

Reloading Economics

“The unusual characteristic of wealth was imposed in two ways: as an illusion of the equality of chances and as a support for the statistical access to power.”

For at least two decades, the explicative capacity of Economics has been experiencing a problem: consequences, in their vast majority, do not follow from premise. A neurotic estrangement took place between the relevance of the theory and its consistencies and contents.

Critically, the phenomenology of relevance failed to be founded on the substantiation heralded by consistency. The empty explicative space was also equally installed between the rationality of the premise and the configuration of the consequences – the inclusion area of unintentional consequences, for instance, points to this. Between the intentional load of the premise and the end result a significant difference emerges, represented by unintentional consequences, a fact which generates pre-logical, and even illogical states for the understanding.

When something occurs beyond the explicative spectrum of rational hypothesis, it infiltrates magical thinking with a motivating role. The rationalized aspects remain thus suspended, even creating for Economics the risk of operating with conjectures, if it does not fail in the jungle of ideologizing assumptions.

We cannot ignore the fact that this epistemological neurosis of Economics appeared from the moment the means for attaining a certain goal have been forcefully multiplied, that goal being wealth. The unusual characteristic of wealth was imposed in two ways: as an illusion of the equality of chances and as a support for the statistical access to power. The former related to permissiveness of societal mechanisms as implied by democratization, while the latter was linked to the cost reduction in the functioning of democratic systems.

Both situations are, without doubt, perverted: the equality of chances is real in a potential sense, which is that it can only be statistically verified, while the access to power is a potential which is fulfilled by exception, non-statistically.

The alteration of the sense of democracy into an illusion of the equality of chances is more and more obvious as the means for the substantiation of wealth multiply. The well-travelled path of the casino economy supports this truth.

Speculation, rent-seeking, the creation of fictitious assets, the virtualization of real-estate growth etc. insure the content of the casino economy. In a tragic and therefore unreal way, people experience the illusion of getting rich. Perpetually inventing means for growing the wealth, like credit unlimited by rational conditions or the stimulation of the price of homes in order to generate the irrational exuberance of deferring costs to the future through excessive indebtedness, represent aspects specific to the casino economy.

In a casino economy the reality feels good, while reason – with its scientific pendant – is sent on vacation. Frankly speaking, the conditions for this absence are created because people, being overwhelmed by success, have no need for reason and rationality. As it is well known, the excessively better collapses the accessible good, the architecture of success sought by any means crumbling inevitably in the dust of illusion.

What seemed the royal path of the equality of chances through unlimited access to wealth is proven a Sisyphean tragedy experienced in mass. And this because after the panic attack is spent through the unraveling of the illusion, the habit of experiencing genuine effort must be re-acquired, as suggested by the fable of the hero of antiquity. It is the only measure for the equality of chances.

The goal of attaining power through wealth by any means is always statistically lost. Wealth cannot be democratic as long as it must also be rational, whereas power rarefies democracy by using wealth as a founding argument. One cannot be the other unless both are admitted as having no connection with democracy – seen as equality of chances and as responsible right to freedom.

The thing we feel is the neurosis of Economics is based on the falsifying of the means necessary for attaining the goal, as well as the loading of this goal with illusory contents. In fact, exiting the neurosis is possible by reloading Economics with its substance limited by the natural, original goal. The mixture of senses in the function of Economics pushes it towards the transactional universe of political interests in the distribution of power, a fact which would generate the abdication from the principles which structure the space of the rationality of utility effects, because the effort would be simply a problem of political calculation.

Epistemologically, this means that the results must be completely explained by another rational hypothesis.

Marin Dinu

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The Impact of Sovereign Credit Ratings on the Issuance of Government Bonds in Central and Eastern Europe

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Abstract. *The current research paper aims to assess the impact of sovereign credit ratings on the issuance of government bonds in Central and Eastern Europe. The personal analysis is performed on a sample of government bonds issued by Turkey, Hungary, Czech Republic, Slovak Republic, Poland, Romania and Russia between 2000-2010. The sample includes issues in several currencies (EUR, USD, GBP, JPY, CHF, CZK, PLN, TRY, RUB, RON, HUF). The research paper consists of two different analyses. The first one assesses the degree in which the variation in the initial yield of government bonds issued in one particular currency can be explained by using explanatory variables such as: inflation, sovereign rating corresponding to the issuing country, and the state of crisis (this analysis is performed for each currency separately). The second analysis assesses the degree in which the variation in the maturity of the government bonds issued by a certain country can be explained by using explanatory variables such as: inflation, sovereign rating on the date of issuance, and the state of crisis.*

Keywords: sovereign credit rating; government bonds; initial yield; maturity.

JEL Codes: G24, G15.

REL Code: 11B.

Introduction

Existing research has approached the general theme of the impact of sovereign credit ratings on the capital markets at multiple levels; multiple studies have focused on the influence of sovereign ratings on stock markets and bond markets (secondary markets), and few on the influence of sovereign ratings on the forex markets and on the derivative instruments. One of the areas least explored so far has been the impact of sovereign ratings on the issuance of government bonds. Therefore, such a research may offer a significant potential for new and interesting results.

Literature review

Most of the previous research in the area concerned with the impact of sovereign credit ratings on bonds markets has focused on the secondary bonds markets (ie the markets in which investors trade previously issued bonds) rather than on the primary bonds markets (ie the markets in which bonds are issued). In general, the research papers from the former category proved that the changes in sovereign ratings have an influence on the price of bonds (for example, Reisen, Maltzan, 1999, have proved this result for emerging markets), that the reaction of the bond prices is stronger in the case of a rating downgrade than in the case of a rating upgrade (Gonzales et al., 2004), and that there can be a contagion effect on the neighbouring countries (Arezski et al., 2010, Gande, Parsley, 2005). Thus, Arezski et al. (2010), in a study performed on a sample of data between 2006-2010 from various european countries, proved that the downgrading of a sovereign rating for a country in the euro zone would have an impact not only on the local market, but also on other capital markets in the euro zone.

The start point for the current research has been De Broeck & Guscina's (2011) article "Government Debt Issuance in the Euro area: The Impact of the Financial Crisis" published within the "IMF Working Paper" series. This article analized the way in which the issuance standards for the issuance of government bonds in the euro zone area and Denmark have changed following the financial crisis. The authors used a database including government bonds issued between 2007-2009. The results of their research proved that the issuance standards for the analysed area did change following the financial crisis, and the negative impact of the crisis on the issuance standards has been the strongest in the case of euro zone countries which had huge debt and huge budget deficits, the reason being the fact that such countries had to assume additional risks when trying to refinance their debt after the crisis. Before the

crisis, the issuance standard could be characterized by the following elements: local currency, fixed coupons, long maturities; following the crisis, the new issuance standard is characterized by: shorter maturities, foreign currency denominations and variable coupons. The authors performed their research on a sample of 3,000 government bonds issued by the countries mentioned between 2007-2009.

The personal analysis described below is to a certain extent more complex than the one from the IMF study briefly described above: most of the countries in the sample are not in the euro zone, and for this reason the sample contains a significant number of issuances in currencies other than the euro. Therefore, a differentiated analysis had to be performed for each country separately and for each currency separately.

Description of data

The personal analysis has been performed on a sample which includes issues of government bonds made by Turkey, Hungary, Czech Republic, Slovakia, Poland, Romania and Russia between 2000-2010. Overall, the sample includes 1,306 issues, for which the following data have been collected from Reuters: principal currency, interest currency, issued amount, issue date, maturity date, initial yield etc. (The initial sample from which these issues have been selected included much more data – 3,541 issues – but many of those had incomplete data available). The sample includes issues in several currencies for each country, as follows: Turkey (EUR, JPY, USD and TRY), Hungary (CHF, EUR, GBP, HUF, JPY and USD), Czech Republic (CHF, CZK and EUR), Slovakia (only EUR), Poland (EUR, PLN, USD, GBP, JPY and CHF), Romania (EUR and RON), and Russia (only RUB). The two tables below summarize the total numbers of issuances of government bonds in the sample for each year and each country (the first table) and for each currency and each country (the second table):

Table 1

Total number of issues of government bonds per countries and per years

	Turkey	Hungary	Czech Republic	Slovakia	Poland	Romania	Russia
2000	2.0	-	-	-	-	-	-
2001	9.0	2.0	12.0	4.0	2.0	-	-
2002	1.0	1.0	15.0	2.0	5.0	-	1.0
2003	4.0	3.0	1.0	3.0	5.0	-	9.0
2004	9.0	4.0	23.0	3.0	6.0	-	1.0
2005	11.0	5.0	29.0	1.0	14.0	10.0	3.0

2006	16.0	4.0	80.0	2.0	5.0	7.0	2.0
2007	34.0	5.0	6.0	2.0	11.0	8.0	2.0
2008	70.0	3.0	44.0	1.0	13.0	9.0	5.0
2009	113.0	51.0	39.0	4.0	42.0	11.0	9.0
2010	190.0	144.0	11.0	7.0	50.0	31.0	7.0
2011	8.0	40.0	-	1.0	7.0	8.0	4.0

Table 2

Total number of issues of government bonds per countries and per currencies

	Turkey	Hungary	Czech Republic	Slovakia	Poland	Romania	Russia
EUR	11	11	6	30	15	4	-
USD	28	2	-	-	8	-	-
CHF	-	-	-	-	8	-	-
JPY	-	-	-	-	12	-	-
GBP	-	-	-	-	1	-	-
CZK	-	-	254	-	-	-	-
PLN	-	-	-	-	116	-	-
HUF	-	249	-	-	-	-	-
RON	-	-	-	-	-	80	-
TRY	428	-	-	-	-	-	-
RUB	-	-	-	-	-	-	43

Moreover, additional data has been collected from Reuters on the following economic indicators for all the countries in the sample: CPI, Consumer confidence index, and sovereign credit ratings issued by the three largest rating agencies in the world (S&P, Moody's and Fitch) for the countries in the sample and the period analyzed.

In the next pages we will perform a statistical analysis of the data in the sample, including the assessment of the government bonds from each country with regard to: the average maturity for each year (and how the average maturity of government bonds issued changed over the period analyzed in each of the countries), the number of issues per each year (and to what extent this number has suffered changes over the period analyzed), and the average initial yield for the issues from each year. The average number of issues for each year and the average initial yield for each year have been calculated for each currency separately, in order to obtain comparable results.

With regard to the average maturity of the government bonds issued by the countries in the sample, we noticed that in all situations there is a difference between the average maturity of the government bonds issued before 2008 (between 2000-2008) and the average maturity of the government bonds issued between 2009-2011: Turkey (average maturity approx 10 years between 2000-2008; average maturity below five years after 2008); Hungary (average

maturity between 7.5-13 years in the period 2000-2008; average maturity between 0.6-1.3 years after 2008); Czech Republic (average maturity between 10-20 years during the period 2000-2007; average maturity between 0-6 years after 2008); Slovakia (average maturity between 10-18 years during the period 2008-2011; average maturity below six years after 2008); Poland (average maturity between 9-17 years during the period between 2000-2008; average maturity below four years after 2008); Romania (average maturity of 10-16 years between 2000-2008; average maturity below 1 year after 2009); Russia (average maturity of 10-23 years between 2000-2007; average maturity of 3-7 years after 2008).

This trend has also been noticed by De Broeck & Guscina (2011) in their study on the government bonds issued by euro zone countries and Denmark between 2007-2009. De Broeck and Guscina (2011) have noted that after the inception of the financial crisis in Europe, the trend in the primary market of government bonds has been of sharp decrease in the average maturity, this fact being generated by the increased uncertainty in the capital markets and by the increasing reluctance of investors to place money in long-dated instruments.

Few of the countries in the sample have witnessed a reversal of this trend in 2011: for example in Turkey, the average maturity of the government bonds issued before the publication date for this article has been greater than five years. The table below presents further details on the statistical analysis related to the average maturity of the government bond issuances included in the sample.

Table 3

The average maturity for the government bond issued by each country in the sample in each of the years between 2000 – 2010

	Average maturity (# years)		Czech Republic	Slovakia	Poland	Romania	Russia
	Turkey	Hungary					
2000	20.0						
2001	8.8	13.0	12.0	10.0	10.0		
2002	10.0	11.1		10.0	11.9		10.1
2003	9.5	9.2	10.7	10.0	8.4		19.9
2004	11.3	10.9	10.0	11.7	16.7		14.0
2005	8.1	9.0	9.8	7.0	14.5	10.8	13.8
2006	7.0	8.2	17.9	17.5	11.2	15.4	23.0
2007	5.1	8.2	20.2	10.0	11.1	16.2	8.5
2008	4.1	7.5	5.0	3.0	9.1	14.8	6.6
2009	3.3	1.1	5.8	4.2	2.1	13.4	3.6
2010	3.9	0.6	1.9	5.4	2.6	1.1	3.3
2011	7.8	1.3	1.1	1.0	4.2	0.9	2.8

With regard to the currencies of the issuances included in the sample, we have noticed several particularities, as follows.

First of all, the main currencies in which the countries included in the sample have issued government bonds have been the local currencies (each country's own local currency, except for Slovakia), EUR and USD. The countries have also issued occasionally government bonds in other currencies, such as GBP, JPY, CHF. All the countries in the sample, except for Russia, have issued government bonds denominated in EUR, but we could not identify any trend in the evolution of the number of such issues. Fewer countries have issued government bonds denominated in USD (Turkey, Hungary and Poland). All the countries in the sample, except for Slovakia, have issued government bonds denominated in the local currency. The maximum number of issuances in local currency has not been reached by all countries in the sample in the same year (Turkey – 2010, Hungary – 2010, Czech Republic – 2006, Poland – 2010, Romania – 2010, Russia – 2003). Moreover, the issues in local currencies have had a high weight out of the total number of issues in most countries: Hungary, Czech Republic, Turkey, Poland and Romania.

Table 4

The issues of government bonds denominated in local currency – as a % of the total number of issues per country per year during 2000-2010

Local currency	Issues denominated in the specified currency - % of the total number of issues each year						
	Turkey	Hungary	Czech Rep.	Slovakia	Poland	Romania	Russia
2000							
2001	100.0%	50.0%	100.0%		50.0%		
2002		100.0%	100.0%		40.0%		100.0%
2003	25.0%	33.3%			20.0%		100.0%
2004	44.4%	50.0%	95.7%		66.7%		100.0%
2005	27.3%	40.0%	100.0%		28.6%	100.0%	100.0%
2006	81.3%	75.0%	100.0%		40.0%	100.0%	100.0%
2007	91.2%	80.0%	83.3%		63.6%	100.0%	100.0%
2008	92.9%	66.7%	95.5%		76.9%	100.0%	100.0%
2009	97.3%	98.0%	97.4%		85.7%	81.8%	100.0%
2010	97.4%	99.3%	100.0%		88.0%	93.5%	100.0%
2011	87.5%	100.0%			71.4%	100.0%	100.0%

Regarding the trends in the evolution of the number of issues denominated in local currency, we have noticed an increasing trend only in a few situations: Turkey; Hungary (only 2009-2011); Poland (only in 2006-2010). The number of issues denominated in local currency in each country as a percentage of the total number of issues in the country also had a different evolution from one country to another. Thus, this percentage has been relatively higher in 2009-2010 compared to 2000-2008 in most countries; one exception was Romania, where the percentage has been lower in 2009 and 2010.

Table 5

The number of issues of government bonds denominated in local currency for each country in the sample and each year between 2000-2010

Local currency	Number of issues per year in local currency			Slovakia	Poland	Romania	Russia
	Turkey	Hungary	Czech Rep.				
2000							
2001	9	1	12		1		
2002		1	15		2		1
2003	1	1			1		9
2004	4	2	22		4		1
2005	3	2	29		4	10	3
2006	13	3	80		2	7	2
2007	31	4	5		7	8	2
2008	65	2	42		10	9	5
2009	110	50	38		36	9	9
2010	185	143	11		44	29	7
2011	7	40			5	8	4

Among the particular situations identified, we would like to mention Slovakia (which issued government bonds denominated only in EUR during the period analyzed. This result may be due to the fact that Slovakia entered the euro zone on the 1st of January 2009, which would explain why all interest for Slovak debt in the years before joining the euro zone has been for debt in EUR) and Russia (which issued all the government bonds included in the sample in RUB, the local currency).

The average initial yields for the government bonds issued in EUR by the countries in the sample have not had a uniform behavior during the period analyzed and from one country to another. Between 2000-2003 we have noticed very large differences between the average initial yields calculated for government bonds issued by different countries (for example 9.6% for Turkey in 2003 vs. 4.3% in Hungary during the same year). This situation may be generated by the structural economic differences existing between the two countries at the specified moment (inflation, sovereign credit rating). The average initial yields for the government bonds denominated in EUR vary in a much narrower interval between 2004-2006 (3.5%-5%), and after 2007 there have been again very large differences among countries. We have noticed that same phenomenon in relation to the government bonds issued in USD.

The average initial yields for the government bonds denominated in the local currency exhibited different trends from one country to another; the maximum values for each country have been recorded in different years (2007 – Turkey, 2004 – Hungary, 2001 – Czech Republic, 2001 – Poland, 2009 – Romania and 2003 – Russia).

Research and results overview

The big variety of the data in the sample has allowed us to run several regressions. These regressions can be divided into two distinct categories, as follows:

- Regressions which determine for the government bonds issued in one certain currency to what extent the average initial yield can be explained by using explanatory variables such as inflation, sovereign rating corresponding to the country who issues the bonds and to the year of issuance, and the crisis/non-crisis state.
- Regressions which determine for the government bonds issued in a certain country (regardless of the currency) to what extent the variation in maturity can be explained by using explanatory variables such as inflation, sovereign rating at the issue date, and the crisis/non-crisis state. For these sub-sets of bonds we could not run regressions aiming to determine to what extent the same explanatory variables can explain the initial yield, because in most countries, the bonds have been denominated in various currencies, and for this reason the initial yields were not comparable numbers.

Following the results of the research performed by De Broeck and Guscina (2011) with regard to the issues of government bonds by the countries in the euro zone and Denmark, and following the results of other pieces of research concerned with the influence of sovereign ratings on the evolution of the bond markets (Raisen, Maltzan, 1999, Hertelius et al., 2008), we have identified the following elements which may help explain the most important parameters of the issues of government bonds included in our sample (the initial yield and the maturity): inflation, sovereign rating corresponding to the country which is issuing the bonds and for the moment when the issue is made, crisis/non-crisis state (quantified through a dummy variable which has a value equal to 1 if the year belongs to a crisis period and zero otherwise).

In order to explain the relationship among the above mentioned variables, we have firstly grouped the data into new smaller samples, each of them containing government bonds issued in a certain currency (in order to ensure the comparability of the data), regardless of the issuing country. We have therefore created the following samples:

1. Sample – Government bonds denominated in USD
2. Sample – Government bonds denominated in EUR
3. Sample – Government bonds denominated in PLN
4. Sample – Government bonds denominated in HUF
5. Sample – Government bonds denominated in CZK

6. Sample – Government bonds denominated in RUB

7. Sample – Government bonds denominated in TRY.

We have created no samples for GBP, JPY and RON because the number of issues with complete data available was too small in order to be able to generate a set of significant results through running a regression.

We will now present in detail the results of this first set of regressions. The correlations among the variables that we will refer to are summarized in Annex 1. Moreover, the table below is summarizing the results of all regressions ran during this first stage.

Table 6

Summary of the results of the first set of regressions

	1(a) USD	1(b) USD	2(a) EUR	2(b) EUR	3(a) PLN	4(b) HUF	5(a) CZK	6 RUB	7(a) TRY	7(b) TRY
R Square	0.8663	0.8687	0.4042	0.3956	0.6166	0.5240	0.5244	0.2005	0.4600	0.4420
<i>Coefficients</i>										
Intercept	8.8094	8.9236	4.6377	4.4557	32.9703	- 3.3432	- 11.3010	23.5963	- 32.8563	- 25.1006
Inflation	0.1029	0.1007	0.1856	0.2015	1.0984	- 0.1341	0.4880	- 0.4497	2.1926	1.9386
Sovereign rating at issue date	- 0.2657	- 0.2669	- 0.0612	- 0.0639	- 1.9718	0.7671	0.9523	- 0.7285	2.8451	2.3726
Crisis dummy	na	- 0.2244	- 0.3145	na	- 2.9183	0.5279	- 3.3125	na	1.9763	na
<i>P-values</i>										
Intercept	0.0000	0.0000	0.0038	0.0045	0.0005	0.0507	0.0335	0.0101	0.1206	0.2074
Inflation	0.0000	0.0000	0.0060	0.0018	0.0001	0.0753	0.0015	0.0374	0.0000	0.0000
Sovereign rating at issue date	0.0004	0.0004	0.4893	0.4686	0.0022	0.0000	0.0058	0.2094	0.1592	0.2294
Crisis dummy	na	0.4968	0.4406	na	0.0000	0.1264	0.0000	na	0.2675	na

1) Sample – Government bonds denominated in USD:

This sample includes 30 government bonds denominated in USD, issued between 2000-2010 by the following countries: Poland, Turkey, Hungary.

Following the assessment of the correlations among variables, we have tested through regression analysis to what extent the variation in the initial yield for the government bonds issued in USD can be explained by using the explanatory variables: sovereign rating at issue date, Inflation, and crisis dummy. We have ran two versions of regressions: (1a) the first regression uses only inflation and sovereign rating at issue date as explanatory variables; (1b) the second regression uses all three available variables as explanatory variables.

Both regressions have high R-square values (0.8663 and 0.8687), which means that 86.63% (and 86.87%) of the variation in the Initial yield of the government bonds issued in USD can be explained by using the selected explanatory variables. However, the large p-value (0.5) associated with the

coefficient of the crisis dummy explanatory variable in the second regression indicates that that coefficient is not statistically significant.

Therefore, the variation in the Initial yields of the government bonds issued in USD between 2000 – 2010 can be explained best by using the explanatory variables inflation and sovereign rating at the issue date. Both coefficients resulted from this regression are statistically significant.

2) Sample – Government bonds denominated in EUR:

This sample includes 46 government bonds denominated in EUR, issued between 2000-2010 by the following countries: Slovakia, Poland, Czech Republic, Hungary, Turkey and Romania.

Following the assessment of the correlations among variables, we have tested through regression analysis to what extent the variation in the initial yield for the government bonds issued in EUR can be explained by using the explanatory variables: sovereign rating at issue date, inflation, and crisis dummy. We have ran two versions of regressions: (2a) the first regression uses all three available variables as explanatory variables; (2b) the second regression uses only inflation and sovereign rating at issue date as explanatory variables.

None of the two regressions have high values for the R-square indicator (0.4042 and 0.3956), which means that only 40.42% (and 39.56%) of the variation in the initial yield for the government bonds issued in EUR can be explained by using the chosen explanatory variables. Moreover, the p-values associated to most of the coefficients (0.49 and 0.44 for the first regression; 0.47 for the second regression) show that the corresponding coefficients are not statistically significant.

3) Sample – Government bonds denominated in PLN:

This sample includes 48 government bonds denominated in PLN, issued between 2000-2010 by Poland.

Following the assessment of the correlations among variables, we have tested through regression analysis to what extent the variation in the initial yield for the government bonds issued in PLN can be explained by using the explanatory variables: sovereign rating at issue date, inflation, and crisis dummy. We have ran only one regression: (3a) the regression uses all three available variables as explanatory variables.

The regression has a relatively large R-square (0.6166), which means that 61.66% of the variation in the initial yield of the government bonds issued in PLN can be explained by using the chosen explanatory variables. Moreover, the

p-values associated to the coefficients resulted from running the regression show that all the coefficients are statistically significant.

Therefore, the variation in the initial yields of the government bonds issued in PLN between 2000 – 2010 can be explained best by using the explanatory variables inflation, crisis dummy and sovereign rating at the issue date.

4) Sample – Government bonds denominated in HUF:

This sample includes 78 government bonds denominated in HUF, issued between 2000-2010 by Hungary.

Following the assessment of the correlations among variables, we have tested through regression analysis to what extent the variation in the initial yield for the government bonds issued in HUF can be explained by using the explanatory variables: sovereign rating at issue date, inflation, maturity (#years) and crisis dummy. We have ran two versions of regressions: (4a) the first regression uses all four available variables as explanatory variables; (4b) the second regression uses only sovereign rating at issue date, inflation and crisis dummy as explanatory variables.

Both regressions have high values for the R-square indicator (0.5634 and 0.5240), which means that 56.34% (and 52.40%) of the variation in the initial yield for the government bonds issued in HUF can be explained by using the chosen explanatory variables. Moreover, the p-values associated to the coefficients resulted from running both regressions show that all coefficients are statistically significant.

Therefore, the variation in the initial yields of the government bonds issued in HUF between 2000-2010 can be explained best by using the explanatory variables inflation, crisis dummy, maturity (#years) and sovereign rating at the issue date.

5) Sample – Government bonds denominated in CZK:

This sample includes 54 government bonds denominated in CZK, issued between 2000-2010 by the Czech Republic.

Following the assessment of the correlations among variables, we have tested through regression analysis to what extent the variation in the initial yield for the government bonds issued in CZK can be explained by using the explanatory variables: sovereign rating at issue date, inflation, maturity (#years) and crisis dummy. We have ran two versions of regressions: (5a) the first regression uses only sovereign rating at issue date, inflation and crisis dummy

as explanatory variables; (5b) the second regression uses all four available variables as explanatory variables.

Both regressions have high values for the R-square indicator (0.5244 and 0.5966), which means that 52.44% (and 59.66%) of the variation in the initial yield for the government bonds issued in CZK can be explained by using the chosen explanatory variables. Moreover, the p-values associated to the coefficients resulted from running both regressions show that all coefficients are statistically significant.

Therefore, the variation in the initial yields of the government bonds issued in CZK between 2000 – 2010 can be explained best by using the explanatory variables inflation, crisis dummy, maturity (#years) and sovereign rating at the issue date.

6) Sample – Government bonds denominated in RUB:

This sample includes 25 government bonds denominated in RUB, issued between 2000-2010 by Russia.

Following the assessment of the correlations among variables, we have tested through regression analysis to what extent the variation in the initial yield for the government bonds issued in RUB can be explained by using the explanatory variables: sovereign rating at issue date, and inflation.

The regression has a very low R-square (0.2005), which means that only 20.05% of the variation in the initial yields of the government bonds issued in RUB can be explained by using the chosen explanatory variables. All coefficients resulted from the regression are statistically significant, but given the low R-square, the value of the analysis performed is anyway very reduced. Therefore the variation in the Initial yields of the government bonds issued in RUB during 2000-2010 can be explained only to a small extent by using the chosen explanatory variables.

7) Sample – Government bonds denominated in TRY:

This sample includes 42 government bonds denominated in TRY, issued between 2000-2010 by Turkey.

Following the assessment of the correlations among variables, we have tested through regression analysis to what extent the variation in the initial yield for the government bonds issued in TRY can be explained by using the explanatory variables: sovereign rating at issue date, inflation, crisis dummy. We have ran two versions of regressions: (7a) the first regression uses all three

available variables as explanatory variables; (7b) the second regression uses only sovereign rating at issue date and inflation as explanatory variables.

Both regressions have high values for the R-square indicator (0.4600 and 0.4420), which means that 46% (and 44.2%) of the variation in the initial yield for the government bonds issued in TRY can be explained by using the chosen explanatory variables. However, many of the p-values associated with the coefficients resulted from the two regressions show that the corresponding coefficients are not statistically significant (sovereign rating at issue date and crisis dummy for the first regression; sovereign rating at issue date for the second regression).

Therefore, the variation in the initial yields of the government bonds issued in TRY between 2000-2010 cannot be explained satisfactorily by using the chosen explanatory variables.

The second part of the current study consists of an analysis of the maturity (in years) the government bonds issued by each separate country:

Following the previously mentioned references and the first part of the current article, we have identified the following elements that may play a role in explaining the maturity of the government bonds issued by a particular country: inflation, sovereign rating at issue date, crisis / non-crisis state (quantified through a dummy variable which equals 1 in case the corresponding year is in a crisis period, and zero otherwise).

In order to assess the relationship between the variables mentioned above, firstly we have grouped the data in the sample so that we have created new samples, each of them containing the government bonds issued by one particular country, regardless of the currency in which they were denominated. We have thus created the following new samples:

- 8) Sample – Government bonds issued by Turkey
- 9) Sample – Government bonds issued by Russia
- 10) Sample – Government bonds issued by Czech Republic
- 11) Sample – Government bonds issued by Slovakia
- 12) Sample – Government bonds issued by Poland
- 13) Sample – Government bonds issued by Hungary.

We have not created a separate sample for Romania, because there were only four government bonds issued by Romania with full data available, and such a small number of observations would not have made a regression analysis possible.

Secondly, we have calculated the correlations among the variables for each of the newly created samples: maturity (# years), inflation, sovereign rating at issue date, crisis dummy.

Afterwards, based on the values of the correlations among the variables in each newly created sample, we have defined several versions of regressions to be run and analysed for each of the samples. The following section presents a detailed analysis of these regressions. One may notice that even if the overall sample contained a larger number of government bonds, the newly created samples have a smaller number of observations, because the data collected for the explanatory variables would have not been complete if all the initial observations had been taken into account. The correlations among the variables (which we will refer to in the paragraphs below) are presented in detail in Annex 2. Moreover, the table below synthesises the results for all the regressions ran during this second part of the research.

Table 7

Results summary for the regressions ran for the second part of the research

	8 Turkey	9 Russia	10 Czech Rep.	11 Slovakia	12 Poland	13 Hungary
R Square	0.1854	0.6685	0.5480	0.4859	0.2778	0.6133
<i>Coefficients</i>						
Intercept	- 20.0204	0.7459	- 18.6882	- 0.6378	37.0507	2.4368
Inflation	0.1914	0.3767	0.7340	0.1387	1.3999	- 0.1353
Crisis dummy	- 4.3216	- 13.7217	- 10.3740	- 7.4215	- 9.3592	- 7.2135
Sovereign rating at issue date	2.8975	0.9890	1.8255	0.7445	- 1.9274	0.5195
<i>p-values</i>						
Intercept	0.1399	0.9630	0.4123	0.9483	0.2417	0.3420
Inflation	0.0080	0.3867	0.1953	0.7409	0.1389	0.3705
Crisis dummy	0.0001	0.0000	0.0001	0.0016	0.0001	0.0000
Sovereign rating at issue date	0.0480	0.3775	0.2168	0.1984	0.3820	0.0031

8) Sample – Government bonds issued by Turkey:

This sample includes 158 government bonds denominated in the following currencies: TRY, EUR, USD.

Following the assessment of the correlations among variables, we have run a regression aimed at determining what portion of the variation in the maturity (# years) of the government bonds issued by Turkey between 2000-2010 can be explained by using the explanatory variables: sovereign rating at issue date, inflation and crisis dummy. The regression had a very low R-square (0.1854), which means that only 18.54% of the variation in the maturity (# years) can be explained by using the chosen explanatory variables. The p-values corresponding to the coefficients resulted from the regression show that all coefficients are statistically significant; however, due to the low R-square, we conclude that the choice of explanatory variables used has not been good enough to explain a significant part of the variation in the maturity (# years).

9) Sample – Government bonds issued by Russia:

This sample includes 33 government bonds denominated in RUB

Following the assessment of the correlations among variables, we have run a regression aimed at determining what portion of the variation in the maturity (# years) of the government bonds issued by Russia between 2000-2010 can be explained by using the explanatory variables: sovereign rating at issue date, inflation and crisis dummy. The regression had a relatively high R-square (0.6685), which means that 66.85% of the variation in the maturity (# years) can be explained by using the chosen explanatory variables. However, the p-values corresponding to the coefficients resulted from the regression show that not all coefficients are statistically significant (the coefficients for the variables inflation and sovereign rating at issue date).

10) Sample – Government bonds issued by Czech Republic:

This sample includes 76 government bonds denominated in the following currencies: CZK, EUR, CHF.

Following the assessment of the correlations among variables, we have run a regression aimed at determining what portion of the variation in the maturity (# years) of the government bonds issued by Czech Republic between 2000 – 2010 can be explained by using the explanatory variables: sovereign rating at issue date, inflation and crisis dummy. The regression had a relatively high R-square (0.5480), which means that 54.80% of the variation in the maturity (# years) can be explained by using the chosen explanatory variables. However, the p-values corresponding to the coefficients resulted from the regression show that not all coefficients are statistically significant (the coefficients for the variables inflation and sovereign rating at issue date).

