources, such as water, materials and energy, as well as space for growth. All of them can be realized having in view the technological progress.

For sustainable urban development economic, environmental and social development must be considered, implying the use of modern solutions and technologies. This can be translated into systems and technologies which are open, dynamic and integrated like smart solutions. To date, the implementation of smart solutions for cities represents a necessity and a real support for sustainable urban development. Through them the city development in economic and social terms can be supported without disturbing the environment.

Our paper proposes an empirical analysis aiming to investigate in what extent the population/employees in a mid-sized Romanian city is prepared for implementation of this type of solutions, based on the fact that internet communication has become a constant of their everyday life. With this aim in

view, the paper first discusses the main co-ordinates of the urban sustainable development and the priorities of smart solutions for sustainable cities, followed by the discussion of the case study performed.

2. Sustainable urban development

Today urban development is a major global issue that requires urgent attention because of the intensification of human activities that want only use natural resources and degrade the environment. The urban development is related to the quality of life and in a smart city the economic, social and environmental systems are providing a healthy, productive, good life for all the citizens.

We can say that urban development is a complex system that concerns the entire economic, social, and cultural sectors from the city.

One of the major problems of the current economy is to use resources efficiently. This principle requires the conservation and rational use of renewable resources, as well as balancing the pace of exploitation of other resources and their regeneration rate. An effective solution requires that everything is taken from nature to be used and useful substances from waste and used goods to be recycled. Here we can see that it is necessary to use new information technologies to ensure efficient use of the resources.

Sustainable urban development is defined (Hald, 2009) as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The future city has been recognized as a new stage of urban development in which we use the resources and the environment efficiently. Because of different development of cities of the world we can't have the same strategy for all the cities.

3. Smart solutions for sustainable cities

Smart solutions may be regarded as a collection of new technologies and applications, which enable the processing, storing and transfer of information and knowledge to a wide variety of users. In our age these solutions have a major impact on human life and future development of society. Starting from this kind of technologies and applications, a lot of ideas about the new image of the city or smart city can be identified, as published in many books, articles and papers. Such studies highlight the solutions for city development by means of new technologies.

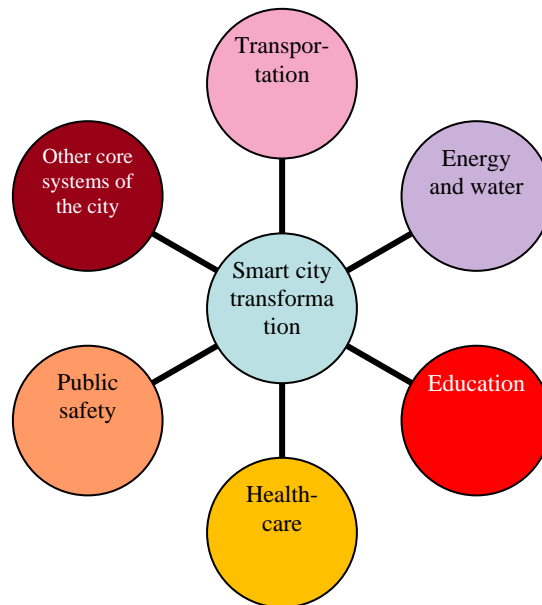


Figure 2. *Smart City – a system of systems*

Top priorities for cities include sustaining water, energy and food supplies, managing waste and reducing greenhouse gas emissions (IBM, 2010). Smart city transformation has in view these priorities. In the cities where smart solutions have been implemented inhabitants consume less energy and space for living and make more activities with the same quantity of energy. In our view smart technologies represent a good solution for sustainable development of the city. The smart city can be regarded like a *system of systems* in which the city integrates all entities to achieve a new efficiency level.

The smart city can integrate and optimize all the systems to achieve a new level of productivity, quality and efficiency. A smart city is based on the use of new technologies in all activities for improving the quality of work and of life, to reduce costs and to improve the efficiency.

The smart city has been acknowledged as a new stage of urban development (IBM, 2010, Muyuan, 2011, Pike Research, 2010). Its construction has become an international concern. Solutions for all the cities to become smarter can be found, but cannot be the same solution for all cities. To implement a smart city the top priorities have to be considered.

These new technologies are still an understudied field. We can identify very few exceptions in which the smart solutions have been growing in some city without the help of local authorities. So, we can say that is very important to imply all the sectors from the city in this direction.

New technologies are the central element for sustainable development in our time. Smart systems represent a central nervous system of the modern society: communications, government functions, information gathering and business activities all depend on access to information and internet. Without these smart systems, individuals and firms could not function efficiently.

4. Case study. Methodology

4.1. The methods used for data collection

The survey concentrated on the core area of the city administration, education, health, transportation, etc. This was performed among the employees for a mid-sized Romanian city Râmnicu Vâlcea in order to investigate three main issues:

- the use of present communication infrastructure; how employees perceive the use of on-line solutions in their activities;
- how existing communication infrastructure is used for employees activities;
- if the employees consider beneficial the relationship established between companies through smart solutions.

The survey consisted of 18 questions targeting the following categories:

- general information about the employees: age, gender;
- questions regarding how existing communication infrastructure is used for their activities;
- questions regarding how on-line communication changes employees relationship; they aim to check whether the employees are interested in on-line resources as well as the major advantages and disadvantages of using on-line system;
- questions regarding how employees are interested in working on-line;
- questions regarding how employees perceive the relationships between companies through smart solutions.

The methodology is based on primary collected data by means of a collective survey which contains a mixture of close and open ended questions. For data collection structured interviews were developed using a given questionnaire format.

4.2. Participants

The subjects of the survey were selected from employees of a mid-sized Romanian city Râmnicu Vâlcea. The respondents were selected among the employees of the public sector. A set of derived procedures have been employed for collecting and analyzing more than 400 observations from a heterogeneous population.

By gender, the sample population is distributed as shown in Table 1. There are more male employees than female. The distribution is representative for the general population of the city.

Table 1

Sample distribution by gender	
Gender	Post-Test Mean (%)
M	57
F	43

By age, the distribution of the sample population is presented in Table 2. The majority of the employees have between 35 and 45 years of age. The number of the young employees is very important for our survey, because they are more open to changes and new solutions.

Table 2

Sample distribution by age	
Age	Number
25-35	128
35-45	167
45-55	80
more then 55	25

Most of employees are young. The distribution of employees by age highlight that the number of those who have interest in new technologies is the most important. They are also the people who learned in school how to use Internet and new technologies for improving communications and other activities.

5. Case study. Analysis

The study approached three directions and for every part we elaborated a set of questions. The results are presented for each of the three categories of questions: the use of present infrastructure, on-line communication between employees, using the new technologies for relationship between companies.

5.1. The use of present infrastructure

The first set of survey items relates to the hardware and software conditions, the survey revealing that all the employees had access and used the communication infrastructure. They use the software and hardware infrastructure from work-office often than home.

Table 3

Frequency of use and percentage of users	
Frequency of use	Percentage of users
Always several times a day	67.81
Several times a day during the end of the month	3.83
Several times a day during the projects	28.36

A special importance should be given to the frequency with which the employees return to the internet for communication, documentation and information. The employees used frequent several times a day communication infrastructure (Table 3), confirming the need for correlation with the economic reality.

We must to highlight the large number of employees who use the internet for communication, documentation and information (78.34%), for training (13.16%), for links to other organizations (9%) (Figure 3).

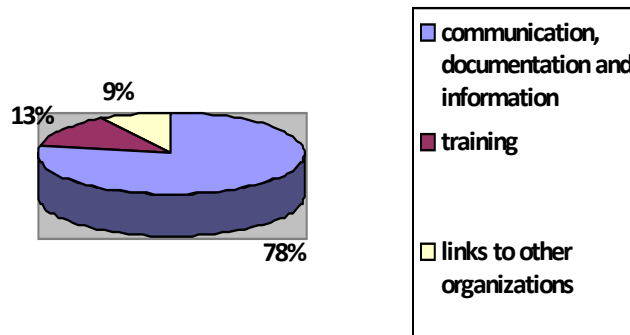


Figure 3. *Internet services usage*

Analysis of responses highlight that the employees use the hardware and software infrastructure at work and smart solutions will improve their activities.

The employees revealed that new technologies have changed the way we inform, entertain and educate ourselves, as well as our ways of working, carrying out research, doing business, and keeping in contact with each other.

We can specify that the new technologies (Fernández-Maldonado, 2005, p. 2) have become pervasive in developed countries and increasingly present in cities of the developing world, while each year thousands of new digital devices and applications are brought into the market and into the hands of millions of people.

5.2. On-line communication between employees

On-line communication is one of the most important facilities of information technology age for the employees around the world. It changed the human life by making it easier to communicate between each other. Employees now communicate between each other's by different ways in comparison to the past. As a result businesses also change and develop by using communication technology. The employees of the public sector have many benefits and many barriers by using communication technology; the discussion will be limited to this area.

According to the answers, there are a very large number of employees who believe that the online communication is essential in their work and interaction with other employees (98.99%). We believe that this attitude reflects the openness to new technologies or smart solutions. The large number of those who believe that the relationships between employees are improved through on-line communication (Table 4) helped us to conclude that the use of smart solutions would be of a real support for them.

Table 4

On-line communication	
Communication	Percentage
Improved	91.46
Unchanged	8.42
Worse	0.02

The responses also show that the on-line communication is considered essential by the majority of employers in terms of reducing time, costs and of linking the activities of organizations.

Users also highlight the possibility of obtaining additional information on a particular topic through on-line communication with other employees, this helping them to improve their knowledge.

In the open question related to the disadvantages of using on-line communication solutions the responses could be grouped in the following categories:

- Accessibility – some employees have highlighted the difficulty of connecting to the internet in some areas.

- False identities – they said that on-line communication does not allow people always to see each other.
- Time – even if in more situations the on-line communication reduces the necessary time, the employees highlight that there are some situations in which one person wait a few hours or even a few days for receiving an answer.

We must have in view the disadvantages for employees regarding the use of internet and on-line communication because all future solutions are based on internet and communication.

The first disadvantage regarding using internet in workplace for a long time highlight by employees is that it could be affected body and brain health. The second disadvantage is that employees can use company computer for dubious purposes. But the advantages are more important, so it is essential in our age to use on-line communication between employees.

5.3. Using the new technologies for relationship between companies

On-line communication can help companies to communicating effectively with clients and employees. Also companies can use it to build a good relationship with their customers. Now most companies public or private provide a website to market their goods and give more details about company's business. Most companies use now on-line communication to produce or exchange new information.

The first question of this part envisaged the importance of linking the companies with the economic reality. Most employees (99.18%) have stressed the interest in real examples of other companies for the same problems they have.

When asked if they prefer to work on-line the majority declares that it is very useful to work on-line. In this case they will generate less waste and on-line communication is a real support for future work (97.32%). The new technologies are viewed as a solution for generating less waste and for protecting the environment.

The last question is one that stresses the need for a smart solution to enable the communication between companies. The analysis of responses highlights that the employees think that through smart solutions can be linked all activities from organizations and between them. These solutions will reduce the need for use of natural resources and this is the first requirement for creating a more sustainable and smart city.

6. Conclusions

Urbanization is a real issue for our society. Therefore a series of environmental problems as well as social and economic problems characterize the cities of our age. Investing in technological progress for developing cities and for solving the environmental challenges will remain a priority for authorities. A coherent urban planning is required in this respect, starting from a realistic analysis of the current situation.

Our analysis investigated the preparation of employees of a city for smart solutions, revealing that through on-line communication and smart solutions the relationship between employees is improved and all activities will be linked and automated.

The efficient manage of data and information using new technologies is a solution for innovation, competition, and productivity.

From on-line communication which offers us a lot of information we can select, using the decision based by our knowledge, the useful solutions and we can produce new knowledge and innovation.

In an economical crisis the need for knowledge and innovation is higher as ever and the analysis of prepare of employees to the use of smart solutions is very important.

Acknowledgements

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Transition to a green economy – a challenge and a solution for the world economy in multiple crisis context

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Abstract. *The concept of "Green Economy" is heavily debated recently because it is considered to be essential for the future global economy. This concept aims to find practical solutions that can be applied in international affairs regarding the environment development as a result of the massive problems caused by multiple crises that are no longer solvable. However, the international community is looking for long-term alternatives to improve the quality of life and eliminate poverty population as much as possible.*

To make sustainable economic development requires a transition with multiple implications for both the government and the private sector. In other words, you need a joint effort between public and private, in order to separate economic growth from excessive use of resources; the main objective should be considered the quality of life along with reducing the environmental and social deficit.

The transition to a "Green Economy" means practicing a certain type of economy based on policies and investment that should be able to create a connection between economic development, biodiversity, ecosystem, climate change, health and welfare on the medium and long term. These premises must be connected together to achieve sustainable

development – which is considered the resumption of economic growth at global scale.

Switching to "Green Economy" implies a proper concern based on adequate knowledge, research and innovation in order to create a framework for promoting sustainable development on long term. This study aims to generate an overview on the concept of "Green Economy", considered by some experts as the main solution to the problems that countries of the world are facing nowadays. It is well known that the economic system is situated in a collapse and requires a rethinking from all points of view. A solution to adapt the economy and its development to these new global challenges can be the transition to "Green Economy", especially by integrating the environment in sustainable development paradigm.

Keywords: green economy; sustainable development; policies and investment; economic growth; poverty eradication.

JEL Code: E20.

REL Code: 8E.