11) Sample – Government bonds issued by Slovakia:

This sample includes 29 government bonds denominated in EUR.

Following the assessment of the correlations among variables, we have run a regression aimed at determining what portion of the variation in the maturity (# years) of the government bonds issued by Slovakia between 2000-2010 can be explained by using the explanatory variables: sovereign rating at issue date, inflation and crisis dummy. The regression had a relatively high R-square (0.4859), which means that 48.59% of the variation in the maturity (# years) can be explained by using the chosen explanatory variables. However, the p-values corresponding to the coefficients resulted from the regression show

that not all coefficients are statistically significant (the coefficients for the variables inflation and sovereign rating at issue date).

12) Sample – Government bonds issued by Poland:

This sample includes 125 government bonds denominated in the following currencies: PLN, JPY, USD, CHF, EUR, GBP.

Following the assessment of the correlations among variables, we have run a regression aimed at determining what portion of the variation in the maturity (# years) of the government bonds issued by Poland between 2000-2010 can be explained by using the explanatory variables: sovereign rating at issue date, inflation and crisis dummy.

The regression had a relatively low R-square (0.2778), which means that only 27.78% of the variation in the maturity (# years) can be explained by using the chosen explanatory variables. Moreover, the p-values corresponding to the coefficients resulted from the regression show that not all coefficients are statistically significant (the coefficients for the variables inflation and sovereign rating at issue date).

13) Sample – Government bonds issued by Hungary:

This sample includes 211 government bonds denominated in the following currencies: HUF, JPY, EUR, USD, CHF and GBP.

Following the assessment of the correlations among variables, we have run a regression aimed at determining what portion of the variation in the maturity (# years) of the government bonds issued by Hungary between 2000-2010 can be explained by using the explanatory variables: sovereign rating at issue date, inflation and crisis dummy. The regression had a relatively high R-square (0.6133), which means that 61.33% of the variation in the maturity (# years) can be explained by using the chosen explanatory variables. The p-value for the coefficient of the variable Inflation indicates that this coefficient is not statistically significant; however, all other coefficients resulted from the regression are statistically significant.

Conclusions

The study aimed to assess the impact of sovereign ratings on the issuance of government bonds in the countries in Central and Eastern Europe. The personal analysis has been performed on a sample which included government bonds issued between 2000-2010 by the following countries: Turkey, Hungary, Czech Republic, Slovakia, Poland, Romania and Russia. Various pieces of data

have been collected from Reuters for all the bonds in the sample (the principal currency, the interest currency, the issued amount, the issue date, the maturity date, the initial yield and others). The sample includes bonds denominated in several currencies for each of the countries included in the analysis.

Following a statistical analysis of the data in the sample (which included several elements, such as: the average maturity of the bonds issued for each country, the number of issues made by each country in each year or in each currency, the average initial yield for the bonds issued by each country in each year and for each currency of denomination etc.), several regressions have been ran.

The first set of regressions looked at the government bonds in the sample issued in a particular currency and attempted to determine to what extent the variation in the initial yield can be explained by using explanatory variables such as inflation, sovereign rating at issue date, crisis / non-crisis state, and maturity. For this purpose, we have created seven sub-samples corresponding to each of the currencies in the initial sample for which there have been enough observations in order to allow a regression type analysis, namely: USD, EUR, PLN, HUF, CZK, RUB, TRY. The results have proved that the variation in the initial yield for the government bonds can be explained by using the explanatory variables: inflation, sovereign rating at issue date, and crisis dummy for the sub-samples: PLN, HUF, CZK and TRY; and by using only the explanatory variables inflation and sovereign rating at issue date for the sub-samples USD and EUR. The proportion in the variation of the Initial yield of government bonds in the sample that these combinations of variables could explain (according to the values of R-square) varied between 40% (for the sub-sample of government bonds issued in EUR) and 86% (for the sub-sample of government bonds issued in USD). R-square for the regression run on the sub-sample of government bonds denominated in RUB was only 0.20, therefore in that case the choice of explanatory variables could not explain the variation in the initial yield (more precisely, the choice of explanatory variables could explain only 20% of that variation in initial yields, which is an extremely low and consequently an unsatisfactory level).

The second set of regressions looked at the government bonds issued in a particular country (regardless of the currency) and attempted to determine the extent to which the maturity of the bonds can be explained by using explanatory variables such as inflation, sovereign rating at issue date, and crisis/non-crisis state. For this purpose we have created 6 sub-samples corresponding to each of the countries in the initial sample for which there have been enough observations to allow regression type analysis, namely: Turkey, Russia, Czech Republic, Slovakia, Hungary, Poland. The results showed that the variation in

the maturity (# years) of the government bonds in the sample can be explained by using inflation, sovereign rating at issue date and crisis dummy as explanatory variables in the case of the sub-samples corresponding to the countries Russia, Czech Republic, Slovakia, and Hungary. The proportion in the variation of the maturity (# years) that could be explained by this choice of explanatory variables (according to the values of R-square calculated for each regression) varied between 48% (for the sub-sample corresponding to the government bonds issued by Slovakia) and 69% (for the sub-sample corresponding to the government bonds issued by Russia). R-square had low values (0.18 and 0.27) for the regressions ran on the sub-samples corresponding to the government bonds issued by Turkey and Poland.

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Annexes

Annex 1. Correlations among variables used for the first part of the research

Table 8

Correlations among variables corresponding to the sample of government bonds denominated in USD

	Maturity (#years)	Inflation	Sovereign rating at issue date	Crisis – dummy variable	Initial yield
Maturity (#years)	1.00				
Inflation	0.06	1.00			
Sovereign rating at issue date	- 0.13	- 0.52	1.00		
Crisis – dummy variable	0.07	- 0.29	0.13	1.00	
Initial yield	0.10	0.89	- 0.71	- 0.29	1.00

Table 9

Correlations among variables corresponding to the sample of government bonds denominated in EUR

	Maturity (#years)	Inflation	Sovereign rating at issue date	Crisis – dummy variable	Initial yield
Maturity (#years)	1.00				
Inflation	0.12	1.00			
Sovereign rating at issue date	- 0.04	- 0.68	1.00		
Crisis – dummy variable	- 0.37	- 0.44	0.33	1.00	
Initial yield	0.43	0.62	- 0.49	- 0.36	1.00

Table 10

Correlations among variables corresponding to the sample of government bonds denominated in PLN

	Maturity (#years)	Inflation	Sovereign rating at issue date	Crisis – dummy variable	Initial yield
Maturity (#years)	1.00				
Inflation	- 0.64	1.00			
Sovereign rating at issue date	- 0.25	0.65	1.00		
Crisis – dummy variable	- 0.85	0.82	0.48	1.00	
Initial yield	0.62	- 0.37	- 0.41	- 0.66	1.00

Table 11

**Correlations among variables corresponding
to the sample of government bonds denominated in HUF**

	Maturity (#years)	Inflation	Sovereign rating at issue date	Crisis – dummy variable	Initial yield
Maturity (#years)	1.00				
Inflation	- 0.10	1.00			
Sovereign rating at issue date	0.62	0.01	1.00		
Crisis – dummy variable	- 0.69	0.03	- 0.75	1.00	
Initial yield	0.55	- 0.13	0.70	- 0.45	1.00

Table 12

**Correlations among variables corresponding
to the sample of government bonds denominated in CZK**

	Maturity (#years)	Inflation	Sovereign rating at issue date	Crisis – dummy variable	Initial yield
Maturity (#years)	1.00				
Inflation	0.22	1.00			
Sovereign rating at issue date	- 0.37	- 0.40	1.00		
Crisis – dummy variable	- 0.67	- 0.23	0.69	1.00	
Initial yield	0.67	0.38	- 0.30	- 0.62	1.00

Table 13

**Correlations among variables corresponding
to the sample of government bonds denominated in RUB**

	Maturity (#years)	Inflation	Sovereign rating at issue date	Crisis – dummy variable	Initial yield
Maturity (#years)	1.00				
Inflation	0.29	1.00			
Sovereign rating at issue date	- 0.30	- 0.24	1.00		
Crisis – dummy variable	- 0.77	- 0.29	0.61	1.00	
Initial yield	- 0.21	- 0.37	- 0.15	- 0.00	1.00

Table 14

**Correlations among variables corresponding
to the sample of government bonds denominated in TRY**

	Maturity (#years)	Inflation	Sovereign rating at issue date	Crisis – dummy variable	Initial yield
Maturity (#years)	1.00				
Inflation	0.03	1.00			
Sovereign rating at issue date	0.19	- 0.63	1.00		
Crisis – dummy variable	- 0.24	- 0.49	0.17	1.00	
Initial yield	- 0.16	0.65	- 0.30	- 0.23	1.00

Annex 2. Correlations among variables used for the second part of the research

Table 15

Correlations among the variables corresponding to the government bonds issued in Czech Republic

	Maturity (#years)	Inflation	Crisis – dummy variable	Sovereign rating at issue date
Maturity (#years)	1.00			
Inflation	0.19	1.00		
Crisis – dummy variable	- 0.52	- 0.17	1.00	
Sovereign rating at issue date	- 0.34	- 0.29	0.76	1.00

Table 16

Correlations among the variables corresponding to the government bonds issued in Turkey

	Maturity (#years)	Inflation	Crisis – dummy variable	Sovereign rating at issue date
Maturity (#years)	1.00			
Inflation	0.30	1.00		
Crisis – dummy variable	- 0.38	- 0.46	1.00	
Sovereign rating at issue date	- 0.20	- 0.86	0.47	1.00

Table 17

Correlations among the variables corresponding to the government bonds issued in Slovakia

	Maturity (#years)	Inflation	Crisis – dummy variable	Sovereign rating at issue date
Maturity (#years)	1.00			
Inflation	0.47	1.00		
Crisis – dummy variable	- 0.67	- 0.76	1.00	
Sovereign rating at issue date	- 0.30	- 0.76	0.66	1.00

Table 18

Correlations among the variables corresponding to the government bonds issued in Russia

	Maturity (#years)	Inflation	Crisis – dummy variable	Sovereign rating at issue date
Maturity (#years)	1.00			
Inflation	0.48	1.00		
Crisis – dummy variable	- 0.81	- 0.52	1.00	
Sovereign rating at issue date	- 0.55	- 0.57	0.73	1.00

Table 19

**Correlations among the variables corresponding
to the government bonds issued in Poland**

	Maturity (#years)	Inflation	Crisis – dummy variable	Sovereign rating at issue date
Maturity (#years)	1.00			
Inflation	- 0.28	1.00		
Crisis – dummy variable	- 0.51	0.70	1.00	
Sovereign rating at issue date	- 0.42	0.54	0.74	1.00

Table 20

**Correlations among the variables corresponding
to the government bonds issued in Hungary**

	Maturity (#years)	Inflation	Crisis – dummy variable	Sovereign rating at issue date
Maturity (#years)	1.00			
Inflation	- 0.14	1.00		
Crisis – dummy variable	- 0.77	0.17	1.00	
Sovereign rating at issue date	0.56	0.06	- 0.59	1.00

Optimal Licensing Contracts with Adverse Selection and Informational Rents

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Abstract. *In the paper we analyse a model for determining the optimal licensing contract in both situations of symmetric and asymmetric information between the license's owner and the potential buyer. Next we present another way of solving the corresponding adverse selection model, using the informational rents as variables. This approach is different from that of Macho-Stadler and Perez-Castrillo.*

Keywords: optimal contract; innovation; adverse selection; informational rents.

JEL Codes: C61, D82, D86.

REL Codes: 7J, 7L.

Introduction

In the actual economic context, competition plays a very important role for the firm's existence on different markets. One of the main goals of any productive firm is finding new production technologies generating lower production costs, but high qualitative goods or services and yielding efficient results. The firms pay a special attention to development and research activity carried out by specialized departments. This activity results in new production possibilities, new patents or innovations and yields to a higher competitive position on the market for the respective firm.

In the paper we will analyse the effects of asymmetric information between the two contractual partners on the form of optimal licensing contract. We will use an adverse selection model, proposed for the first time by Macho-Stadler and Perez-Castrillo (1991).

Usually, a licensing contract is based on a fixed fee (and this fee is independent of the output produced or the activity) and a variable fee (royalty), dependent on the volume of output. Although the optimality of licensing contracts has been considerably studied in the last twenty years, there is no a general conclusion about the form of these contracts. The terms of licensing contracts depend on many factors such as: if the innovator (the licensor) competes with the innovation in the same market as the potential buyer, the number of firms competing for the innovation (potential buyers of the innovation), the seller's possibility to verify and to monitor the buyer after selling the patent or risk sharing between the two contractual partners (the seller and the buyer).

Recent papers tried to determine, on theoretical reasons, the optimal form of licensing contracts and to explain the necessity of including some variable fees a license contract. With the rapid development of the incentive theory in the last twenty years, many theoretical studies pointed out that the presence of asymmetric information between the licensor and the licensee influenced the form of licensing contracts: Gallini and Wright (1990), Macho-Stadler and Perez-Castrillo (1991), Begg (1992), Erutku et al. (2008), Antelo (2009).

In their paper, Gallini and Wright (1990) analyse the consequences of seller's private information on the optimality of contracts and they show that the high quality innovations are signalled through two-part contracts (a fixed fee and a variable fee). Macho-Stadler and Perez-Castrillo (1991) derive the features of optimal licensing contracts in two different situations of asymmetric information between the partners: signalling (the Principal-the seller has some private information and can signal the high quality on the patent through contracts based on royalties) and screening (the Agent-the buyer has some

private information about the true value of the patent and the contracts must be based only on fixed fees). Begg (1992) shows that a contract based on royalties is more efficient than a licence contract based on fixed fee, due to the existence of a separating equilibrium of the game he analysed. In another theoretical study on the design of optimal contracts in the situation of incomplete information, Erutku et al. (2008) consider that the contracts based only on royalties are suboptimal from the buyer's perspective since there is always a two part contract dominating the contract based on royalties. Antelo (2009) analyses in a signalling game the effects of asymmetric information (the contract duration and the choice of the royalties) on the design of royalties-only contracts. Crama et al (2008) study the form of optimal licensing contracts when the buyer's evaluation of innovation represents incomplete information; they show that the presence of moral hazard and adverse selection can yields to a higher loss.

There are not so many empirical studies about the optimal terms of licensing contracts and the results don't confirm all the features generated in theoretical studies. Some interesting analysis belong to Rostocker (1983), Taylor and Silberstone (1973), Macho-Stadler et al. (1996), Jensen and Thursby (2001), Mukherjee et al. (2008).

The paper is organized as follows. In Section 1 we briefly present the main assumptions and the model from Macho-Stadler and Perez-Castrillo's paper (1991, pp. 189-208). In Section 2 we characterise the optimal licensing contract in the situation of symmetric information (complete information) and we comment the results. Section 3 presents another approach for solving the Principal's optimization program in the situation of asymmetric information; we use here the variables "informational rents" which permit us to interpret the features of the second best optimal contracts in terms of the problems with asymmetry of information between the Principal and the Agent. A section with conclusions closes the paper.

1. The model

In their paper, Macho-Stadler and Perez-Castrillo analyzed two types of problems with informational asymmetry between the seller (the owner of a patent) and the buyer (a firm who's intention is to use the patent) of one innovation (license). The first problem corresponds to a classical signalling problem where the seller knows better than the buyer the quality of innovation. The second problem, where the buyer has an informational advantage (private information), corresponds to an adverse selection problem. This last type of problem is also described in our paper.

We assume that a research institute owns a patent (innovation) and it can't obtain profit directly, but only through a licensing contract. We will refer further at this institute as being the Principal.

On the other hand, the Agent is a monopolist (a firm) having a constant average production cost c^0 , so that the total cost of production is given by $c^0 \times Q$.

Definition 1. A licensing contract in the situation of symmetric information is a pair (F, ε) , where:

F represents the amount paid by the monopolist when signing the contract (this is usually referred as a *fixed fee*);

ε is the amount paid by the Agent to the Principal for each unit produced by the firm using the patent (this is usually referred as a *variable fees* or *royalties*).

In the new situation – after buying the license, the average production cost becomes lower than c^0 , $c < c^0$.

We assume that the market demand function for the good produced by the monopolist is given by $D(P)$ and the monopoly price is denoted by $P^m(x)$. Then, for each level of the average cost x , the firm's profit function is denoted by $\pi^m(x)$.

Proposition 1. The profit function satisfies:

$$\frac{d\pi^m(x)}{dx} = -D(P^m(x))$$

Proof

The profit function for each value of x is:

$$\pi^m(x) = [P^m(x) - x]D(P^m(x)) \quad (1)$$

where

$$P^m(x) \in \arg \max_P (P - x)D(P)$$

Then:

$$\frac{d}{dP}(P - x)D(P) = 0 \text{ for } P = P^m(x)$$

or

$$D(P^m(x)) + [P^m(x) - x]D'(P^m(x)) = 0 \quad (2)$$

Differentiating the profit function from (1) with respect to x yields:

$$\begin{aligned}\frac{d\pi^m(x)}{dx} &= \left[\frac{dP^m(x)}{dx} - 1 \right] D(P^m(x)) + [P^m(x) - x] D'(P^m(x)) \frac{dP^m(x)}{dx} = \\ &= \frac{dP^m(x)}{dx} [D(P^m(x)) + [P^m(x) - x] D'(P^m(x))] - D(P^m(x)) = \\ &= -D(P^m(x))\end{aligned}$$

Remarks:

1. In the last equality we used the relation (2).
2. The above result could be alternatively obtained differentiating the function $\pi^m(x)$ with respect to x as an explicit variable and using the envelope theorem (Details are presented in *Appendix 1*).

2. The optimal contract in the situation of symmetric information

First suppose that there is no asymmetry of information between the Principal and the Agent. This corresponds to the situation where both the seller and the buyer (of the patent) know the true value of the innovation.

The Principal's problem is to maximize the total profit subject to Agent's participation constraint (he is willing to pay no more than the profit excess).

We use the following notation: $D^m(x) = D(P^m(x))$.

Then, the optimization problem is written as:

$$\begin{aligned}(\max)_{F, \varepsilon} & [F + \varepsilon \times D^m(c + \varepsilon)] \\ \text{s.t.} & \\ \text{(I)} & F \leq \pi^m(c + e) - \pi^m(c^0) \\ & F \geq 0 \\ & \varepsilon \geq 0\end{aligned}$$

Solving the problem

In the above program, we associate the Kuhn-Tucker multipliers to each constraint, including the sign constraints as inequalities. We present this variant of solving the problem in *Appendix 2*. The Lagrangian is given by:

$$\begin{aligned}L(F, \varepsilon; \lambda, \alpha, \beta) &= F + \varepsilon \times D^m(c + \varepsilon) + \\ &+ \lambda [\pi^m(c + \varepsilon) - \pi^m(c^0) - F] + \alpha \times F + \beta \times \varepsilon\end{aligned}$$

Optimizing with respect to the variables, the first order conditions are:

$$\frac{\partial L}{\partial F} = 0 \quad (3)$$

$$\frac{\partial L}{\partial \varepsilon} = 0 \quad (4)$$

$$\frac{\partial L}{\partial \lambda} \geq 0, \lambda \geq 0 \text{ and } \lambda \frac{\partial L}{\partial \lambda} = 0 \quad (5)$$

$$\frac{\partial L}{\partial \alpha} \geq 0, \alpha \geq 0 \text{ and } \alpha \frac{\partial L}{\partial \alpha} = 0 \quad (6)$$

$$\frac{\partial L}{\partial \beta} \geq 0, \beta \geq 0 \text{ and } \beta \frac{\partial L}{\partial \beta} = 0 \quad (7)$$

From (3) we get:

$$1 - \lambda + \alpha = 0 \text{ or } \lambda = 1 + \alpha > 0.$$

From (5) it follows that $\frac{\partial L}{\partial \lambda} = 0$; therefore, we have:

$$F = \pi^m(c + \varepsilon) - \pi^m(c^0) \quad (*)$$

This result has a well known interpretation: the participation constraint is binding at the optimum.

The first order condition (4) is equivalent to:

$$\frac{\partial L}{\partial \varepsilon} = D^m(c + \varepsilon) + \varepsilon \times D'^m(c + \varepsilon) + \lambda \times \pi'^m(c + \varepsilon) + \beta = 0$$

We use in the above relation the result from *Proposition 1* and $\lambda = 1 + \alpha$. This yields to:

$$D^m(c + \varepsilon) + \varepsilon \times D'^m(c + \varepsilon) - (1 + \alpha)D^m(c + \varepsilon) + \beta = 0$$

or:

$$\varepsilon \times D'^m(c + \varepsilon) - \alpha \times D^m(c + \varepsilon) + \beta = 0$$

We will show that, for any value of β , at the optimum it must be that $\varepsilon = 0$.

Suppose that β is equal to 0. Then, we obtain:

$$\varepsilon \times D'^m(c + \varepsilon) - \alpha \times D^m(c + \varepsilon) = 0,$$

But, in this last equation there is a sum of two negative terms. The only conclusion is that $\varepsilon = 0$ and $\alpha = 0$.

On the other hand, if $\beta > 0$, from the first order condition (7), it must be that $\frac{\partial L}{\partial \beta} = 0$; therefore $\tilde{\varepsilon} = 0$.

Using the result $\tilde{\varepsilon} = 0$, the condition (*) becomes:

$$\tilde{F} = \pi^m(c + \varepsilon) - \pi^m(c^0) = \pi^m(c) - \pi^m(c^0) > 0$$

We note that, if $\tilde{F} > 0$, then it follows immediately from (6) that $\alpha = 0$.

Hence, we got the optimal licensing contract $(\tilde{F}, 0) = (\pi^m(c) - \pi^m(c^0), 0)$, which is a Pareto-optimal contract.

We can now formulate the following theorem:

Theorem 1. In the case of symmetric information, the optimal contract (the first best solution) in the sense of *Definition 1* is given by $(\tilde{F}, 0)$, with $\tilde{F} = \pi^m(c) - \pi^m(c^0)$.

In such a situation, the optimal licensing contract is based only on a fixed fee, which is exactly equal to the buyer's profit excess and the Agent's production is efficient.

3. The optimal contract in the situation of asymmetric information

With asymmetry of information, the Agent has some private information (hidden information) and knows better than the Principal how important the innovation is. In some situations, the asymmetry of information consists in a better knowledge of the buyer related to the demand function for the output he produces or related to the production technology impact and the real value of the innovation. These situations are more probable when the patent's owner doesn't act on the industry or on the respective product market.

The Principal (the owner of the license) considers that the Agent's evaluation is one of two types – the type G (good) or the type B (bad), and having the corresponding average cost $c^G < c^0$ and $c^B < c^0$ respectively, with

$c^G < c^B$. The probability the Principal believes that the innovation has the type G is denoted by γ .

Without knowing the innovation type, it is optimal for the Principal to propose a menu of contracts, one contract for each type of Agent.

Definition 2. A menu of contracts $((F^G, \varepsilon^G), (F^B, \varepsilon^B))$ is *feasible* if it satisfies the following participation constraints:

$$\pi^m(c^G + \varepsilon^G) - \pi^m(c^0) - F^G \geq 0 \quad (8)$$

$$\pi^m(c^B + \varepsilon^B) - \pi^m(c^0) - F^B \geq 0 \quad (9)$$

This definition means that the contracts (F^G, ε^G) , (F^B, ε^B) assigned to each type of Agent yield a profit greater than the profit obtained by the Agent without using the patent.

Furthermore, for a menu to be accepted it must satisfy the *incentive compatibility constraints* – each type of Agent will select the contract the Principal designs for him.

Definition 3. A menu of feasible contracts $((F^G, \varepsilon^G), (F^B, \varepsilon^B))$ is *incentive feasible* if it satisfies also the following *incentive compatibility constraints*:

$$\pi^m(c^G + \varepsilon^G) - F^G \geq \pi^m(c^G + \varepsilon^B) - F^B \quad (10)$$

$$\pi^m(c^B + \varepsilon^B) - F^B \geq \pi^m(c^B + \varepsilon^G) - F^G \quad (11)$$

This means that when the Agent chooses the contract (F^G, ε^G) his profit evaluated at the average cost c^G is greater than the profit obtained if he would choose the other contract (F^B, ε^B) . The same interpretation corresponds to the second constraint: when the Agent chooses the contract (F^B, ε^B) having the average cost c^B , his profit is greater than the profit obtained when he chooses the other contract (F^G, ε^G) .

The inequalities (8)-(11) fully characterise the set of incentive feasible contracts.

We can now write the Principal's program:

$$(II) \quad (\max)_{F^G, \varepsilon^G, F^B, \varepsilon^B} \left\{ \gamma [F^G + \varepsilon^G \times D^m(c^G + \varepsilon^G)] + (1 - \gamma) [F^B + \varepsilon^B \times D^m(c^B + \varepsilon^B)] \right\}$$

s.t.

$$\pi^m(c^G + \varepsilon^G) - F^G \geq \pi^m(c^G + \varepsilon^B) - F^B \quad (10)$$

$$\pi^m(c^B + \varepsilon^B) - F^B \geq \pi^m(c^B + \varepsilon^G) - F^G \quad (11)$$

$$\pi^m(c^G + \varepsilon^G) - \pi^m(c^0) - F^G \geq 0 \quad (12)$$

$$\pi^m(c^B + \varepsilon^B) - \pi^m(c^0) - F^B \geq 0 \quad (13)$$

$$F^G \geq 0, \varepsilon^G \geq 0, F^B \geq 0, \varepsilon^B \geq 0$$

Proposition 2. If the set of incentive feasible contracts is nonempty, the constraint (12) is implied by the constraints given by (10) and (13).

Therefore, if the innovation of type B is accepted, it is also accepted the other type of innovation.

Proof

We use the monotonicity property of the profit function. From *Proposition 1* it follows that the profit function $\pi^m(\cdot)$ is strictly decreasing and using the constraint (10) we get:

$$\pi^m(c^G + \varepsilon^G) - F^G \geq \pi^m(c^G + \varepsilon^B) - F^B \geq \pi^m(c^B + \varepsilon^B) - F^B$$

or

$$\pi^m(c^G + \varepsilon^G) - F^G - \pi^m(c^0) \geq \pi^m(c^B + \varepsilon^B) - F^B - \pi^m(c^0)$$

So, the constraint (12) is not a relevant one and can be ignored when solving the Program (II).

Theorem 2. The optimal contract in the situation of *adverse selection* (the second best solution) $((\bar{F}^G, \bar{\varepsilon}^G), (\bar{F}^B, \bar{\varepsilon}^B))$ satisfies the following:

$$\bar{F}^G < \tilde{F}^G, \bar{\varepsilon}^G = \tilde{\varepsilon}^G = 0$$

and

$$\bar{F}^B < \bar{F}^G, \bar{\varepsilon}^B > 0.$$

Next, we will give another proof of this theorem, different from that of Macho-Stadler and Perez-Castrillo. For this, we will use the informational rents as variables.

The model transformed using the variables informational rents – variable fees

Definition 3. The expressions

$$U^G = \pi^m(c^G + \varepsilon^G) - F^G - \pi^m(c^0)$$

and

$$U^B = \pi^m(c^B + \varepsilon^B) - F^B - \pi^m(c^0)$$

are the *informational rents* for each type of innovation G and B , respectively.

We transform the objective function and all the constraints of the Program (II) using these new variables.

If we substitute F^G and F^B we obtain:

$$F^G = \pi^m(c^G + \varepsilon^G) - \pi^m(c^0) - U^G \quad (14)$$

$$F^B = \pi^m(c^B + \varepsilon^B) - \pi^m(c^0) - U^B \quad (15)$$

Then, the objective function of the Principal becomes:

$$\begin{aligned} H(\varepsilon^G, \varepsilon^B, U^G, U^B) = & \gamma [\pi^m(c^G + \varepsilon^G) - \pi^m(c^0) + \varepsilon^G \times D^m(c^G + \varepsilon^G)] + \\ & + (1 - \gamma) [\pi^m(c^B + \varepsilon^B) - \pi^m(c^0) + \varepsilon^B \times D^m(c^B + \varepsilon^B)] - \\ & - [\gamma \times U^G + (1 - \gamma) U^B] \end{aligned}$$

This expression shows that the Principal objective is maximizing the expected social value of trade minus the expected informational rent of the Agent.

Before we go further, we need to introduce the following function:

Definition 4. The function $\phi: [0, \infty) \rightarrow R$, $\phi(\varepsilon) = \pi^m(c^G + \varepsilon) - \pi^m(c^B + \varepsilon)$ is the *excess function* with respect to the patent's type.

The function $\phi(\varepsilon)$ has the following properties:

- i) $\phi(\varepsilon) > 0$, $\forall \varepsilon \geq 0$
- ii) $\phi'(\varepsilon) < 0$, $\forall \varepsilon > 0$

While the first property is induced by the monotonicity property of the profit function with respect to the average cost, the second property of the excess function shows that the marginal excess is strictly decreasing with respect to the marginal cost.

The higher the average cost is, the lower the excess function is. At such high average cost, there is almost any difference between the two types of innovation.

With the above change of variables, the constraints (10)-(13) will be written in terms of ε^G , ε^B , U^G and U^B .

The incentive constraint (10) is transformed as follows:

$$\begin{aligned} \pi^m(c^G + \varepsilon^G) - F^G - \pi^m(c^0) &\geq \pi^m(c^B + \varepsilon^B) - F^B - \pi^m(c^0) + \\ &+ \pi^m(c^G + \varepsilon^B) - \pi^m(c^B + \varepsilon^B) \end{aligned}$$

or

$$U^G \geq U^B + \phi(\varepsilon^B) \quad (\text{upward constraint}) \quad (16)$$

Similarly, the incentive constraint (11) becomes:

$$U^B \geq U^G - \phi(\varepsilon^G) \quad (\text{downward constraint}) \quad (17)$$

The participation constraints (12) and (13) are now equivalent to the following sign constraints $U^G \geq 0$ and $U^B \geq 0$.

The optimization problem of the Principal (II) is rewritten as:

$$(\max)_{\varepsilon^B, \varepsilon^G, U^G, U^B} G(\varepsilon^G, \varepsilon^B, U^G, U^B)$$

(III) s.t.

$$U^G \geq U^B + \phi(\varepsilon^B) \quad (16a)$$

$$U^B \geq U^G - \phi(\varepsilon^G) \quad (17a)$$

$$U^G \geq 0 \quad (18)$$

$$U^B \geq 0 \quad (19)$$

Proposition 3. In the optimization Program (III), at optimum we have:

- i) the constraints $U^B \geq 0$ and $U^G \geq U^B + \phi(\varepsilon^B)$ are binding;
- ii) the constraints $U^B \geq U^G - \phi(\varepsilon^G)$ and $U^G \geq 0$ are not relevant.

Proof

i) Suppose that $U^B > 0$ and let $u > 0$ be a small real value such that $U^B - u \geq 0$.

If $(\varepsilon^G, \varepsilon^B, U^G, U^B)$ represents the optimal solution of the problem (III), then $(\varepsilon^G, \varepsilon^B, U^G - u, U^B - u)$ is at least a feasible solution for this problem. The objective function evaluated in this point is:

$$G(\varepsilon^G, \varepsilon^B, U^G - u, U^B - u) = G(\varepsilon^G, \varepsilon^B, U^G, U^B) + u > G(\varepsilon^G, \varepsilon^B, U^G, U^B)$$

This is a contradiction with the assumption that $(\varepsilon^G, \varepsilon^B, U^G, U^B)$ represents the optimal solution. Therefore, $\bar{U}^B = 0$ is optimal.

Suppose now that $U^G > \phi(\varepsilon^B)$. For a small real value $u > 0$, the solution $(\varepsilon^G, \varepsilon^B, U^G - u, 0)$ is at least a feasible solution and the corresponding value of the objective function is:

$$G(\varepsilon^G, \varepsilon^B, U^G - u, 0) = G(\varepsilon^G, \varepsilon^B, 0, U^B) + \gamma \times u > G(\varepsilon^G, \varepsilon^B, 0, U^B)$$

This contradicts the above assumption.

Therefore $U^G = \phi(\varepsilon^B) > 0$ is optimal.

ii) With the results proven above, the constraint $U^B \geq U^G - \phi(\varepsilon^G)$ becomes:

$$0 \geq \phi(\varepsilon^B) - \phi(\varepsilon^G) \text{ or } \phi(\varepsilon^G) \geq \phi(\varepsilon^B)$$

(but this is true from the *implementability condition*).

The constraint $U^G \geq 0$ is a simple consequence of the conditions: $U^B \geq 0$ and $U^G \geq U^B + \phi(\varepsilon^B)$.

With all the results, the optimization problem is simplified and becomes a simple optimization problem with respect to only two variables:

$$\begin{aligned} (\max)_{\varepsilon^G, \varepsilon^B} H(\cdot) = & \{ \gamma [\pi^m(c^G + \varepsilon^G) + \varepsilon^G \times D^m(c^G + \varepsilon^G)] + \\ & + (1 - \gamma) [\pi^m(c^B + \varepsilon^B) + \varepsilon^B \times D^m(c^B + \varepsilon^B)] \\ & - \gamma \times \phi(\varepsilon^B) \} \end{aligned}$$

For this new optimization problem, the necessary conditions are:

$$\begin{aligned} \frac{\partial(\cdot)}{\partial \varepsilon^G} = 0 \Rightarrow \\ \Rightarrow \gamma \left[\frac{d\pi^m(c^G + \varepsilon^G)}{d\varepsilon^G} + D^m(c^G + \varepsilon^G) + \varepsilon^G \times D'^m(c^G + \varepsilon^G) \right] = 0 \end{aligned} \quad (20)$$

and

$$\begin{aligned} \frac{\partial(\cdot)}{\partial \varepsilon^B} = 0 \Rightarrow \\ \Rightarrow (1 - \gamma) \left[\frac{d\pi^m(c^B + \varepsilon^B)}{d\varepsilon^B} + D^m(c^B + \varepsilon^B) + \varepsilon^B \times D'^m(c^B + \varepsilon^B) \right] - \\ - \gamma \times \phi'(\varepsilon^B) = 0 \end{aligned} \quad (21)$$

Using the result of *Proposition 1*, these first order conditions (20) and (21) can be written as:

$$\varepsilon^G \times D'^m(c^G + \varepsilon^G) = 0 \quad (22)$$

and

$$(1 - \gamma)\varepsilon^B \times D'^m(c^B + \varepsilon^B) - \gamma \times \phi'(\varepsilon^B) = 0 \quad (23)$$

The condition (22) yields to $\bar{\varepsilon}^G = 0$.

Solving for ε^B into the condition (23) it follows immediately that $\bar{\varepsilon}^B > 0$.

Suppose that $\bar{\varepsilon}^B > 0$ is not optimal. Then if $\bar{\varepsilon}^B = 0$, we would have:
 $\phi'(0) = 0 = -D^m(c^G) + D^m(c^B) < 0$ and this is a contradiction.

Therefore, the optimal solution for the program (III) is given by:

$$\bar{\varepsilon}^G = 0, \bar{\varepsilon}^B > 0, \bar{U}^B = 0 \text{ and } \bar{U}^G = \phi(\bar{\varepsilon}^B)$$

We can easily derive now the optimal fixed fees (the old variables).

From $\bar{U}^B = 0$, we get:

$$\bar{F}^B = \pi^m(c^B + \bar{\varepsilon}^B) - \pi^m(c^0) < \pi^m(c^B) - \pi^m(c^0) = \tilde{F}^B$$

Similarly, from $\bar{U}^G = \phi(\bar{\varepsilon}^B)$ we get:

$$\begin{aligned} \bar{F}^G &= \pi^m(c^G + \bar{\varepsilon}^G) - \pi^m(c^0) - \bar{U}^G = \\ &= \pi^m(c^G) - \pi^m(c^0) - \phi(\bar{\varepsilon}^B) < \pi^m(c^G) - \pi^m(c^0) = \tilde{F}^G \end{aligned}$$

If we evaluate the difference $\bar{F}^G - \bar{F}^B$ we obtain:

$$\begin{aligned} \bar{F}^G - \bar{F}^B &= \pi^m(c^G) - \pi^m(c^0) - \phi(\bar{\varepsilon}^B) - \pi^m(c^B + \bar{\varepsilon}^B) + \pi^m(c^0) = \\ &= \pi^m(c^G) - \pi^m(c^G + \bar{\varepsilon}^B) + \pi^m(c^B + \bar{\varepsilon}^B) - \pi^m(c^B + \bar{\varepsilon}^B) = \\ &= \pi^m(c^G) - \pi^m(c^G + \bar{\varepsilon}^B) > 0 \end{aligned}$$

Hence $\bar{F}^G > \bar{F}^B$.

We found the results given in Theorem 2. The main advantage of our approach is the direct way of deriving the Agents payoffs (named informational rents).

Remarks

We can now summarize the features of the optimal licensing contracts in the situation of asymmetric information:

A. The contract designed for the firm with high evaluation (type G) is completely based on a fixed fee $\bar{F}^G$ lower than the fixed fee corresponding to the situation of symmetric information (the first best solution). We have therefore, $\bar{\varepsilon}^G = 0 = \tilde{\varepsilon}^G$.

This contract gives to the Agent of type G a positive informational rent $\bar{U}^G = \phi(\bar{\varepsilon}^B)$.

B. The contract designed for the low evaluation (type B) generates the same profit as the profit obtained without using the new technology. This second best contract is based on two parts: a fixed fee $\bar{F}^B$ and a variable fee, $\bar{\varepsilon}^B > \tilde{\varepsilon}^B = 0$. With this contract the Agent gets no informational rent.

An example

Suppose that the demand function is $D(p) = p^{-\alpha}$, with $\alpha > 1$.

We first find the price such that $p^m(x) \in \arg \max [p - x]D(p)$.

We denote by $f(p) = (p - x)p^{-\alpha} = p^{1-\alpha} - x \times p^{-\alpha}$ the objective function from the above optimization problem. This function is a concave function.

And its derivative with respect to p is:

$$f'(p) = (1 - \alpha) p^{-\alpha} - x(-\alpha) p^{-\alpha-1}$$

The first order condition for the maximization problem is given by:

$$f'(p) = 0$$

or

$$p^{-\alpha} [1 - \alpha + \alpha \times x \times p^{-1}] = 0$$

Therefore:

$$p^m(x) = \frac{\alpha \times x}{\alpha - 1} = \left(1 + \frac{1}{\alpha - 1}\right)x \quad (24)$$

The above expression shows that the price is a linear positive transformation with respect to the average production cost and a hyperbolic decreasing transformation with respect to the parameter α .

From (24) we can find the optimal demand:

$$D^m(x) = \frac{(\alpha-1)^\alpha}{\alpha^\alpha} \times \frac{1}{x^\alpha} \quad (25)$$

and the profit function

$$\pi^m(x) = \frac{x^{1-\alpha}}{\alpha-1} \times \frac{(\alpha-1)^\alpha}{\alpha^\alpha} \quad (26)$$

It is easy to see the link between the profit function $\pi^m(x)$ and the demand $D^m(x)$:

$$\frac{d\pi^m(x)}{dx} = \frac{(1-\alpha)x^{-\alpha}}{\alpha-1} \times \frac{(\alpha-1)^\alpha}{\alpha^\alpha} = -\frac{(\alpha-1)^\alpha}{\alpha^\alpha} \times \frac{1}{x^\alpha} = -D^m(x)$$

This result confirms the result of *Proposition 1*.

The optimization problem with respect to the contract variables (F, ε) in this particular case is written as:

$$\begin{aligned} & (\max)_{F, \varepsilon} \left\{ F + \varepsilon \frac{(\alpha-1)^\alpha}{\alpha^\alpha} \times \frac{1}{(c+\varepsilon)^\alpha} \right\} \\ & \text{s.t.} \\ & \frac{(c+\varepsilon)^{1-\alpha}}{(\alpha-1)} \times \frac{(\alpha-1)^\alpha}{\alpha^\alpha} - \frac{(c^0)^{1-\alpha}}{(\alpha-1)} \times \frac{(\alpha-1)^\alpha}{\alpha^\alpha} \geq F \\ & \varepsilon \geq 0 \\ & F \geq 0 \end{aligned}$$

Let λ be the multiplier assigned to the first constraint in the above program, and let a and b be the Kuhn-Tucker multipliers of the sign constraints.

As in Appendix 2, the Lagrange function is:

$$\begin{aligned} L(F, \varepsilon; \lambda, a, b) = & F + \varepsilon \frac{(\alpha-1)^\alpha}{\alpha^\alpha} \times \frac{1}{(c+\varepsilon)^\alpha} + \\ & + \lambda \left[\frac{(c+\varepsilon)^{1-\alpha}}{\alpha-1} \times \frac{(\alpha-1)^\alpha}{\alpha^\alpha} - \frac{(c^0)^{1-\alpha}}{\alpha-1} \times \frac{(\alpha-1)^\alpha}{\alpha^\alpha} - F \right] + \\ & + a \times \varepsilon + b \times F \end{aligned}$$

And the first order conditions are:

$$\frac{\partial L}{\partial F} = 0 \text{ or } 1 - \lambda + b = 0.$$

It follows that $\lambda > 0$ and then, at the optimum we have:

$$F = \frac{(c + \varepsilon)^{1-\alpha}}{\alpha - 1} \times \frac{(\alpha - 1)}{\alpha^\alpha} - \frac{(c^0)^{1-\alpha}}{\alpha - 1} \times \frac{(\alpha - 1)}{\alpha^\alpha} \quad (27)$$

$$\frac{\partial L}{\partial \varepsilon} = 0 \text{ or,}$$

$$\begin{aligned} a + \frac{(\alpha - 1)^\alpha}{\alpha^\alpha} \times (c + \varepsilon)^{-\alpha} + \varepsilon \times \frac{(\alpha - 1)^\alpha}{\alpha^\alpha} \times \frac{-\alpha}{(c + \varepsilon)^{\alpha+1}} + \\ + \lambda \times \frac{-1}{(c + \varepsilon)^\alpha} \times \frac{(\alpha - 1)^\alpha}{\alpha^\alpha} = 0 \end{aligned}$$

In this last equation, using $\lambda = 1 + b$ we get:

$$-\varepsilon \times \frac{(\alpha - 1)^\alpha}{\alpha^\alpha} \times \frac{\alpha}{(c + \varepsilon)^{\alpha+1}} - b \times \frac{1}{(c + \varepsilon)^\alpha} \times \frac{(\alpha - 1)^\alpha}{\alpha^\alpha} + a = 0 \quad (28)$$

Analysing the relation (28), we note that if $a > 0$, then $\varepsilon = 0$.

Otherwise, if $a = 0$ then $\varepsilon = 0$ and $b = 0$.

Therefore, the optimal contract is given by:

$$\tilde{\varepsilon} = 0 \text{ and } \tilde{F} = \frac{(\alpha - 1)^{\alpha-1}}{\alpha^\alpha} \left[c^{1-\alpha} - (c^0)^{1-\alpha} \right] > 0$$

Conclusions

We analyzed in this paper the effects of asymmetric information between the owner of an innovation and the potential buyer (in a monopoly position) on the design of optimal licensing contracts. If it is the buyer who has private information, then the contracts based only on fixed fees are designed for the firm with a high evaluation of innovation and this type of firm gets a positive informational rent. On the other hand, if the firm has a low evaluation about the innovation, then the contract designed by the Principal (the seller) is based also on variable fees.

However, in practice, the contractual terms or the particular form of a license contract don't depend only on incentive aspects or on the presence of

asymmetric information between the Principal and the Agent. These terms depend also on some other factors such as financial firm's situation on the market uncertainty or business risk. But these informational problems could explain some contractual forms that are used in different economic activities.

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Appendix 1

The Envelope theorem

Consider the following parameterized optimization problem:

$$(\max) f(x, a)$$

$$(P) \quad \text{s.t.}$$

$$g(x, a) = 0$$

where

$$f : \mathbb{R}^n \times \mathbb{R} \rightarrow \mathbb{R} \text{ and } g : \mathbb{R}^n \times \mathbb{R} \rightarrow \mathbb{R}.$$

Let $L(x, t, a) = f(x, a) - tg(x, a)$ be the Lagrange function associated to the above problem and let $x(a)$ be a maximizing choice – an optimal solution of the problem (P).

We denote by $M(a) = f(x(a), a)$ the optimal value for the objective function. We are often concerned with examining how this optimal value changes when the parameter a is changed. These derivatives are easily evaluated using the first order conditions and the chain rule. We have:

$$\frac{dM(a)}{da} = \frac{\partial L(x(a), a)}{\partial a} = \frac{\partial f(x(a), a)}{\partial a} - t \frac{\partial g(x(a), a)}{\partial a}.$$

Appendix 2

The Kuhn-Tucker conditions

The problem

Consider $f, g, g_j : \mathbb{R}^n \rightarrow \mathbb{R}$, $j = 1, \dots, m$ be the functions belonging to the class C^2 from $\mathbb{R}^n$.

We want to find the optimal solution of the following problem:

$$\left\{ \begin{array}{l} [Opt] f(x_1, x_2, \dots, x_n) \\ s.t. \quad g(x_1, x_2, \dots, x_n) = g_0 \\ \quad \quad g_j(x_1, x_2, \dots, x_n) \leq 0 \\ or \\ \quad \quad g_j(x_1, x_2, \dots, x_n) \geq 0 \\ x_i \geq 0, i = 1, 2, \dots, n, j = 1, 2, \dots, m \end{array} \right.$$

The problem can be solved using the *KUHN-TUCKER* method, which generalises the method of Lagrange multipliers.

Let λ be the multiplier associated to the equality constraint and λ_j be the Kuhn-Tucker multipliers of the inequality constraints in the above problem.

We assume that the multipliers are all nonnegative.

Then, if the objective function is maximized, the *maximization problem* must be written as follows:

$$\left\{ \begin{array}{l} [Max] f(x_1, x_2, \dots, x_n) \\ \quad g_0 - g(x_1, x_2, \dots, x_n) = 0 \\ \quad g_j(x_1, x_2, \dots, x_n) \geq 0 \\ x_i \geq 0, i = 1, 2, \dots, n, j = 1, 2, \dots, m \end{array} \right.$$

Instead, the *minimization problem* has the form:

$$\left\{ \begin{array}{l} [Min] f(x_1, x_2, \dots, x_n) \\ \quad g_0 - g(x_1, x_2, \dots, x_n) = 0 \\ \quad g_j(x_1, x_2, \dots, x_n) \leq 0 \\ x_i \geq 0, i = 1, 2, \dots, n, j = 1, 2, \dots, m \end{array} \right.$$

Solving the problem

There is also another possibility for solving the above general problem (and this is the approach used in our paper): the sign constraints can be considered as simply inequality constraints and can be included into the Lagrange function.

Hence, for the above *maximization problem*, with this new formulation, the Lagrange function is:

$$L(\cdot) = f(x_1, x_2, \dots, x_n) + \lambda[g_0 - g(x_1, x_2, \dots, x_n)] + \sum_{j=1}^m \lambda_j g_j(x_1, x_2, \dots, x_n) + \sum_{i=1}^n \alpha_i x_i$$

(with all multipliers satisfying $\alpha_i \geq 0$).

The first order conditions are the following:

$$\begin{cases} \frac{\partial L}{\partial x_i} = 0, \quad i = 1, 2, \dots, n \\ \frac{\partial L}{\partial \lambda} = 0 \\ \frac{\partial L}{\partial \lambda_j} \geq 0, \quad \lambda_j \geq 0 \quad \text{and} \quad \lambda_j \frac{\partial L}{\partial \lambda_j} = 0, \quad j = 1, 2, \dots, m \\ \frac{\partial L}{\partial \alpha_i} \geq 0, \quad \alpha_i \geq 0 \quad \text{and} \quad \alpha_i \frac{\partial L}{\partial \alpha_i} = 0, \quad i = 1, 2, \dots, n \end{cases}$$

If the problem to be solved is a minimization problem, in the above Lagrange function the last term will have the opposite sign (i.e. $-\sum_{i=1}^n \alpha_i \times x_i$), and the first order conditions are similar, except the sense of the inequalities from the last two groups conditions. Note that the first order conditions are only necessary conditions and not sufficient (second order conditions).

Morality, Ethics and True Image in Business Accounting

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Abstract. *By its nature, the accounting field is in a close connection with ethics, morality and religion. The concepts of morality, ethics and religion are closely connected to each other and at the same time they are complementary. How many bankrupts occurred in economy and how many human dramas could be avoided if morality should have been present? How many rich people could be aware of the sufferings of the majority if the ethics of business would have been known to them? In our everyday living, all over the world and maybe especially in our Romanian space, we very much need a "minima moralia" in the businesses field. The fiddle from the public money, the fiscal evasion, reprogrammed payments and payment exemptions represent main objectives when starting the serious campaign of the moral sanitation in the business field. The temptation of money appeared the same time as "scene" entering of this sign of value. The mirage of the fortune has the same age with "homo œconomicus". The true image, as a criterion of performance of the accounting field, is basal established on the concepts of ethical and moral nature: truth, honesty, regularity, reality, neutrality, continuity, permanency, etc. The achievement of the accounting truth claims, in equal parts, serious elements of professionalism. A real "fire test" for us is to prove through real facts the absolute governing of an unwritten law: we have to say what we think and, mostly, we must do what we say.*

Keywords: morality; ethics; religion; true image; deontology; businesses.

JEL Codes: M14, M41.

REL Codes: 5H, 14I, 14K.

1. Preliminaries

Starting from the genesis of the primary cause (*causa causorum*) we think that, in the biblical sense of a fair judgment, the first and the biggest ACCOUNTANT of the universe is God ...himself. How should we imagine otherwise this implacable *post-factum* Justice? For each of us, as human beings, He opened an *account* where He registers, attentively and without partiality, a fair calculation of everything we did right or wrong in our lives, of everything we had to give and everything we had to receive and, through all these, of everything we have built with our love and, at the same time, of everything we have demolished through our hate.

The French thinker Michel Barbá (1984) reminds us, in an original way, a big truth: *“In its way to progress and civilization, the human society cannot ignore the idea of order, discipline and foresight in the field of economy....In the seventh day of the week, instead resting, the God created....The Accountant”*. Like it or not, the world of yesterday, today and tomorrow could not exist in the past and cannot exist in the present and in the future without us. Obviously, we can recognize that the reciprocal statement is in the same way valid.

In front of the Supreme Judge we always reach with *“true image”*, unembellished, appreciated by the end to its *“right value”*! Without having any International Standards of Accounting, the Divine Court seems to be founded on the slogan *“Amicus Plato, sed magis amica veritas”* („Platon is my friend, but more my friend is the truth”). These words are found in „Aristotle’s Life”, signed by Ammonius Saccas, 3rd century AD, a philosopher from Alexandria (Porphyrios, 1998).

2. Accounting connections with ethics, morality and religion

By its nature, the accounting field is in a close connection with ethics, morality and religion. The concepts of morality, ethics and religion are closely connected to each other and at the same time they are complementary (Olaru, 2007, Zanc, Lupu, 2007). Ethics is a rational theory regarding rightness and wrongness, an “upstream” reflection of the values ordered with intelligence and with morality. Formed in principles having already a structure, the ethical values confer a religious connotation with a restrictive character to morality (Horomnea, 2001).

How many bankrupts occurred in economy and how many human dramas could be avoided if morality should have been present? How many rich people could be aware of the sufferings of the majority if the ethics of business would have been known to them? We are happy that on our territory the Romanian

magnate has finally appeared. We are not afflicted by the idea that the total amount of the fortunes existing in the hands of the first ten Romanians magnates of the above mentioned hierarchy means the equivalent of the 2/3 of the currency reserves of the National Bank of Romania. It is important to know if these big fortunes did not intersect in their way of accumulation procedures with the spectacular bankruptcies of certain Banks or Mutual Funds, such as SAFI, Caritas, FNI, etc. In the same way we are interested by the “*cartoon billionaires*”, who were using other people’s money to buy fabulous fortunes at ridiculous prices, based on an obvious financial engineering. Beyond the demand to comply with the terms established by certain privatization programs, the state, as the owner of the shares, had the right and also the liability to establish values of limitation (“*minimum minimorum*”) down to which the sale had to be adjudged. In this way, the new owner could not entirely recover the paid price selling afterwards ... 1/10 or even less from the total amount of the bought shares.

3. Slippages of business ethics

The expression *business ethics* focuses every good, equitable, correct and true element that is present in an assembly of institutions, transactions or efforts, generically called *businesses*. Our thoughts did not reach this word by accident (Olaru, 2010). In our everyday living, all over the world and maybe especially in our Romanian space, we very much need a “*minima moralia*” in the *businesses field*. The fact that a large part of our GDP (Gross Domestic Product) is circulating inside the area of the underground economy, makes us consider that these words deserved to be written.

The fiddle from the public money, the fiscal evasion, reprogrammed payments and payment exemptions represent main objectives when starting the serious campaign of the moral sanitation in the business field. Considering the Romanian phenomena represented by the “wild” capital accumulation, a cramp idea governs in our minds: some people’s “overnight”-getting rich is in a very close connection to some other’s suddenly poverty increasing... Moreover, such “entrepreneurs” fortune and arrogance has its origin, among other elements, in the smooth passiveness and cowardice of the silent majority, who sees, knows, but...pipes down.

Beyond any elements of flair in businesses, beyond the role played by chance in the estate and financial speculations, beyond the fabulous “heritages”, as specialists in the field of economy we are allowed to put a question, leaving the answer in the count of the esteemed reader. Is there in the world, in the large area of businesses, any activity (production, trade, services, etc.) that may

generate such an accelerated increase of hundreds or thousands of times of the enterpriser's fortune? Of course, we are not considering the fortune of the administrated patrimonial unit that, without a proper management, may be bankrupted, but we are considering the private fortune, of the prosperous business man or of his "collaterals". We're in doubt of this. Entered in the field of money gained without work, the parvenu has an increase on the material level, but has a decrease on the moral level. Ridiculous and scornful, full of himself but empty in his inner part, he looks always "from top" to you, even though his pigmy origin should oblige him to keep his place where he really belongs to. In his suffering mind, everything and everybody has a price, everything may be obtained or ceded with a certain amount of money. From here the idea that he deserves everything on the earth such as: respect, authority, gratefulness, honour, love, success in all fields and on all social levels, praises, social position, political career, etc. Having no soul and knowing nothing about ingenuity, he may count on the fingers his few "friends". His true friends were already lost in his rush for money making. Anyway, because the undeserved prosperity comes at once, in most of the cases it alters the human essence. Obviously, our appraisals exclusively refer to the unscrupulous and devoid of character parvenu, those who through occult means have accumulated in an incredible rhythm fabulous fortunes. Fortunately, in the same areal there are humans of very high value.

4. "Homo œconomicus" and money temptation

In the same field, the philosopher Aristotle considers that fortunes and money achieving without making any effort represents a degrading fact (Aristotel 2001). Benvenuto Cellini speaks in his own biography about the eternal thirst of hidden earning shown by persons governed by primary instincts that cannot be repressed. This alteration of the mankind to the low levels of character *"leads to all kinds of intrigues and cheating, until it reaches even accidental or precogitated crimes"* (*premeditated, t.n.*) (Cellini, 2003).

The trader of the Middle Ages shows an unlimited desire for money. Starting with the bankers of Arras, depicted by Adam from Halle as *"loving money too much"*, we reach the people from Florence depicted by Dante as a *"very greedy tribe, full of envy, pride and very fond of the coin named florin"*. The slogan of the trader of the above mentioned period is shown by an anonymous banker from Florence: *"your help, your protection, your honour, your dreams are only the money"* (Horomnea, 2001).

As the founder of a masterpiece in the field of accounting in a double party, Luca Paciolo emphasizes with sorrow that *"many things may happen to*

the trader because honesty is very rare among people". This is why he recommends, quite insisting on the matter, to keep order and exact calculation in the commercial activity. On the other hand, he says that *"if we miss the figures and calculation from the art of trade, this art will soon disappear"*. "The author without luck", Benedetto Cotrugli, had drawn a book of economic behaviour (*"Dela mercantura e del mercante perfecto"*), comprising numerous elements of commercial ethical aspects. The destiny had a word to say in this case: even though the work was written before Paciolo (1494), the book of Cotrugli was published *post mortem* (1573 and 1602). This is the reason for which the Italian is known under this name in the history of accounting (Demetrescu, 1972, Horomnea, 2000).

From the above mentioned matters, we can see that the temptation of money appeared the same time as "scene" entering of this sign of value. The mirage of the fortune has the same age with *"homo æconomicus"*. Within a frenetic, foolish rush for undeserved fortunes, the stinginess leads to facts made without any prior thinking.

5. Ethical behaviour in accounting

Therefore, the connection made between businesses, ethics, morality, professionalism and accounting by our approaches is not at all forced or old fashioned (Olaru, 2010, Zanc, Lupu, 2007). Between the objectives of the accounting and the morality of businesses exists a serious interdependency.

The true image, as a criterion of performance of the accounting field, is basal established on the concepts of ethical and moral nature: truth, honesty, regularity, reality, neutrality, continuity, permanency, etc. The achievement of the accounting truth claims, in equal parts, serious elements of professionalism. To reach this objective, the accounting expresses, legalizes and ameliorates the morality of businesses. *"In life, each of us remains debtor towards our profession"* is an everlasting truth, shown by the Marcus Pollio Vitruvius, two thousand years ago (Vitruvius, 1964).

And therefore, might we live with little more accounting or without it? This is a question coming from those who are considering us uncomfortable or even unfriendly partners. We consider such those people who are dealing with other fields of activity than ours, and also those persons who are suffering of the syndrome of *"getting rich-overnight"*. The answer, bearing no double meaning, is exposed to a detailing procedure. As long as we live in a relative world, often made of small temptations and facts, we are obliged to calculate, to measure, to think. Obviously, the attribute of relative refers to morality, as well.

We shall try to imagine, even theoretically, a sole hour in which accounting and also the idea of order and foresight will be totally abandoned on the economic level. The chaos, decline and bankruptcy represent the “reward” given by the “natural” laws of economy, applied in the immediate hour of such a dangerous adventure. An uninspired decision in the strategy of enterprise, a single transaction effected incautiously could throw the society from the profitable area in the world of loses or of risks. The accounting does not avoid the risk entirely, but obviously, it may diminish it, sometimes it may anticipate the potential risks.

The fact that one of the richest persons in the world, the famous billionaire Bill Gates, the owner of Microsoft Corporation, was in the first past ...*an accountant*, may represent something in our presentation. Even though in 2001 he lost about 1/5 from his own fortune, 11 billions \$ respectively, “*the unhappy*” still has a fortune of 56 billions \$, being for the 13th year consecutively the richest man in the world. When seeing such performances and paradoxes, it is difficult to know how to correctly react. To express compassion for what he had lost or to envy him for what he still possesses...

After the incursion made by us in the field of businesses, having also in view their asperities, we ascertain serious preoccupation on the direction of “*normalizing*” the accounting behaviour. Arbitrator of the dispute arisen between different users present on the informational market, the economist must express the economic truth in a formalized language. The social order claims real and correct information. At the same time, they must be also intelligible, pertinent, neutral and obviously at a reasonable cost.

The deontology of accounting expresses the assembly of rules and usages that regulates the rates between the accounting professional, as a producer of the information of accounting, and his beneficiary. In our opinion it is the art of fulfilling in an exemplary way the professional duties.

Through deontological behaviour, the accounting, as a professional, must impose for himself a way of working that is compatible with the good reputation of the profession, avoiding any activity that may bring any shadow on his reputation.

In 1995, at the National Conference of CECCAR (The Corp of Accounting Experts and Authorized Accountants from Romania), it was adopted the *Code regarding the ethical and professional behaviour of the accounting experts and authorized accountants from Romania*.

According to this code, the behaviour of the professional accountants and the professional relationships must be characterized by the following aspects:

- integrity: to be fair, honest and sincere in their work;

- objectiveness: they should not cede in front of certain prejudgments or a priori opinions;
- independence: to manifest themselves freely in front of any interest, such as: direct or indirect financial involvement in the activity of a client; involvement as a member of the executive staff or as an employee; the incidence of the family relationships; the level of the received accounting fees; the acceptance of different works performing on the basis of fees not established in advance;
- professional secret: to comply with the confidential character of the obtained information;
- promotion of professionalism and professional competence.

The protection of the honour and independence of the corps has to be ensured by the following elements:

- acknowledgement, competence and awareness;
- independence of spirit and avoidance of involvement from the material point of view;
- morality, probity and dignity.

The behaviour with clients, the quality of the performed works, and punctuality in execution, the self control of the work quality and the remuneration of the performed services are provisioned in the Code of ethical and professional behaviour.

Infringements of the laws or proceedings that are acting against integrity, independence and honour are forbidden by the same rules, even though they take place out of the professional performing.

6. Conclusions

Apart of any doubts, through its nature and functions, the accounting field put an order in economy, promoting the sense of trust in the business field. Together with the moral education coming from the Bible, “the science of accounts” stopped in some way the pathologic thirst for money. The idea that everything you do “will be counted” and you will respond for it is present both in Religion and Accounting.

Under this call, “*homo business*” must always aspire to the moral and social wellness. The professional deontology of the accounting expert is concentrated under the slogan “*Science-Independence-Morality*” and this did not happen by accident. Finally, we would like to emphasize once again the acute actuality of the presented problem. Without any doubts, we can say that there are moments that must not be missed in the life of any nation. Recently, the history opened for us a free lobby. It is important not to lose this big chance.

To know somewhere to be at the right moment and place means that you are helped by the chance. The difficulties arisen by the process of our integration in the supranational structures constantly start and end with the sanitation of the environment, especially focused on the business field. Of course, such a fact means a plus of morality. A real “fire test” for us is to prove through real facts the absolute governing of an unwritten law: *we have to say what we think and, mostly, we must do what we say.*

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Intra-Industry Trade in Tourism Services

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Abstract. *Usually the tourism flows are explained by demand, economic growth, and revealed comparative advantage (neoclassic trade theory).*

This manuscript examines the link between intra-industry trade and international tourism flows. We have examined the Portuguese intra-industry trade in this sector. The analysis apply the static (Grubel and Lloyd) and dynamic index (Brühlhart). Our results show that the tourism services are important for a small economy such as Portugal. The intra-industry trade is very significant between Portugal and the following countries: Spain, USA, Italy, Greece, Turkey and Canada.

Keywords: tourism flows; intra-industry trade; Grubel and Lloyd index; Brühlhart index, Portugal.

JEL Code: F11.

REL Code: 10D.

Introduction

The tourist flows have been studied frequently in terms of demand, and economic growth. Some researchers as Phakdisoth and Kim (2007), Leitão (2010), Surugiu et al. (2011) demonstrated that international trade explains the tourism sector. As refers Leitão (2010, p. 64): “(...) Tourism is a significant source of export significant revenues for any country”. It is important that policymakers and economists understand the factors of intra-industry trade in travel services.

The main objective of this manuscript is to apply the techniques of international trade, including the indexes of intra-industry trade (Grubel, Lloyd, 1975, Brühlhart, 1994) to Portuguese tourism flows.

The Portuguese economy is characterized by a small open economy, where tourism has a role in economic growth. In terms of geographic location, Portugal is located in Southern Europe, and in the Western part of Iberian Peninsula. The surface of the country, including the archipelago of the Azores (2,247 square kilometres) and Madeira (794 square kilometres), is 92,345 square kilometres.

The climate is mild, which allowed that the tourist activity has developed. Portugal has a historical, rich cultural and artistic past. The country has a qualified tourist supply which allows it to receive international conferences, international exhibitions and sporting events.

According to the Bank of Portugal (statistics of tourist cash flows) in 2008, Portugal held tourist expenditure with particular emphasis on Spain, France and the United Kingdom. As regards the revenue the United Kingdom comes first in terms of ranking, followed by France and then Spain.

Webster et al. (2007), Sinclair and Stabler (2007) analysed the revealed comparative advantage. Bela Balassa (1966) proposed an index to analyse the comparative advantage. The comparative advantage is explained by neoclassic trade theory (Ricardo, Heckscher-Ohlin).