Introduction

The concept of environment has its source of origin about 30 years ago, when for the first time, in 1972, at the Stockholm Conference, the environmental problem, along with the effects that man's actions have on it, was taken into account. Later, in 1983 the World Commission for Environment and Development (WCED) began its activity, following a resolution of the United Nations General Assembly. Since 1985, when marking the discovery of the ozone hole over Antarctica, the officials try to take measures to reduce consumption of substances that affect the protective ozone layer. Chernobîl catastrophe generated Brundtland Report (WCED) entitled "Our Common Future", which mentioned the notion of "sustainable development" and defined it as "the one which aims to present needs without compromising the ability of future generations to satisfy their own needs."⁽¹⁾

This report presents an overview of economic development situation, arguing that evolution cannot be stopped, but in the same time it proposes a rethinking of strategies in order to take into account environmental protection along with the planet's resources and it also suggests organizing an international conference as a starting point in the incursion of sustainable development. The Earth Summit in Rio de Janeiro that took place in 1992 created a general image regarding the field of sustainable development, reaching problems of climate change, biological diversity and deforestation. This year – 1992 – is an important one because it is for the first time when a support plan for sustainable development has been adopted at global level. This event was followed by the Sustainable Development Summit held in Johannesburg in 2001, in order to concentrate the attention of people on the importance accorded to sustainable development. All these actions have led to a concern for this domain, that has not installed in the minds of people and organizations at once, but gradually, being now in a position where we turn our joint efforts to integrate sustainable development across the economy to overcome crises, to find new solutions designed to attenuate the post-crisis effects.

2012 UN Conference on Sustainable Development⁽²⁾ approaches two main themes: "Green Economy in the Context of Sustainable Development and Poverty Eradication" and "Institutional Framework for Sustainable Development"⁽³⁾.

It aims to highlight the importance of transition to a green economy that would build up a new form of sustainable economic development. Based on these actions, we can see an increasingly concern on current issues that may be a solution worthy of consideration to overcome the economic effects of multiple crises. Among the overall objectives, there can be included: poverty

eradication and economic development, food security, welfare and health on long term, adaptation to climate change, along with eliminating excessive consumption of natural resources.

1. EU – active involvement in the transition to Green Economy

European Union plays a key role in efforts to prepare the Rio Summit in 2012 and it is actively involved in order to boost sustainable development among European population and institutions at a global level. In other words, the EU is trying to create a coexistence of a partnership between public and private environment in order to support the importance of sustainable development both for society and the global economy. We note that globalization is like a paradigm, like a double-edged weapon, as it helps economies to grow, but the threat to "fall"⁽⁴⁾ does not disappear. The phenomenon of globalization requires active support for sustainable development.

Among the proposals and conclusions arising in the Notice of Economic and Social Committee on the theme "Towards a World Summit on Sustainable Development in 2012" (own-initiative opinion), it was noted that the summit has the purpose to revive the spirit of Rio and revitalize Rio Principles and Agenda 21, as tools to involve all interested parties and the orientation of a more sustainable world⁽⁵⁾.

Articles 1.4 and 1.5 from Chapter Conclusions presented in the Notice of Economic and Social Committee on "Towards a World Summit on Sustainable Development in 2012" suggest that the meeting would be a landmark and should set a deadline for taking decisions regarding the next steps to be followed on climate change, biodiversity; the summit should also complete the current negotiations on mercury and launch new negotiations on the inclusion of sustainability in corporate governance. The summit should recognize and support the Earth Charter as a means to urge individuals and organizations around the world to commitment and action in this field.

In the current economic conditions, the EU feels the pulse of future events that may mark the path for the states of the world and tries to get involved as much as possible in order to find solutions that can be adopted and adapted at both central and local level. According to analysis, specialists sustain that the economy has been profoundly affected by economic crises, registering a sustainable economic downturn. Europe's population, in particular, became more cautious, avoiding to make investments and reducing their own consumption; these actions are fueled by strict banking conditions in loans and the alarming unemployment figures. EU unemployment rate remained at 9.5%

in July and in the Euro area was 10%, unchanged from June, according to data presented by the European Statistics Office (Eurostat)⁽⁶⁾.

Among EU member states, the lowest unemployment rate was recorded in Austria (3.7%), Netherlands (4.3%) and Luxembourg (4.6%), the opposite presenting Spain (21.2%), Latvia (16.2% in the first quarter of 2011) and Lithuania (15.6% in the second quarter of 2011). In July, the unemployment rate in Romania was 7.3%. Eurostat estimates that 22.711 million men and women in the European Union, of which 15.757 million in the Euro area, did not have a job in July 2011. Compared with June 2011, the number of unemployed increased by 18,000 in the EU and in the Euro area rose by 61,000⁽⁷⁾.

These figures are not encouraging for future results and they show that the economic crisis may extend to a social crisis for most EU countries. In addition, there are opinions of experts and surveys showing that because of the debt crisis of European countries, 2012 will be marked by economic decline, financial and multiple social unrest. According to analysts surveyed by Bloomberg, the Euro area will go into recession in the next 12 months, the banking sector problems will get worse and in the next five years at least one member of the Euro area will give up the single currency. The survey was conducted on 1,031 participants, among the investors, analysts and traders around the world⁽⁸⁾.

European Union tries to take steps to avoid these gloomy forecasts, as much to alleviate the effects of post-crisis and find solutions to avoid falling into a new phase of recession. Rio Conference in 2012 is trying to bring real solutions in debates to help world countries to overcome periods of crisis. The Green Economy as a concept is a different optic, a new vision designed to rebalance the situation that causes chaos. EU proposes for this meeting a renewal of activity in global sustainable development by:

- Defining and implementing various aspects of the Green Economy;
- Giving financial assistance and technology transfer and know-how (especially for developing countries);
- Fundamenting various aspects of governance for sustainable development;
- Involving all companies in Europe to optimize vision in Rio and providing the necessary political support.

2. Measures and instruments for sustainable development and poverty eradication

The new economic system based on sustainable development is likely to become the solution to overcome environmental, economic and social development, also aimed at crisis management and its effects. It is necessary to

take measures by using appropriate policies to create conditions to support economic growth and poverty reduction. In the current economic environment, most countries have been and still are affected by the crisis, hindering economic growth. However, growth should be possible to get out of this collapse by creating strong links between development, production and sustainable consumption.

The nature and its value plays an important role to support economic growth in the current context, if only the importance of balance in its protection is acknowledged. This is where the concept of Green Economics interferes, to create the framework of transition to an economy closely linked to sustainable development. The economic system has many variations, and this vision should mold perfectly from the beginning in order to adapt on long term. To implement the policies associated with green economy, we need first a joint effort of all countries, by raising awareness of the importance of this phenomenon, as well as providing timely and applicable solutions.

For example, to implement green economy in every state requires deep involvement of consumers and business environment along with the main frame of measures proposed and adopted at the national and international leading levels. One must understand the sustainable use of resources is a priority, especially if the climate change in decades is taken into account. Eradicating poverty is closely linked to the sustainable management of natural resources. Why? Because poor population is assuring their existence depending on natural resources. Natural capital is related to the current problems of humanity, such as poverty, sanitation, health, education. States should pursue objectives in the long term following the future problems:

- Food security;
- Welfare and long-term health of the population;
- Climate change and its effects;
- Economic development;
- Elimination of poverty.

Green economy involves the use of natural resources, energy and new technologies with cleaner production methods in order to promote economic growth and creating new jobs. With this concept, we need to create new sustainable consumption and production patterns that do not force the ecosystem. Sustainable development requires dynamism, requires constant change, adaptation and research; all these elements are closely related to environmental conservation and proper use of natural resources. An example in this direction may be the energy field. It is considered that in the next 40 years there will be strong changes in energy consumption and production (according to recent Report by the International Energy Agency on Technological Scenarios for 2050)⁽⁹⁾.

The chemical industry is a model for adopted changes in order to replace existing production methods with some lasting and effective ones to obtain a commercial advantage. The policy instruments that could be used in the Green Economy can be grouped into several categories:

- Fair pricing;
- Procurement policies;
- Ecological tax reform;
- Public investment in infrastructure development;
- Public support for research and development in clean technologies;
- Social policies for combining social objectives with economic policies.

3. China's Green Economy – a role model?

Green economy in China has started to develop slowly and later than in other countries, yet the results are promising. The success of this country seems to be the investment in research that propelled it to the positive results and growth even in times of economic crisis. In 2010, the installed capacity of wind turbines in China was on first place in the world. It seems that the recovery of solar energy, for example, placed it in first place in this field worldwide. Chinese authorities will allocate in the period 2011-2020, a total of 5,000 billion yuan to develop energy sectors: wind, solar, biological and hydropower, to satisfy the needs of production and daily life of the population with new type energies⁽¹⁰⁾. It seems that this country's investment by 2015 is heading for the sum of 313 billion US dollars to promote low carbon emissions, according to Xinhuanet. The investment will help reduce energy consumption per unit of gross domestic product in China by 16% at the end of 2015, compared to the year 2010, according to Xie Zhenhua's declaration, vice president of the National Development and Reform. Over the last five years, by 2010, the energy consumption per unit of GDP fell by 19.1%⁽¹¹⁾.

Xie Zhenhua also declared that, in the next five years, China will develop circular economy projects and will establish 100 demonstration bases for the use of flight and launch pilot programs to reduce carbon emissions in five provinces and eight cities⁽¹²⁾. Results of this country are not random. Even after the economic crisis, one can see differences between the results in Europe and Asia. In Asia there is growth (8.7%), driven by economic growth in China (+10%), while in the Euro area there can be seen an estimated increase of 1%⁽¹³⁾.

China is a country that shallows energy, it is the largest producer and consumer of coal, ranks second in oil consumption and ranks fifth in oil production. Its intention is to dominate the renewable industry worldwide. To promote job growth, China has focused on investment funds directed to green

energy as a basis for global development. Among the objectives of China's energy diversification lists green market, strengthening its leadership position with market share for high-tech products. Harvard Kennedy School Belfer Center conducted a study which showed that China and emerging countries coordinate their energy and their support by government-owned enterprises.

This study covered countries like Brazil, China, India, Mexico, Russia and South Africa and found that by 2020 fabulous sums to create new jobs and increase exports will be invested in renewable energy sources. Along with these results, the investments will be related to positive effects on the environment and natural resources by reducing emissions of greenhouse gases.

Since 1999, China has achieved about 1% of solar cells placed in solar panels to generate electricity. In 2009, China has a 40% market share in this segment. Companies in China are expected to achieve more than half of solar panels in 2011 and almost 80% of the units that produce solar hot water. China prepares for massive exports of high-power wind turbines and the producers intend to sell at lower prices than Western ones.

This country is hunting a leader position in Green Energy and it can be considered a rival on export markets. The success of this country is due to reduced labor costs, along with investment in education, technology, communication and transportation systems. There are not only positive opinions regarding the green economy practiced in China. In the book "When a Billion Chinese Jump: How China Will Save Mankind – or Destroy It", the author, Jonathan Watts, correspondent of The Guardian, warns that problems were created in China and might not find solution. In his opinion, what he saw in China is not good for humanity, claiming that this Green Economy adopted by this country is only a generalization. One example, reported in the paper presents children in a province of China who choose all parts that can be reused from all the world computers. In this selection, children can become ill from toxic emissions having to wear masks all the time to avoid the toxic garbage. The persons that oppose to these activities are arrested to help the cycle continue.

The great rivers of Asia have begun to drain and it is estimated that two thirds of them will disappear by 2050 due to accelerated melting of glaciers in the Himalayas. These examples could continue, but despite all the criticism, China has shown that it manages well this issue by obtaining exceptional results in the green economy. They have propelled it into first place and brought positive records on all levels. The policies to support exporters and preferential policies in tax and labor-intensive adopted in the sectors of high technology have alleviated the crisis, helping China to record better results than other countries.

Conclusions

The transition to a green economy involves practicing an economy based on investment policies and the connection between economic development, biodiversity, ecosystem, climate change, health and welfare of the medium and long term. These premises must be connected together to achieve sustainable development, considered the resumption of economic growth at a global level.

The transition to green economy involves a proper concern focused on knowledge, research and innovation to create a good framework designed to promote long term sustainable development.

In the current economic conditions, strongly affected by the post-crisis effects, the EU feels the pulse of future events that may mark the path for the future of the states of the world and tries to get involved as much as possible to find solutions that can be adopted and adapted both at central and local level.

European Union seeks a renewal of activity in global sustainable development by: defining and implementing various aspects of the green economy, environmental, financial assistance and technology transfer and know-how (especially for developing countries), substantiating various aspects of governance for sustainable development, involving the whole society in Europe to optimize vision in Rio and providing the necessary political support.

The new economic system based on sustainable development is likely to become the solution to overcome environmental, economic and social development problems and it also follows to manage the crisis effects. In this sense, it is necessary to take measures by using appropriate policies to create conditions to support economic growth and poverty reduction. Green economy involves the use of natural resources, energy and new technologies with cleaner production methods in order to promote economic growth and creating new jobs. With this concept, we need to create new sustainable consumption and production patterns that do not force the ecosystem. Sustainable development requires dynamism, requires constant change, adaptation and research and all these elements are closely related to environmental conservation and proper use of natural resources.

China is a country that swallows energy constantly, it is the largest producer and consumer of coal, ranks second in oil consumption and ranks fifth in oil production. To promote job growth, China has focused on investment funds directed to green energy as a basis for global development. Among the objectives of China's energy diversification lists green market and strengthening its leadership position with market share for high-tech products. China has shown that it manages well the waste issues by obtaining exceptional results in the green economy. They have propelled it into first place and brought positive records at

all levels. China can be regarded as a role model especially in terms of sustainable development, although the methods it uses for recycling have carried controversial opinions among many experts who fear long-term negative effects.

Notes

- (1) Report of the World Commission on Environment and Development: Our Common Future, Transmitted to the General Assembly as an Annex to document A/42/427 - Development and International Co-operation: Environment, UN Documents Cooperation Circles, the NGO Education Committee of the Conference of NGOs.
- (2) United Nations Conference on Sustainable Development will be held in Rio de Janeiro on 4-6 June 2012.
- (3) European Commission Communication on the guidelines adopted for preparing the ground for the EU position at the conference "Rio +20" UN Sustainable Development, will be held in Rio de Janeiro in June 2012.
- (4) We refer to the book of J. Stiglitz, "The Free Fall", and published by Public House, Bucharest, 2010.
- (5) See Official Journal of the European Union, 2011/C 48/12.
- (6) „Harmonised unemployment rate by gender” – total, Eurostat, August, 2011.
- (7) „Employment rate by gender, age group 15-64”, Eurostat, September, 2011.
- (8) Bloomberg is an American news agency specializing in surveys in over 126 countries.
- (9) See Official Journal of the European Union 2011/C 48/12.
- (10) See Official Journal of the European Union 2011/C 48/12.
- (11) See Official Journal of the European Union 2011/C 48/12.
- (12) We refer to Xie Zhenhua's (the Deputy Chairman of National Development and Reform Commission) declaration dated July 17, 2011.
- (13) According to OECD report published on June 15, 2011.

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A VAR analysis of the connection between FDI and economic growth in Romania

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Abstract. *The impact of FDI on economic growth is neither homogeneous, nor completely clarified. Due to the accumulation of capital in the host economy, FDI is expected to encourage the incorporation of new inputs and technologies in the process of production. However, the impact of FDI on economic growth is not so shaped up in empirical studies. Accordingly, while some studies remarked a positive impact of FDI on economic growth, others showed a negative relationship between the two variables. In this article, we carried out an analysis of vector autoregressive type (VAR), so as to identify the relationship between FDI and economic growth in Romania between 1991-2009. The main conclusion of our study is that the FDI volume does not initiate growth; and that economic growth is an important factor in terms of attracting FDI in Romania.*

Keywords: foreign direct investments; economic growth; VAR model; impulse functions.

JEL Codes: F41, O49.

REL Codes: 8E, 10F.

1. Literature

One can notice, in the up-to-date literature, that special attention is paid to the FDI impact on economic growth in host countries. Theoretically, within the neo-classical model, FDI encourages economic growth by increasing investment and/or their efficiency. Endogenous model of growth shows that FDI fosters growth by diffusion of technologies from developed economies to host countries (Borensztein et al., 1998). As summarized in studies authored by Balasubramanyam et al. (1996) and De Mello (1999), FDI is a mixture of capital stocks, know-how and technology, that can enhance existing knowledge stock in the host economy through sustainable training of workers, skill acquisition and dissemination, and by introducing alternative management practices and organizational structural management (Xiaoying, Xiaming, 2005).

From an empirical point of view, Blomstrom et al. (1996) identified the positive effects of FDI on economic growth, using FDI input flows in an emerging country, as a measure of its interaction with other countries. The study carried out by Balasubramanyam et al. (1996) led to significant results that support the hypothesis that FDI is more important for economic growth in countries promoting exports, than in those that encourage imports. This implies that the impact of FDI varies, depending on the peculiarities of the country; trade policy can influence the role of FDI on economic growth. UNCTAD (1999) found that FDI can have either a positive or a negative effect, depending on the variables included in the testing equation. These variables include the initial GDP per capita, level of education, level of domestic investment, political instability, trade issues, the size of the “black” market and the financial development stage.

Borensztein et al. (1998) suggest that differences in the absorption capacity of technologies may explain the variations of the FDI effects on the economic growth among countries. In the model we suggest, the training of human capital determines the ability of adopting foreign technologies. Therefore, one may assume that a higher level of human capital skills may induce higher rates of growth at a given level of FDI (this assumption is supported by their empirical results). The same authors point out that the country might need a minimum level of human capital stock in order to obtain positive FDI results.

Similarly, Olofsdotter(1998) is considering the absorptive capacity of FDI recipient countries, and then comes to the conclusion that the FDI positive effects are stronger when there is a superior level of institutional capacity, and the importance of bureaucratic efficiency is higher. Bengo and Sanchez-Robles (2003) prove that FDI is positively correlated with the economic growth, but

host countries require human capital, economic stability and liberalized markets so as to benefit of FDI effects flows in the long-run. Using the data resulting from a survey carried out on 80 countries, in the period 1979-1998, Durham (2004) did not identify a positive relationship between the economic growth and FDI, and suggests that the FDI effects are correlated with the absorption capacity of the host countries.

Developed countries tend to have a higher level of skilled workforce than the emerging countries; therefore one may assume that the latter will have a higher FDI flow. This assumption is confirmed by Xu (2000), who studied the USA multinationals as a channel of diffusion for international technology in 40 countries during 1966-1994. The main result is that technology transfer from USA multinationals contributed to productivity growth in the developed countries but not in the developing countries. However, there is empirical evidence according to which the FDI positive effects are not necessarily correlated with the absorptive capacity. For example, Bende-Nabende et al. (2003) revealed that direct FDI impact in the long-run on the economic growth is noteworthy; it is also positive for countries such as the Philippines and Thailand (less advanced economically), and negative in the more economically advanced countries such as Japan and Taiwan. The previous findings are consistent with the Sjöholm study (1999), at microeconomic level; according to him, the greater the distance between domestic and foreign firms, the larger the gains in productivity.

The above debate demonstrates that the FDI impact on economic growth is far from conclusive. The FDI role may be influenced by that particular country's peculiarities; it can be positive, negative, or even irrelevant, depending on economic, institutional, or technological conditions of the host country.

When analyzing the correlation between the two variables, an important issue is the probable endogeneity between them. In this respect, two approaches are implemented. The former refers to the bilateral causality testing. Using data from ten countries of East Asia, Kholdy (1995) administered Granger causality tests, but found no causality between FDI and productivity. As explained, FDI can cause "leakage" of limited effectiveness, as a vehicle for technology transfer less important than previously assumed. Zhang (1999) also studied the causality (for ten Asian economies) and concludes that FDI enhances long-term economic growth in mainland China, Hong Kong, Indonesia, Japan and Taiwan, and in the short-run intensifies it in the case of Singapore.

Chakraborty and Basu (2002) make use of the co-integration and error correction technique to examine the relation between FDI and the economic growth in India. The results obtained suggest that, in India, the GDP is not

Granger caused by FDI; its causality being rather the other way round (from GDP to FDI). Nair-Reichert and Weinhold (2001) start from mixed estimations (fixed and random) to explore the connection between FDI and economic growth in emerging countries, and then identified a causal relationship between the two variables. Using data from 80 countries between 1971-1995, Choe (2003) revealed a two-way causality between FDI and economic growth; its effects are more obvious from economic growth towards FDI.

From the above studies, one can notice that the results concerning causality are heterogenous. It proves again that the relationship between FDI and economic growth is far from being clarified. It varies depending on the country in question and the determined period of time.

The second approach regarding endogeneity between the two variables is the estimation of a system of equations, in which FDI equation includes variables such as: economic growth, human capital, exchange rate and the infrastructure. Recent examples include the studies of Bende-Nabende and Ford (1998), and Bend-Nabende et al. (2002, 2003) which explain a system of equations where both FDI and economic growth are treated as endogenous variables.

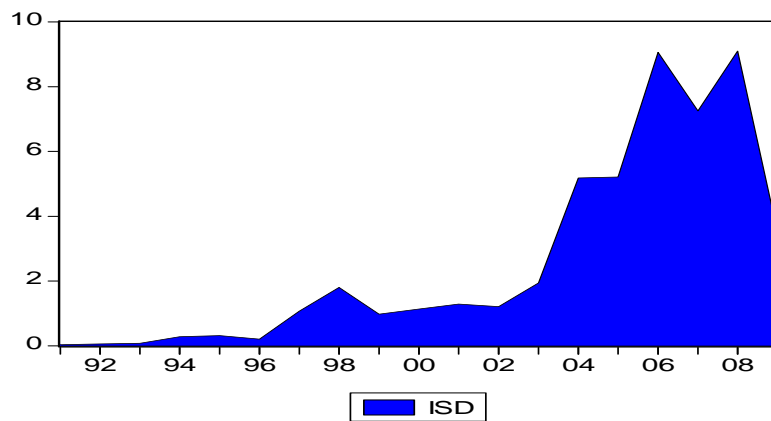
Xiaoying and Xiaming (2005) studied the FDI impact on economic growth both in developed countries (21) and in some emerging countries (63), using cross-sectional data for the period 1970-1999. The results reveal that there is no endogeneity between the two variables over the whole period, except for the period 1985-1999. The study illustrates that there is a high complementary connection between FDI and economic growth for all countries under study. Moreover, FDI not only enhances the economic growth by themselves, but also indirectly, through positive interaction effects with human capital; and also through high negative effects regarding the FDI interaction with technological gaps in emerging countries. Empirical data support new theories on FDI and economic growth, confirming that FDI flows are attracted by countries with large markets. Moreover, human capital and the absorptive capacity are very important so as FDI to have positive consequences on economic growth. Political implications of the study are obvious: since the studied variables tend to become endogenous, promoting human capital, technological skills and economic development will attract new FDI flows. This factor will further stimulate economic growth and competitiveness.

2. Description of the analyzed variables

Romania's potential in terms of *foreign direct investments*, during the period 1991-2003, was a relatively low one, and it can be explained by the absence of a functional market economy, corroborated with the inability of

politicians to create a stable business environment, and also the lack of business opportunities due to the delay in privatization. This country has become a country with a functioning market economy, a status awarded by the European Union in October 2004, and this was a positive signal for foreign investors, who appreciated that Romania can have economic stability, which may lead to the establishment of a favorable investment environment.

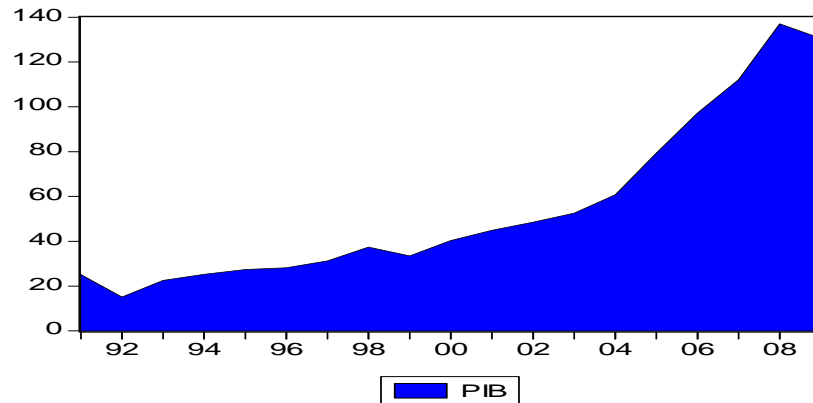
Under the circumstances, considering the statistical data analyzed, one can notice that by the end of 2004 the inflow of foreign investment in Romania has tripled in comparison with 2003, and was nearly six times higher than the average of previous years taken into observation.



Source: data processed by means of Eviews 5.0.

Figure 1. FDI evolution in Romania, during 1991-2009

The most eloquent indicator for estimating *the economic growth* is GDP. From the graphic representation below, one can notice the rising trend of the Romanian GDP throughout the analyzed period, with three points of inflection represented by the years 1992, 1999 and 2009. The most dramatic growth of this macroeconomic indicator was recorded between 2004 and 2008, an interval during which the FDI level has increased considerably, and one year later, in 2009, due to the financial and economic crisis, the level of both variables studied decreased significantly.



Source: data processed by means of Eviews 5.0.

Figure 2. *The GDP development in Romania during 1991-2009*

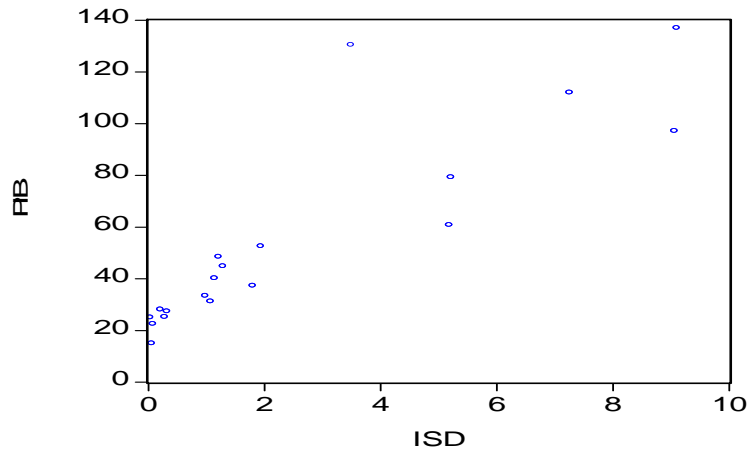
In Table 1 we have included the main statistic parameters which characterize the two variables:

Table 1
**Statistic characteristics of GDP and FDI
in Romania, 1991-2009**

Statistic indicator	FDI	GDP
Average	2.616053	55.21579
Median	1.210000	40.30000
Maximum	9.100000	137.0000
Minimum	0.035000	15.10000
Dev.Std.	3.049177	37.77597
Skewness	1.144427	1.076860
Kurtosis	2.908080	2.821105
Jarque-Bera	4.154114	3.697489
Probability	0.125298	0.157435
Amount	49.70500	1049.100
Amount dev. std	167.3547	25686.43

Source: data processed by means of Eviews 5.0.

Statistical connection between the economic growth and FDI in Romania during the period 1991-2009, can be easily inferred from Figure 3, however it will be empirically tested in the last part of the case study.



Source: data processed by means of Eviews 5.0.