The study of Webster et al. (2007) also emphasized the “new trade” theories, i.e intra-industry trade (IIT) using a multicountry analysis. The authors demonstrated that Indonesia, Sri Lanka, Greece, and Mexico present highest values of IIT. Developed economies such as Canada, Netherlands, and USA present highest values of IIT. However some developed economies such as Japan and Germany have lowest values of IIT.

In general, the literature on intra-industry trade in tourism services focuses on the factors, as in monopolistic competition, product differentiation and economic scales (Lee, Lloyd, 2002). Balassa (1979), Falvey and Kierzkowski (1987) demonstrated that economies with lower trade barriers have higher levels of intra-industry trade.

The study of Lee and Lloyd (2002) shows that per capita gross domestic product (PCGDP), and trade orientation (TROR) has a positive impact on intra-industry trade in services.

The remainder of the paper is organized as follows: section 2 presents the relationship between tourism service and IIT; section 3 presents the indicators of IIT; section 4 and 5 show the results of IIT and marginal IIT. The final section provides conclusions.

The nature of tourism services and intra-industry trade

In the end of 70's, new trade theories emerged. These models of Krugman (1979), Lancaster (1980), Helpman (1981), Eaton and Kierzkowski (1984) and Helpman and Krugman (1985) introduced a new reality: intra-industry trade (IIT). For other words, these models permit to explain the simultaneous trading (export and import) of product within a particularly industry.

Balassa (1966) refers that the intra-industry trade is explained by similar per capita incomes. Geographical distance discourages IIT. Moreover, the common border promotes bilateral trade. Trade barriers have a negative impact on the promotion of IIT.

For a long time trade in services was not subject to analysis in the international economics. With the Uruguay Round trade in services gains weight with the General Agreement on Trade in Services (GATS). The Uruguay Round has implemented a trading system based on multilateralism. The World Trade Organization (WTO) was confronted with the process of globalization and protectionism (Bhalla and Bhalla (1997).

The discussion of intra-industry trade in tourism services have been negligenced.

There are some studies that analysed intra-industry trade in services as in Kierzkowski (1989), Tang (1999), Lee and Lloyd (2002), Webster et al. (2007). Kierzkowski (1989) analysed the transportation services. The study of Tang (1999) examined the international telephone industry. Lee and Lloyd (2002) applied the index of Grubel and Lloyd (1975) and the index of Brühlhart (1994) in services by country and in services by industry for the period 1992-1996.

Webster et al. (2007) also apply the index of Grubel and Lloyd (1975) and the index of Brühlhart (1994) in tourism services. The authors concluded that tourism is explained by product differentiation, economies of scale and monopolistic competition.

In 1990's, international economics watched a new paradigm. IIT is measured and explained with dynamic process. According to the literature, the concept of marginal intra-industry trade is associated with labour market adjustment costs (Brühlhart, 1994).

Table 1 shows the importance of tourism receipts in Portugal by foreign countries in 2008. The United Kingdom occupied the first position, followed by France, Spain, and Germany. The fifth and sixth are occupied by Netherland and the United States.

Table 1

Tourism receipts by foreign country in 2008

Country	Ranking by country
United Kingdom	1
France	2
Spain	3
Germany	4
Netherland	5
United States	6
Brazil	7
Ireland	8
Belgium	9
Italy	10

Source: Bank of Portugal dataset.

Material and methods

The data were taken from the Bank of Portugal (statistics of tourist cash flows) between Portugal and trade partners. We calculate the intra-industry trade in tourism services considers the incoming and outgoing expenditures.

The empirical literature use the index proposed by Grubel and Lloyd (1975). The Grubel and Lloyd (1975) index is given by:

$$IIT_i = 1 - \frac{|X_i - M_i|}{(X_i + M_i)} \Leftrightarrow IIT_i = \frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)}$$

The index is equal to 1 if all trade is of the intra-industry trade type. If IIT is equal to 0, all trade is inter-industry trade. The Grubel and Lloyd index is a static measure and, as Hamilton and Kniest (1991) demonstrated, the changes of this index over time do not adequately reflect the changes in trade partners. Their measure did not eliminate the scale effect. In other words, their index did not allow the comparison between industries of different size. This problem was resolved by Brühlhart (1994) marginal IIT index (MIIT).

$$MIIT = 1 - \frac{|\Delta X - \Delta M|}{|\Delta X| + |\Delta M|}$$

The Brühlhart index is a transformation of Grubel and Lloyd (1975) index. The MIIT index also takes the values 0 and 1. The value 0 indicates that the marginal trade in the industry is exclusively of the inter-industry trade and the value 1 represents that the marginal trade is entirely of the intra-industry.

According to the literature (Brühlhart, Elliot, 2002) the impacts on symmetric or asymmetric demand shock within or between industries are explained by trade-induced.

Intra-industry trade – Grubel and Lloyd index

Table 2 report Grubel and Lloyd index of intra-industry trade in Portuguese tourism for the year 2008 and 2009. Intra-industry trade in tourism services predominates between Portugal and the following countries: Spain, Greece, the United States, Italy, Canada, and Turkey. In other words, the IIT between Portugal and these countries are over 50%.

As Table 2 also shows, the trade partners with highest value of inter-industry trade (comparative advantage, i.e. $IIT < 0.5$) are Austria, Czech Republic, Denmark, Germany, Ireland, Netherlands, Poland and United Kingdom.

Table 2
**Portuguese intra-industry trade in tourism services:
the index of Grubel and Lloyd**

Countries	2008	2009
Austria	0.43	0.40
Belgium	0.53	0.52
Canada	0.54	0.61
Czech Republic	0.19	0.18
Denmark	0.21	0.21
France	0.44	0.41
Germany	0.39	0.38
Greece	0.69	0.71
Hungary	0.29	0.30
Italy	0.75	0.73
Ireland	0.29	0.73
Netherlands	0.29	0.30
Poland	0.31	0.27
Spain	0.97	0.90
Turkey	0.71	0.53
United Kingdom	0.32	0.37
United States	0.70	0.70

Source: Own calculations from Bank of Portugal dataset.

Marginal Intra-industry trade – Brülhart index

The marginal intra-industry trade (MIIT) appears in literature as a way of explaining the issues of structural adjustment in the labour market. The literature considers that intra-industry trade has lower adjustments costs than inter-industry trade, i.e, smooth adjustment hypothesis (SAH).

This article uses the index of marginal intra-industry trade (MIIT) is not to evaluate the issues of adjustment in the labour market, but to assess the changes in international tourism. As in Webster et al. (2007) we compare the results of IIT (Grubel, Lloyd index) with the indicator MIIT (Brülhart, 1994).

When we apply the MIIT index we see that the picture is something different. The countries with the highest values of marginal intra-industry trade in tourism services are: Austria, Canada, Netherlands, and USA (Table 3).

Table 3
**Portuguese marginal intra-industry trade
in tourism services**

Countries	MIIT
Austria	0.93
Belgium	0.21
Canada	0.90
Czech Republic	0.18
Denmark	0.21
France	0.88
Germany	0.42
Greece	0.53
Hungary	0.10
Italy	0.40
Ireland	0.43
Netherlands	0.90
Poland	0.55
Spain	0.26
Turkey	0.46
United Kingdom	0.12
United States	0.80

Source: Own calculations from Bank of Portugal dataset.

Conclusions

In this article we analyze the flows of tourism taking into consideration the indicators of international trade, including intra-industry trade. As we referred the studies of trade in services have been neglected. However,

Kierzkowski (1989), Tang (1999), Lee and Lloyd (2002), Webster et al. (2007) contributed to this gap decrease. We consider that there are necessary and empirical developments of theoretical models, not only in multilateral terms, but also in bilateral terms. It is our understanding that the classic studies, i.e. bilateral trade, give us a more realistic picture.

The results show that a correlation exists between the theory of international trade and tourism. That is, the tourist products are associated with product differentiation, economies of scale and are explained by monopolistic competition.

However this study has some limitations. In future we need to study the determinants of intra-industry trade in tourism services. This type of trade “two-way trade” is associated to different endowments and quality of products.

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Operational Risk Modeling*

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Abstract. *Losses resulting from operational risk events from a complex interaction between organizational factors, personal and market participants that do not fit a simple classification scheme. Taking into account past losses (ex. Barings, Daiwa, etc.) we can say that operational risk is a major financial losses in the banking sector, although until recently have been underestimated, considering that they are generally minor, note setting survival of a bank.*

Keywords: operational risk; BIA; SA; AMA; LDA.

JEL Codes: D53, G32.

REL Codes: 7J, 11B.

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Because of the financial crisis and prolonged recession economics European Supervisory Organizations, banks feel inadequate capitalization required by the Basel I and II, which cannot absorb the consequences of banking risks and ensure economic development through credit, so they created new complex prudential policies, grouped under form a new agreement, namely Basel III.

Such rules and regulations have been created which has recognized the impact of operational risk in credit institutions, consistent with changes occurring within the banking and financial market, stressing the importance of proper risk management, without which financial institutions cannot exist.

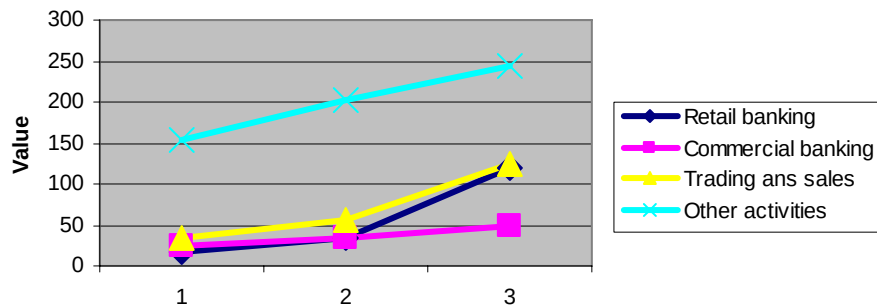
Identify risk issues and capital adequacy of credit institutions and investment firms have been given increasing importance of large, both internationally and nationally, such that different models have been developed for quantification and operational risk management. Through this study we proposed: identification and analysis of operational risk, highlighting the applicability of capital adequacy models, and determining capital requirements for credit institution in Romania.

For the first pillar of Basel II on the minimum capital required to cover operational risk, in what follows we present the case of a credit institution, hereinafter named financial institution X, aiming to ensure the confidentiality of information provided. The database contains all relevant information in terms of operational risk and includes 2650 observations.

The concept of credit institution analyzed the relevant indicator is called “gross income”, which is the sum of the profit and loss account of net interest income and similar income from shares and other variable income securities, with commissions income, income from financial operations and other operating income.

As the main business lines the credit institutions considered for the analysis of losses from operational risk: trading and sales, retail banking, commercial banking and other activities (which includes overlapping corporate financing activities, payment and settlement services as agent), classification of operations performed on the basis of specific criteria and policies developed and implemented in internal procedures.

For all business lines the financial institutions have used as relevant indicator the “gross income”, considering it, according to the Basle Committee and recommendations, a clear indicator present in annual financial statements on which the calculations can be performed easily and national comparisons and international are easily audited and reflects very well the sensitivity of operational risk.



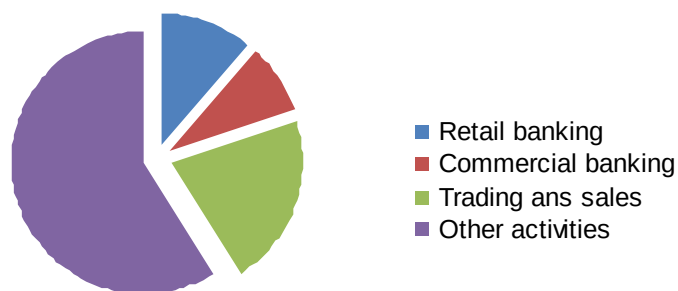
Source: authors.

Figure 1. *Evolution of gross income for the business lines*

To obtain high values for a particular business line shows the size and intensity of activity gross income of the institution concerned on those industries, also providing information about the departments concerned with potential losses that may occur and the amount necessary to cover losses related to operational risk business lines.

To determine the capital requirements for operational risk under the basic approach is to apply factor 15% of average gross income received by each credit institution over three consecutive years.

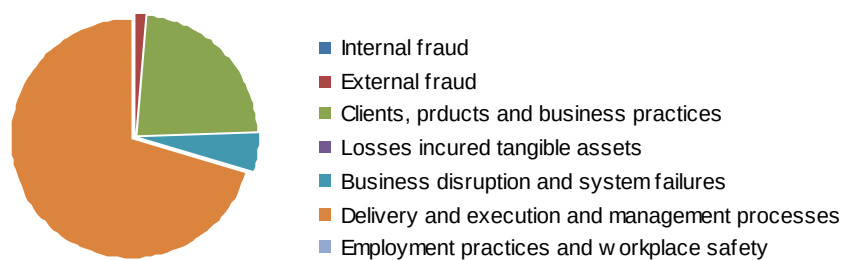
Where the standard model for determining the capital requirement should be started the process of allocating gross income for each business line as can be seen from Figure no. 1. Then the average gross income for each business line will apply the appropriate risk weight to calculate the capital requirement.



Source: authors.

Figure 2. *The capital requirement under the standardized approach to business lines*

The credit institution has allocated the largest share of capital for operational risk business lines: financing companies, payments and settlement, agency services, retail brokerage, asset management, is considered the most risky, but according to Figure 1 we interpret that this allocation is due to the fact that the lines are most active in terms of obtaining income. Losses arising from operational risk, where the credit institution are identified and related international standards on the seven types of events, such as internal fraud, external fraud, employment practices and workplace safety, clients, products and business practices; incurred losses of tangible assets, business disruption and system failures and execution, delivery and management processes. Thus on the basis of documents centralized accounting department, internal audit, IT, risk management, operations department, the Department of Operational Risk losses and the situation may types of events causing losses for the financial institution, which we present in the figure below.



Source: authors.

Figure 3. *The probability of occurrence of events per event type*

For the credit institution the most frequent losses were due to management processes, poor execution or distribution due to a lack of documents, incomplete documents, lack of customer permission, shipping losses, collateral damage management, bad communications, maintenance, or discharged with errors, accounting errors, missed deadlines or responsibilities expired, the collateral maladministration, negligence or loss generating assets endangering the customer, unauthorized access to the accounts, records, customer errors, inaccurate reporting, error reporting etc. obligations.



Source: authors.

Figure 4. *Operational loss suffered by event type*

For credit institution main loss in terms of severity is due to the destruction of physical assets as effect of deterioration or loss of physical assets of the organization and their impact on business. Analyzing Figures 3 and 4 can easily establish internal fraud and lack of employment practices and workplace safety that might explain with efficient management of the financial institution. Next to the credit institution will apply the method analyzed Loss Distribution Units (LDA) for measuring capital requirements for operational risk.

Financial Institution Activity was divided, as in Standardized Approach, in four business lines, as presented and the Basel Committee, namely: Retail Banking, Commercial Banking, trading and sales, other.

Using the model to classify all types of events provided by the Basel Committee, in the work were encountered losses due to internal fraud, external fraud, risks arising from relationships with customers, products and business practices, destruction of tangible assets, adjournment operations or errors in the system, process management, execution or faulty distribution, staffing and related conditions workplace safety.

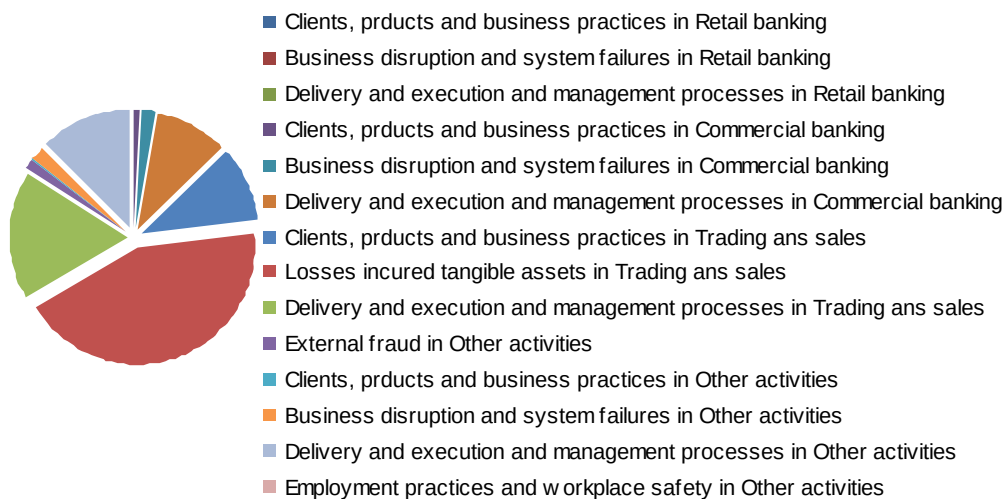
This will result in 28 cells of the matrix types of events/lines of business. The first step of this method is to assign the number of losses suffered by the credit institution in each cell of the matrix.



Source: authors.

Figure 5. *Number of losses suffered by the credit on each cell of the matrix*

After distributing the number of cell losses, the losses are distributed over the cell matrix.



Source: authors.

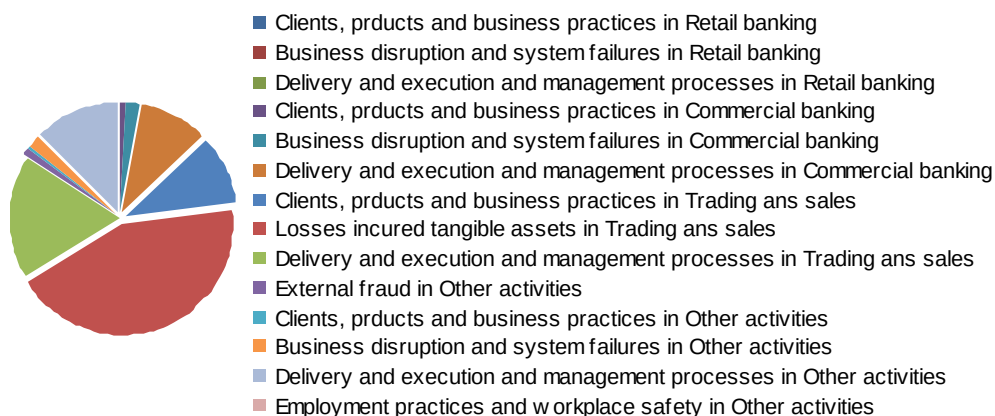
Figure 6. *The losses incurred by the credit on each cell of the matrix*

Frequency distribution is a discrete one data and having information on a relatively short period of time, it will be modeled by Poisson distribution (Frachot, 2001), setting its parameters so as to provide the average number of incidents occurred for the period.

In case of the severity distribution, being a continuous and positive, there were tested several distributions such as Gamma, Exponential, Logistic, LogLogistic, Normal, log normal, Pareto, Weibull, choosing Weibull distribution, in most cases Exponential and lognormal ones considered as the closest to the empirical distribution.

Using Monte Carlo simulation for the aggregation of severity and frequency distribution there were simulated 100 scenarios of occurrence of these losses, including 10,000 each scenario values.

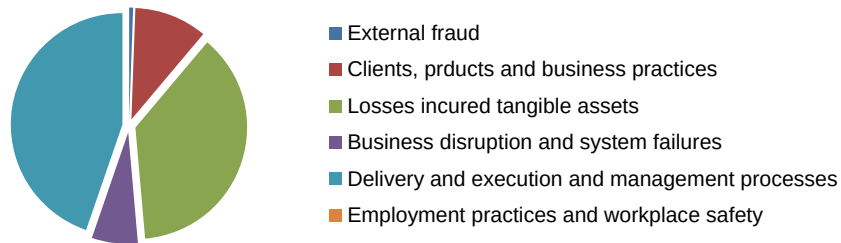
Operational risk capital requirement for credit institution will be determined like value at risk, being the total value at risk for each cell of the array of risks; confidence interval was set at 99.9%.



Source: Own processing.

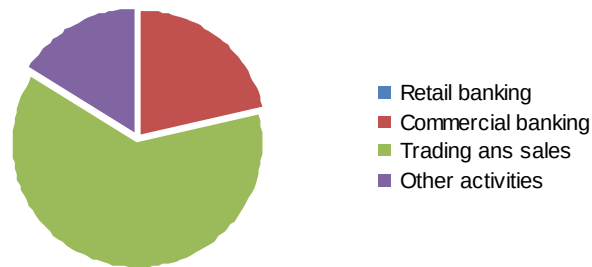
Figure 7. *The expected loss on business lines and event types*

Next we determine the expected loss event types and business lines, summarizing the results in Figures 8 and 9 respectively. Thus the most common expected loss is due process management, poor implementation and distribution, and the most affected line of business is the trading and sales.



Source: authors.

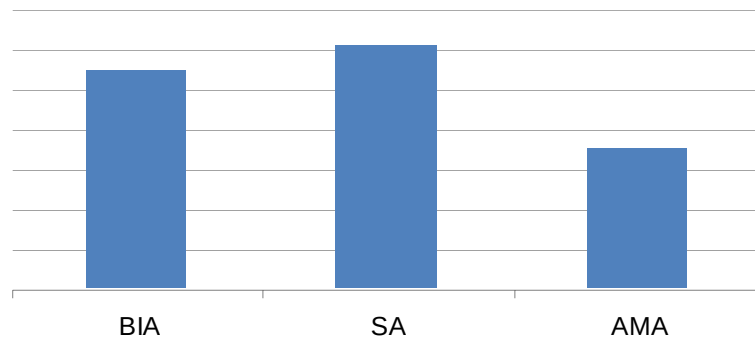
Figure 8. *Value at risk by types of events*



Source: authors.

Figure 9. *Value at risk business lines*

Thus summing up the institution's credit analysis, we observed, as from Figure 10, that once the bank uses a more complex means of measuring operational risk, capital requirement for this risk is reduced. Minimum capital is allocated using the Distribution Approach loss because it can identify, measure and manage operational risks more effectively. One can easily observe the superiority of advanced methods, achieving a substantial saving of capital for operational risk, when using advanced methods.



Source: authors.

Figure 10. *Capital requirement determined using three approaches*

In case of the credit institution is remarked an increase of the capital requirement when used the standard method because the most active business lines are the trading and sales and other activities whose risk weight is 18%.

In this paper there were used original methods and designs, prepared according to available data, supporting the need for operational risk and capital adequacy measurement own funds continues to expected or unexpected events related to credit institutions. The biggest problem encountered in applying the model was the small number of observations for certain types of events and business lines, as data collection is realized over a threshold established by the credit institution as a balance between small losses and the cost of registration accuracy losses too large a boundary situation. Another problem may be created by the consistency, relevance and bias estimates where quantitative methods are applied on irrelevant data, poor quality or too expensive. VaR method is applied with difficulty due to the identification of structural dependence, between risks, estimation, tests and procedures used to construct an increasing number of functions. Identify inconsistencies may occur due to operational losses level: different accounting standards and practices, lack of regulations regarding the inclusion or exclusion of some components of losses in capital base required, etc.

Such financial institutions may suggest that the first step would be to do the measurement of operational risk is to conduct an inventory by category and creating a methodology to identify, plan and avoid these risks and devising plans for crisis and address the effect of event risk.

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Trends in Trade and Investment Flows between the EU and the BRIC Countries

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Abstract. *In this paper, we intend to present an in-depth comparative analysis of the trade and investment flows between the EU member states and the four strongest emerging countries: Brazil, Russia (BRIC), India and China (BRIC), during 2004-2009⁽¹⁾ and beyond. In the EU-BRIC equation, we include for comparison countries like the USA and Japan, and their respective relations with BRIC.*

The purpose of the paper is to contribute to the discussion of the integrated issues related to trade and investments, since the EU-BRIC relations represent one of the most important „pieces” in this „global puzzle”.

First, relying on the statistics published by Eurostat, the WTO, the UNCTAD and the national authorities, our study highlights the main trends of the trade and investment flows between the EU and BRIC, in comparison with those of the USA and BRIC or Japan and BRIC.

Second, we emphasize the principal factors that contributed to these developments and their economical consequences. For example, the global economical situation, the political decisions, the resource scarcity or the (still) existing fiscal paradises play a major role in the celerity and magnitude of the trade and investment flows.

Third, on the basis of the actual data and information, our analysis outlines the perspectives of the EU-BRIC trade and investment relations in the long run.

Following this rationale, the paper is structured around three main sections, followed by a summary of the conclusions of the author.

Keywords: trade; FDI flows; FDI stocks; EU-27; BRIC.

JEL Codes: F10, F14, F21, F23, F59, O24, O52-O54, O57.

REL Code: 10D.

Structure

Motivation for the topic “Trends in trade and investment flows between the EU and the BRIC countries”:

1. Comparisons and interrelations between the EU and BRIC countries in the field of trade in goods, services and FDI flows.
 2. Determinants of trade and investment exchanges between the EU and the BRIC countries.
 3. Perspectives of trade and investment flows between the EU and BRIC countries through the lens of the strategic bilateral relationships.
- Conclusions.

Motivation for the topic “Trends in trade and investment flows between the EU and the BRIC countries”

We have chosen this research topic for two main reasons. *First*, BRIC is the group of the most powerful emerging economies which record remarkable growth rates and ascending shares in the global trade and investment flows. And the development of the economic and diplomatic relationships among the world’s most powerful economies is without precedent. *Second*, as the BRIC countries move from the factor driven (India) or efficiency driven stage of development (China, Russia and Brazil) to the stage of development based on innovation (which is the case for the most of the EU member countries), the interaction between the EU and BRIC deepens. The cooperation of the BRIC countries with the EU (and other developed economies) is the key for the implementation of their national modernization and innovation strategies. And, once they become “intelligent” economies based on innovation and new technologies, some major issues may also be settled, such as environment deterioration, dramatic social imbalances and development gaps among regions.

BRIC – the group of the globally most powerful emerging economies

Since 2001, the international experts have used the “BRIC” acronym in order to define the group of countries including Brazil, Russia, India and China. From an institutional point of view, the coalition of the most powerful emerging economies of the planet was looked at with circumspection. It was asserted that BRIC were the only worldwide coalition that first prefigured „in the mind of the economists”, and only subsequently turned into „reality”.⁽²⁾ Nevertheless, after two high level summits (Ekaterinburg, June 16, 2009 and Brasilia, April 15, 2010) and the signals mutually sent by the leaders of the four most powerful emerging economies, we can assert that the BRIC is already institutionalized.

The group has even the intention to extend, one first step in this direction being the invitation addressed to South Africa to attend the third BRIC summit from April 2011, in China.

Among the BRIC priorities there are: strengthening the G-20 role on the international scene, reforming the international financial system, jointly with the reform of the UN, World Bank, IMF and WTO in respect of increasing the participation of the developing economies at the decision-making process, attaining the Millennium Development Goals, sustainable development and cooperation – both among the BRIC countries and between them and the rest of the world.

In the hierarchy of the world countries in terms of GDP (at market prices), China surpassed Japan in 2010 ranking second, after the USA.⁽³⁾ The group of the EU-27 cumulated a GDP at current prices of around USD 16,000 billion at the level of year 2010 (26% of total), exceeding the USA (24%) and the BRIC group (17%). In contrast, as for GDP at PPP, the BRIC group already exceeds the EU (24%, as compared to 21%).

Although the world financial and economic crisis left differentially its “print” over each of the BRIC countries, and the anti-crisis measures taken by the four governments had been different, the growth rates of China, India and Brazil were robust at the level of the year 2010, exceeding the average of the emerging and developing economies group of countries. Instead, the GDP growth rate of Russia is estimated at 4% in 2010, by around 3 percentage points under the average of the emerging and developing economies group.

The IMF forecasts for 2015 the following world hierarchy according to GDP (at market prices): 1. the USA (almost USD 18,000 billion), 2. China (circa USD 10,000 billion), 3. Japan (about USD 6,380 billion), 4. Germany (almost USD 3,860 billion), 5. France (USD 3,112 billion), 6. Brazil (circa USD 3,100 billion), 7. Great Britain (USD 3,050 billion), 8. The Russian Federation (over USD 2,900 billion), 9. India (around USD 2,500 billion), followed by 10. Italy (almost USD 2,400 billion) and 11. Canada (almost 2,000 USD). According to these forecasts, two countries of G-7, Italy and Canada, shall be overtaken by the BRIC countries until 2015 in terms of GDP, at market prices (IMF, 2011a and 2011b).

Nevertheless, although China ranks already second in the hierarchy of the world countries according to GDP, in current prices, its GDP / inhabitant remains at low levels (under USD 4,400 in current prices, 2010). Relatively, GDP / inhabitant in India is estimated at USD 1,265, in Brazil USD 10,800, and in Russia over USD 10,400 – well below the figures recorded by the USA (over USD 47,000), Japan (almost USD 43,000) and the EU-15 countries (IMF, 2011b).

The four most powerful emerging economies worldwide have many common features, such as: robust consumption markets, rich and various natural resources, competitive sectors in agriculture and industry, solid foreign

exchange reserves, but, at the same time, many different characteristics, for instance the endowment with factors of production, or the predominance of one or another engine of economic growth.

The researchers from the Vienna Institute for International Economic Studies (WIIW) are among the most proactive economists in the field of the analysis of BRIC countries. In their opinion, Brazil is a service economy, oriented toward the domestic market, the development of Russia is based on energy and raw materials export, India is, as Brazil, a service economy, but export-oriented, while the main engines of the Chinese economy are the export of manufactures and the foreign direct investment (FDI) (WIIW, 2009).

BRIC countries are included in the category of world states with vast populations (aggregated share of 42.6% of world total, as compared to 7.7% in EU), large surfaces and rich natural resources (including natural gas, oil, coal, rare earth, arable land), and in the years prior to the world financial and economic crisis recorded high rates of economic growth and made significant progress in the field of the knowledge economy.

BRIC group has significant foreign exchange reserves – over 40% of the world total (gold reserves excluded), at the end of September 2010; China had around 30% of the international foreign exchange reserves (USD 2,650 billion), Russia 5.8% (USD 501 billion), India 3.4% (USD 296 billion), and Brazil 3.2% (USD 281 billion). In 2010, the imports of BRIC countries were covered by their foreign currency reserves in proportion of: 118%, 153%, 76% and, respectively, 170% – lower levels than those recorded in 2009 (136%, 165%, 82% and, respectively, 211%) (IMF, 2010b, p. 203), due to imports increase.

As regards gold reserves, at the level of September 2010, China had around 3.9% of the international gold reserves, Russia 2.7%, India 2%, and Brazil 0.1%, meaning an aggregate rate of 8.7% of the world total for BRIC group. Gold reserves still have a very low share in the total reserves of BRIC countries: 0.5%, 5.7%, 7.4% and, respectively, 1.5%, as compared to the developed economies (for example, the corresponding shares were for the USA 72.1%, for Germany 67.4%, and for Portugal around 80%).

In the field of the international trade in goods, the BRIC group had in 2009 a share of 14.5% in the world exports and 12.5% in imports. The corresponding rates in the international trade in services were lower, of 8.4% in exports and 10.9% in imports (WTO, 2010c). The BRIC countries have become in the recent years attractive destinations (but significant sources as well) for (of) FDI. In 2009, at the global level, the group attracted 17.4% of the FDI inflows and contributed with 10% to the FDI outflows. BRIC's share in the global FDI stock was lower, of 7.3% in the inward stock and 3.7% in the outward stock (UNCTAD, 2010), which also highlights the acceleration of the

integration process of the BRIC countries into the world economy in the recent period or, equivalently, the *time* gap between BRIC group and the developed countries (which still hold the highest share of the global trading and investment flows) in relation to the international integration.