Figure 3. “Simple scatter graph” related FDI (FDI) and GDP (GDP)

3. Method of research and results

In order to confirm whether there is a relationship between foreign direct investment (FDI) and economic growth (GDP), we considered the following assumptions:

$$H1: FDI = f(GDP) \quad (1)$$

$$H2: GDP = f(FDI) \quad (2)$$

The demonstration will be performed by using a VAR model, which can be written as the following equation:

$$ISD_t = \alpha_1 + \sum_{j=1}^k \beta_j \times ISD_{t-j} + \sum_{j=1}^k \chi_j \times PIB_{t-j} + \varepsilon_{1t} \quad (3)$$

$$PIB_t = \alpha_2 + \sum_{j=1}^k \phi_j \times PIB_{t-j} + \sum_{j=1}^k \varphi_j \times ISD_{t-j} + \varepsilon_{2t} \quad (4)$$

where α_1, α_2 are the free terms coefficients; $\beta, \chi, \phi, \varphi$ are endogenous variables coefficients and ε are residual errors.

The main steps of the econometric analysis are:

- a) administering of stationary tests;
- b) checking Granger causality between the variables considered;

- c) VAR model selection and the appropriate lag;
- d) checking the stability of the model;
- e) identification of impulse functions.

a) *Conditions to be fulfilled, so that a time series be stationary, are:*

- Average time series to be stable, or in other words, remarks must fluctuate around the average.
- The series variance to be stable.

From an economic perspective, a series is stationary if shock applied on it is temporary (absorbed in time) and not constantly. If a series is not stationary, by differentiating one obtains a stationary series. The integration order of the series is the number of successive differentiations required to achieve a stationary series.

For the variables studied, we have first tested the level stationary of the series using ADF (Augmented Dickey-Fuller) and PP (Phillips-Perron) tests, and it showed that the time series are not stationary, or in other words, show a unit root (Tables 2 and 3). Therefore, we have proceeded to the differentiation of order 1 of the series, and the results indicate that these integrated series are stationary of 1 order (do not show a unit root or I (1)), as shown in Tables 4 and 5.

Table 2

Testing the level stationary of FDI series

Null Hypothesis: FDI has a unit root

Exogenous: Constant

Bandwidth: 2 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.
Phillips-Perron test statistic	-1.491770	0.5147
Test critical values:		
1% level	-3.857386	
5% level	-3.040391	
10% level	-2.660551	

Source: data processed by means of Eviews 5.0.

Table 3

Testing the FDI stationary level of GDP series

Null Hypothesis: GDP has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic based on SIC, MAXLAG=3)

	t-Statistic	Prob.
Augmented Dickey-Fuller test statistic	1.554044	0.9987
Test critical values: 1% level	-3.857386	
5% level	-3.040391	
10% level	-2.660551	

Source: data processed by means of Eviews 5.0.

Table 4

Testing the FDI differentiated stationary the order 1 level

Null Hypothesis: D(FDI) has a unit root

Exogenous: Constant

Bandwidth: 2 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-5.102715	0.0009
Test critical values: 1% level	-3.886751	
5% level	-3.052169	
10% level	-2.666593	

Source: data processed by means of Eviews 5.0

Table 5

Testing the GDP differentiate order 1 stationary series

Null Hypothesis: D(GDP) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic based on SIC, MAXLAG=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.361421	0.0279
Test critical values: 1% level	-3.886751	
5% level	-3.052169	
10% level	-2.666593	

Source: data processed by means of Eviews 5.0.

- b) The Pairwise Granger causality test checks on the proportion in which the current level of GDP is due to its previous levels, proving at the same time that if, by adding the previous values of the other variables (FDI), the explanation could be improved.

The Pairwise Granger causality test, shown in Table 6, suggests (for a lag equal to 4) that we can accept the null hypothesis in the first case, which means that *GDP does not cause FDI volume Grangerin Romania*. The null hypothesis is rejected in the later case (for a confidence level of 5% and 10%, respectively), which means that *FDI volume causes GDP level Granger*.

Table 6

Pairwise Granger causality test

Sample: 1991 2009

Lags: 4

Null Hypothesis:	Rmk.	F-Statistic	Probabilities
GDP does not cause Granger FDI	15	0.75907	0.58783
FDI does not cause Granger GDP		4.57925	0.04897

Source: data processed by means of Eviews 5.0.

- c) Next, we shall explain *the selection criterion of the lag and the VAR model construction*. Regarding the construction of the model, *we used the series on level*, even if the VAR methodology suggests that all variables should be stationary. The argument is as follows: "The traditional approach of VAR enthusiasts is to work on level, even if some of the series are non-stationary. In this case, it is important to recognize the effect of the unit root over the estimator distribution." (Harvey, 1990, p. 83).

As for lag selection, we considered the "VAR Lag Order Selection Criteria" test, which in Table 7 illustrates that for five theoretical lags, all the five criteria (LR, FPE, AIC, SCandHQ) recommend a lag equal to 5 for the VAR model "FDI-GDP".

Table 7

VAR Lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-97.44754	NA	5072.174	14.20679	14.29809	14.19834
1	-67.60385	46.89724	128.0696	10.51484	10.78872	10.48948
2	-61.32736	8.069768	97.48768	10.18962	10.64609	10.14737
3	-53.89009	7.437264	68.03725	9.698585	10.33764	9.639429
4	-49.82406	2.904312	89.48589	9.689151	10.51080	9.613093
5	-24.11146	11.01969*	7.457847*	6.587351*	7.591584*	6.494391*

Source: data processed by means of Eviews 5.0.

Note that: * indicates the order of the selected lag according to the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Under the circumstances the model can be written as follows (see Table 8 for the VAR estimations):

$$ISD_t = \alpha_1 + \beta \times ISD_{t-5} + \chi \times PIB_{t-5} + \varepsilon_{1t} \quad (5)$$

$$PIB_t = \alpha_2 + \phi \div PIB_{t-5} + \varphi \times ISD_{t-5} + \varepsilon_{2t} \quad (6)$$

Table 8

Estimations of the “Unrestricted FDI-GDP autoregressive vector”

Period (adjusted): 1996 - 2009

Remarks included: 14 after adjustments

Standard errors in () & t-statistics in []

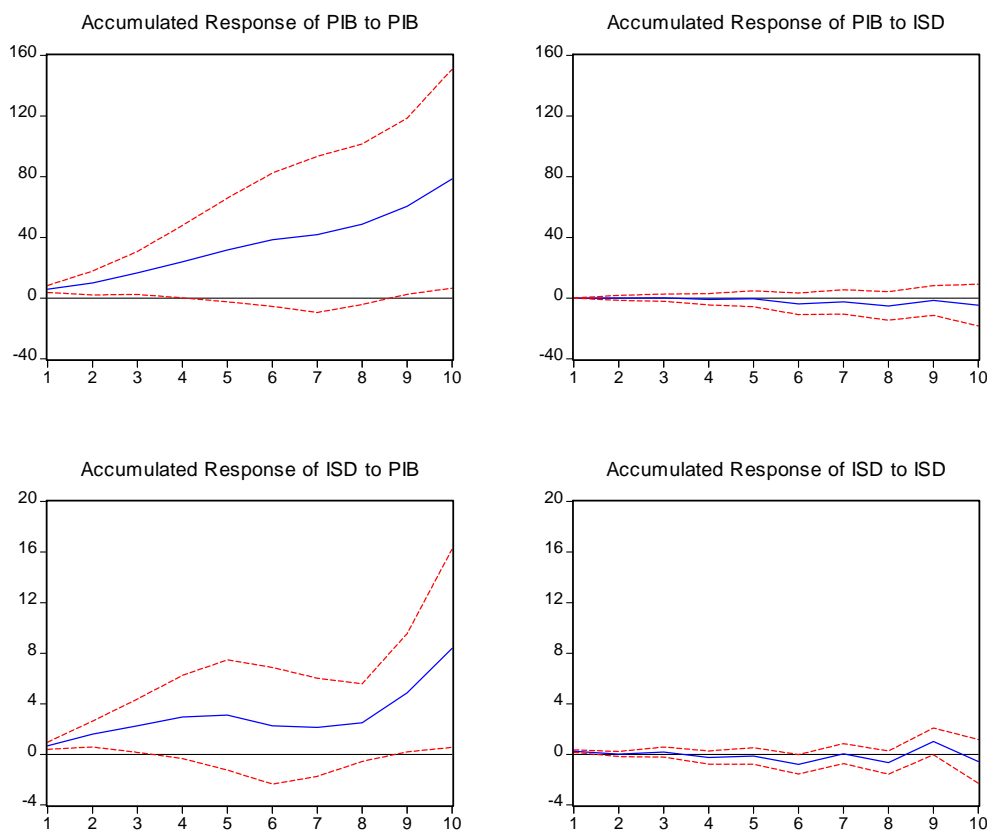
	GDP	FDI
GDP(-1)	0.591595 (0.75189) [0.78681]	0.256234 (0.08995) [2.84872]
GDP(-2)	0.552456 (0.74442) [0.74213]	0.124641 (0.08905) [1.39962]
GDP(-3)	0.555708 (0.75649) [0.73459]	0.094202 (0.09050) [1.04094]

GDP(-4)	0.169450 (0.60378) [0.28065]	0.069816 (0.07223) [0.96658]
GDP(-5)	0.408287 (0.56991) [0.71641]	0.025516 (0.06818) [0.37425]
FDI(-1)	0.598267 (3.32743) [0.17980]	-0.917386 (0.39805) [-2.30468]
FDI(-2)	0.573810 (3.29316) [0.17424]	-0.379527 (0.39395) [-0.96338]
FDI(-3)	-4.431796 (2.96806) [-1.49316]	-1.641379 (0.35506) [-4.62278]
FDI(-4)	-0.343684 (3.77764) [-0.09098]	-1.411194 (0.45191) [-3.12272]
FDI(-5)	-8.691384 (5.31442) [-1.63544]	-2.972308 (0.63575) [-4.67526]
C	-26.60671 (21.0615) [-1.26329]	-13.07141 (2.51954) [-5.18801]
R-squared	0.994152	0.987666
Adj. R-squared	0.974657	0.946552
Sum sq. resids	108.7538	1.556359
S.E. equation	6.020903	0.720268
F-statistic	50.99722	24.02276
Log likelihood	-34.21535	-4.488180
Akaike AIC	6.459335	2.212597
Schwarz SC	6.961452	2.714714
Mean dependent	66.68571	3.495000
S.D. dependent	37.82134	3.115509
Determinant resid covariance (dof adj.)		2.338781
Determinant resid covariance		0.107393
Log likelihood		-24.11146
Akaike information criterion		6.587351
Schwarz criterion		7.591584

Source: data processed by means of Eviews 5.0.

As a conclusion, the VAR "FDI-GDP" model can be considered representative to describe autoregressive connections between FDI and economic growth of Romania. Based on the model, we can identify four impulse responses (illustrated in Figure 4), which evaluates the effect of a shock on variations in current or future values of the FDI and GDP variables.

Accumulated response to Cholesky one S.D. innovations ± 2 S.E.



Source: data processed by means of Eviews 5.0.

Figure 4. Impulse functions of the VAR "FDI-GDP" model

Based on the chart analysis we can state the following *estimations*:

1. A +1% shock in the FDI level (top right chart) generates almost no effect on the Romanian GDP in the first five years of the forecast. Over the next five years one can notice that the same positive impact of FDI will lead to GDP contraction, therefore the relationship between the two variables will be negative.

2. A +1% shock in the GDP level (left chart below) will generate a significant increase in FDI flows, even spectacular starting with the eight year of the forecasting.

Conclusions

In spite of the expectations and results of other empirical studies undertaken (Bosworth, Collins, 1999, Bengo, Sanchez-Robles, 2003, Hansen, Rand, 2004), we reached the conclusion that the VAR model estimations indicate a reverse connection between FDI flows and economic growth of Romania. This conclusion is perhaps the expected one, but it has economic political implications, meaning that authorities will have to adopt, in the future, several measures which may facilitate the dissemination of positive effects from FDI to economic growth. Among such measures, mention must be made regarding: the income per capita (especially by the significant increase of the minimum income in the Romanian economy) (Bloomstrom et al., 1994), development and implementation of some strategies of commercial export-based policy (Balasubramanyam et al., 1996), increased skilled labor force (Borensztein, 1998), increasing the capacity to absorb new technologies and, last but not least, encourage and support economic stability, infrastructure development (physical and financial), and liberalization of markets.

The second estimation shows that FDI flows are particularly sensitive to economic growth in Romania, as confirmed by other recent developments of the two variables (as a rule, they grow in the same direction) and by the empirical results of the studies of Choe (2003) and Chowdhry and Mavrotas(2006).

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EU budget reform in the context of the current economic crisis

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Abstract. *The European Union regarded as an economic re-enhancement force in Europe and in the world must fund the needs of 500 million citizens. To do that, it should possess an innovative budget adjusted to the new facts of globalization meant to meet present challenges and create various opportunities for the future.*

In order to improve budgetary procedures, the need to reform the community budget has emerged, namely to change the way it is designed and spent. The manner of setting and distributing the community budget has been changed several times whenever the context in member states has demanded. Thus, European institutions concluded in 1988 interinstitutional agreements which have been covering budgetary process and budget allocation ever since. Agreements are concluded for several years and bear the name of “financial prospects”. Other two agreements have been made (during 2007-2013 and, respectively, 2014-2020) in compliance with Delors I and Delors II Packages.

The present paper focuses on approaching the progress of budgetary indicators in the context of the multiannual financial framework where the European Union budget is set.

Keywords: budget; reform; multiannual financial framework.

JEL Codes: H61, H69.

REL Codes: 20J, 20G.

1. Introduction

The European Union regarded as an economic re-enhancement force in Europe and in the world must fund the needs of 500 million citizens. To do that, it should possess an innovative budget adjusted to the new facts of globalization meant to meet present challenges and create various opportunities for the future.

Governments, companies and families all over Europe make careful choices when the issue of spending their own money arises. The European Union should also exist confining to its means, following its main goal: investment for the future. The Union's budget is relatively low, around 1% of European wealth (evaluated by Gross National Income), which means around 1/50 of member states' budgets. However, this is a significant budget, as it is almost entirely spent on investment, not consumption, and can make a true difference when choices are correctly made.

2. What should be known about the European Union's budget

The EU budget is often misunderstood and that is why it is necessary to know its main features:

1) It is a low budget

The EU budget (27 member states, 500 million citizens) was around € 127 billion in 2011, which is very little as compared with the amount of national budgets in all the 27 EU member states which come up to more than € 6,300 billion. In other words, the total public spending of the 27 member states are almost fifty times higher than the EU budget spending.

2) It equals 1% of the EU GDP

The EU budget means approximately 1% of the EU Gross Domestic Product whereas member states' budgets are on average 44% of national GDP.

3) "No" to budgetary deficit

The EU budget is always balanced meaning that no single Euro is spent "on tick".

4) An investment budget

The EU budget is mainly an investment one. 94% of the inflows to the EU budget is invested within the member states according to the programmes and policies that citizens directly benefit from. The former fund long-term investment that cannot be financed nationally (such as transnational infrastructure or investment in research).

5) Low administrative costs

Many people wrongfully believe that most EU budget is spent on its management. In fact, administrative costs are just a small share of the total

budget. They have been stable over the last years and significant efforts are being made to keep them low. In 2010, the EU's management costs were almost €7.9 billion (meaning approximately 6% of EU total budget).

6) Slower growth than in national budgets

The national budgets of EU member states rose during 2000-2010 by 62%, whereas the EU budget only rose by 37%. Nevertheless, the EU expanded during the same period by twelve new member states, reaching 27 from 15.

3. The EU budget: income and spending categories

The EU budget is an important tool which contributes in fulfilling the stated goals of the European Union by means of its multiannual priorities found in the budget structure's spending field. The financing sources of the European budget until 1970 were made up of the member states' contributions and on 21 April 1970 these were replaced by the system of own traditional resources.

The European Union possesses "own resources" to fund its expenses. Legally speaking, these resources belong to the Union. The member states collect them on behalf of the EU and transfer them into the EU budget.

Member states' participation in setting the budget of the European Union takes place by means of own traditional and other type of resources. In this respect, there are (Moşteanu, 2008, pp. 333-335):

1) Own traditional resources: fees, bonuses, additional or compensatory amounts, additional amounts or factors, fees in the General Customs Tariff and other fees already stated or to be stated by the European Union's institutions in relation with the trade with tertiary countries. Such amounts are cashed by national administrations and directly sent into the European Union's budget after keeping a 25% share according to the spending on budgetary income collection.

2) Other own resources. This category includes:

- own resources from VAT ensuing from a single quota applied to VAT-resulted levies in each member state. However, the Union lets its member states decide on the sources of VAT payment to the general community budget.
- resources based on Gross National Income (GNI). They are calculated according to the difference between expenses and other own resources' estimation by applying an even quota to GNI level in all the member states (the quota is set yearly within the budgetary procedure). Such resources are also known as complementary as they can balance the community budget. The quota applied to GNI is set in such a manner

that raised resources could fund the difference between annual spending and other own resources' level;

- incomes resulted from all the newly-imposed fees within a general policy in compliance with the European Community Treaty or the Euratom Treaty;
- the amendment in favour of Great Britain is a special derogation with the purpose to counterbalance the country's major financial imbalances which cover two thirds of the budgetary imbalance between the incomes provided by Great Britain and the Community's spending referring to the British territory; the derogation is assumed by other member states complying with a certain rule applied to Gross National Income as part of the community GNI.

3. In addition to own resources, the budget is also financed from other less significant sources such as various taxes and fees, revenues from institutions' administrative operations, interests on delayed payments and fines, and surpluses from previous fiscal years.

The spending category of the community budget is made up of numerous chapters and budgetary directions which are all classified as budgetary headings (Moşteanu, 2008, p. 334):

- 1) Sustainable growth: competitiveness and cohesion;
- 2) Preservation and management of natural resources including agriculture: market spending and direct payments;
- 3) Citizenship, freedom, security and justice;
- 4) The European Union as world partner;
- 5) Administration; Compensations for the European Union's new member states.

4. The multiannual financial framework in the European Union

In order to improve budgetary procedures, it has become necessary to reform the community budget, respectively to change the way it is designed and spent. The manner of setting and dividing the community budget has been changed whenever the circumstances in member states have called for it. Thus, European institutions have been concluding interinstitutional agreements since 1988 which cover budgetary processes and budget allocations. Agreements comprise several years and bear the name of "financial prospects". After the emergence of Delors I and Delors II Packages, as well as 2000 Agenda, two additional agreements have been made (comprising the period between 2007 and 2013 and respectively 2014-2020).

The issue of reforming the European Union's budget arose in December 2005 when a decision of the European Council stated a clause allowing the European Commission to suggest a "budget review" during 2008-2009.⁽¹⁾

The reason for such a decision was that the EU was still running a budget that met the needs of the 1950's which significantly hindered the funding of new priorities such as economic growth, labour force employment, public health or education and research.

The interinstitutional agreement on the current financial prospect concluded on 17 May 2006 by the Union Council, the European Commission and the European Parliament restates the idea of a review in a statement annexed to the document:

"1) In accordance with the conclusions of the European Council, the Commission has been invited to undertake a full, wide-ranging review covering all aspects of EU spending, including the Common Agricultural Policy, and of resources, including the United Kingdom rebate, and to report in 2008/2009. That review should be accompanied by an assessment of the functioning of the Interinstitutional Agreement. The European Parliament will be associated with the review at all stages of the procedure on the basis of the following provisions:

- during the examination phase following the presentation of the review by the Commission, it will be ensured that appropriate discussions take place with the European Parliament on the basis of the normal political dialogue between the institutions and that the positions of the European Parliament are duly taken into account;

- in accordance with its conclusions of December 2005, the European Council "can make decisions on all the subjects covered by the review". The European Parliament will be part of any formal follow-up steps, in accordance with the relevant procedures and in full respect of its established rights.

2) The Commission undertakes, as part of the process of consultation and reflection leading up to the establishment of the review, to draw on the in-depth exchange of views it will conduct with European Parliament when analysing the situation. The Commission also takes note of the European Parliament's intention to call for a conference involving the European Parliament and the national parliaments to review the own-resources system. It will consider the outcome of any such conference as a contribution in the framework of that consultation process. It is understood that the Commission's proposals will be put forward entirely under its own responsibility."

The information above shows that the main goal of the review was connected to the future as it lays the foundation of a new financial prospect (the financial framework for 2007-2013, respectively 2014-2020).

The multiannual financial framework does not mean the EU budget for seven years but a mechanism meant to ensure EU spending predictability along with observing strict budgetary discipline. The latter defines maximum amounts (“limits”) for each major spending domain (“heading”) in the Union’s budget. In this context, the European Parliament and Council which represent the “Union’s budgetary authority” must yearly and consensually set the budget for the following year. In real terms, the annual budget adopted is always below the global limit of the annual financial framework which actually decides on the political priorities of the years to come and is therefore both a political and a budgetary framework.

The present duration of the multiannual financial framework started in 2007 and shall end in 2013. The tables below emphasize the classification of budgetary spending within the current multiannual prospect also envisaging the one in the future:

Table 1

Financial prospect (current prices) between 2007-2013								
	2007	2008	2009	2010	2011	2012	2013	Total 2007-2013
1. Sustainable growth	53,979	57,653	61,696	63,555	63,638	66,628	69,621	436,770
1a. Competitiveness for growth and development	8,918	10,386	13,269	14,167	12,987	14,203	15,433	89,363
1b. Cohesion for growth and development	45,061	47,267	48,427	49,388	50,651	52,425	54,188	347,407
2. Preservation and management of natural resources	55,143	59,193	56,333	59,955	60,338	60,810	61,289	413,061
of which: market interventions and direct payments	45,759	46,217	46,679	47,146	47,617	48,093	48,093	330,085
3. Citizenship, freedom, security and justice	1,273	1,362	1,518	1,693	1,889	2,105	2,376	12,216
3a. Freedom, security and justice	637	747	867	1,025	1,206	1,406	1,661	7,549
3b. Citizenship	636	615	651	668	683	699	715	4,667
4. EU as global partner	6,578	7,002	7,440	7,893	8,430	8,997	9,595	55,935
5. Administration	7,039	7,380	7,525	7,882	8,334	8,670	9,095	55,925
6. Compensations	445	207	210					862
Total	124,457	132,797	134,722	140,978	142,629	147,210	151,976	974,769
Share in GNI	1.02 %	1.08 %	1.13 %	1.16 %	1.13 %	1.12 %	1.11 %	1.11 %

Source: Ungureanu, 2011, pp. 295-296.

Analyzing the figures that are financially accepted, it is very easy to notice what the Union's budgetary priorities are: the preservation and management of human resources, cohesion for growth and development etc.

The financial framework of 2014-2020 has the values below:

Table 2

Financial prospect (current prices) between 2014-2020								
	2014	2015	2016	2017	2018	2019	2020	Total 2014-2020
1. Intelligent and favourable growth for inclusion	64,696	66,580	68,133	69,956	71,596	73,768	76,179	490,908
of which: economic, social and territorial cohesion	50,468	51,543	52,542	53,609	54,798	55,955	57,105	376,020
2. Sustainable growth, natural resources	57,386	56,527	55,702	54,861	53,837	52,829	51,784	382,927
of which: spending on the market and direct payments	42,244	41,623	41,029	40,420	39,618	38,831	38,060	281,825
3. Security and citizenship	2,532	2,571	2,609	2,648	2,687	2,726	2,763	18,535
4. Europe in the world	9,400	9,645	9,845	9,960	10,150	10,380	10,620	70,000
5. Administration	8,542	8,679	8,796	8,943	9,073	9,225	9,371	62,629
of which: institutions' administrative expenses	6,967	7,039	7,108	7,191	7,288	7,385	7,485	50,464
Total engagement credits	142,556	144,002	145,085	146,368	147,344	148,928	150,718	1,025,000
Share in GNI	1.08 %	1.07 %	1.06 %	1.06 %	1.05 %	1.04 %	1.03 %	1.05 %

Source: http://ec.europa.eu/budget/library/biblio/publications/2011/mff2011/MFF_2011_ro.pdf.

The global engagement limit suggested by the Commission for 2014-2020 is 1.025 billion Euros. The amount equals the one of the last year in the current multinational financial framework (2013) multiplied by 7 (number of years). This limit means 1.05% of GNI. The payment limit equals 1.00% of GNI (1.06% for 2007-2013):

Table 3

**Comparison between multiannual financial frameworks
for 2007-2013 and 2014-2020**

(according to prices in 2011)

		2007-2013	2013	2013 X 7	2014-2020
Engagement credits	billion Euros	993.6	146.4	1,024.8	1,025.0
	% of GNI	1.12	1.12		1.05
Payment credits	billion Euros	942.8	137.8	964.4	972.2
	% of GNI	1.06	1.05		1.00

Source: http://ec.europa.eu/budget/library/biblio/publications/2011/mff2011/MFF_2011_ro.pdf.

The new multiannual financial framework includes several novelties:

- *in terms of economic growth, work places and cohesion*

“Europe’s Connection” facility is a brand new scheme destined for the funding of priority infrastructures of Pan-European concern in the fields of transportation and energy. The facility shall be centrally managed by the European Commission and financed (40 billion Euros + 10 billion Euros from the cohesion policy budget) by a new budget section. The co-funding rates from EU budget shall be higher for the investment in Europe’s poor regions.

Innovative funding tools are proposed in order to accelerate and guarantee major investment which could only be carried out by public funds, especially EU bonds to fund projects. The Commission suggests the unification of the European Regional Growth Fund, European Social Fund and Cohesion Fund into a single strategic framework also including the European Agricultural Fund for Rural Growth and the European Fund for Fishery and Sea Business.

The Commission proposes the conclusion of partnership contracts with each member state in order to reach outcome-oriented programming. These partnership contracts can also include macroeconomic conventions to improve the coordination of member states’ economic policies.

Financing cohesion actions shall continue to focus on the least developed Member Regions and states. Nevertheless, to facilitate the progressive exclusion of regions from the convergence objective and to equally rank the regions having the same wealth level, a new category of transition regions shall emerge (whose GDP/per capita is between 75% and 90% of EU average). Cohesion funds shall aim at the investment contributing in fulfilling the quantized goals set up by 2020 Europe Strategy in compliance with specific provisions regarding conditionality. Conditionality shall be twofold: *ex ante conditions* which must be observed before making payments and *ex post conditions* which can allow the issuing of additional funds only if the expected outcomes have been reached.

- in terms of research and innovation

The three most important funding programmes for research and development (Competitiveness and Innovation Programme, the Seventh Framework-Programme, and the European Innovation and Technology Institute) shall be brought together in a single strategic framework, 2020 Horizon, in order to remove partitions and avoid overlaps. Funding schemes shall be standardized and simplified. Additionally, all funding schemes shall have their own set of rules on participation, audit, support structures, outcome dissemination and reimbursement methods. As far as funding is concerned, the innovative financial tools shall help mobilize private investment and partnerships between the public and private sector.

- in terms of agriculture and environment

Making 30% of the direct payments to farmers environmentally friendly: in order to ensure that the single agricultural policy contributes in the EU fulfilment of environmental and climate policy goals, 30% of direct payments shall depend on observing several best practices in terms of environment, in addition to the existing duties in terms of eco-conditionality.

- in terms of environment and climate policies

The priorities related to environment and climate policies shall be “integrated” within all the EU’s key financing instruments among which cohesion, agriculture, sea business and fishery, research and innovation, as well as in foreign assistance programmes.

- in terms of justice, health and security

The financial instrument for civil protection shall be renewed to meet various aspects connected with the management of disasters, namely more coherent and better integrated feedback in emergency circumstances, better preparation to cope with disasters and innovative actions meant to reduce disaster risks.