Table 1

Shares of the BRIC and EU in the global FDI flows and stocks and the international trade in goods and services, in 2009 (in %)

Country/group of countries	Share in the FDI flows		Share in the FDI stocks		Share in the international trade in goods ⁽²⁾		Share in the international trade in services ⁽²⁾	
	Inflows	Outflows	Inward	Outward	Export	Import	Export	Import
Brazil	2.3	.(1)	2.3	0.8	1.2	1.1	0.8	1.4
Russia	3.5	4.2	1.4	1.3	2.4	1.5	1.2	1.9
India	3.1	1.4	0.9	0.4	1.3	2.0	2.6	2.5
China	8.5	4.4	2.7	1.2	9.6	7.9	3.8	5.0
BRIC	17.4	10.0	7.3	3.7	14.5	12.5	8.4	10.9
EU	32.5	35.3	42.0	47.4	36.7	37.3	45.6	42.3

Notes:

⁽¹⁾ The FDI flows generated by Brazil in 2009 recorded a value of -10 billion dollar, due to a surge of intra-firm borrowings, from the Brazilian subsidiaries abroad to the mother-companies. Before 2009, Brazil had generated significant FDI flows: in 2007, almost 13%, and in 2008 circa 25% of the total FDI outflows of the Latin America and Carribeans.

⁽²⁾ Including the intra-EU trade and significant re-exports and imports for re-export.

Sources: UNCTAD (2010) and WTO (2010c).

Taking into account the EU intra+extra flows, EU-27, as entity, ranks first, in both world exports and imports of goods and services, and in FDI flows and stocks globally received and generated. Anyhow, EU shares in the international trade and investment flows had a declining track during the last years, by contrast with the trend of BRIC countries, whose shares in these flows substantially increased. And as regards the extra-community trade in goods, EU exports are slightly exceeded by the exports of the BRIC group.

Strategic character of the relationships between the EU and BRIC countries

As the BRIC countries move from the development stage based on factors of production (India) or efficiency driven (China, Russia and Brazil) to the innovation-based economies (classification according to World Economic Forum, 2010), the interactions between the EU and BRIC deepen.

The size and dynamic of the BRIC economies allow them to increase their capacity to absorb and generate innovation. *First*, these countries can innovate on a

much larger scale, as compared to other economies, based on their own investments in research and development and improvement of labour force. *Second*, they have the financial capacity to acquire new technologies – licenses, machinery and equipment, even high-tech (HT) companies – and can attract scientists, managers and consultants. *Third*, all the BRIC countries represent attractive locations for foreign direct investments (FDI). From the four emerging economies analyzed, the case of China is the most relevant. For the biggest Asian economy, the access to technology was the basic reason for the liberalization of trade and investment flows. In other words, China opened its huge domestic market in exchange to the technology access (OECD, 2010b, p. 121).

Besides the development without precedent of the economic and diplomatic relationships among the most powerful emerging economies worldwide, the cooperation of the BRIC countries with the developed economies, mainly the EU, the USA and Japan, is the key for the implementation of their national strategies for modernization and innovation. China intends to become an innovation-oriented nation until 2020 and world leader in science and technology until 2050.⁽⁴⁾ India wishes to become a developed country before 2020. At its turn, the Russian Federation, helped by the *Strategy 2020 – Long term social and economic development of the Russian Federation*, expects to become innovative, competitive at global level and join the world leaders list. Brazil, besides the ambitious strategies in energy and agriculture fields, has as target the acceleration of the innovation process at national level. Accordingly, the EU and other developed economies, world leaders in the field of innovation and high-tech products and services, play and will continue to play an essential role in the innovation process of the BRIC countries.

In the field of the knowledge-based economy, despite the remarkable scores in the innovation field, the BRIC countries still have a long distance to cover for catching up with the developed economies. As regards the quality of governance, the development of ICT infrastructure and the education and human resources, the BRIC countries still need the expertise of the developed countries, including the EU. On the other hand, the EU is dependent on the resources of BRIC economies and their markets. And these are just several reasons for the strategic character of the relationships between the EU and BRIC.

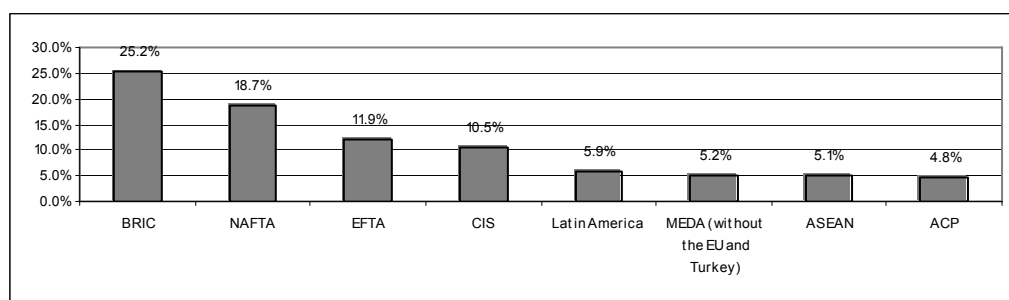
1. Comparisons and interrelations between the EU and BRIC countries in the field of trade in goods, services and FDI flows⁽⁵⁾

The integration process of Brazil, Russia, India and China into the global economy has started with delay, as compared to other countries. Russia's policy and its role in the Council for Mutual Economic Assistance

(CAER/COMECON) during the „cold war”, Brazil’s policy to substitute imports in view of sustaining the national „champions” and China’s policy of isolation from the rest of the world until 1978 are only a few elements which slowed down the integration process of these countries into the world economy. Instead, in the ‘90s, and especially during the last decade, the participation of the BRIC countries in the international trade and investment flows intensified.

At the same time, in the years 2000s, the role played by extra-community countries in the EU trade increased. Despite the fact that the internal market still concentrates the largest part of EU trade flows, the extra-community exports and imports record higher and higher shares in the total flows. Therefore, at the level of the year 2009, the extra-community exports of goods had a share of 35% in the EU total (intra+extra) exports, and the related imports around 38%. The situation is similar at the level of trade in services, except their slightly higher shares, and the extra-community exports share in the total EU exports which exceeds the extra-community imports share in the total EU imports (around 43% for export and 41% for import). These trends highlight the increasing relevance for the EU of the import sources and markets from outside the EU.

In 2009⁽⁶⁾, the main partners of the EU in the field of trade in goods were: the USA (15.9% of total), China (12.9%), the Russian Federation (7.9%), Switzerland (7.1%), Norway (4.6%), Japan (4%), Turkey (3.5%), South Korea (2.3%), India (2.3%) and Brazil (2.1%). Instead, the trade in services was dominated by the USA (27.5% of total) and Switzerland (12.4%), China, Russia, India and Brazil holding much lower shares: 3.5%, 3.3%, 1.8% and, respectively 1.7%.



Notice: NAFTA – North American Free Trade Area, EFTA – European Free Trade Association, CIS – Community of the Independent States, MEDA – countries participating at the Euro-Mediterranean Partnership, ASEAN – Association of the Southeast Asian Nations, ACP – 79 countries from Africa, Caribbeans and Pacific.

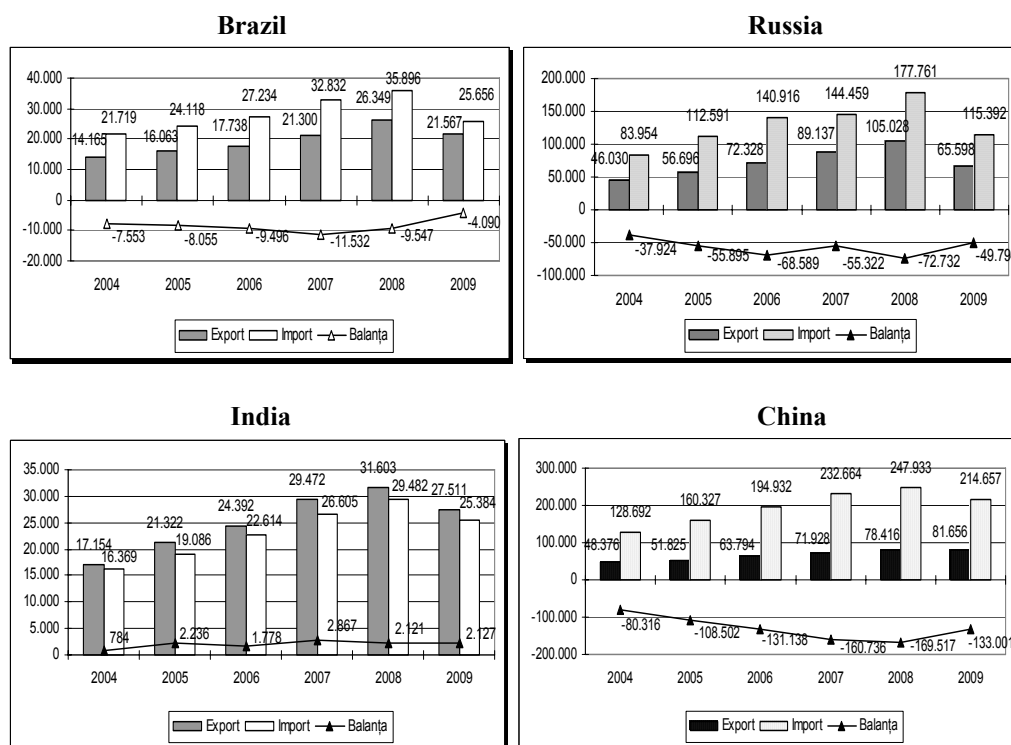
Source: DG Trade (2010).

Figure 1. Main partners of the EU in the field of trade in goods, groups of countries breakdown (in %)

While at the level of trade in goods, China, Russia, India and Brazil ranked 2nd, 3rd, 9th and 10th in the hierarchy of EU major trade partners, at the level of trade in services the positions were more modest: 3rd, 4th, 12th and, respectively, 13th.

At the level of trade in goods, the BRIC group had in 2009 a share of 25.2% in the EU trade, exceeding even the share held by the group of NAFTA countries, namely 18.7% of total.

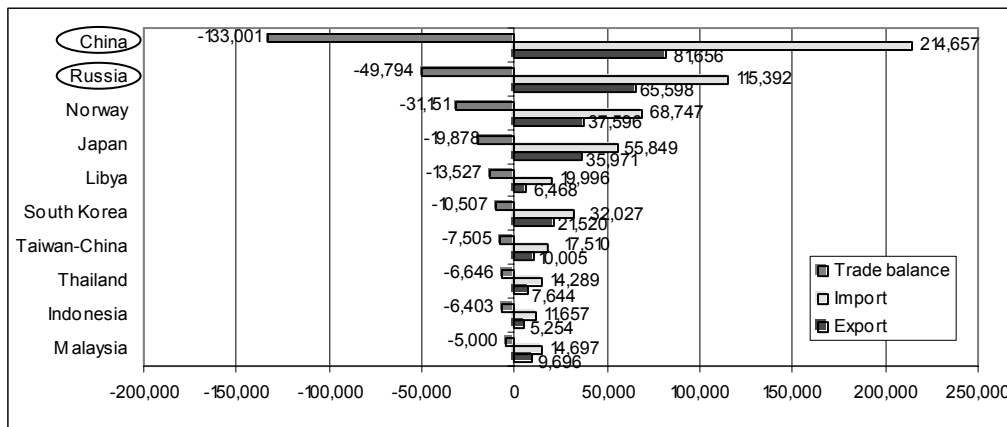
Taking into consideration the two trade flows, the BRIC group had in 2009 a share of 18% in the EU exports of goods (being overrun only by NAFTA, with a percentage of 22.2%) and 31.7% in imports (16.2 percentage points over NAFTA respective share). These market shares were reflected in a large EU-BRIC deficit of the balance of trade in goods: Euro 185 billion. The EU recorded an insignificant trade surplus in the relationship with India (Euro 2.1 billion) and a moderate deficit with Brazil (Euro 4.1 billion), while the deficits of trade balances with China and Russia were remarkable (Euro 133 billion and, respectively, Euro 50 billion).



Source: DG Trade (2010).

Figure 2. Trade in goods between the EU and the BRIC countries, 2004-2009 (in million Euro)

Besides, the highest trade deficits recorded by the EU in relation with its trade partners in 2009 were with China and Russia (Euro 133 billion and, respectively, Euro 50 billion – smaller in comparison with the figures at the level of 2008, of around Euro 170 billion and, respectively, Euro 70 billion).



Source: Calculations, based on the DG Trade (2010).

Figure 3. The highest trade deficits recorded by the EU in relation with the main trade partners in 2009 (in million Euro)

The EU-BRIC deficit in the field of trade in goods is even more significant if we take into consideration the total EU deficit in relation with its extra-community partners, which amounted in 2009 to around Euro 104 billion. In the preceding years, the EU-BRIC trade in goods balance recorded a deficit of Euro 249.6 billion in 2008 and Euro 224.6 billion in 2007.

The determinant element for the evolution of the trade in goods balance in 2009 was the world financial and economic crisis, which influenced also the EU trade in respect of diminishing the exports, imports, and, accordingly, the trade balances.

In 2009, as compared to 2008, the community exports to Russia decreased by 37.5%, those to India by around 13%, and to Brazil by 18%. In contrast with these reductions, the EU exports to China increased by around 4% during the same period. As regards imports, decreases of these flows were recorded in relation with all four BRIC countries (Russia 35%, India 14%, Brazil 28.5% and China 13.4%).

During 2000-2009, the shares of BRIC in the community exports of goods and, respectively, imports significantly increased, particularly distinguishing the spectacular trend of China and Russia shares on the EU

market, mainly for import. China was in 2009 the third major export partner of the EU, Russia the fourth, India the eighth, and Brazil the 12th. In the same year, China was the main import source of the EU, Russia the third, Brazil the ninth, and India the tenth.

Table 2

**Shares of the BRIC countries in the exports and imports of the EU
in 2000 and 2009 – trade in goods (in %)**

Share in the EU trade	Brazil		Russia		India		China	
	2000	2009	2000	2009	2000	2009	2000	2009
Export	2.0	2.0	2.7	6.0	1.6	2.5	3.0	7.5
Import	1.9	2.1	6.4	9.6	1.3	2.1	7.5	17.9

Source: DG Trade and Eurostat (2010).

Relatively, at the level of the trade in goods of the USA and Japan, the BRIC countries held in 2009 an aggregate share of 11.3% in American exports and 23.5% in the respective imports and 22.7% in the Japanese exports and 26.6% in the respective imports. The trade deficit of the USA in relation with the BRIC group was Euro 182 billion – very closed to that of EU-BRIC – while the Japanese trade deficit recorded a much lower figure: Euro 13.2 billion. As regards the trade balances of the USA with each BRIC country in 2009, it can be noticed the chronic deficit in relation with China (Euro 171.8 billion), moderate deficits with Russia and India (Euro 9.8 billion and, respectively, Euro 4 billion) and the surplus of Euro 3.7 billion with Brazil. By contrast, Japan recorded in the same year trade deficits with China, Russia and Brazil (Euro 9.5 billion, Euro 4 billion and, respectively, Euro 1.6 billion) and a modest surplus of Euro 1.9 billion with India.

Table 3

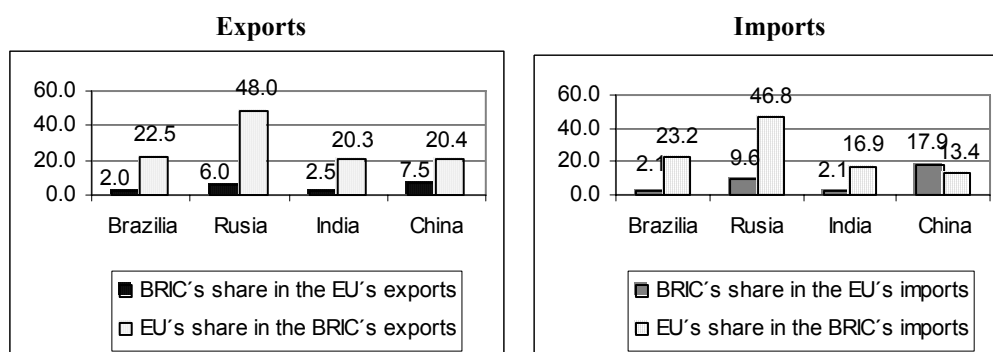
**Shares of the BRIC countries in the exports and imports of the EU, the USA and Japan,
in 2009 (in %)**

Shares in the EU's trade	Brazil	Russia	India	China	Total
Export	2.0	6.0	2.5	7.5	18.0
Import	2.1	9.6	2.1	17.9	31.7
Share in the USA's trade					
Export	2.5	0.5	1.6	6.7	11.3
Import	1.3	1.2	1.4	19.6	23.5
Share in Japan's trade					
Export	0.8	0.6	1.2	20.1	22.7
Import	1.2	1.7	0.7	23.0	26.6

Source: DG Trade and Eurostat (2010).

For the USA, China is the third trade partner (14.5% of total), Brazil the seventh (1.8%), India the eighth (1.5%), and Russia only the 18th (0.9%). China is the main trade partner of Japan (21.5% of total trade flows), while Russia is the 19th (1.1%), Brazil the 21st (1%), and India the 23rd (0.9%).

According to the data provided by the European DG Trade, the EU is the main partner of the BRIC countries in the field of trade in goods, both for export and import. In 2009, the EU, as entity, succeeded to overrun Japan and to become the main exporter on the huge Chinese market, despite the high degree of economic integration existent in Asia. At its turn, China plays an important role in the trade flows of Brazil, Russian Federation and India, but its trade dependence on these three countries is low.



Notice: In this case, only the extra-EU trade has been taken into consideration.

Source: DG Trade (2010) and Eurostat (2010).

Figure 4. EU and BRIC reciprocal shares in trade in goods in 2009
(bilateral trade dependency) (in %)

The analysis of the interrelations between the EU and BRIC in the field of trade in goods, at the level of the year 2009, highlights the following conclusions:

- As regards the export, the dependence degree of BRIC countries upon the EU internal market is much higher than that of EU upon BRIC countries;
- The situation is similar for import, except the EU-China flows: China's share in the EU import (almost 18%) is higher than the EU share in China's imports (13.4%), although the EU is the main exporter on the Chinese market;
- Russia, and especially China, are more important for the EU as import sources, rather than export markets, which mirrors the community

trade (im)balance in relation with these countries (deficits of Euro 133 billion and, respectively, Euro 50 billion in 2009);

- The shares of Brazil in the exports and imports of goods of the EU are similar, of around 2%, while the rate of India in the EU export is higher than in import (2.5% and, respectively, 2.1%). Besides, the EU trade balance with Brazil is negative (Euro 4 billion at the level of the year 2009), while EU records surpluses with India (Euro 2.1 billion in 2009).

The negative effects generated by the world financial and economic crisis also influenced the trade in services in 2009. The EU exports to China, Russia and Brazil diminished in 2009 by 11%, 13.4% and, respectively, 7.4% as compared to the levels recorded in 2008, while the exports to India insignificantly increased (by 0.7%). At their turn, the community imports from China, Russia and India decreased by around 14%, 21.8% and, respectively 7.7%, and the imports from Brazil increased only by 1.6% in 2009, as compared to the level of 2008.

As regards the share held by BRIC group in the EU trade in services (export+import), this is much lower, as compared to the related shares in the trade in goods: 11.2% in exports and 9.1% in imports in the services sector, against 18% in exports and 31.7% in imports, in the trade in goods (Eurostat, 2010). But, in contrast with the deficit of the EU-BRIC trade in goods balance, of Euro 185 billion in 2009, the services trade balance recorded a surplus in 2009 (of Euro 16.3 billion), similar with the level of 2008 and by Euro 3 billion higher than the value recorded in 2007. This balance represents one quarter of the EU surplus in relation with all its extra-community partners. Consequently, the competitive benefits of the EU against BRIC are obvious in the services sector.

As regards the investments, during the period 2004-2008, the FDI flows of the EU to the rest of the world (at extra-community level) were exceeded by the intra-community flows, among the member countries. Instead, in 2009, the FDI flows received by the EU from the countries outside the Union (in aggregate value of Euro 221.7 billion), represented 59% of the total received flows. The situation was similar for the generated flows, namely the FDI flows generated by the EU in the extra-community countries (of Euro 263.3 billion) represented 54.7% of the total generated flows in 2009, in contrast with the previous period, when the share of the extra-community flows was exceeded by the share of the intra-community flows.

In comparison with the trade flows, the participation of the BRIC countries at the FDI flows of the EU is much lower. The gravitation centre was, during the whole period, the group of EU-15, which succeeded to concentrate the highest share of these flows. In 2008, among the EU countries, Spain was the main investor in Brazil, Great Britain in China and Russia, and Germany in India.

Table 4

BRIC shares in the EU trade and investment flows in 2009 (in %)					
Share in the extra-EU trade in goods	Brazil	Russia	India	China	BRIC
Export	2.0	6.0	2.5	7.5	18.0
Import	2.1	9.6	2.1	17.9	31.7
Share in the extra-EU trade in services	Brazil	Russia	India	China	BRIC
Export	1.8	3.8	1.8	3.8	11.2
Import	1.5	2.6	1.8	3.2	9.1
Share in the extra-EU FDI	Brazil	Russia	India	China	BRIC
Inflows	1.3	1.4	0.2	0.1	3.0
Outflows	2.6	-	1.2	2	5.8

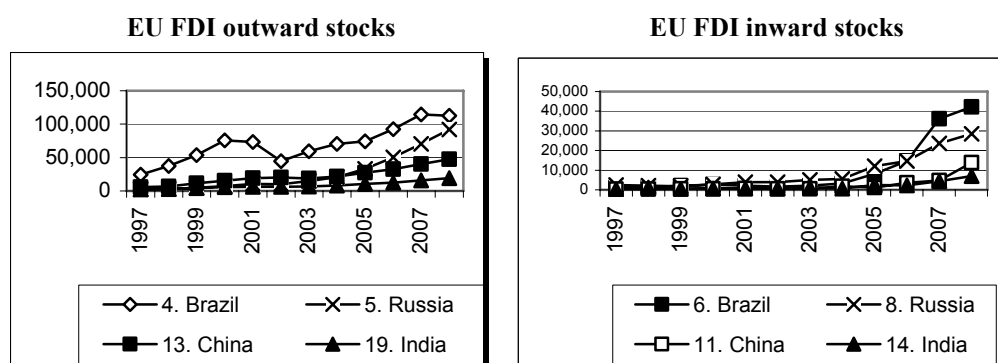
Notice: The value of the EU FDI outflows to Russia was negative in 2009.

Source: DG Trade and Eurostat (2010).

As regards Romania, according to the statistics provided on July 31, 2010 by the Trade Registry Office and the Romanian Centre for Foreign Trade and Investment Promotion, only China is included (among the BRIC countries) in the hierarchy of the 50 main investors (in trading companies with foreign participation), at the level of the whole Romania – ranking 17th, with almost 9,900 companies but only 1.14% of the total share capital.

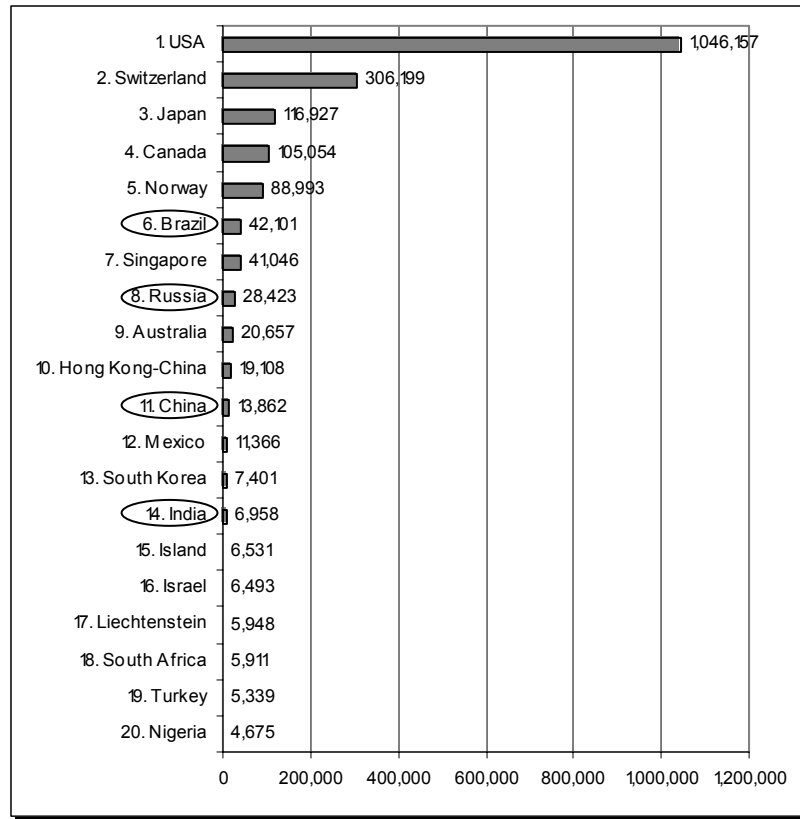
Taking into account the fact that the FDI bilateral flows record ample variations from one year to another due to the frequent changes at the level of their components (participations at capital, intra-company loans and re-invested profits) and fluctuations at the level of the number and value of mergers and acquisitions and of the green field investments, we shall refer below to the FDI stocks.

At the level of the year 2008, the FDI stocks received by the EU from extra-community countries amounted to Euro 2,421.4 billion (32% of total), and those generated by the EU amounted to Euro 3,253 billion (38% of total). As regards the FDI stocks received and generated by the EU, the corresponding shares of the BRIC group were 3.8% and, respectively 8.4%.



Source: Eurostat (2010).

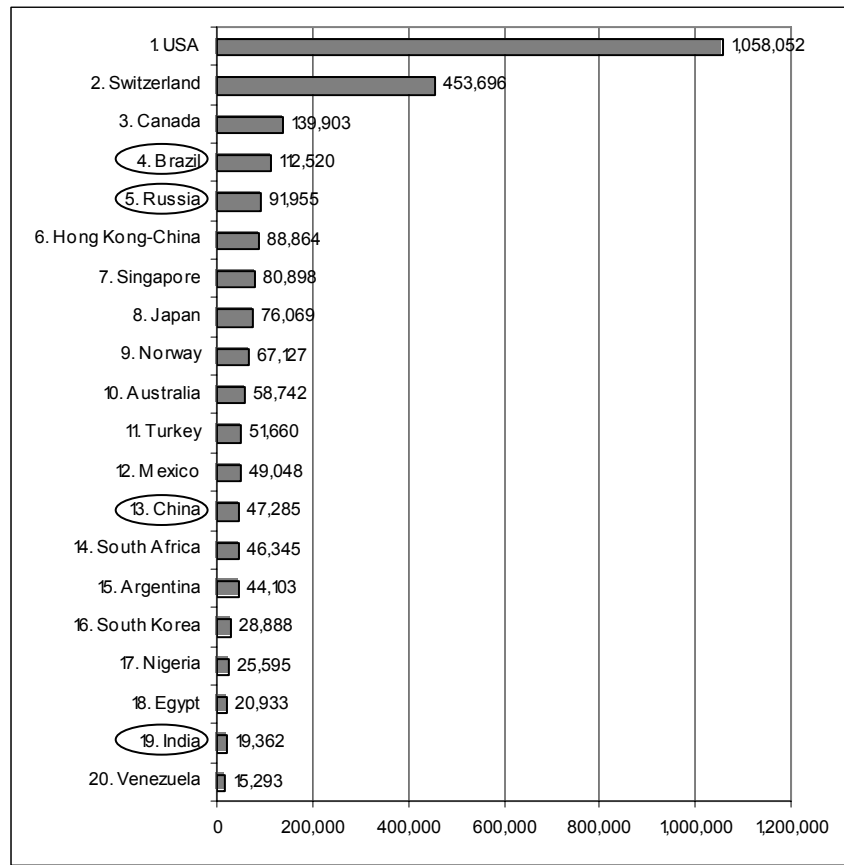
Figure 5. EU FDI stocks in relation with the BRIC countries during 1997-2009 (in million Euro)



Source: Eurostat (2010).

Figure 6. *The first 20 economies taking into consideration their shares in the EU inward FDI stocks in 2008 (in million Euro)*

The share of the BRIC group in the FDI stocks received by the EU from outside the Union increased by around 3 percentage points during the period 2004-2008, from less than 1% to 3.8%. The share of Brazil increased from 0.2% in 2004 to 1.7% in 2008, that of China from 0.1% to 0.6%, that of India from 0.04% to 0.3%, and that of Russia, from 0.3% to 1.2%. The share of Hong Kong-China remained relatively constant, at the level of 0.8%. As regards the FDI stocks generated by the EU, in the period 2004-2008, it is noticed that Brazil maintained its share at around 3.5% of the extra-community total, China increased its share from 1% to 1.5%, in parallel with the decrease of the share held by Hong Kong-China from 4.3% to 2.7%, a low increase of India's share from 0.4% to 0.6%, in contrast with the high increase of Russia's share, from 1% to 2.9%.



Source: Eurostat (2010).

Figure 7. *The first 20 economies taking into consideration their shares in the EU outward FDI stocks in 2008 (in million Euro)*

From the BRIC countries, Brazil and Russia had the most spectacular growth trend in the years '2000, both in terms of the FDI inward and outward stocks in relation with the EU.

Taking into account the results of the surveys recently carried out among the TNC managers as regards the capacity of the BRIC countries to attract and generate FDI, the investment flows between the EU and BRIC countries shall intensify in the years to come. BRIC is already placed on the investors' favourite destination map. In the hierarchy of the most „promising” host-countries for FDI, China keeps the first position, being followed by India (which wins thus one position as compared to the previous survey), Brazil on the 3rd (higher by one position), the USA on the 4th (lower by two positions), followed by Russia on the 5th position. At the same time, BRIC countries

become important FDI sources globally. According to the capacity of these countries to generate FDI, China is placed by the experts on the 2nd position, India on the 6th, and Russia on the 9th (UNCTAD, 2009b and 2010b).

The next section will focus on considering the main determinants of the trade and investment flows between the EU and the BRIC countries and those which explain the still low shares of the BRIC countries in the EU FDI.

2. Determinants of trade and investment flows between the EU and BRIC countries

The development of the trade and investment flows between the EU and BRIC countries is determined by multiple exogenous and endogenous factors.

From the recent exogenous determinants, we mention the world financial and economic crisis which generated many “chain” effects on the international trade and investments and, in particular, on the bilateral exchanges between the EU and BRIC. First, after the historical maximum figure of the international trade flows from 2008, the global demand diminished in 2009, due to the recession recorded in the developed countries and the slowing down rate of the economic growth in the emerging countries. The demand decrease generated, at its turn, the reduction of the prices for raw materials. After the highest increase in the last century of the commodity prices recorded in the period 2003-2008 (UN, 2010), the prices decreased starting from November 2008 for all the raw materials due to the global financial and economic crisis and excessive supply. Hence, on the other hand, the decrease of the prices for raw materials contributed to the reduction of inflation pressures, decrease of transport and other costs, with direct effects upon the consumers’ real income. Therefore, the effects of the world financial and economic crisis have been partly moderated by the reduction of the prices for raw materials in the commodity importer countries.

Second, the funding of exports and imports became more and more restricted. The experts consider that over 90% of the trade transactions involve a loan form (mainly on the short term), insurance or warranty (WTO, 2008). On the other hand, the funding of trade deficits was also more difficult and expensive, in the context of the uncertain environment on the financial markets. Third, the private investments, especially those in search of efficiency, with high contribution to export, have been restrained.

In the field of FDI, the situation is similar to that in the international trade, but the sharp decline of the global investment flows was recorded one year earlier, in 2008. Both the investments and the international trade had recorded a sharp decrease in 2001, but slighter than that of 2008-2009 and having as main determinant the slowing-down of the economic growth rate in

most of the developed countries and the crisis of the IT and communication sector (the so-called „dot.com” crisis), exacerbated by the uncertainty established after the terrorist attacks in the USA from September 11, 2001.

As regards the endogenous elements, we mention three of them: the economic complementary elements between the EU and BRIC countries, their international specialization and their different competitive advantages, the historical affinities and the tradition of the relationships among various economies (we can mention here the trade and investment relationships between Brazil and Portugal, for example) and, in close relation with the two elements mentioned above, the FDI geographical distribution. For instance, the economic complementarities between the EU and BRIC are directly reflected in the bilateral trade structure (Table 5). A detailed analysis of the trade per country for product sub-groups would make even more obvious the inter-relations between the EU and the BRIC countries, but the dimensions of this paper are not appropriate to consider such an analysis.