The Commission also provides the transition from annual to multiannual programming based on outcomes, thus decreasing the amount of administrative work of all players involved.

- at world level

There is a single pre-accession integrated tool to reflect structural funds, namely the Cohesion Fund and there is the European Agricultural Fund for Rural Growth. It is about replacing programmes in industrialized, emerging countries with a new partnership instrument meant to support public diplomacy, joint approach, trade and convergence promotion in terms of regulations.

- regarding EU administration

The Commission has proposed major changes of clerks’ present status. The changes mainly envisage the 5% decrease in the number of workers so that

all institutions, bodies and agencies increase their efficiency and savings, simultaneously guaranteeing European Union public services which can meet the highest standards.

The decrease in the number of workers should be compensated by increasing the number of working time per week by 2.5 hours without any compensatory adjustments of salaries. As early as seven years ago, the European Commission set up a major reform of its administration. It meant lower salaries when recruiting personnel, forming a category of contracting agents with lower salaries, increasing retirement age, low pension rights and more contributions in the pension system. The reform successfully allowed 3 billion Euros saved from European taxpayers' money and it is expected that until 2020 it should generate additional savings coming up to 5 billion Euros.

- in terms of EU budget funding

The reform of the own-resources system is suggested which aims at removing the current own VAT-based resource and bringing forth two new resources, of which the former depends on collecting financial transactions' fees and the latter on the incomes ensuing from national value-added tax⁽²⁾.

The purpose is not to rise the EU budget, but to contribute in the national efforts for budget re-enhancement by cutting direct duties from member states' budgets. These suggested changes are meant to simplify existing budget duties and strengthen the relations between EU policies and EU funding.

5. Conclusions on the budgetary reform

The EU budget reform is regarded as compulsory after the budgetary pressures caused by the accession of new large member states and by other inside emergencies, but also as a consequence of European and global markets' and countries' changing trends such as climate changes, strong global features of economic relations and security of energy resources.

In the context of wider European Union, the community budget should have a modern and flexible structure. To reach a compromise between the need for flexibility and that for predictability, one should focus on the relationship between the average-term efficient allocation of budgetary resources and the flexibility of budgetary allocations.

As to budgetary indicators namely community budget revenues and expenses, the fundamental strategic choice the Union has to make now and in the future is either a decent level budget with tough budgetary constraints – such as the one at present –, or a budget with few limits that sooner or later will end up with huge spending.

The budgetary reform fundamentally raises the question of choosing between two ways:

- the former related to development by monitoring the community public spending, private initiatives, rejecting protectionism, improving the business environment to encourage domestic capital and attracting it from the outside. In a certain way, this is Europe's solution (community level) based on rules, not money;
- the latter refers to maximizing the expansion of community public spending by giving up the tough budgetary constraints existing at present and re-enhancing centralization.

The former way relies on productive citizens and creating wealth, whereas the latter rests on the ability to win in the massive redistribution accompanying the respective process. Yet, this hope is merely theoretical; redistribution is a political process in one way or another controlled by those who generate resources.

In the European Parliament there is a consensus referring to the need for budget reform with the purpose to better cope with future crises. "In order to generate work places, ensure growth, competitiveness and a strong domestic market, we need a strong EU budget. Each Euro spent from our joint budget decreases the burdens of national budgets" (Buzek, 2011). Yet, the opinions about how that can happen are different: some representatives focus on the ways to raise own resources and others concentrate on how to prioritize spending.

Irrespective of the steps taken in the context of its reform, the Community budget should be regarded as an important tool the EU can use to accomplish its current political goals, to generate exchanges and to maximize the long-term impact of community actions.

Notes

- (1) The European Council, Brussels, 15-16 December 2005, addressed the Commission the following recommendation: "to undertake a full, wide-ranging review covering all aspects of EU spending, including the CAP, and of resources, including the UK rebate, to report in 2008/9. On the basis of such a review, the European Council can make decisions on all the subjects covered by the review. The review will also be taken into account in the preparatory work on the following Financial Perspective."
- (2) On 28 September 2011, the European Union Commission drew up a COUNCIL PROVISION proposal regarding the single system of fees on financial transactions and the amendment of Directive 2008/7/CE. Financial transaction fee shall apply on the territory of all 27 member states and shall not include transactions of individuals or small and medium enterprises (SME's) such as mortgage loans, bank loans made by SME's, or insurance

contracts. There will be no tax on foreign exchange transactions or capital increases made by enterprises or public bodies. Such a fee already exists in ten member states but the action within the EU is more adequate to prevent the transformation and fragmentation of the domestic market. Preliminary estimations show the revenues generated by such a fee all throughout the EU might annually reach 57 billion Euros according to market feedback. Some of these revenues might be used as own resources to the EU budget leading to the reduction of national contributions in the EU budget and the decrease in the urgency upon national budgets.

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Technological innovation as a mean to increase economic competitiveness

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Abstract. *Corporations must be able to adapt and evolve if they wish to survive. Businesses operate with the knowledge that their competitors will inevitably come to the market with a product that changes the basis of competition. The ability to change and adapt is essential to survival.⁽¹⁾ European Union and its member states set several frameworks to support companies to acquire knowledge and strengthen their competitiveness, as follows:*

- *National Programs for R & D funding which support national actors;*
- *Sectorial Operational Programs (either at national or regional level, in full compliance with national rules);*
- *EU programs (e.g. Competitiveness and Innovation Program – CIP, R&D Framework Programs – FP);*
- *Pan-European programs (e.g. EUREKA).*

Romania is participating to all programs and pan-European R & D frameworks. Furthermore, its innovation program within the National Plan for research facilitates company participation to knowledge development and technology development. Nevertheless Romania's Innovation performance is still at one of the lowest level in Europe⁽²⁾. The followings present how companies are considering their participation to R & D programs and the impact of an R & D project in a company.

Keywords: research; innovation; programs; projects; competitive.

JEL Codes: O32, O38.

REL Codes: 8L, 17E.

1. Aim of RDI in companies

Organisations that manage products and technologies have been built on a strong research & development base are constantly looking for opportunities to diversify into new product markets. Their strategic management activities seek to mobilise complementary assets to successfully enter those markets. In industry, research is much more generic and term and can involve both new science and the use of old science to produce a new product.

There is no single best way to manage research & development. There is no prescription, no computer model that may lead to successful RDI. Every single company or competitive environment is unique.

Some of us may believe that research is uncertain, based on exploration and unknown, therefore there is no way to manage this process. Business world showed that RDI can be managed and most of large corporations spend important amounts on this activity that could lead to top position or maintain them on those positions. In fact, during the last years, “RDI expenditures” were turned into “RDI investments”. Table 1 is presenting top 20 EU 15 companies (the 15 EU members states before the 2004 enlargement) in terms of RDI investments .

2. RDI as a driving force for economic competitiveness

There are three strategic areas of RDI in companies:

- RDI for existing business, respectively keeping up competition on and ensuring that an existing product/service is not outdated;
- RDI for new business – new business opportunities will be identified by managers and will include technology development;
- RDI for exploratory business implies continuous accumulation of knowledge also in areas that may, potentially, develop the core business.

From RDI perspective, the company’s technology base can be categorised as follows: 1) Core technologies, 2) Complementary technologies, 3) Peripheral technologies, 4) Emerging technologies. Each project within a company should not be evaluated as individual (mutually exclusive) but in competition with other projects; we may find good projects that could be cancelled or not financed simply because others (in other departments) would provide more consistent incomes. Theory of portfolio should be used in order to optimize the number of types of project that are to be funded.

Table 1

Top 20 EU-15 companies (the 15 EU members states before the 2004 enlargement) in terms of RDI investments

Rank	Company	ICB Sector	Country	R&D Investment	change 07/06	change 06/05	change 05/04	Net Sales	change 07/06	change 06/05	change 05/04
				2007				2007			
				€m	%	%	%	€m	%	%	%
Top 1000 Companies				126.358,38	8.6	6.7	7.8	5,515,078	7.0	10.6	10.5
<i>number of comp. for calculation</i>				51	50	50	49	51	50	50	49
1	Nokia	Telecommunications equipment (9578)	Finland	5,281.00	42.3	2.3	-5.3	51,058	24.2	20.3	16.8
2	Volkswagen	Automobiles & parts (335)	Germany	4,923.00	16.1	4.0	-2.1	108,897	3.3	10.7	7.1
3	Daimler	Automobiles & parts (335)	Germany	4,888.00	-6.6	-5.6	-2.1	129,436	-15.3	1.3	6.1
4	Sanofi-Aventis	Pharmaceuticals (4577)	France	4,563.00	3.6	8.9	69.3	28,052	-1.1	3.9	83.7
5	GlaxoSmithKline	Pharmaceuticals (4577)	UK	4,419.43	-6.1	10.2	8.0	30,928	-2.2	7.2	8.4
6	Robert Bosch	Automobiles & parts (335)	Germany	3,560.00	4.8	15.9	12.6	46,320	6.0	4.0	5.1
7	AstraZeneca	Pharmaceuticals (4577)	UK	3,448.55	29.8	15.0	-4.2	20,217	11.6	10.5	11.8
8	Alcatel-Lucent	Telecommunications equipment (9578)	France	3,368.00	69.4	10.9	34.1	18,005	25.2	9.5	2.5
9	Siemens	Electrical components & equipment (2733)	Germany	3,366.00	1.7	-35.8	1.8	90,348	0.5	19.2	0.4
10	BMW	Automobiles & parts (335)	Germany	3,144.00	-2.0	3.0	10.5	56,018	14.3	5.0	5.2
11	Ericsson	Telecommunications equipment (9578)	Sweden	2,911.03	2.4	4.8	4.3	19,872	5.6	17.1	15.0
12	EADS	Aerospace & defence (271)	The Netherlands	2,701.00	-5.9	21.2	3.1	39,123	-0.8	15.3	7.7
13	Bayer	Chemicals (135)	Germany	2,645.00	7.7	30.3	-21.5	32,631	2.6	16.1	-8.0
14	Renault	Automobiles & parts (335)	France	2,462.00	2.6	6.0	15.5	39,561	-2.4	0.3	0.3
15	Peugeot (PSA)	Automobiles & parts (335)	France	2,074.00	-4.6	1.1	-1.5	60,613	7.1	0.6	0.3
16	Finmeccanica	Aerospace & defence (271)	Italy	1,955.00	4.6	7.0	28.4	11,916	2.5	4.1	20.8
17	Fiat	Automobiles & parts (335)	Italy	1,741.00	8.9	2.6		58,529	14.9	11.2	
18	Boehringer Ingelheim	Pharmaceuticals (4577)	Germany	1,730.00	9.9	15.7	10.4	10,952	3.6	10.9	16.9
19	BT	Fixed line telecommunications (653)	UK	1,704.60	11.9	53.9	39.3	28,188	2.4	3.6	5.9
20	Philips Electronics	Leisure goods (374)	The Netherlands	1,604.00	-7.6	-33.9	37.2	27,037	-12.4	1.5	0.3

Table 1

Top 20 EU-15 companies (the 15 EU members states before the 2004 enlargement) in terms of RDI investments (continued)

Rank	Company	Employees		R&D/Net Sales ratio		Operating Profit		R&D/Employee s		Market Capitalisation		Capital Expenditures	
		2007	change 07/06	2007	2006	2007	2006	2007	2006	2007	change 07/06	2007	2006
		#	%	%	%	% of Net Sales	€K	€K	€m	%	% of Net Sales	% of Net Sales	
		20,297,642	4.2	2.3	2.2	12.2	6.2	6.0	4,954,856	-9.0	7.2	7.1	
		20	20	20	20	20	20	20	18	18	20	20	
1	Nokia	100,534	53.9	10.3	9.0	11.7	52.5	56.8	70,647	-14.7	1.3	2.0	
2	Volkswagen	307,589	-0.3	4.5	4.0	6.3	16.0	13.7	71,064	46.0	8.9	8.0	
3	Daimler	357,000	-2.4	3.8	3.4	6.8	13.7	14.3	45,749	-24.0	16.0	20.1	
4	Sanofi-Aventis	99,495	-0.8	16.3	15.5	23.0	45.9	43.9	65,387	-13.5	4.8	4.4	
5	GlaxoSmithKline	103,401	1.6	14.3	14.9	33.5	42.7	46.2	89,901	-9.7	7.0	6.4	
6	Robert Bosch	267,562	3.8	7.7	7.8	6.9	13.3	13.2			5.7	6.1	
7	AstraZeneca	67,900	2.0	17.1	14.7	27.4	50.8	39.9	51,319	4.4	4.0	3.0	
8	Alcatel-Lucent	76,410	-14.5	18.7	13.8	-24.4	44.1	22.2	9,859	-43.5	2.0	2.0	
9	Siemens	398,200	8.1	3.7	3.7	6.5	8.5	9.0	74,367	-3.4	3.3	4.6	
10	BMW	97,922	0.7	5.6	6.5	7.1	32.1	33.0	19,448	-26.9	24.5	22.8	
11	Ericsson	73,345	13.7	14.6	15.1	16.2	39.7	44.1	23,558	-42.1	2.3	2.2	
12	EADS	116,493	-0.3	6.9	7.3	-0.3	23.2	24.6	12,459	-23.4	4.6	5.8	
13	Bayer	105,622	9.3	8.1	7.7	9.4	25.0	25.4	42,752	5.2	4.8	5.0	
14	Renault	133,854	-0.3	6.2	5.9	7.3	18.4	17.9	17,136	-35.9	8.3	8.8	
15	Peugeot (PSA)	207,850	-1.8	3.4	3.8	1.8	10.0	10.3	8,167	-39.1	3.3	4.7	
16	Finmeccanica	58,700	3.6	16.4	16.1	8.5	33.3	33.0	8,559	2.5	5.3	4.9	
17	Fiat	179,601	3.4	3.0	3.1	5.2	9.7	9.2	14,374	-35.6	5.0	6.5	
18	Boehringer Ingelheim	39,800	3.6	15.8	14.9	19.2	43.5	41.0			6.0	5.6	
19	BT	108,500	3.1	6.0	5.5	11.1	15.7	14.5	18,699	-45.1	12.2	12.2	
20	Philips Electronics	125,656	-22.0	5.9	6.3	8.3	12.8	12.1	24,327	-20.6	2.4	2.3	

Source: The 2008 EU Industrial R&D Investment Scoreboard (released in October 2008)

It is well understood that technological developments – and we are considering only technology intensive companies, not those that use technology to support their businesses – will lead to improvement products and processes, reduced costs and, at the end, to better financial results. This will lead to development of business strategies that will incorporate RDI aspects.