Table 5

Comparative presentation of the trade in goods between the EU and BRIC, with the outlining of the categories having a share > 10% at export/import (in %)

Trade flow	Brazil		Russia		India		China	
	SITC	%	SITC	%	SITC	%	SITC	%
Export	Machinery and transport equipment	47.7	Machinery and transport equipment	42.9	Machinery and transport equipment	43.8	Machinery and transport equipment	58.1
	Chemicals	22.0	Chemicals	16.7	Miscellaneous manufactured articles, classified mainly by material	27.7	Chemicals	11.7
	Miscellaneous manufactured articles, classified mainly by material	11.4	Miscellaneous manufactured articles	13.1	Chemicals	10.0	Miscellaneous manufactured articles, classified mainly by material	11.1
	-	-	Miscellaneous manufactured articles, classified mainly by material	11.1	-	-	-	-
	-	-	-	-	-	-	-	-
Import	Non-agricultural commodities, minus fuels	29.6	Fuels	73.8	Miscellaneous manufactured articles	27.6	Machinery and transport equipment	47.5
	Agricultural products	29.1	-	-	Miscellaneous manufactured articles, classified mainly by material	21.5	Miscellaneous manufactured articles	33.9
	Machinery and transport equipment	11.5	-	-	Machinery and transport equipment	20.2	Miscellaneous manufactured articles, classified mainly by material	21.2
	-	-	-	-	Chemicals	10.4	-	-
	-	-	-	-	-	-	-	-

Source: DG Trade (2010).

Going to the FDI specific elements, the shares of the BRIC countries in the extra-community FDI flows and stocks remain at low levels. This paradox is explained by the TNC reasons to invest abroad. In the theory of FDI, the investments are classified, according to their objective, in: investments in search for resources, market, effectiveness and strategic assets or increase of competitiveness.

Let's take for instance the case of FDI in search for resources, at the level of TNC from BRIC countries. They aim, of course, mainly to locations from Africa, Asia or Latin America, where such resources are abundant. As regards FDI looking for effectiveness and strategic assets, the EU, and other developed economies would be the ideal destination, but the EU-27 countries impose a series of access restrictions to the domestic market, most in infrastructure field – electricity, transport, telecommunications – but also in the financial sector. In some EU member states, such as Germany, Great Britain or France, there is a strict legal framework, according to which the investors' access to such sectors considered strategic from the point of view of the national security and safety is blocked – similar situation as in the USA and Japan. Taking into account that most of the investors from BRIC countries (mainly from China and Russia) are state-owned companies, which ensured monopoly position on the domestic market, one of the arguments of the EU for the restrictions imposed to the access to the internal market is also the non-distortion of competition. Nevertheless, recent studies (Hunya, Stölliger, 2009) highlight the fact that FDI from BRIC countries in the EU are concentrated in predominant proportion in the service sector, while community FDI in BRIC countries are in proportion of 1/3 in the processing industry and 2/3 in the services sector. Anyway, the recent provisions of the EU investment policy („investment-related package”) for FDI liberalization can actuate the bilateral investment flows.

At the same time, the share of the developed countries in the FDI flows and stocks generated by the EU remains large, despite a high efficiency rate of the investments in the BRIC countries, even above the average recorded in the new member states of EU (NMS). The explanation is the attractiveness of the developed countries in terms of macroeconomic stability, infrastructure and strict legislation in the field of intellectual property rights and also the high prices of assets and the long-standing history of FDI among the developed countries (Hunya, Stölliger, 2009).

As regards the reasons of the EU to invest in the BRIC countries, it must be underlined the fact that, together with the decrease of the attractiveness degree of such destinations in terms of costs, that given by the local market size and purchasing power increases (Hunya, Stölliger, 2009). And if we take into account also the role of the EU in the innovation and modernization process of

the BRIC economies, we may assert that the inter-relations between the EU and the BRIC in the field of FDI will even deepen on the long term.

Besides the elements mentioned above, we would like to highlight another one. Currently, the EU is the main investor in Brazil and Russia, while Mauritius is the major investor in India, and Hong Kong-China the most relevant investor in China. Cyprus appears in the official statistics of the Russian Federation as one of the most important foreign investors. The FDI flows that reach China through Hong Kong-China (actually, recording a declining trend due to the increasing attractiveness of China) or those entering Russia through Cyprus or India through Mauritius reflect the *capital migration* process explained by the investors' reasons to avoid fees and taxes. Nevertheless, due to the implementation of stricter transparency standards, pursuant to the world financial and economic crisis, the attractiveness degree of fiscal paradises declines, in favour of other countries such as BRIC.

3. Perspectives of trade and investment flows between the EU and BRIC countries through the lens of the strategic bilateral relationships

Although the market role is without doubt the main determinant of the international trade and investment flows, the public institutions and the formal rules, the informal norms and their constraint power are those which determine the „game's rules”.⁽⁷⁾ Our arguments in this section begin with the delineation of the bilateral legal framework between the EU and the BRIC countries.

Brazil, the strategic partner of the EU from Latin America

EU and Brazil established diplomatic relationships in 1960, and since then the cultural, economic and political relationships between the two parties permanently developed. The enhancement of the dialogue with the largest Latin American economy is considered by the European Commission (EC) one of the ways for re-starting the negotiations related to the EU-Mercosur association Agreement. The EU has not in view a new separate agreement with Brazil, therefore it considers the strategic nature of the bilateral relationships as an „engine” of the inter-regional cooperation. Brazil is for the EU the largest market in Latin America – both as import source and export destination. Brazil concentrates 35% of the total trade (export+import) between the EU and Latin America, being followed by Mexico (19%) and Argentina (almost 10%).

The bilateral high level summits are at their turn a way to strengthen the bilateral relationship. On July 14, 2010 the fourth bilateral summit took place in Brazil's capital, a particular emphasis being put on the requirement of

accelerating the negotiations for the conclusion of the EU-Mercosur association Agreement. The negotiations for this Agreement, suspended in 2004, were re-launched last year on the occasion of the EU-Mercosur bilateral summit from Madrid (May 17, 2010), and the first round of negotiations took place during June 29 – July 2, 2010, after a six-year hiatus.

Analysing the evolution and current level of the trade and investment exchanges between EU and Brazil, it must be noticed their high potential. Taking into account the high protectionism level of the Brazilian goods and services markets, and the existent barriers in the local business environment, the negotiations should continue both in the Doha Round and at EU-Mercosur and bilateral levels, in view of reducing the tariff and non-tariff import barriers existent in Brazil and improving the local business environment. This shall also facilitate the reduction of the actual EU trade deficit with Brazil. The EU-Brazil business summit is also an important way to strengthen the long term bilateral trade and investment relationships.

Russia, strategic partner of the EU, despite the bilateral divergences

After the Iron Curtain has fallen, within the new bilateral relationships delineated at economic and political level, we remark the consolidation of the cooperation between the EU and the Russian Federation. Although the tensions between the two parties are still present, and they continue to be intensely evident in the energy and geo-political fields, nevertheless the convergent common interests are prevalent.

The EU and its strategic partner, the Russian Federation, have cooperation relationships based on complementarity. While the EU aims, among others, at the Russian natural resources (upon which is still highly dependent) and the Russian market, Russia needs the European capital and technologies, the internal market and the EU support for joining the WTO.

Between December 1, 1997 and December 1, 2007 the bilateral relationships were guided by the Partnership and Cooperation Agreement, acting in the political, economic and cultural sectors. In view of enhancing the bilateral cooperation, the EU and Russia decided, within the session of May 2003 from Sankt Petersburg to establish four common spaces: economic, of freedom, security and justice, of foreign security and of research, education and culture. Within the summit of May 2005 from Moscow, there were outlined the road maps for the four common spaces, the EC drafting every year a progress report concerning the cooperation in these spaces.

After the expiry of the Agreement in 2007, this was automatically extended. In 2008, two sessions took place which significantly influenced the

process of concluding a new Agreement: the summit from the Siberian city Khanty-Mansiysk, carried out on June 26-27, 2008 (the 21st) and that from Nice on November 14 (the 22nd). At the 21st summit it was decided, after one year and a half of exploratory period, to *start the negotiations in view of concluding a new Partnership Agreement with the Russian Federation*, which had to replace the Partnership and Cooperation Agreement of 1997, taking into account the major changes occurred both at global level, and regional and local level as well. Despite some objections, the 22nd summit led to *unblocking the negotiation process* of the Agreement, process in a deadlock after the Russian-Georgian conflict of August 2008. Between July 2008 and May 2010, nine rounds of negotiations took place for the new Agreement.

The completion of the negotiations aiming at concluding a new Agreement, together with the materializing the four Common Economic Spaces and implementing the Partnership for Modernization, started at the 25th bilateral summit (of May 31- June 1, 2010, from Rostov on Don) contribute to the strengthening of the relationships between EU and Russia and enhancing the trade and investment exchanges between the two parties.

Strategic partnership EU-India, hardly developed until now

The cooperation relationship between the EU and India originated in the '60s. The first Framework Agreement between the two parties was signed in 1973, and was followed by a new and more comprehensive Agreement in 1981 – the Trade and economic cooperation agreement. The development of the bilateral relationship between the EU and India led to the conclusion of a new Cooperation agreement in 1994, much more comprehensive than the previous ones, opening the way for an ample political dialogue.

In 2000 the first bilateral summit took place in Lisbon, being followed by other ten summits at high level, the 11th being held on December 10, 2010 in Brussels. A particular relevance had the high level summit of 2005 (New Delhi), when the first common action plan was concluded. It provides, among others, to establish a high level group in trade, in order to analyze the ways of deepening and enlarging the bilateral trade and investment relationships.

The common action plan was reviewed at the summit of 2008 from Marseille. It was also enacted a common Work program concerning the climate changes. As integral part of the Strategy „Global Europe”, started by the European Commission in 2006 and pursuant to the feasibility studies concerning the opportunity of enacting a bilateral Free trade agreement and to the report from 2006 of the high level working group on trade, the two parties agreed to start the negotiations for concluding such an Agreement. From June

2007 until April 2010 nine negotiation rounds took place. Anyway, the negotiations are difficult as India might lose at several levels following the completion of the Agreement: reduction of the collections from custom duties, possible deepening of the trade deficit, risks induced by the liberalization of the financial services, restriction of the control over the capital, granting the national treatment to the European investors etc.

Instead, for the EU, the conclusion of such an Agreement might generate a series of benefits: diminishing of the protection level imposed by India to the imports from the EU, enhancement of the investment flows and bilateral trade exchanges.

In the science and technology field, the cooperation relationship between the EU and India are strong. On November 23, 2001, the two parties signed a bilateral Cooperation agreement in this sector. Based on this, the EU and India cooperate within the seventh Framework Program (FP7) for technological research and development 2007-2013. At present, there is also a bilateral Cooperation agreement in the research field for obtaining energy by nuclear fusion,⁽⁸⁾ and the two parties are considering also the conclusion of a Research and development agreement in the field of nuclear energy usage for peaceful purpose.⁽⁹⁾

Nevertheless, despite the bilateral efforts to strengthen the cooperation at all levels, among the EU relationships with its strategic partners (the USA, Canada, Japan, Russia, China, India, Brazil and Mexico), that with India is the least developed, fact highlighted also by the low level of the bilateral trade and investment flows.

At their turn, the USA, after the end of the „American unipolar moment”⁽¹⁰⁾, oriented more and more to identify allies in the terrorist fight and, according to the deepening of its current account and budget deficit, allies available to finance this “twin” deficit. Therefore, the strategic and economic dialogue with China was started in 2006. The same year, when it became obvious that it is not possible to establish the Free Trade Area of the Americas, the Commercial dialogue with Brazil was initiated. And in 2010, the inaugural Strategic dialogue USA-India took place. The relationships with Russia, instead, continue to remain at the experimental level, even after the conclusion of a new treaty for the reduction of strategic weapons, START-2. A historical reminiscence, the lack of a trust environment is felt also in the relationships between Japan and China, despite a high dynamic of the bilateral trade and investment exchanges.

EU and China, „closer partners, increasing responsibilities”

China and the EU set bilateral official relationships in 1975, and in 1978 signed the first Commercial agreement between the two parties. In order to reflect the gradual development of the bilateral relationships, the Agreement from 1978 was replaced in 1985 by the EU-China Trade and Cooperation Agreement. In 1980, China was included on the list of the countries benefiting from community scheme of the generalized, non-reciprocal and non-discriminatory system of preferences in favour of the developing countries (GSP).

In 1995, the EC defined in the Communication „A long term policy for the relationships between China and Europe” its first Strategy concerning the bilateral economic relationship. This was followed in 1998 by the Communication related to „Building a comprehensive partnership with China”, which virtually initiated a new stage of the bilateral relationship, designated also by the first EU-China summit carried out in London the same year.

In 2003, the strategic partnership between the two parties was initiated, and the Chinese government made public in October 2003 „China’s policy document in the relationships with the EU”, emphasizing the objectives of the Chinese policy towards the EU, the cooperation fields and the five-year cooperation framework.

On October 24, 2006 EC published the Communication „EU-China: closer partners, increasing responsibilities”, and, in parallel with this, the working document concerning the bilateral trade and investments, named „Competition and partnership”, which analyzes the trade exchanges between the EU and China and their expectations, starting from the political and economic strategies and the policy in the field of competition and cooperation.

On April 25, 2008 the EU and China started in Beijing the bilateral dialogue mechanism at high level on economic and trade topics. Until that date, over 20 sectoral dialogues on economic topics had been recorded between the EU and China⁽¹¹⁾, most of them started 2-3 years before, the new mechanism being complementary to these. The requirement of enhancing the dialogue and cooperation between the EU and China occurred from both the benefits of developing the existing bilateral complementarities, and the interest shown by China for „the European model” in certain fields, and also from the need to settle certain discrepancies in an amicable way.

The mechanism aims at enlarging and deepening the cooperation between China and the EU on economic and trade matters. The main action fields are: the multilateral trade system, the strategic matters in relation to the bilateral trade, investments, innovation (including the intellectual property rights) and the bilateral technology and economic cooperation (including energy,

sustainable development, transport, legislation). At the inaugural session, a working plan and an activity schedule were decided.

The decision to start the high level mechanism was made during the 10th EU-China summit, which took place in Beijing on November 28, 2007. The initiative belongs to China, the main objective of this mechanism being the reduction of bilateral trade imbalances.

The last high level summit between the two parties, the 13th, took place on October 6, 2010 in Brussels. On the occasion of celebrating 35 years since the agreement of the bilateral diplomatic relationships was set, the EU and China expressed their commitment to open a new stage of the bilateral relationships, where the recently defined opportunities at regional and global level (including those provided by the Treaty from Lisbon) are to be used in the mutual benefit of the two parties.

EU-China, a second G-2?

The ascent of the Chinese economy during the last decades, after its integration into the world economy pursuant to the reforms of Deng Xiaoping, re-modelled the economic and political relationships between China and the rest of the world. Strategic partner of both the USA and the EU, China is considered by them both an opportunity and a threat.

China records a significant trade surplus both in the relationships with the USA, and with the EU. In general, during the world recession, the global imbalances diminished: the trade deficits of the USA and the EU decreased, the surpluses of China and Japan diminished, while the oil price was lower. Anyway, it is improbable that these trends remain on the long term. The recent reduction of China's trade surplus is determined by the contraction of the global demand and the national economic stimulus package, with impact on the domestic demand, rather than by structural changes.

Two elements might have a strong impact upon the Chinese trade balance: on the one hand, the revaluation of the national currency, renminbi (RMB or yuan), which would increase the attractivity degree of the domestic market for the Chinese producers (which is equivalent to exports moderation); on the other hand, the reduction of the propensity to save of the households and companies, which would contribute to increase the domestic demand (which means imports increase as well). But, both the RMB revaluation and the domestic consumption increase are long term processes.

The USA, and also the EU hold China responsible for maintaining the national currency, RMB, at an undervalued foreign exchange rate, in order to encourage exports or, conversely, to slow down imports. As regards the foreign

exchange rate of RMB, the Chinese government, conceding to the external pressures, resorted to the appreciation of the RMB by 21% against the Dollar between July 2005 and July 2008, but the next period maintained the foreign exchange rate to 6.83 RMB for one Dollar. The ascending trend of China's foreign currency reserves, which exceeded the threshold of USD 2,000 billion in April 2009, and since that time increased at a high rate, show the government policy to „bridle” the national currency foreign exchange rate, but it is also the natural consequence of the balance of payments surpluses. For instance, the surplus of the balance of trade in goods increased during the recent years until it reached the record level of USD 296 billion in 2008 (WTO, 2009).

In the opinion of the World Bank experts, a stronger yuan would ease the inflation pressures, by reducing the prices of the imported products and would also impact on the economic growth model, by inclining the balance in favour of services and consumption and tempering the investments and industry development. There are still many experts (among them, the Nobel Prize laureate in economics, Robert A. Mundell) who consider that a free floating foreign exchange rate of yuan could erode not only the steadiness of the Chinese economy, but also the global one.

In their turn, Chinese experts find other explanations for the Chinese trade surplus. They highlight that the EU and the USA weapon embargo over exports to China, in effect for over 20 years, is an impediment to exports increase on the Chinese market (by restricting the export of double-usage technologies, civil and military).

The USA and the EU equally deny granting the market economy status to the world biggest emerging power, invoking among other reasons the excessive state involvement in economy and non-observance of the human rights.

While China became in 2008 the main funder of the USA public debt, holding 20% of the American treasury securities – in other words, China effectively finances the USA current account deficit – starting with 2011 the Beijing government intends to acquire massive government bonds originating from the Euro Zone.

China intends to become an innovation-oriented nation until 2020 and world leader in science and technology until 2050. Therefore, the cooperation between China and the developed countries (mainly the USA and the EU) – world leaders in innovation and high technology products and services are the key factor for the implementation of the national modernization and innovation strategies.

These are just a few arguments in sustaining the idea that the USA-China and EU-China partnerships are based on similar strategic considerations, so we can already talk about G-2' and G-2''.

BRIC countries: main investors in the EU in a few decades?

The sustained economic growth rates and the increase of the commodity prices between 2003 and 2008, and the investment liberalization in most of the host-countries led to an unprecedented expansion of the FDI flows generated by BRIC countries. The value of these cumulated outflows reached a historical maximum figure of USD 147 billion in 2008, representing around 9% of the world flows, as compared to less than 1% a decade ago. Although the FDI flows generated by BRIC decreased in 2009, pursuant to the world financial and economic crisis, the share of the BRIC countries in the global FDI flows, both generated and received, continued to increase. More than that, TNCs from the four countries were again remarkably proactive investors in 2010.

In the early '80s, two new framework-concepts crystallized in the FDI theory. One is that developed by Alan Rugman: *matrix firm specific advantages – country specific advantages* (FSA-CSA) at the TNC level (Rugman, 1981). He underlines that, on the one hand, one of the company's motivations for going abroad is the turning to account its FSA. The company specific benefits mean the company's property, *id est*: technologies, knowledge, managerial or marketing abilities etc. On the other hand, the second reason is given by the host-country specific benefits, for instance: natural resources, the quality and size of the labour force, cultural factors, tariff and non-tariff barriers, public policies etc. But this matrix has been shaded by the other framework concept, which has dominated the FDI theory for over 30 years and was initiated by John Dunning: the „eclectic” paradigm of the international output OLI – ownership, location and internalization (Dunning, 1981). According to this paradigm, FDI are motivated by three advantages of: ownership, location and internalization. Between the matrix FSA-CSA and the paradigm OLI there is the following correspondence: FSA=O, and CSA=L, I being in fact the mechanism of tracing the borders of the TNC, based on the company specific advantages and the host-country specific benefits.

Based on this, the FDI typology was gradually defined, having as correspondent four major reasons for TNCs to internationalize through FDI: investments in search of resources (natural or cheap and/or highly qualified labour force), investments looking for markets (and for avoiding the trade barriers on those markets), investments searching for effectiveness and investments looking for strategic assets (or *created*, which is the main source of the companies' competitiveness and belong to the knowledge economy and creative economy) (Dunning, 1993, UNCTAD, 1998, pp. 184-189, OECD, 2002, pp. 39-41). As a matter of fact, starting from the '90s, the interest of the economists concentrated more and more on the companies' competitiveness (Porter, 1990).

In contrast with the previous period, when starting with Dunning (1958), the studies focused on the FDI analysis at the level of the developed economies, the last decade was characterized by an afflux of analyses focussing on FDI attracted from and originating in the emerging economies (Mathews, 2002, 2006, Buckley, 2010). Even the theoretical discourse highlights conceptual frameworks specific to this group of economies (Mathews, 2002, 2006). John A. Mathews proposes a complementary model to the paradigm OLI, adapted to the level of TNCs from the emerging economies: LLL (linkage, leverage and learning). Mathews (2006d) underlines the following aspect: the fact that TNCs from the emerging economies are the new entrants on the international markets may be, at the same time, a benefit, by the access to advanced technology (by imitation) and based on this, the reduction of property gaps against TNCs in the developed countries. As a matter of fact, this approach is similar to „the evolutionist process” described by Lall (2000) and based on „the technological learning” (Nelson, 2004). Dunning et al. (2008) recognized that emerging TNCs are short of the „O” component (ownership or property benefits), but this doesn’t mean that such benefits are absent. While TNCs in the developed countries make use of FSA based on assets, such as technologies, brands and other intellectual property rights, TNCs from the emerging economies resort to networks, contacts and organization structure (UNCTAD, 2006).

FDI generated by BRIC have been stimulated by the increase of over the border mergers and acquisitions, despite the interruption episodes of such transactions, situation similar to that of the developed countries. During the period 2000-2009, the Indian companies concluded 812 merger and acquisition agreements abroad, while the Chinese ones concluded 450, the Russian 436 and the Brazilian 190. Some transactions of this kind exceeded USD 1 billion (UNCTAD, 2010a).

In the ranking of the first 100 non-financial TNC, according to the value of the assets held abroad (at the level of 2008, at global level) there are only seven TNC from emerging economies – of which two from China (CITIC Group, 48th position and China Ocean Shipping Group Company, 80th position), one from Hong Kong-China, one from Malaysia, one from Mexico and two from South Korea (UNCTAD, 2010a). Instead, in the hierarchy of the main 100 non-financial TNC from the emerging economies at the level of 2008, 16 are from Hong Kong-China (from various fields), 13 from Taiwan-China (from various fields), 13 from China (from various fields), eight from Russia (of which one in oil and natural gas sector, five in metallurgical industry, and two in telecommunications), five from India (from various fields), three from Brazil (from fields related to natural resource exploitation and processing).

TNCs from BRIC countries have a series of common features:

- They created asset portfolios in various locations, as a source for increasing their competitiveness both on the domestic and foreign markets;
- In the first stage, TNCs from BRIC countries extended most at regional level, often in host-countries with cultural affinities with the origin country. Subsequently, looking for new markets and resources, the expansion was achieved at global level. For instance, if at mid '90s, India's FDI stocks in emerging economies outside Asia held a share of only 25% of total, in 2008, this share reached 61%. This kind of expansion seems to be preferred by most of the companies which are at the beginning of the internationalization process, if we take into account the Scandinavian models Uppsala and POM⁽¹²⁾;
- Many TNCs from BRIC countries became global players, because they hold, among others, global brands, managerial abilities and competitive business models. We mention here, for exemplification: CITIC and COSCO (China), Lukoil and Gazprom (Russia), Vale SA (Brazil), Tata and ONGC Videsh (India);
- The most of the TNCs from BRIC are motivated by strategic reasons, rather than by the short term profitability, which reflects the role played by the state-owned companies in these countries. Most of the Chinese TNC are state-owned companies, but many TNC from Brazil, Russia and India are under the state supervision too (for example, Petrobras, Gazprom, ONGC Videsh).

The government policies of BRIC countries in the FDI field sustained the increase of the generated flows and, also, the implementation of these policies is facilitated by the substantial foreign exchange reserves held by China, Russia, Brazil and India.

The most relevant example is that of China, which we shall discuss hereinafter. During the last years, the Chinese policy „go out” (or „going global” strategy), started in the late '90s by the State Council (central government), drew more and more the attention of the international economists. From the favourite destination of the FDI flows, China started to delineate more evidently its position of FDI generating country. According to UNCTAD data, the FDI annual average flows generated by China increased from USD 0.4 billion in the '80s, to USD 2.3 billion in the '90s, exceeding USD 43 billion in 2009. In 2009, despite the reduction of FDI at world level, the Chinese FDI flows from the non-financial sectors increased by 6.5% as compared to 2008, reaching USD 43.3 billion (Ding, 2010).

In the opinion of the specialists from the Ministry of Trade from China, the Chinese FDI abroad are estimated at USD 60 billion in 2010, based on the government policy and expansion plans of the Chinese companies. China holds

around 30% of the world foreign currency reserves, and part of them may be used for acquiring assets whose value decreased pursuant to the world financial and economic crisis.

The surveys recently carried out by UNCTAD show that many investment promotion agencies place China on the first positions in the potential range of the global investors, and some of them, headquartered in countries such as Denmark, Sweden or Great Britain, have already opened offices in China.

Among the major reasons of the Chinese companies for investing abroad is the access to natural resources. Most of the investment projects abroad are resource-oriented and benefit from the support of the Chinese government. But there are still many projects aiming at the access to technologies and opening research-development-innovation centres in key locations (for example, Huawei Technologies and ZTE Corporation in Sweden, Haier in Germany) and the access to well-known brands (acquiring by Lenovo Group Ltd. of the IBM PC Company Division).

At this point of the exposure, we should make a brief digression. Gradually, as BRIC countries move from the factor driven (India) or efficiency driven stage of development (China, Russia and Brazil) to the stage of development based on innovation (which is the case for the most of the EU member countries), the interaction between the EU and BRIC deepens. The cooperation of BRIC countries with the EU (and other developed economies) is the key for the implementation of their national modernization and innovation strategies (Oehler-Şincai et al., 2010, pp. 8-11). And, along with their turning into „intelligent”, economies based on innovation and new technologies, certain major matters can be settled, such as environment degradation, dramatic social imbalances and regional development gaps.

As regards the legislation recently adopted in China for the regulation of the Chinese FDI, this includes new measures for the administration of the investments abroad (Ministry of Trade, March 16, 2009) and provisions concerning the foreign currency supervision of the FDI operations (State Administration for Foreign Exchange from China, July 13, 2009). According to the new regulations, the required procedures for FDI accomplishment have been even more simplified.⁽¹³⁾ The new measures stipulate for the first time that the Chinese companies should observe the laws and regulations of the host countries and assume social responsibilities – the companies’ code of conduct abroad. But, despite the measures taken by the Chinese authorities for speeding-up the investments abroad and the expansion of the FDI outflows, these are obviously exceeded by the FDI inflows. This is due to the different growth rates of the two categories of FDI flows, the received flows increasing much rapidly than the generated ones, and from a higher base (Figure 8).

For China, the spread between the received flows and the generated flows reached in 2007 the maximum figure of the period 1990-2009 (USD 61 billion). Relatively, in India, the maximum spread between the two flows was recorded in 2008, but at a much lower level than in China (around USD 22 billion).

Brazil, India and Russian Federation as well intend to generate global players, by incentives (to establish „national champions” in Russia and Brazil or to continue to liberalize the foreign currency system in India).

For example, in Brazil, the situation of the FDI outflows has been deeply influenced by the restructurings at regional level. The liberalization of the economies from Latin America in the '90s constrained the Latin American companies to modernize themselves in order to become competitive against the external competition. The local companies had two alternatives available: to go bankrupt or to consolidate. The surviving ones internationalized themselves in order to extend their markets, reduce costs and improve risk profile. More than that, the privatization process (in Brazil and Mexico) promoted the establishment of national „champions”, who, subsequently, turned into big TNCs. In Brazil, the process of privatization and reforms aimed mainly to generate large, restructured and specialized companies (such as Vale, Embraer or Petrobras).

The National Development Bank of Brazil (BNDES) played an active role in consolidating the national companies and, more recently, in deepening their internationalization process. BNDES started to support intensively the national companies by credit lines from 1994, and in 2002 even set up a special credit line for the expansion abroad of the Brazilian companies. In 2009, BNDES granted loans amounting to USD 8 billion for supporting the Brazilian TNC in the fields of agriculture, capital goods, constructions, technical engineering, electronic products, energy, technical services, IT and communications. Nevertheless, the international experts consider that the access of the Brazilian companies to financial resources is still restricted, and most of the entrepreneurs have to use their own resources or rely on foreign funding (UNCTAD, 2010a, p. 49).

The world financial and economic crisis strongly affected the Brazilian TNCs. The intra-company loans (granted by the subsidiaries from abroad to the Brazilian parent-companies) reached in 2009 an unprecedented net value, of USD 14.6 billion, in order to cope with the financial difficulties. The specialists consider that one of the major barriers on the way of deepening the internationalization of the Brazilian TNC is the insufficient access to loans. Anyway, the negative elements are counter-balanced by the following elements:

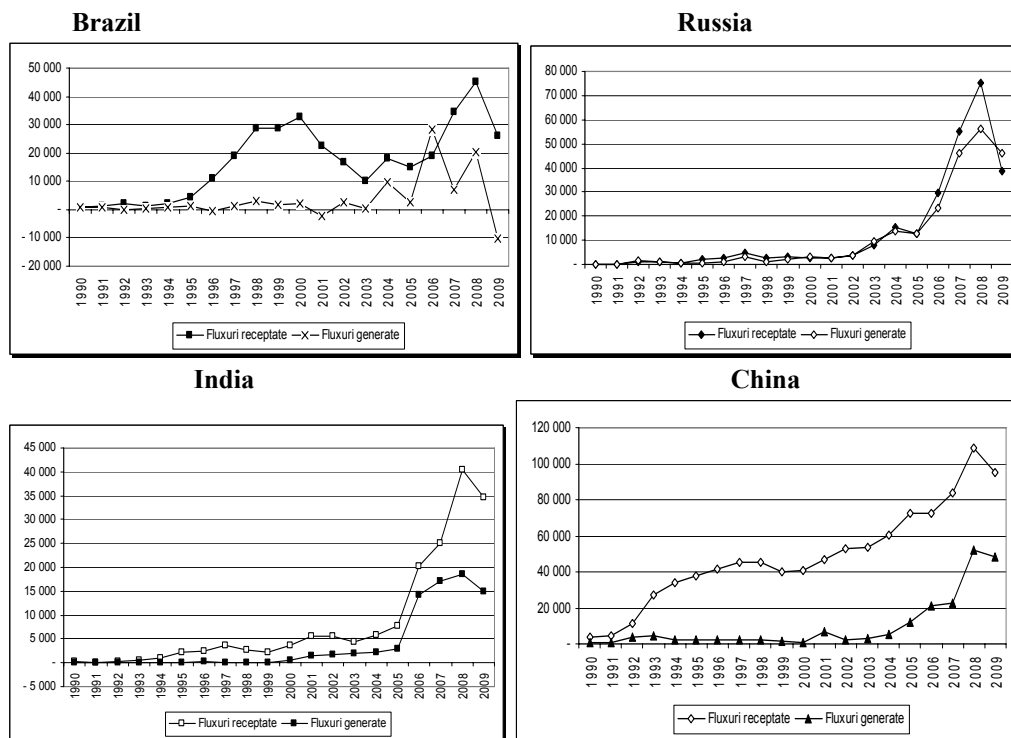
- Latin America is the main market for the Brazilian TNCs, and the region was less affected by the world financial and economic crisis than the rest of the world;

- The Brazilian TNCs are less present in industries sensitive at business cycles, being, instead, active in industries “resilient” to crisis, benefiting from a steady demand (such as: agriculture, telecommunications) (UNCTAD, 2010a, p. 49).

In 2006, the Brazilian FDI outflows exceeded the inflows by USD 9.3 billion, but this was the only episode from the period 1990-2009, when Brazil was a net generator of FDI flows.

Instead, in case of Russia, during the period 1990-2009 five such situations were recorded, when Russia was a net generator of FDI flows (1992, 2000, 2002, 2003 and 2009). The spread between the outflows and inflows was significant in 2009 (USD 7.3 billion).

It must be underlined that the Russian FDI flows are mainly oriented to the acquirement of strategic assets in the developed countries, in activities from the downstream energy field (UNCTAD, 2010a, p. 51).



Notice: Fluxuri receptate=FDI inflows; fluxuri generate=FDI outflows.

Source: UNCTAD (2010a).