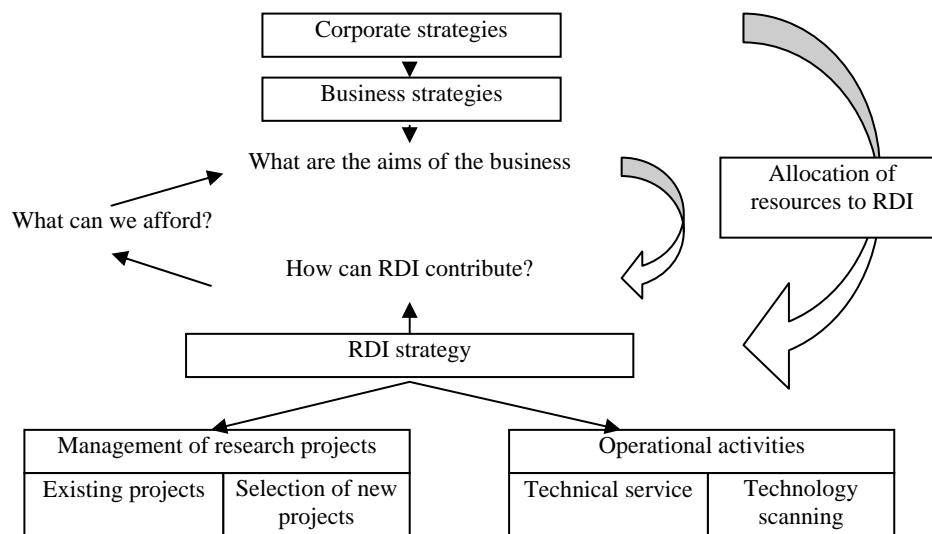


Figure 1. RDI decision making process

Most innovative firms are still waiting some time before taking to take decisions whether resources should be allocated to most promising RDI projects. This should be also influenced by a long term allocation as a disruptive environment will definitely cut any positive foreseen result, but the relationship between RDI expenditure as percentage of sales and commercial success is less evident.

RDI is not the only factor that influences the successful of a certain business. Crude oil – commodities in general – could dramatically influence the competitiveness of a certain company, but RDI will definitely sustain it.

3. Public vs. private funding for RDI

3.1. Public funding for RDI in Romania

The National Research, Development and Innovation Plan for 2007-2013, hereinafter referred to as the National Plan II – PN 2, is the main instrument by which Romanian Government is implementing the National Strategy for RDI.

In order to set up PN 2, it has been taken into consideration the role of the National Research, Development and Innovation System, respectively to develop science and technology in order to increase the economic competitiveness, to improve social quality and to enhance the knowledge with potential to be valorised and to sustain further expansion of the horizon of action. PN 2 aims to achieve the three strategic objectives of the National RDI System, as follows:

1) Knowledge creation, respectively to achieve leading edge scientific and technological results, competitive at global level, in order to increase the international visibility of Romanian research sector and subsequently to transfer results in economy.

2) Increasing the competitiveness of Romanian economy by innovation, with impact at company level and by transferring knowledge in economy.

3) Increasing quality of life, respectively to find technical and scientific methods which support social development and improve its human dimension.

Therefore, the RDI system could become the engine for knowledge development in Romania, being able to support performance by innovation in all domains contributing to citizens' welfare and in the same time to achieve scientific excellence worldwide recognized.

In establishing the programs of the NP II there has been taken into account the fact that concrete actions must be primarily undertaken in order to increase the number of researchers, to improve their performances and increase the attractiveness of the research career. For this purpose, it has been set up Human Resources Program. In order to give researchers the possibility to work using competitive equipment, to benefit of an adequate management and to be permanently connected to socio-economic requirements, Capacities program has been set up. Taking into account the importance of basic research in developing knowledge and that it provides a solid base for applied research and technological development, through ideas, but also due to the capacity of training the highly skilled personnel necessary for these activities, the Plan includes a program called Ideas. Even though for this program there have been no specific priority domains established, and the emphasis is on international excellence and visibility, on research at the boundary of knowledge, on interdisciplinary and complex research in frontier domains and participation in international networks of excellence, there are several basic research areas of special interest, with potential in Romania. By concentrating the investment in these areas, the program supports also new areas, where research teams from Romania are already collaborating internationally. The program, called Partnerships in S&T priority areas, which is the largest program in the Plan, focuses on creating conditions for a better collaboration between the different

RDI entities, companies and/ or public administration units, in order to offer solutions for issues within research areas, identified as a result of the wide consultation performed during the foresight exercise carried out during the period September 2005 – May 2006. Most of the priorities of public investment in research & development are of interest also for basic research areas. Public investment aims at developing knowledge motivated by strategic socio-economic requirements, and the research is assessed according its innovative potential. The program *Innovation* was included in the plan taking into account the importance of finalizing research activities by practical results, related to technical and technological developments. This program will support pre-competitive and competitive research projects, as well as projects for the development of the innovation infrastructure. The program *Support for institutional performance* establishes institutional financing mechanisms based on competition, which enable high quality research entities, whether public or non-profit, to implement their own development strategies in accordance with the National Strategy for RDI. The assessment of institutional performances will be performed internationally, every 3-5 years. This program will ensure resource focusing, as well as the institutional development necessary to obtain international performances.

The objectives of Innovation is increasing the innovation, technological development and production assimilation capacity of the results of the researchers, in order to improve the competitiveness of the national economy and to improve the quality of life.

4. European public funding for RDI (pan-European Frameworks for RDI)

4.1. EUREKA initiative

Created as an intergovernmental initiative in 1985, EUREKA aims to enhance European competitiveness through its support to businesses, research centers and universities which carry out pan-European projects to develop innovative products, processes and services.

Through its flexible and decentralized network, EUREKA offers project partners rapid access to a wealth of knowledge, skills and expertise across Europe and facilitates access to national public and private funding schemes.

The internationally recognized EUREKA label adds value to a project and gives participants a competitive edge in their dealings with financial, technical and commercial partners.

Through a EUREKA project, partners develop new technologies for which they agree the Intellectual Property Rights and build partnerships to penetrate new markets.

The EUREKA clusters play a key role in building European competitiveness, driving European standards and the interoperability of products in a wide range of sectors. The result is a clear demonstration of the strength of pan-European teamwork in the European research area.

The EUREKA umbrellas are thematic networks which focus on a specific technology area or business sector. The main goal of an umbrella is to facilitate the generation of EUREKA projects in its own target area.

Each year hundreds of individual projects are initiated by European companies, an increasing number of which are SMEs. These contribute to improved wellbeing, security, environment and employment in Europe and beyond.

4.2. Seventh Framework Programme for research, technological development and demonstration activities⁽³⁾

Knowledge lies at the heart of the European Union's Lisbon Strategy to become the “most dynamic competitive knowledge-based economy in the world”. The “knowledge triangle” – research, education and innovation – is a core factor in European efforts to meet the ambitious Lisbon goals. Numerous programs, initiatives and support measures are carried out at EU level in support of knowledge. The Seventh Framework Programme (FP7) is designed to support a wide range of participants: from universities, through public authorities, to small enterprises and researchers in developing countries, starting with:

- Private companies – such as small and medium-sized enterprises (SMEs), private research institutes or other industrial participants.
- Public organizations – for example, public universities, regional authorities, public research organizations (PROs).
- Individual researchers – from both the public and private sectors.
- Researchers and organizations outside the European Union – whether from candidate countries, associated states, developing countries, emerging economies or industrial nations.

FP 7 will promote excellence in scientific and technological research, development and demonstration through the following four specific programmes: cooperation, ideas, people and capacities

5. Private funding for RDI

Private companies (large enterprises) are usually financing themselves their R&D costs. The share between debt and equities are subject to complex calculations made up by financial departments. In terms of knowledge acquiring, companies are using both their own centres or in cooperation with academic environment.

5.1. Pharmaceutical industry

Innovative prescription medicines and treatments are saving lives and giving patients new hope for a healthier future.

The mission of pharmaceutical researchers is a simple one – make new discoveries to cure and better treat disease. However, this mission is anything but simple to achieve. A new medicine's journey from the laboratory to the patient is a long, expensive and uncertain one. On average, it takes 10-15 years and \$802 million to develop just one new medicine. Each of these new breakthroughs comes only through many, many failures. For every 5,000 compounds tested, only one is approved by the FDA. Those that are only do so after a series of rigorous studies to demonstrate they are safe and effective (source: <http://www.innovation.org>)

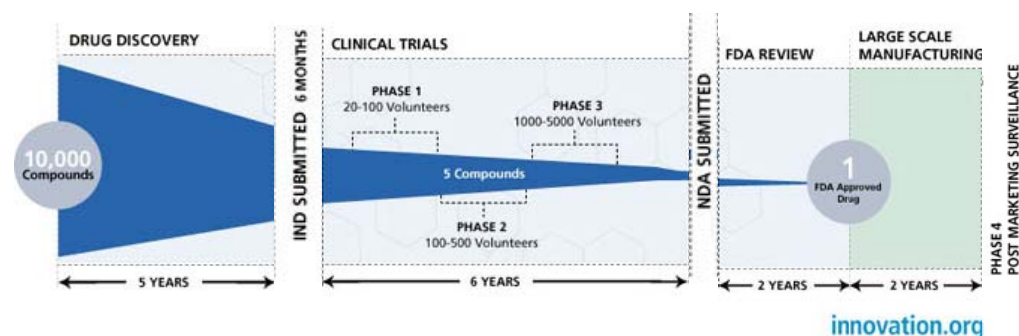


Figure 2. R&D process in pharmacology (source: www.innovation.org)

This record R&D investment reflects the continued commitment of America's pharmaceutical research companies to lead the world in the pursuit of new, life-saving and life-enhancing medicines. US pharmaceutical research companies have consistently invested around 18 percent of sales on R&D activities.

“The pharmaceutical industry is one of the most research-intensive industries in the United States. Pharmaceutical firms invest as much as five

times more in research and development, relative to their sales, than the average US manufacturing firm.”

5.2. Automotive industry

The vehicle research process varies considerably between mature markets and developing markets and even from one emerging country to another. Consumers are increasingly focused on fuel-efficient and alternative-fuel vehicles when making car buying decisions, especially in developing markets.

Forward-looking research in the automotive industry

As part of research work, it is dedicated a considerable amount of time and energy to traffic-related megatrends that will affect products and processes in the future. These include not only the increasing importance of environmental and climate protection aspects, but also the strong growth of megacities in some markets, which presents new challenges for infrastructure. At the same time, micromarkets will grow up alongside existing mass markets. A further point of focus is demographic change and the constant increase in the proportion of over-60s, who show a high degree of quality awareness, for example. In addition, customer requirements are diverging across society as a whole due to growing differences in income levels. And tomorrow's world of work will be more flexible than is the case today with regard to the tasks performed, the way in which work is organized, working hours and places of work. As a result of all these trends, products will be shaped to an even greater extent by intelligent and networked technology and ease of use by people. Driver assistance systems will bring increasing improvements in safety, while new vehicle materials will offer enhanced functionality and comfort.

6. Business case 1 – Broadband services for everyone over fixed wireless access networks – BROADWAN; project funded by European Commission under the 6th Framework Programme (2002-2006)

6.1. Introduction

The author of this work chose this project based on the following considerations:

1. It is publicly funded by European Commission, via the most important instrument implementing the EU policies, respectively the Framework Programme. In this particular case is the 6th Framework Programme which has been carried out within 2002-2006 <http://cordis.europa.eu/fp6>

2. Consortium members are both (multinational) companies such as: Telnor (NO), Alvarion (IL), THALES R&D (FR) Telecom operators such as: CEGETEL (FR), Telecom Castilla (FR), consulting companies, such as: IDATE (FR), NAVUS, academia, such as: Technical University Cluj (RO), University of Cardiff (UK), University of Salzburg (AT).

3. TEX BroadBand product developed by InterStarTech Ltd. (IL) is one of the products that have been developed as a result of BROADWAN project.

6.2. Brief description of BROADWAN

BROADWAN aims at developing broadband network architecture and technology, with a particular focus on wireless access. Broadband wireless access technology is establishing an efficient and integrated part of the global coverage of broadband fixed network, which provides converged multi-services for all.

6.3. BROADWAN objectives

The overall objectives of the BROADWAN project are:

Development of economical realistic network architecture for the provision of true broadband services for all citizens in Europe.

Positioning of European industry in the lead for next generation broadband fixed wireless access (BFWA) solutions.

Motivating advanced utilization of broadband services at all levels of society by performing demonstrations and trials in some rural areas.

6.4. Technical approach

The utilisation of broadband networks is becoming increasingly more important for the development of European society. Broadband services help and may even be absolutely necessary to maintain and increase the everyday quality of life irrespective of living area. Business, organisations, education, health care, culture, and community authorities are taking more and more advantage of broadband networks. The realisation of a European-wide broadband network is beneficial to the people as well as business and industry without damaging the environment.

Broadband technology helps European business and society in general, and radio-based technology in particular, has the potential of improving third world societies dramatically.

Efficient wireless access systems represent a possibility for ensuring that everyone in Europe is able to get access for broadband services within a reasonable time frame. Broadband radio access is a very important technology in achieving the goal of reaching all citizens. The requirement of pan-European service coverage leads to an access networking structure where wireless solutions are a necessity as well as an attractive contribution for achieving full service coverage. Seen at a global level European broadband communications industry in the lead should have a very interesting market.

Operational conditions will vary. In some areas wireless solutions will interwork or compete with other solutions, in other areas they will represent the only possibility. The radio solutions will be important for competition and represent an extension of the fixed network into the broadband nomadic and mobile domain.

6.5. BROADWAN organization

BROADWAN is organized in three main technical areas:

- Broadband access network requirements and architecture;
- Wireless access systems;
- Broadband network utilization.

The scope of the project encompasses a total solution for universal hybrid broadband access networks, including deployment guidelines and planning software, with focus on wireless access architectures and systems.

The area “Broadband access network requirements and architecture” will concentrate on topics related to user and system requirements, novel network architectures and advanced management of heterogeneous networks. The evolving broadband market will be characterised and technical-economical analyses performed. These studies will be used to identify the most appropriate network architectures, enabling widespread deployment of broadband access networks in Europe. Connection costs, available services, security and ease of use will be important factors for determining the possible network solutions, which will provide broadband connections for all (residential, SMEs, public authorities, organisations, educational institutions etc).

6.6. BROADWAN consortium

There are 25 BROADWAN partners comprising operators, industry, academia and consultancy. The partners from 10 countries represent all parts of Europe, both from north to south and from west to east. The significant numbers of SMEs are particularly focusing on broadband service provision.

Consortium partners			
Telenor	Norway	Thales Communications	France
Alvarion	Israel	Thomson	France
BUTE	Hungary	TUCR	Italy
Cegetel	France	University of Salzburg	Austria
CoRiTeL	Italy	University of Cardiff	UK
CNRS	France	Thales Research and Technology	France
IDATE	France	University of Buckingham	UK
Joanneum Research	Austria	T-Systems RIC	Hungary
Nera	Norway	Navus	Germany
Aniel	Spain	Moviquity	Spain
Rutherford Appelton Laboratory	UK	Infoglobal	Spain
TUC-N	Romania	Telecoms Connect	UK
Telecom Castilla-La Mancha	Spain		

6.7. Impact

BROADWAN results have an expected impact on several issues, in particular:

- True broadband global coverage;
- Simple architecture for effective interconnected networks;
- New and flexible end user equipment;
- New network solutions scalable for varying population densities and user demands;
- Service provision allowing and encouraging peer-to-peer capacity demanding applications;
- Fixed and nomadic users have access for all services over a single platform;
- Equipment vendors obtain a huge market for their products;
- Operators can serve customers in all regions irrespective of population density;
- Service trials demonstrate benefits and motivate rural societies to take advantage of the broadband network.

Results will be achieved through own research and in cooperation with other projects and national programs, by providing results to standardisation bodies, and addressing key policy outlined to enable Europe to be in the lead of using information technology at all levels of the society.

6.8. Conclusions

1. BROADWAN is a pre-competitive research project but is paving the way towards product development. Despite the fact that most of participants are private companies, they are entitled to receive public funds. Their activities are

not funded 100% by the European Commission but according to FP 6 rules (50% for R&D activities, 35% for demonstration activities);

2. BROADWAN is the first step towards a purely commercial project. Tex Broadband is one of the continuation of BROADWAN.

3. BROADWAN results are contributing for consolidation of an existing market. The deliverable nr. 34 “Business opportunities for broadband wireless solutions” – which is one of the most important in terms of future business – shows that WiMAX technology will be extensively used in rural areas, or low density population areas (e.g. Africa and some areas from Asia-Pacific) as WiMAX is a cheap and affordable solution⁽⁴⁾.

4. In emerging markets, WiMAX could allow operators to be freed from the crippling costs of deploying wire line infrastructures, which would in turn stimulate broadband development in urban areas” (source: BROADWAN project, deliverable 34 – Business opportunities for broadband wireless solutions). This lead to the conclusion that Tex Broadband product developed under WiMAX technology will be well accepted by potential markets, not only for domestic users but also for business and local/regional/national authorities, such as: fire brigades, police, ambulance, local/regional governments, etc.

5. WiMAX technology cannot yet be considered mature. The business models have yet to be firmly set, and it is still difficult to compare them with DSL models, which having been deployed on a massive scale. This massive deployment has in turn driven down the price of equipment – both the DSLAM and client modems – considerably over the past few years.

7. Business case 2 (RDI private funding): TEX BroadBand – a product developed by InterStarTech Romania SRL

7.1. Introduction

Inter Star Tech Ltd. decided to develop a new product which could be used by all IP Mobile WiMAX Core Network Interconnection Entity – named TEX BroadBand (TX BB), aimed to be sold in Emerging Markets. All R&D activities will be performed by InterStarTech Romanian SRL, the branch of InterStarTech Ltd. Israel.

The project’s aim is to develop a unique solution for WiMAX solution for emerging markets. The WiMAX is an innovative broadband solution which aim to be the solution for the 4’th generation of the mobile networks. The project will be focus on developing inovative low cost solution for mobile WiMAX networks for interconnecting between the RAN (Radio Access Network) and the CSN (Core Service Network) with segmentation on emerging markets.

7.2. Market Study (extract from the TEX BroadBand market study performed by Inter Star Tech Ltd Israel)

7.2.1. State of the art

Although today it seems the internet is everywhere, this is far from the reality of most of the population of the world. Actually the situation is much more worst since there are large areas of the world in which people doesn't have personal phone line and in the good case have public phone in the centres of the villages. This situation is mainly common in rural areas in many places and especially in East Europe, Asia, Africa, Latin America but as well in many other places all over the world.

The WiMAX technology which gives a unique solution to bring broadband to everywhere and one network to carry quadruple services (Data, Voice, Video & Mobile services) is actually the solution to close this gap of internet to everyone and everywhere and by that mean close the digital divide gap. Currently as broadband technology we can find the cable modem internet services and the xDSL, and also in the cellular mobile network we can find the UMTS also as an infrastructure for that. The cable modem (DOCSIS) and the xDSL are usually not available in emerging markets and rural area (very high capex), and the 3G cellular networks are not offering enough bandwidth available for everyone in attractive price like the WiMAX can offer.

7.2.2. Market relevance & expected impact (economical & social)

The development of the internet connectivity, as well as its value added services is essential in today's world. However, a significant part of the world doesn't benefit this platform due to lack of infrastructure, developing countries are still behind and inability to reach remote rural areas of which there is not economical justification with traditional infrastructure, i.e. very low density of subscribers vs. high costs of cabling infrastructure (CAPEX). This is causing within countries and in between them "digital" discrimination which are badly affecting educational and business effectiveness which sometimes called as the digital divide.

The WiMAX is an excellent solution for those cases, together with the way the ASN/GW is designed to cost and effectiveness for emerging markets, it is expected to be adopted widely by operators. In some cases, governments intervene and offer financing for operators to help bridging this digital gap, which is bringing more invested money to this market.

The basic attributes of the emerging markets are as followed:

- Low GDP;
- Bad infrastructure;
- Typically low broad band penetration;
- Including markets in transition – Russia, India, China;
- All of Asia Pacific – countries, not including Japan, Singapore, Taiwan, Korea, Australia;
- All of Latin America, Middle East and Africa, Central and Eastern Europe.

7.2.3. Technological innovation and strategic relevance

Mobile WiMAX is developing the technology to fulfil the fourth generation of cellular mobility. Compared to today's third generation solutions, the WiMAX brings added value in speed, full IP based infrastructure, always on connection and service level agreement which can determine the quality of service of a mobile user. The WiMAX 802.16e standard based systems are in development by many major players in the telecom market, some of them even focus on the ASN function only, while WiMAX networks fully based on 802.16e are not yet deployed in the world. Taking part of the WiMAX revolution in providing "personal broadband" in this phase is strategic to assure a significant market share. Focus on emerging markets is even more relevant since these will be among the first markets that WiMAX technology will enter.

7.3. Economic justification of the project proposal

7.3.1. Contribution to the competitive growth of the beneficiary company

In the terms of contribution to competitive growth the following can be mentioned:

- WiMAX as a technology is defined sometimes as a Wireless DSL broadband equipment, in that respect it competes the current solutions for data broadband connectivity like xDSL and also compete with cable TV solution in bringing internet connectivity and IPTV.
- WiMAX mobile is aimed to be the forth generation mobile network infrastructure, in that respect the WiMAX will compete the 3G cellular network solution like UMTS, EvDO (CDMA200 based) and also with what is targeted to be the forth generation cellular infrastructure for mobile broadband connectivity, LTE.

7.3.2. Existence of some favourable market situations for the product/technology/ service resulting from marketing studies

As mentioned above the outcome of this project will be All IP Mobile WiMAX Core Network Interconnection Entity for Emerging Markets with mainly focused on delivering primary voice services. Currently there is no standard based technology which brings low cost broadband connectivity to emerging markets. Based on research the total WiMAX market by 2010 will be 3.2 billion USD, the part of the emerging markets in the 3.2B\$ are 1.5B\$ which represents 47% of the total WiMAX market by 2007. As mentioned above the expected market revenue of ASN/GW's by 2010 will be in the emerging markets 200M\$.

8. Conclusions

8.1. Public vs. private research

Apparently public R&D is fulfilling society needs and at the end of the day results are not important for economic environment, but the most important is to spend the approved amounts correctly. Project results seem not to be significant. It is said that publicly funded R&D is not offering competitive advantages to applicants. It has to be specified that, in this particular case, academic institutions (R&D centres, universities or state owned undertakings) are not taken into discussion as they are almost exclusively interested to publish in prestigious journals, to publish books or to be known among international scientific communities.

Companies are interested in making profits, in growth, in market shares, in a better position within the industry and, ultimately, to give higher amounts to shareholders. Are the two systems antagonists? At the first view, companies are not interested in public research as most of participants to public R&D programs are academia or NGOs. However, in industrial R&D from public programs, we can see an important number of companies. What are they looking for? Why are they subsidising their participation, as governments are not paying 100%?

BROADWAN and TEX BroadBand projects (Business case 1 and Business case 2) could be considered as representative for a trend that companies are following, respectively to access public R&D funds with a similar role as insurance policies against some risks, mainly the technological risks.

FX risks, change in commodities prices are mitigated using other means, like the use of derivatives:

- BROADWAN is a high risk project in terms of technology development and business perspectives. Even WiMAX Technology is very new and manufacturers would be ready to produce large amounts of devices, it is not sure that markets are ready to accept such an innovative product. Once BROADWAN is completed, members of the consortium are aware of important elements related to technology itself and market disponibility to receive WiMAX devices. It means that all risks are decreased and BROADWAN makes the first step forward towards definition of mature markets.
- TEX BroadBand aims to be sold to three categories of clients:
 - Individuals;
 - small companies in need of transferring large amounts of data at high speed;
 - local/regional/national authorities and governments as TEX BroadBand could be used for fire brigades, ambulances and police cars.

TEX Broadband has the advantage that is a no longer a risky project in terms of technology development and less riskier in terms of business. The financial burden is drastically diminished.

8.2. Conclusions

R&D is an indispensable necessity for innovation dynamic and competitiveness. Among other things, the long-term competitiveness of a developed country counts as endangered if (1) its industry conducts considerably less R&D than industry in other developed countries, or (2) the research profile of its industry bypasses the most promising technological areas for the future markets. companies become active abroad in R&D either (1) in order to optimize the adaptation to foreign market conditions and to increase foreign market shares (market motive) or (2) in order to access specific knowledge in specially suited locations or to generate it there (knowledge motive).

Multinational involvement in overseas research and development R&D has increased significantly during the past decade. Multinational firms from North America, Europe, Japan, and South Korea have accelerated the pace of their direct investments in overseas R&D. In addition, a number of multinational companies have established or acquired multiple R&D

laboratories abroad and are increasingly integrating these laboratories into a global R&D network.

The expansion of foreign direct R&D investments in the United States during the past decade took place amid a significant increase in global mergers and acquisitions. Foreign acquisitions of US companies have had a significant impact on the overall R&D data, both in terms of foreign R&D expenditures and FDI in R&D in the United States. Although there was a widespread surge in the late 1980s in acquisitions in all industries, such as computers, banking, semiconductors, steel, and tires, the largest impact on R&D funding and direct investments was in the acquisition by foreign multinational companies of US drugs and biotechnology firms with large R&D budgets (Serapio Jr. et al., 1999).

During recessions and crises periods, one of the measures that governments should have been taken is to INCREASE the public amounts (both in real terms and as % of GDP) for public R&D programs, and encourage companies to develop products & technologies from public funds, as many risks are considerably diminished.

Notes

- (1) According Trott, P., – Innovation Management and New Product Development, third Edition, p5, Prentice – Hall, 2005.
- (2) See The Innovation Union's performance scoreboard for Research and Innovation, 1 February 2011, available at http://ec.europa.eu/research/innovation-union/pdf/iu-scoreboard-2010_en.pdf.
- (3) The Seventh Framework programme for European Community of Atomic Energy (2007-2011) is separate.
- (4) Extract from BROADWAN D34, p. 12. “The factors that provide the market’s various players with an incentive to deploy WiMAX include the capacity to: ...Provide a lower-cost, reliable and robust solution: wire line infrastructure deployments require massive investments. WiMAX, on the contrary, can be deployed using existing infrastructures (towers, high points...) and scaled for optimal usage (calculating the adequate number of base stations based on potential market).”

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