Figure 8. Evolution of the FDI inflows and outflows of the BRIC countries during 1990-2009 (in million dollar)

The aforementioned data emphasize the high dynamic of the FDI flows to and from BRIC countries, China being undoubtedly the leader of the group, both as regards the inflows and the FDI inward stocks. But, as regards the FDI outflows China is closely followed by Russia, and as regards the outward stocks, Russia overruns China.

EU-27, as entity keeps the first position in the FDI received and generated flows and stocks at global level. Nevertheless, the shares of the EU in the international investment flows recorded a downward trend during the last years, contrary to the BRIC countries, whose shares in these flows substantially increased. Taking also into account the fact that FDI is one of the major elements of the economic growth, by generating employment, optimizing the resource distribution, facilitating the technology transfer and encouraging trade, at community level it was felt the need to adopt new directions in the investment policy. Consequently, on July 7, 2010 the European Commission (EC) made the first step towards a global European policy of the international investments, including two initiatives: a strategic document and a regulation draft – the „investment-related package”.

The strategic document called *Towards a global European policy of international investments* provides the way the new competences of the EU in the field of FDI may be used in order to encourage the competitiveness, trade, economic growth and the generation of new employment. The intelligent, sustainable and inclusive economic growth is exactly the objective of the strategy *Europe 2020*. In its turn, the regulation draft defines the transition directions regarding the bilateral investment agreements which the EU countries have concluded with other countries and territories outside the Union, before the Lisbon Treaty came into effect, providing legal reliability to the community and foreign investors, without affecting the Commission’s capacity to negotiate new investment treaties. On the basis of the Lisbon Treaty, the FDI related competences are transferred from the member states to the EU, therefore, the investment policy shall be worked out and managed at community level, providing the EU with a stronger negotiation position and a better security of the investments for all the European companies.

While the member states focused before on the promotion and protection of all the investment forms, EC’s main goal is the investment liberalization, based on the FDI market access. In order to cope with the global competition, the EU felt the need of a global European policy in investment field, to ensure a uniform treatment for the community investors, and a stronger negotiation power as well.

The strategic document and the regulation draft introduced by the CE are just the first steps on the way aiming at enacting a common policy in the

international investments field. And one major element which led to enacting the „investment-related package” is the growing role of BRIC countries as regards FDI.

Taking into account the considerations included in this section and the previous ones, we estimate that the trade and investment exchanges between EU and BRIC countries shall increase in the next period, one of the critical elements in this process being the strategic nature of the bilateral relationships between EU and BRIC countries.

Conclusions

The EU-27, as entity, still keeps the first position, both in the world exports and imports of goods and services, and in the FDI flows and stocks received and generated at global level, taking into account the EU intra+extra flows. But, during the last years, the EU shares in the international trade and investment flows followed a downward trend, contrary to the BRIC countries, whose shares in these flows substantially increased. As regards the extra-community trade in goods, the EU exports are slightly exceeded by the cumulated exports of the four most powerful emerging economies at global level.

During the last decade, the shares of the BRICs in the extra-EU exports and imports of goods significantly increased, remarking especially the spectacular evolution of the shares held by China and Russia on the EU market, mainly at import. But, in parallel with these trends, it can be also noticed the deepening of the EU bilateral trade deficit, which at the level of the year 2009 was similar to that recorded by the USA in the relationships with BRIC group. Starting from this similarities between EU-BRIC and EU-USA and taking into account a series of other considerations, we outlined the relationships of G-2”against G-2’.

China was in 2009 the third major export market for the EU, Russia the fourth, India the eighth, and Brazil the 12th. In the same year, China was the main import source for the EU imports, Russia the third, Brazil the ninth, and India the tenth. The EU is the main trade partner of the BRIC countries, both in the field of exports and imports.

As regards the share held by the BRIC group in the EU trade in services, this is much lower, as compared to the respective share in trade in goods. But, contrary to the deficit of the EU-BRIC balance of trade in goods, the services balance recorded a surplus in 2009, with a positive value representing one quarter of EU surplus in the relationships with all its extra-community partners.

Therefore, the competitive benefits of the EU against BRIC are obvious in the services sector.

Also, this paper highlights the fact that, in comparison with the trade flows, the participation of the BRIC countries in the FDI flows of the EU is much lower. The core of these flows was during the whole period the group of EU-15, which succeeded to concentrate the major share of these. Taking into consideration the results of the surveys recently carried out among the TNC managers as regards the capacity of the BRIC countries to attract and generate FDI, we consider that the investment flows between the EU and the BRIC countries shall increase over the next years. And together with the movement of the BRIC countries from the development stage based on factors of production (India) or effectiveness-based economies (China, Russia and Brazil) to the stage of innovation-based economies, the interrelations between the EU and the BRIC shall deepen.

Beyond the unprecedented development of the economic and diplomatic relationships among the most powerful world emerging economies, the cooperation of the BRIC countries with the developed economies, mainly the EU, the USA and Japan, is the key for the implementation of the national modernization and innovation strategies. China intends to become an innovation-oriented nation until 2020 and world leader in science and technology until 2050. India aims to become a developed country before 2020. In its turn, the Russian Federation intends to become innovative and competitive at global level. Brazil, besides the ambitious strategies in energy and agriculture fields, has, in its turn, the target to accelerate the innovation process at national level. Therefore, the EU and other developed economies, world leaders in the field of innovation, high tech and services, have and will continue to have an essential role to play in the innovation process of the BRIC countries.

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Notes

- (1) Initially, we intended to present the data for 2010 as well, but as of February 2011, these are still not available.
- (2) Source: Official website of the Shanghai Cooperation Organization – quotation of the Brazilian Minister of Foreign Affairs, Celso Amorim, by Olga Kharolets.
- (3) Taking into consideration the GDP at purchasing power parity (PPP), China has been on the 2nd position, after the USA, for almost a decade.
- (4) See also the *National plan for long term development of science and technology 2006-2020* and the *National plan for long and medium term development of talents 2010-2020*.
- (5) This analysis is considering only the extra-community trade flows.
- (6) In 2009, the total extra-community trade in goods (export+import) amounted to Euro 2,295 billion, while the trade in services amounted to around Euro 896 billion.
- (7) Therefore, this is the link between the theory of the international trade, the FDI theory and the new institutional economics.
- (8) In 1985, the USA, EU, Russia and Japan launched the project ITER (International Thermonuclear Experimental Reactor, lat. „Cale”), having as the main goal the development of a new, clean and sustainable energy source, on the basis of the nuclear fusion. China and South Korea joined the group in 2003, and India in 2005. The ITER center is situated in Cadarache, in the South of France. The Agreement came into force on the 24th of October 2007, after having been ratified by all the partners.
- (9) At present there is in force a cooperation Agreement between the USA and India, related to the use of nuclear power for civil usage.
- (10) Authors like Charles Krauthammer consider the period between the fall of the Iron Curtain and the terrorist attacks from the 11.09.2001 as the *American Unipolar Moment*; afterwards, the world became multipolar.
- (11) Agriculture, food security (sanitary and fito-sanitary matters), competition policy, trade policy, customs cooperation, textile trade, macroeconomic policy and regulation of the financial markets, industrial policy, regional policy, energy, environment, science and technology, cooperation in cosmic space, intellectual property rights, global satellite navigation services, sea transport, civilian aviation, consumers' protection, labour force and social business, informatic society, education and culture. In the political field, there are many dialogues about human rights, migration etc. In the tourism field, there is a new agreement on the agreed destination statute (http://ec.europa.eu/external_relations/china/intro/sect.htm).
- (12) Uppsala Model is described in: Johanson and Wiedersheim-Paul (1975), Johanson and Vahlne (1977), Johanson and Vahlne (2009) etc. and the POM Model (product, operation, market) in: Luostarinen (1979), Luostarinen (1994) etc.
- (13) For example, it was eliminated the procedure of examination of the foreign currency origin source used for FDI – the first step required by the prior legislation in the FDI approval process. The Ministry of Trade enlarges the action scope of its local branches for the approval of the FDI projects. Unless the „quick procedures” are applied, just a few types of investment projects are included in the compulsory action scope of the Ministry, among which: investments in countries which have no diplomatic relationships with China; investments in certain countries assigned by the Ministry and other authorities; projects exceeding USD 100 million; investments involving the interests of several countries or

regions. Instead, the local partners of the Ministry may agree investments: amounting between USD 10 and 100 million; in energy and mining sectors; those which require domestic promotion. According to the estimates of the Ministry based on the statistics of 2008, around 85% of the FDI abroad shall be further approved at local level. As regards the investment projects not exceeding USD 10 million and not being included in the compulsory incidence of the Ministry, the „quick procedure” may be applied. According to this, the approval certificate of FDI accomplishment is granted within three business days, and not 15 (the ordinary term). The FDI approval applications of the state-owned companies at central level are managed by the Ministry, and those of other applicants, by the local authorities.

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Abbreviations:

BRIC	Brazil, Russia, India and China
EC	European Commission
EU-27	European Union
EU-15	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom (UK)
EU-12, the NMS	New Member States of the EU: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia
FDI	Foreign Direct Investment
G-2	Referring to the first meeting between the new USA president and his Chinese counterpart on the sidelines of the G-20 summit in London (April 2009) or, according to other authors, the bilateral Strategic and Economic Dialogue, launched in 2006. Generally, the analysts use this acronym to depict the special relationship between the USA and China.
G-7	The group of seven industrialized nations: Canada, France, Germany, Italy, Japan, UK, the United States of America (USA)
G-20	The Group of Twenty Finance Ministers and Central Bank Governors of 19 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, Republic of Korea, Turkey, United Kingdom, United States of America, plus the EU, represented by the rotating Council presidency and the European Central Bank
GDP	Gross Domestic Product
ICT	Information and Communication Technologies
IMF	International Monetary Fund
PPP	Purchasing Power Parity
TNC	Transnational corporations, or multinational corporations or enterprises
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

The Evaluation of the Competitiveness State of Manufacturing Companies in Romania – an Approach According to Mereuță Model*

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Abstract. *The objective of this work is the evaluation of the competitiveness state of companies operating within the manufacturing industry in Romania, 2001-2007. Since 1990, Romania has begun a long process of non - industrialization, which resulted in a significant reduction of the population occupancy in the industry, a reduction of the industrial production and hence exports, which came from this industry. It is therefore necessary to make such a study to identify industries with growth potential, especially since in the current context, it is necessary to adopt viable solutions to overcome the economic crisis. Following this analysis, the findings reveal that four of the 11 sectors analyzed are characterized, in 2001-2007, with a relative lack of competitiveness, and the other ones are positioned in the V area of the evaluation matrix, which means that, in the analyzed period, the static and dynamic economic situation of them was neutral, whichever showing a real growth potential.*

Keywords: competitiveness; system companies; manufacturing; internal efficiency; external efficiency.

JEL Codes: D21, D22, D24, D92.

REL Codes: 14K, 17G.

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By using the components which it involves, the system analysis of companies is a rather complex approach, but also attractive. As for the manufacturing industry in Romania, the branch determines the overall economic growth mainly because it has a 78.6% share in the total industrial production, according to statistics provided by The National Institute of Statistics for 2009, and a 92.3% share in the total exports. The objective of this article is to achieve an evaluation on the state of competitiveness of companies operating in manufacturing industry. To this end, we applied Mereuță's assessment model (Niculescu, Mereuță, 2007, pp. 667-669), which was developed in 2006 in the project "Economic growth, employment and competitiveness in the knowledge economy" and which takes into account several diagnostic variables of the companies' situation, which includes the value added, the labor productivity, the gross result of the exercise and gross operating surplus.

Following the analysis of these indicators there is drawn an individual sheet for each branch of the manufacturing industry which, in the present study, includes three parts: the economic indicators values, strengths, weaknesses and indifference and dynamic state diagram. The statistical data used in the model were taken from reports published by the National Institute of Statistics on the results and performance of businesses, as well as on the ones regarding Romania's foreign trade. Although the 2010 edition appeared on the results and performance of enterprises in industry and construction, which includes statistical data for the year 2008, in the present study, the last year of analysis is 2007, because since 2008 the statistical data are drawn differently. As far as the strengths, weaknesses and indifference, they are established according to the baseline indicators of the six variables as follows: the relatively strong points will be represented by indicators with positive values in relation to the reference system and we will note that with +1, the relatively weak points will be represented by indicators with unfavorable values in relation to the reference system and we will note that with -1, and the points of indifference will be represented by indicators with values within $\pm 5\%$ compared to the reference system and we will note that with 0. This used scale allows prioritizing each of the manufacturing sub-branches in five classes, according to the table below:

Table 1

Evaluation scale			
No.	Class	Significance	Total points
1	A+	Significantly favorable condition	4÷6
2	A	Favorable condition	1÷3
3	B	Neutral state	0
4	C	Unfavorable condition	-1÷-3
5	C-	Significantly unfavorable condition	-4÷-6

Source: Nicolescu, Mereuță, 2007, p. 668.

The Es static evaluation takes into consideration the state class of 2007 of the analyzed sub-branch, and the Eg overall assessment is defined by its classification into five classes, dynamic and static. All the results thus obtained will be summarized in an evaluation matrix structured in five areas: the first area – disadvantaged static and dynamic economic state, the second area – economic static state significantly favorable in relation tot the dynamic economic state, the IIIth area – favorable static and dynamic economic, the IVth area – stare dynamic economic significantly favorable to the static economic status, the V area – neutral static and/or dynamic economic status.

In this study I focused my attention on 11 sub-branches of the manufacturing industry: food and beverage industry, tobacco industry, textile and textile products industry, clothing industry, leather and footwear, wood processing industry, paper and paperboard industry, publishing industry, printing and reproduction of recorded media industry, rubber processing and plastic industry, metallurgy and road transport industry. These industrial sub-branches cumulated in 2007 according to the National Institute of Statistics, over 50% of the gross value added (57.95%) created in the manufacturing industry, 54.74% of employees and 51.5% of total exports of this industrial branch.

The assessments includes considering the following economic indicators: the gross value at factor cost of an industry branch in value added at factor cost in the industry (VA_i/VA), labor productivity (VA_i/NS_i), gross operating surplus ratio (EBE/CA), general profitability rate (Rb/CA), the share of export industry in the export of the industries (Ex_i/Ex) and the degree of coverage of imports by exports (Ga). The reference values of economic indicators related to the manufacturing industry are described in the following table:

Table 2

References 2001-2007(1)

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.043	0.043	0.043	0.043	0.043	0.043	0.043
VA _i /NS _i (thousands lei/employee)	16.43	20.97	7.65	10.17	12.26	14.13	16.47
Rb/CA (%)	-2.16	-1.80	0.08	4.15	3.98	5.79	7.13
EBE/CA (%)	2.81	5.75	6.28	11.31	10.96	11.08	11.55
Ex _i /Ex	0.045	0.045	0.045	0.045	0.045	0.045	0.045
Ga	0.9020	0.864	0.822	0.809	0.787	0.721	0.640

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

By comparing the economic indicators of each manufacturing sub-branches of the benchmarks we have achieved strengths, weaknesses and indifference, as can be seen in the individual descriptions below and on the strengths, weaknesses and indifference have developed dynamic charts status for each sub-branch in hand.

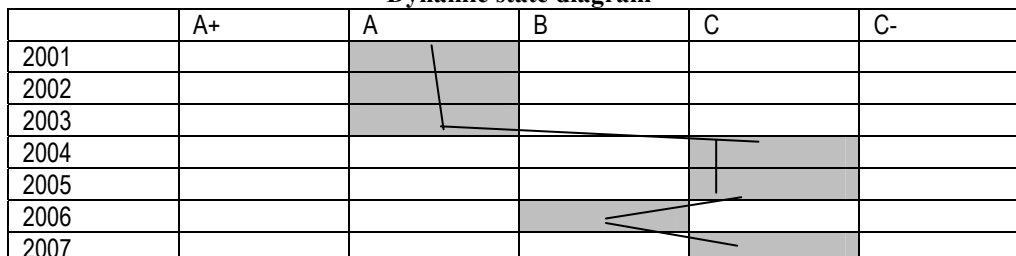
Food and beverage industry: Economic indicators values

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.122	0.290	0.295	0.288	0.283	0.271	0.250
VA _i /NS _i (thousands lei/employee)	16.44	23	17.45	19.47	23.85	27.70	33.59
Rb/CA (%)	-0.22	2.11	1.45	2.67	4.13	6.57	5.53
EBE/CA (%)	10.59	11.9	9.45	8.40	9.97	10.17	10.9
Ex _i /Ex	0.0165	0.0165	0.012	0.014	0.013	0.013	0.014
Ga	0.243	0.202	0.230	0.252	0.204	0.184	0.178

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	+1	0	+1	+1	-1	-1	1	A
2002	+1	+1	+1	+1	-1	-1	2	A
2003	+1	+1	+1	+1	-1	-1	2	A
2004	+1	+1	-1	-1	-1	-1	-2	C
2005	+1	+1	0	-1	-1	-1	-1	C
2006	+1	+1	+1	-1	-1	-1	0	B
2007	+1	+1	-1	-1	-1	-1	-2	C

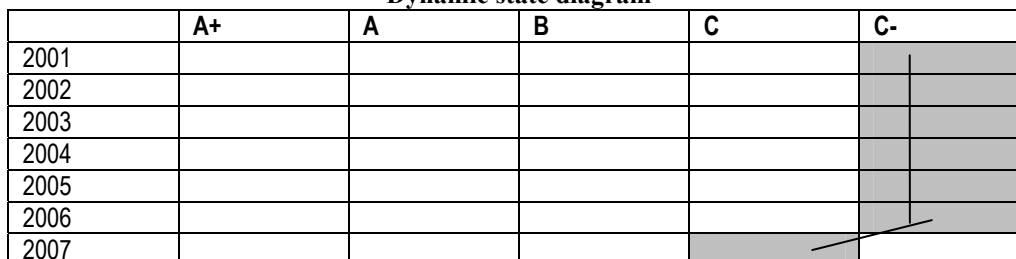
Dynamic state diagram**Tobacco industry: Economic indicators values**

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.006	0.006	0.005	0.004	0.003	0.0035	0.0035
VA _i /NS _i (thousands lei/employee)	158.15	210.25	45.69	61.25	84.65	85.48	95.29
Rb/CA (%)	-6.28	-14.77	-2.28	2.52	3.32	1.55	5.29
EBE/CA (%)	2.30	0.78	3.58	3.86	5.26	2.94	2.72
Ex _i /Ex	0.0007	0.0007	0.001	0.0001	0.0001	0.0004	0.0047
Ga	0.099	0.165	0.065	0.013	0.016	0.045	2.25

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	-1	+1	-1	-1	-1	-1	-4	C-
2002	-1	+1	-1	-1	-1	-1	-4	C-
2003	-1	+1	-1	-1	-1	-1	-4	C-
2004	-1	+1	-1	-1	-1	-1	-4	C-
2005	-1	+1	-1	-1	-1	-1	-4	C-
2006	-1	+1	-1	-1	-1	-1	-4	C-
2007	-1	+1	-1	-1	-1	+1	-2	C

Dynamic state diagram

Textile and textile products industry: Economic indicators values

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.046	0.034	0.035	0.033	0.031	0.029	0.029
VA _i /NS _i (thousands lei/employee)	7.07	9.56	11.35	13.33	13.71	16.26	17.66
Rb/CA (%)	0.81	2.96	3.97	2.01	3.93	5.70	2.37
EBE/CA (%)	12.79	14.69	13.54	11.15	9.48	9.78	6.97
Ex _i /Ex	0.046	0.046	0.047	0.046	0.042	0.041	0.037
Ga	0.248	0.264	0.213	0.305	0.330	0.368	0.369

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	+1	-1	+1	+1	0	-1	1	A
2002	-1	-1	+1	+1	0	-1	-1	C
2003	-1	+1	+1	+1	0	-1	1	A
2004	-1	+1	-1	0	0	-1	-2	C
2005	-1	+1	0	-1	-1	-1	-3	C
2006	-1	+1	0	-1	-1	-1	-3	C
2007	-1	+1	-1	-1	-1	-1	-4	C-

Dynamic state diagram

	A+	A	B	C	C-
2001					
2002					
2003					
2004					
2005					
2006					
2007					

Clothing industry: Economic indicators

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.114	0.067	0.067	0.063	0.054	0.048	0.040
VA _i /NS _i (thousands lei/employee)	6.09	7.32	8.86	10.45	11.02	12.32	14.03
Rb/CA (%)	10.47	9.61	30.66	6.79	4.96	5.36	34.69
EBE/CA (%)	16.42	15.86	14.48	11.89	9.71	8.61	6.15
Ex _i /Ex	0.2269	0.2270	0.2168	0.1850	0.1542	0.1270	0.1003
Ga	7.1281	6.7969	7.8879	7.8730	6.9603	6.2333	4.4104

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	+1	-1	+1	+1	+1	+1	4	A+
2002	+1	-1	+1	+1	+1	+1	4	A+
2003	+1	+1	+1	+1	+1	+1	6	A+
2004	+1	0	+1	+1	+1	+1	5	A+
2005	+1	-1	+1	-1	+1	+1	2	A
2006	+1	-1	-1	-1	+1	+1	0	B
2007	-1	-1	+1	-1	+1	+1	0	B

Dynamic state diagram

	A+	A	B	C	C-
2001					
2002					
2003					
2004					
2005					
2006					
2007					

Leather and footwear: Economic indicators values

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.037	0.024	0.026	0.024	0.021	0.021	0.018
VA _i /NS _i (thousands lei/employee)	5.64	7.16	9.25	10.36	11.37	12.94	15.28
Rb/CA (%)	6.20	7.35	7.60	5.74	3.52	6.52	3.49
EBE/CA (%)	11.62	13.08	12.79	10.16	8.24	8.08	7.55
Ex _i /Ex	0.0957	0.0958	0.0945	0.0742	0.0660	0.0609	0.0523
Ga	1.4158	1.4410	1.4730	1.4553	1.4087	1.3820	1.2485

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	-1	-1	+1	+1	+1	+1	2	A
2002	-1	-1	+1	+1	+1	+1	2	A
2003	-1	0	+1	+1	+1	+1	3	A
2004	-1	0	+1	-1	+1	+1	1	A
2005	-1	-1	-1	-1	+1	+1	-2	C
2006	-1	-1	+1	-1	+1	+1	0	B
2007	-1	-1	-1	-1	+1	+1	-2	C

Dynamic state diagram

	A+	A	B	C	C-
2001					
2002					
2003					
2004					
2005					
2006					
2007					

Wood processing industry: Economic indicators values

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.037	0.044	0.043	0.046	0.043	0.041	0.040
VA _i /NS _i (thousands lei/employee)	7.23	9.87	11.72	14.13	13.85	16.93	20.66
Rb/CA (%)	-2.52	8.91	1.46	4.68	2.56	4.95	1.43
EBE/CA (%)	10.74	12.40	12.18	11.49	8.71	9.09	9.85
Ex/Ex	0.048	0.048	0.047	0.046	0.040	0.038	0.035
Ga	4.9257	4.376	4.000	3.635	2.813	2.645	1.799

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	-1	-1	-1	+1	+1	+1	0	B
2002	0	-1	+1	+1	+1	+1	3	A
2003	0	+1	+1	+1	0	+1	4	A+
2004	+1	+1	+1	0	0	+1	4	A+
2005	0	+1	-1	-1	-1	+1	-1	C
2006	0	+1	-1	-1	-1	+1	-1	C
2007	-1	+1	-1	-1	-1	+1	-2	C

Dynamic state diagram

	A+	A	B	C	C-
2001					
2002					
2003					
2004					
2005					
2006					
2007					

Paper and paperboard industry: Economic indicators values

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.016	0.02	0.018	0.015	0.013	0.012	0.017
VA _i /NS _i (thousands lei/employee)	14.20	19.77	19.79	22.47	20.05	23.87	26.55
Rb/CA (%)	0.32	-1.2	-9.14	4.41	2	3.77	-3.29
EBE/CA (%)	12.95	11.64	9.62	9.16	7.01	7.30	5.94
Ex _i /Ex	0.0080	0.0080	0.0084	0.0070	0.0047	0.0042	0.0050
Ga	0.3011	0.3132	0.2752	0.2688	0.1860	0.1654	0.1962

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	-1	-1	+1	+1	-1	-1	-2	C
2002	-1	-1	+1	+1	-1	-1	-2	C
2003	-1	+1	-1	+1	-1	-1	-2	C
2004	-1	+1	-1	-1	-1	-1	-4	C-
2005	-1	+1	-1	-1	-1	-1	-4	C-
2006	-1	+1	-1	-1	-1	-1	-4	C-
2007	-1	+1	-1	-1	-1	-1	-4	C

Dynamic state diagram

	A+	A	B	C	C-
2001					
2002					
2003					
2004					
2005					
2006					
2007					

Publishing industry, printing and reproduction of recorded media industry:**Economic indicators values**

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.031	0.023	0.023	0.022	0.027	0.027	0.025
VA _i /NS _i (thousands lei/employee)	26.32	34.05	25.60	29.28	34.14	35.21	37.11
Rb/CA (%)	23.6	24.76	12.18	14.33	15.89	13.2	7.44
EBE/CA (%)	24.35	26.97	19.18	17.95	19.57	17.61	14.52
Ex _i /Ex	0.0016	0.0016	0.0011	0.0013	0.0012	0.0012	0.0014
Ga	0.3295	0.2239	0.2239	0.2892	0.27	0.2101	0.2367

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	-1	+1	+1	+1	-1	-1	0	B
2002	-1	+1	+1	+1	-1	-1	0	B
2003	-1	+1	+1	+1	-1	-1	0	B
2004	-1	+1	+1	+1	-1	-1	0	B
2005	-1	+1	+1	+1	-1	-1	0	B
2006	-1	+1	+1	+1	-1	-1	0	B
2007	-1	+1	0	+1	-1	-1	-1	A

Dynamic state diagram

	A+	A	B	C	C-
2001					
2002					
2003					
2004					
2005					
2006					
2007					

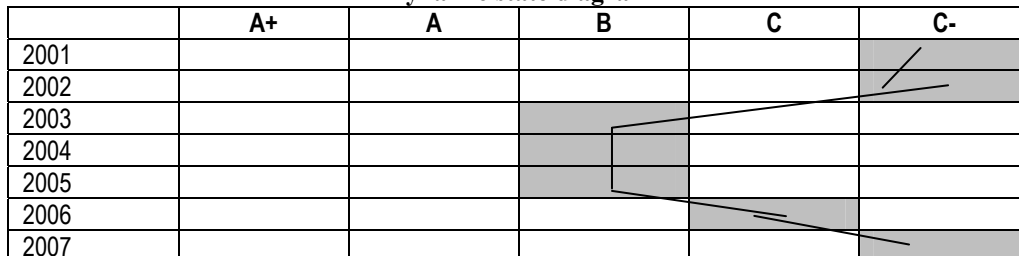
Rubber processing and plastic industry: Economic indicators values

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.028	0.027	0.032	0.033	0.032	0.035	0.037
VA _i /NS _i (thousands lei/employee)	11.77	16.83	22.72	26.59	27.29	30.38	35.94
Rb/CA (%)	-3.15	-5.27	4.15	8.5	5.79	6.02	3.13
EBE/CA (%)	8.52	10.54	13.10	13.86	11.88	10.39	10.40
Ex _i /Ex	0.010	0.010	0.015	0.024	0.026	0.028	0.034
Ga	0.1855	0.2497	0.3266	0.3444	0.3522	0.3608	0.4135

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	-1	-1	-1	+1	-1	-1	-4	C-
2002	-1	-1	-1	+1	-1	-1	-4	C-
2003	-1	+1	+1	+1	-1	-1	0	B
2004	-1	+1	+1	+1	-1	-1	0	B
2005	-1	+1	+1	+1	-1	-1	0	B
2006	-1	+1	0	-1	-1	-1	-3	C
2007	-1	+1	-1	-1	-1	-1	-4	C-

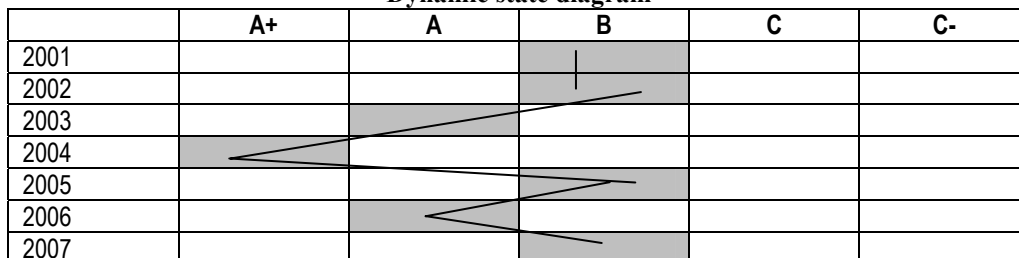
Dynamic state diagram**Metallurgy: Economic indicators values**

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.068	0.040	0.034	0.040	0.035	0.034	0.036
VA _i /NS _i (thousands lei/employee)	11.17	19.23	24.80	51.11	35.51	56.31	64.58
Rb/CA (%)	-21.28	-6.37	-3.25	13.56	-3.25	4.60	4.57
EBE/CA (%)	-0.048	6.95	9.02	15.03	6.47	10.72	10.06
Ex _i /Ex	0.1272	0.1180	0.1202	0.1436	0.1352	0.1327	0.1388
Ga	1.8671	2.0205	1.9258	1.999	1.755	1.3838	1.0933

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Clasa
2001	+1	-1	-1	-1	+1	+1	0	B
2002	-1	-1	-1	+1	+1	+1	0	B
2003	-1	+1	-1	+1	+1	+1	2	A
2004	-1	+1	+1	+1	+1	+1	4	A+
2005	-1	+1	-1	-1	+1	+1	0	B
2006	-1	+1	-1	0	+1	+1	1	A
2007	-1	+1	-1	-1	+1	+1	0	B

Dynamic state diagram

Road transport industry: Economic indicators values

Economic indicators	2001	2002	2003	2004	2005	2006	2007
VA _i /VA	0.044	0.048	0.055	0.065	0.077	0.085	0.084
VA _i /NS _i (thousands lei/employee)	9.91	12.5	18.47	22.39	28.48	42.97	64.26
Rb/CA (%)	-23.31	-18.16	-2.21	4.87	0.62	-2.97	26.73
EBE/CA (%)	5.59	5.28	8.78	7.58	7.58	11.73	16.97
Ex _i /Ex	0.024	0.024	0.026	0.035	0.052	0.070	0.092
Ga	0.3604	0.3962	0.3908	0.2966	0.3567	0.3897	0.3861

Source: Results and performances of businesses in industry and commerce 2003-2009, Romania's foreign trade Yearbook 2003-2009, author' calculations.

Strengths, weaknesses and indifference

	VA	P	Pg	EBE	Ex	Ga	Total	Class
2001	0	-1	-1	+1	-1	-1	-3	C
2002	+1	-1	-1	-1	-1	-1	-4	C-
2003	+1	+1	-1	+1	-1	-1	0	B
2004	+1	+1	+1	-1	-1	-1	0	B
2005	+1	+1	-1	-1	+1	-1	0	B
2006	+1	+1	-1	+1	+1	-1	2	A
2007	+1	+1	+1	+1	+1	-1	4	A+

Dynamic state diagram

	A+	A	B	C	C-
2001					
2002					
2003					
2004					
2005					
2006					
2007					

Dynamic state diagrams allow us to deduce the following conclusions on the seven sub-branches of industry analysis:

Table 3

Static and dynamic evaluation

Sub-branches	Dynamic evaluation	Static evaluation
Food and beverage industry(CAEN 15)	Ed=3→Bd	Cs→stare defavorabilă
Tobacco industry(CAEN 16)	Ed=1.14→C-d	Cs→stare defavorabilă
Textile and textile products industry(CAEN 17)	Ed=2.43→Cd	Cs→stare defavorabilă
Clothing industry(CAEN 18)	Ed=4.29→Ad	Bs→stare neutră
Leather and footwear(CAEN 19)	Ed=3.28→Bd	Cs→stare defavorabilă
Wood processing industry(CAEN20)	Ed=3.29→Bd	Cs→stare defavorabilă
Paper and paperboard industry(CAEN 21)	Ed=1.57→Cd	C's→stare semnificativ defavorabilă
Publishing industry, printing and reproduction of recorded media industry(CAEN 22)	Ed=3.14→Bd	As→stare favorabilă
Rubber processing and plastic industry(CAEN 25)	Ed=2→Cd	C's→stare semnificativ defavorabilă
Metallurgy(CAEN 27)	Ed=3.57→Ad	Bs→stare neutră
Road transport industry(CAEN34)	Ed=3→Bd	A*s→stare semnificativ favorabilă

The analysis of the eleven sub-branches of the manufacturing industry following matrix results of evaluation:

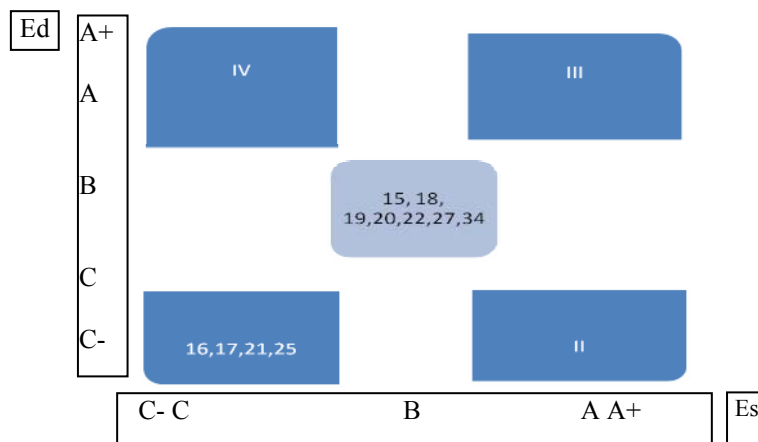


Figure 1. The evaluation matrix

As seen from the evaluation matrix, from the 11 analyzed branches, four are positioned in the zone I, i.e. it is characterized by unfavorable static and dynamic economic state, and all the other branches are found in the Vth area, which means that their static and/or dynamic economic status is neutral. The branches that are located in the area I of the representation matrix is characterized by a relative lack of competitiveness. In this case, from the 11 industries analyzed, only four are located in the area I, i.e.: tobacco industry,

textiles and textile products industry, paper and cardboard industry and rubber processing and plastic industry. These branches cumulated in 2007, 8.65% of the total gross added value, and 8.06% of the manufacturing industry exports and provided jobs for 131,009 employees. All four branches registered in 2007 an above national productivity average, and in terms of coverage of imports by exports, three branches were deficient, while only tobacco industry was in surplus, with a coverage of imports by exports with 225%.

In the Vth area of the matrix representation we find the seven branches of the manufacturing industry, namely food and beverage industry, clothing industry, leather and footwear industry, wood processing industry, publishing industry, printing and reproduction of recorded media industry, metallurgy and transport industry. In 2007, the seven branches cumulated 49.3% of the gross value added, 43.43% of exports and import coverage by deficit exports of 81.03%. Also, five branches registered in 2007 a labor productivity average higher than the national one: food and beverage industry, wood processing industry, publishing industry, printing and reproduction of recorded media, metallurgy and road transport industry, while only two branches had a lower average value and more specific clothing and footwear and leather industry. However, it is noted that while food and beverage industry is also the branch with the largest share of gross value added, it shows a very low share of exports, and import coverage by exports significantly deficient. In the year 2008, there were active in this field the most enterprises in the manufacturing industry (8,717 companies), i.e. 15.57% of companies.

Meanwhile, the sectors of the clothing, leather and footwear industry, wood processing industry and metallurgical industry, in 2007, registered a degree of coverage of imports by exports surplus, while only three branches were significantly deficient. *The wood processing industry - the companies that operate in this sector have a competitive advantage on the one hand, of the existence of natural resources, and on the other hand, of a high degree of coverage of imports by exports.* However, in terms of sustainable economic growth, this branch cannot be a significant vector due to the low productivity and to the low level of raw material processing. *Publishing, printing and reproduction of recorded media - the companies that operate within this industry are characterized by a favorable trend in economic performance throughout the period analyzed.* In these circumstances, the opportunity for development of the companies is obvious, especially since this sector also requires the use of technology for recording media. *Metallurgy – the companies in this sector are characterized by a high efficiency due to the constant exceptional results that, on both the productivity and overall profitability, and on the gross operating surplus.* In terms of exports, this sector has the largest share in the total manufacturing exports of all the branches analyzed. Through these

performances, it is clear that this industry is another significant development vector. *Clothing industry - the companies in this sector, although characterized by a degree of coverage of imports by exports significant surplus, their economic performance is very low.* In 2008, 5,867 companies operated in this sector, i.e. approximately 10.48% of companies in the manufacturing industry.

Following this analysis, we can identify the following features of the company system in the manufacturing industry: most companies are experiencing low economic performance, both in terms of internal and external efficiency; analyzing the gross operating surplus, we find that in the analyzed period, many companies faced debt problems regarding the payment of the investors, notable it is also the low potential capacity of companies in Romania of self-financing the investments; there are sectors showing development opportunities, such as publishing, printing and reproduction of recorded media and metallurgy. Among the branches that have reduced their economic performance in the last analyzed year there are: food and beverage industry, clothing industry, leather and footwear industry, wood processing industry. Noteworthy is the road transport industry, which throughout the period of analysis had a neutral dynamic development, and in the last analyzed year it had a favorable positive static evolution; the companies' productivity has improved significantly throughout the period analyzed, increasing almost five times in 2007 compared to 2001, while exports increased 10 times, this branch thereby constituting another vector for the development.

Aknowledgements

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Note

- ⁽¹⁾ The reference values were calculated as follows: the average share of the added value at factor cost has been determined for all branches of the manufacturing (1/23), productivity, general profitability and overall gross operating surplus are consolidated values, throughout the eleven branches of the industry, the average share of the export of manufacturing has been determined for 22 branches (for waste recovery industry there is no statistics), and the degree of coverage of imports by exports of manufacturing refers to FOB exports and CIF imports. Overall profitability and rate of gross operating surplus for reference values is calculated in the industry because of the lack of statistical data.

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The Birth of the Regulated Company in the Macroeconomic Environment*

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Abstract. *This research analyzes the mode of evolution of an economy at macroeconomic level, backward-pyramidal evolution from the capitalism structure, the appearance of the free enterprise and the corporate form of business organizations in our free market based system, at microeconomic level.*

The purpose of this paper is to enter the understanding of the specificities of the plurality of facets of the governance process. The target of this research paper are privately owned companies, but held publicly (by social parts owners or shareholders) and expressed through the state – corporation relation with its geo-social-political-economic influences.

Keywords: capitalism; corporation; governance; game; trust.

JEL Code: L44.

REL Codes: 3D, 3F, 6B, 7H, 10H, 14D, 17F.

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Introduction

The society from developed countries in the 21st century is living from the unprecedented prosperity, stemmed by the crisis which began in 2007 and it is foreseen to finalize in the last quarter of 2011. These nations have produced the highest life standards for the majority of people along history. How did this happen? It is believed that the origin of this prosperity (before and after the crisis) stands in the development of an economic system which embraces, mostly, the free enterprise, capitalism and competition. The free enterprise brings to the economic systems from developed countries the “energy” developed by competition, in which the creative minds of many individuals are liberated to follow their own interests, the more unsuppressed by regulations the better. Adam Smith wrote, firstly, in 1776 that “an invisible, self-interested hand” moved to create an entire environment for “everyone’s interest” when each of us acts on maximizing self interest (Smith, 1994, p. 148). The initial step in the amazing journey of economic development was realizing the fact that the supreme good is created and served by each of us only by the maximizing of our selfinterest. Sometimes counterintuitive on some aspects, the idea remains a revelation after 234 years from its appearance.

The concept of effectiveness of the invisible hand brought the logic of a secondary notion, that individuals that follow separate interest create intersections between the interests of them and have as an objective result the natural state of competition. Usual for the business environment, it is sustained through competition the framework for raw materials, labor, clients and investment capital. This competitive environment leads to the “survival of the fittest” which establishes the idea that, in time, some people can be afraid of the stopping of evolution by the weak; this is, actually, the most energizing aspect of the free enterprise system and competition. The third aspect of our economic system is the development of modern capitalism, in which investors capital can be united to create large amounts of investment capital necessary to finance extensive projects and large enterprises. It is an axiom that the more leeway for corporate enterprises in searching for higher profits the greater the tilt for individual and institutional investors, who can bring the necessary amount of capital. The three milestone points of the global economic system, then, will be the enterprise, competition and capitalism.

With the development of the economic system, the enterprises of an unprecedented size and complexity prospered. The obvious question was: How can this enterprises be led in the best interest for the shareholders? The premise from which we started is that governance, as we know and practice it, made the difference at macro-social, political and economic level – and at

entrepreneurial-individual level: corporate governance. Without an effective governance system there would be chaos in the inter-human relations framework. Governance is the one which establishes order in chaos. When this individuals live together in communities, there must be laws and rules about the way they relate to each other, because the conflict between them is an inherent fact through human condition. A big part of this conflicts result from different personalities and beliefs and natural competition for the limited resources. Some of them have complicated, moral issues because they fact on the lack of respect and worries for the life and properties of others, based, in turn, on basic human needs.

The moral conflict shows two faces of human nature: the good and the evil. We see the good in love and in altruism, acts of courage, acts of genius represented through the development of arts and sciences and acts of integrity, honor and duty. We see the evil in acts of hate, greed, tyranny, oppression, cowardice and lack of honesty. This kinds of battles between the forces of good and evil were the core of human drama from the beginning of time. The battle takes place in each conscious individual and between individuals and group of interests. This conflicts can be observed deploying and in other forms of government which can be observed on the all surfaces of the Earth and, normally, in the business environment.

1. The evolution of governance

In ancient times, hard labor of subsistence was gradually transformed, by the invention of tools, this being the beginning of technology. By the development of new sources of energy – first was the steam engine and, then, electricity and the internal combustion engine – have appeared machines which substantially improved productivity. In the last 60 years the technological advance exploded in all domains, based on the invention of the transistor. Once with the development of the digital technology, we had the revolution of electronics, communications, transportation, medicine and other forms of manufacturing, underlined by an exponential growth of the ability to gather and disseminate information. A necessary bind of these revolutionary forces has been the promotion of universal education. The innovation that made education available to masses was the invention of the dynamic print by Gutenberg in 1438 and the evolution of printing which fallowed through the growth of the literary background, this way becoming the foundation of the educated population. The impact of this innovation is noticeable in the old saying: “We learn to read so we can read to learn”.

As the literature developed education which brought the appearance of technology, so there was a comparable evolution in the way how our businesses are led. Individuals live in communities from the beginnings, firstly hunters, gatherers, fishermen, agricultural society and, today, industrial society. From outside, humanity hoped to discover the best ways to take decisions regarding communities – ways of governing disputes, control of the destructive behavior and to achieve goals which advance common welfare of members of the society. The effectiveness of a given governance approach was determined on the will of survival and prosperity of the society. In the beginning, the groups of individuals were small, simple and located in one place. Their governance process was simple. Through time, this groups have become large, complex, vast organizations. Tribal and feudal fiefs have evolved to nation states. Small, local properties have evolved into mega-corporations. The decision-making process has grown to reflect more and more complex government problems.

Among primary innovations in this journey from simplicity to complexity in governance there were the social revolutions of the 18th and 19th centuries, especially the American revolution and the French one and the period of illumination that fallowed them. Primary for those times, while the society was changing, these became more stratified, with small, ruling classes which accumulated wealth generated by the subdued masses. Wealthy nations became stronger, by force, colonizing weak nations, especially the ones rich in natural resources, for centuries, the governance was exercised by the few who imposed their point of view on the many. The powerful dictated until they were removed by internal riot or external defeat. Although the basic nature of the society changed; it was a simple case of through which monarchy changed with dictatorship and vice versa. Some changes were competent and willingly, after which nations benefited from, too, but, most common, there was much incompetence, corruption, oppression and rebellion.

The innovative governance system resulted from the action of individuals, not from the evolution of legal principles. When individuals gained power, they have imposed by forced oppression, creating revolutions. Social revolutions which fallowed were fed by the hunger for individual freedom and the wish for the moral imperative of how people should to behave between them. From this revolutions appeared the modern concept of democracy – a rule from the people, of the people and for the people – a concept exemplified through the Constitution of the United States of America and cleared by Abraham Lincoln's speech at the battle of Gettysburg.

2. The governance made the difference

The American experience in governance was a fragile experiment, first of its kind and with major influences on what it is now, after more than two centuries till then. It doesn't needed to succeed. Then South America was developing in a number of individual states at the same time as USA. South America have had big problems in establishing a democrat or stable regime, until today. The 20th century brought the rise and fall of totalitarian regimes from Germany, Japan and Russia, with a lot of suffering brought to the nations from surrounding areas. The end of colonial imperialism in Africa fallowed by World War Two have resulted in a continuous political instability and blood shed and in other parts of the globe, too. This experiments of self-governance in the entire world didn't succeeded not till today. We can say that today peace and prosperity are synonyms with stable and democratic governments. Nations led by totalitarian regimes through a model or another don't succeed to reach any of the previously exemplified goals.

In nation states, the governance makes the difference between the success of that society, but the good governance can not be taken for grant, by the principle: "Believe and do not." Without political and economic systems, it is almost certain that no society can reach peace and sustained prosperity.

3. Capitalism

An fundamental chapter in the evolution of governance has been the developing of the competitive economic system based on the free market which has taken us to the prosperity from three years ago, seen with small regulating syncope (self-regulating) through the crises from 1929-1933 and 2007-2011 (the crises are underlined by the theoretical approach of long cycles, Kondratiev type). Democracy created a context in which the economic system based on the free market, entitled "capitalism", can evolve. There is a clear and logical link between the concept of individual political freedom and the freedom of individuals in fallowing their economic interests. As I mentioned earlier, Adam Smith, in the classic paper "Wealth of Nations", written in 1776, described "an invisible hand of the self-interest" as being in the center of human behavior. In antithesis of negative viewing it in terms of morality, he saw it as a main inner force for economic and social development. A paradox resulted from the development of capitalism is that the collective pursuit of self interest created the prosperity from which we can all benefit. A concept that remains problematic is: "the tension between accumulating goods and nurturing of goodness, which appeared early in the American experience and rooted"

(Shi, 1985, p. 8). The role of the economic system is to supply goods and services which satisfy the needs of individuals and during the economic process can offer jobs which create revenues with which they can buy the goods and services needed and/or wanted. In a weak economy, people fight only for survival, falling prey to illness and famine. A controversial fact is that an economy that creates revenues is not necessarily an economy with high moral standards, everything depends on how wealth is created, on how it is distributed and on what is used for. Finding the equilibrium between “goods and goodness” it is a continuous debate. This is not the purpose of this paper and, for now, there can not be highlighted any solutions for this situation. Although, I want us to understand the importance and relevance of contemporary society. Clearly, ethical and moral considerations which have to enter not only in the governance of nations but and in commercial enterprises, like today the right road is relearned despite all detours on sinuous and dark ways of quick, unreal and irrational enrichment which led to the global economic crisis in which we are still in.

4. The game

The business operation in complex economic systems, each with their own characteristics of ecology (with the sense of auto regulated system of internal implementation). We can observe this systems by using the analogy with a game, where the participants compete within the limits of the games rules to get in front. This kind of games are played during history and developed at a complexity and at a level, with most of its changes spent during the last two decades. Initially, the games were local, evolving from villages to communities and to small geographical regions. In the last hundreds of years, these rose until covered whole nations. Now, the games have become global, with interconnected nations in economic unions (Cairncross, 1997, p. 119). In the majority, the rules of economic systems which we describe are predominantly determined for member countries of economic alliances.

The nature of the game in each nation reflects a number of variables: culture, education of population, political system, geography and capital and available natural resources. This attributes influence the creation of the infrastructure which can sustain the game. Of special importance in infrastructure is public safety, national transportation system (roads and railways) and the legal system (the penal and the civil one). The penal system protects people and the property and ensures the internal social order. The same we can say about an army that can protect the nation of an imminent attack. The civil system arbitrates and reinforces contracts and property rights. We find that

in the context of the resulted organizational infrastructure, the game is influenced and substantially determined by three separate institutions: the govern, governing and regulating agencies and by that individuals or groups who choose or are forced to operate outside the rules of the game.

4.1. Governance and the game

State and local, the ruling entities (parliament and presidency) and many government agencies write, approve and interpret the rules of the game. Especially, the president has an important role in this process, first of all, through his veto-right and by executive orders (these are executed together with the prime minister). In a democracy, individual constituents, as well as interest groups try to influence writing of laws in their favor. That is why, a part of the game implies the efforts of changing the rules of the game.

The governance system can create rules which strengthen or weaken prosperity. This is a complex element which is the source of constant debates and of considerable tensions. Social conscience and populist politics push us to a broad distribution of wealth, the extreme logic is an strong regulated social system (for example: Cuba or Columbia – the result it is extreme poverty for the population). Where this social systems were tested they failed lamentably at growing the revenues for the masses. This kind of systems don't include scope oriented productive behaviors of individuals. On the other hand, letting the wealth to reach, disproportionate, in the hands of interest groups was destructive for prosperity. The big challenge for this economic game is to find the equilibrium between these limits. What a society does with a part of its output is the influencing of its own economic system and, cyclic, the future output.

4.2. The structure and the game

While legislative entities and regulation agencies write the rules at macro-level, this rules are interpreted and put in practice by regulation agencies and the judiciary. The application of these implies monitoring of the taken actions and by those who play the game to find out if the rules were broken or are going to be broken. In democratic countries, this attributes of implementing the rules have created tensions between privacy rights and the power of the police in protecting common goods. The courts, which represent law enforcement, judge based on them and suffer from conflicts of interpretation, complex negotiation and locating on unstable field.

4.3. The ones outside the game

The majority of individuals and of corporate entities participate in the game and operate by its rules and regulation. There are two groups that are not in the game. One from these groups form the underground economic, from which take part the ones who play “outside” the rules. Ironically, the underground economy is based on strict rules of the game which create opportunities on the black market. This kind of rules are meant to strengthen morality, as an example, trying to limit the invasion of drugs, prostitution, illicit gambling and/or pornography, but, usually, creates negative and unwanted consequences by creating the underground economy of illicit goods and services. The second group “outside” the game is formed by those that can not or do not want to be part of the workforce. Social programs led to the creation of new members in this group, other members of the group do not have the necessary skills, the knowledge and work ethics to gain a living in a increasingly more complex work environment. More of that, over the years, many people were excluded from effective participation at the creation of the economy because of prejudices.

Those outside the game, at a minimum level, are a brake for it, but they represent a latent threat. They can destroy the game if they form a mass big enough to create its own political capacity or to riot, like they did it in many countries. In simple terms, if too many people are left behind and they can not participate at the capitalist system, the society will suffer a promulgated revolution by those outside it. It results that it is in the interest of those situated in the game to try to introduce those outside it in.

The result of the writing and the applying of rules, the governance process is the competitive environment in which the game is played. This environment is favorable or unfavorable in creating wealth. The whole world has experienced in the last century close to 70 years of the most flourishing years in history. They were sprinkled with two global economic crisis and two world wars.

The extraordinary challenge for those involved in the national governance process is that if we can return, maintain or improve an adequate level of global wealth or if will succeed to repeat in a couple of years the history of severe economic cycles and the personal suffering which unavoidable accompanies them.

5. The company

Among the most important rules of the game that evolved during time are those that addresses to the form of governance of business organizations. We take the corporative form as a given good these days, but the company/corporation is a relatively new form of organization, as it fallows.

The non-business companies are forms belonging to ancient times, initial being used for organizing towns, guilds and colonies of Rome, and in the early middle ages, these were used for universities, religious orders and other voluntary organizations that performed civic services, being, thus, subject for licensing and government surveillance. The Muscovy Company in 1555, the Spanish Company in 1577, the East Indies Company in 1601 were the first businesses with the shape of an incorporated cluster (early economic organization – precursory to the today's multinational companies), all being created under the regime of Queen Elizabeth I of Great Britain. The London Company, that shortly renamed as Virginia London Company, appeared in 1606 (Beatty, 2000, p.6). Before the appearance of the corporation/company, businesses were organized in common properties or in partnerships.

The Supreme Court of the United States of America, under the ruling of supreme judge John Marshall, has created the necessary legislative framework for the existence of corporations/companies as we know them this day, at the beginning of the 19th century. Marshall, himself, has defined the corporate status in “Dartmouth College vs. Woodward” in the fallowing terms:

“...A corporation is an artificial being, invisible, intangible and existing only in the contemplation of the law. Being the mere creature of law, it possesses only three qualities which the charter of its creation confers upon it, either expressly or as incidental to its very existence... (the most) important are immortality and, if the expression may be allowed, individuality; properties by which a perpetual succession of many persons are considered as the same, and may act as a single individual” (Johnston, 1997, p. 560).

To summarize, the corporation/company is a creation of the law and has legal interpretation independent of its owners. Three functions made the corporation attractive: eternal life, limited responsibility and the division of ownership that allows the transfer of ownership rights without creating ruptures in the organizational structure. In the last years, the taxonomy became more and more problematic, especially at the moment of the occurrence of the economic crisis, because of the plurality of types of companies that were created (international regulations call these companies: C. Corporations), here appears the major difference between the structures of corporations at international level: limited responsibility companies

(LLC – limited leverage company) benefit from a corporative form, but incomes are charged at owners level. This fact contrasts with traditional corporations, where the corporation, itself, pays income taxes and not the owners. After the appearance of the legal framework, the corporation became a preferred form of organizing for big companies. In 1919, corporations, represented 31.5% from total global businesses, hiring 86% of the existent workforce and producing 87.7% of the total global income. (USA Government, 1919, p. 340).

6. The trust

Another form of organizing was experienced at the middle of the 20th century by J.P. Morgan, financier, who assumed the role of unofficial guide and law creator in the absence of federal regulations. Paul Johnson, in an exceptional book, “History of the American People”, wrote that J.P. Morgan:

“...The tendency of economic activity in a free society was to produce primeval chaos, in which men fought savagely for supremacy and countless sins were committed. Freedom was needed for economic society to function efficiently, but the resulting chaos generated inefficiency as well as sin. He reasoned that some degree of order was needed, and that order could best be brought about by forms of economic concentration that imposed a degree of order without inhibiting freedom to the point where efficiency was again endangered. This valuable concentration was achieved by the corporation and the trust” (Johnston, 1997, pp. 559-560).

The story of the appearance of trusts is a complicated one. During the Civil War, USA have followed the high tariffs policy to protect their developing industries. Protectionism through high taxes was maintained by state independent corporations, which joined together to grow their political influence on USA’s government. Learning to cooperate, a number of industries have started to form trusts; sugar, tobacco, railways, bovine and oil are only some examples. Trusts reduced competition and have encouraged monopoly, as an addition to the given situation. Then the justice courts interfered and by the panic from 1893, the antitrust laws have appeared. This effort in organizing of the economic activities wasn’t legal anymore or, as time has shown, efficient.

7. The role of corporate governance

The same as with nations, governance is important in the success of individual commercial enterprises. An examination of successful businesses sustained during long periods of time shows that the board governed business

relations with efficacy (Taşnadi, 2009). The same with weak performance business, it is a normal thing to follow the problem line to the board of directors which did not observed with efficiency the business's problems (Vâlceanu, 1998, p.88). The general press shows regularly examples from the hierarchical latter, and the business press underlines rarely boards of directors with strong performance (Freeman, 2005, p. 202).

The management of the corporation is established under the leadership of a Chief Executive Officer (CEO), which reports to a Board of Directors. While the board plays many roles, the organizations understand a broad area of purposes that can be reached, this research is focused on the management/leadership/governance of stock companies that are opened to the large audience, which have as purpose the creation and serving consumers, and, if it is well done, it leads to awarding the company through profitability and value growth of stocks.

A separation between closed-private owned companies and those opened-private owned companies is that closed-private businesses tend to be directly led by the owner (boss-principle). Because the owners of private businesses are directly involved in their enterprises, they are better informed about the business relations and they represent only their own interest. They aren't empowering their control to a representative board of directors, resulting in the appearance of some potential conflicts of interest that can exist between investors and those that they hired to represent them in the business's management. Even so, many of the governance principles that apply to opened-private owned companies have applicability in those closed-privately owned.

Conclusion

This paper is chronological and logical review of the evolution of the business environment that underlines the emancipation of the governance of commercial unions, geographical regions, countries and companies through the implementation of framework, regulation, bylaws, common sense and good will, facts that today are overruled by the banking system through its core business degenerating into a world of derivatives, OTCs, margin contracts and investment banking situated on the thin line between licit and illicit economic activities, that, in the end, is tracked down to the economic recession that we are trying to suppress in these days of artificial sorrow sustained through the incompetent management of nations.

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FDI in the Service Sector – Propagator of Growth for India?*

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Abstract. *The last two decades have witnessed an unprecedented growth of the Indian service sector. This study aims to analyze the growth dynamics of the FDI. It intends to see whether the growth in FDI has any significant impact on the service sector growth and also investigates whether a growth in this sector causes the GDP to grow. The results suggest that there has been a significant positive impact of the FDI on services sector and this service sector growth has in turn a significant effect on the GDP. The study also looks into the sub-sectoral dynamics and indicates towards the fact that the trade, hotels and restaurants, transport, storage and communications sub-sector contributes the most in the growth of Indian service sector. Therefore FDI can be truly be used as a propagator of economic growth, via its favourable effect on the growth in the services sector. Finally, the study addresses the long running sustainability debate regarding the Indian service sector.*

Keywords: service sector; FDI; economic growth.

JEL Codes: E44, F21.

REL Codes: 8E, 10F.

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I. Introduction

Since 1991, after the liberalization and economic reform, India's growth rate has been particularly impressive. With the liberalization in 1991, India bid goodbye to the slow, cautious and conservative so-called "Hindu rate of growth" and started growing at a much faster rate. According to Tarun Das (ex chief mentor, Confederation of Indian Industry), "Our Berlin Wall fell....and it was unleashing a caged tiger". Since then the growth rate has hovered around the 6% mark and in recent years it reached as high as 9.7%⁽¹⁾. The services sector in India assumes a central role in this growth story. Indian services sector has experienced unprecedented growth during the last two decades. Although, it is natural that when a country becomes more developed its GDP share in agriculture eventually decreases, but Indian services sector's growth has particularly been astounding. Service-led growth is a common phenomenon in the theory of economic growth (Clark, 1940, Kuznets, 1957, Chenery, 1960). But traditionally, the service-led growth has been associated with the tertiary phase of growth, where a major part of the demand for service comes from the developed manufacturing sector (the secondary sector). But Indian growth has been an altogether different story. The growth of Indian service sector is largely independent of the manufacturing sector. India, in its process of growth, has been able to bypass the stage of manufacturing-sector led growth and reached straight into the third stage – service-led growth. This pattern of Indian growth is distinctly dissimilar from the growth pattern of its Asian peers namely Vietnam, Indonesia, China, Thailand, Malaysia and Korea. While for these Asian countries export-oriented manufacturing sector has been instrumental in the growth, in India, the dominant services sector led by information technologies and information technology enabled services has grown faster than all other countries in the last three decades (Walters, Stapleton, Andrews, 2007). This fast-growing sector has always been crucial in Indian economic growth.

Foreign direct investment (FDI) has been instrumental behind the growth of services sector in India. Since the opening up of the economy in 1991, FDI in India has grown in leaps and bound. From a mere 45.46 million dollars in 1970, FDI has grown into a mammoth 40,418.39 million dollars in 2008. Just between 1991 and 2008, the FDI inflow has increased by a staggering 53,791.2% (Figure 1).

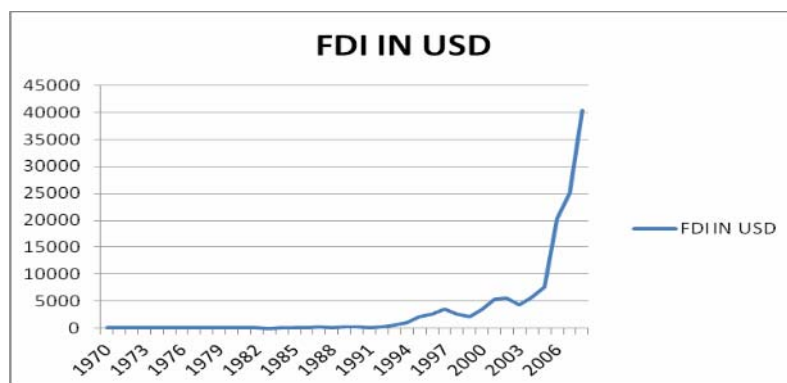
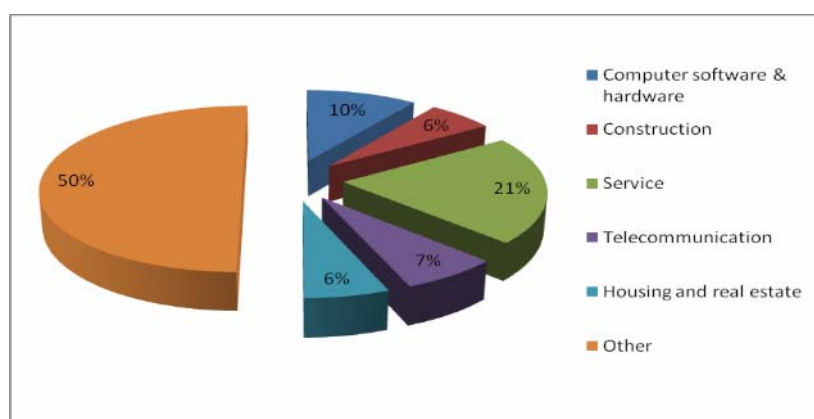


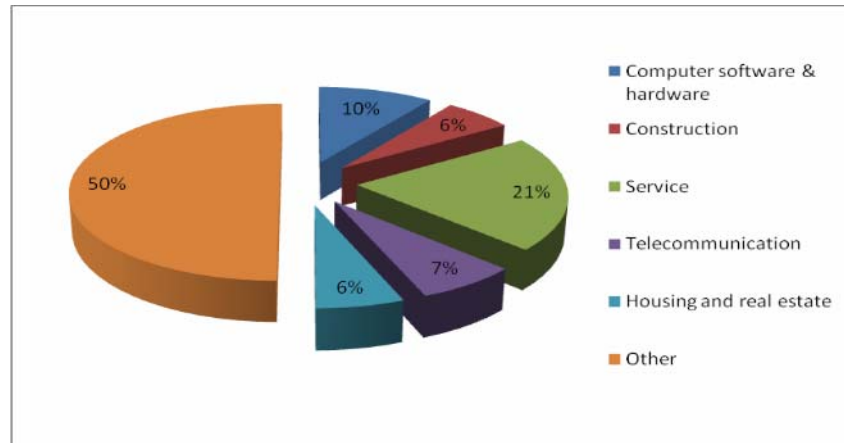
Figure 1. Foreign direct investment in India

A substantial part of the FDI has gone into the services sector. And FDI's contribution to this sector has only grown overtime. Figure 2 shows the share of FDI that has gone into each sector of the economy for the period 1990-1999 and Figure 3 shows the sector-wise FDI for 2000 – 2009. During the later phase, FDI in services sector has grown to 21%, in comparison to the 7% in the earlier phase.



Source: Sirari and Bohra, 2011; RBI Bulletin 2010.

Figure 2. Sector-wise FDI in India: 1991-1999



Source: Sirari and Bohra, 2011; RBI Bulletin 2010.

Figure 3. Sector-wise FDI in India: 2000-2009

There has been a few studies in Indian context that examined the service led growth of India. Eichengreen and Gupta (2009), Eichengreen and Gupta (2010) and Bosworth et al. (2006) have all shown that Indian growth has been largely influenced by the services sector performance. The objective of this study is to understand the growth propagation from FDI to GDP via the services sector. The paper goes farther to investigate the service sub-sectors' performance in the process.

The services sector has been the best performing among the three major sectors in Indian economy (service, agriculture and industry). After 1980, the growth in services sector has always been much higher than the growth rate of the agricultural sector and even the industrial sector. Figure 4 plots the growth curve for all three sectors. The growth curve for services sector clearly leads the race with an exponential growth.

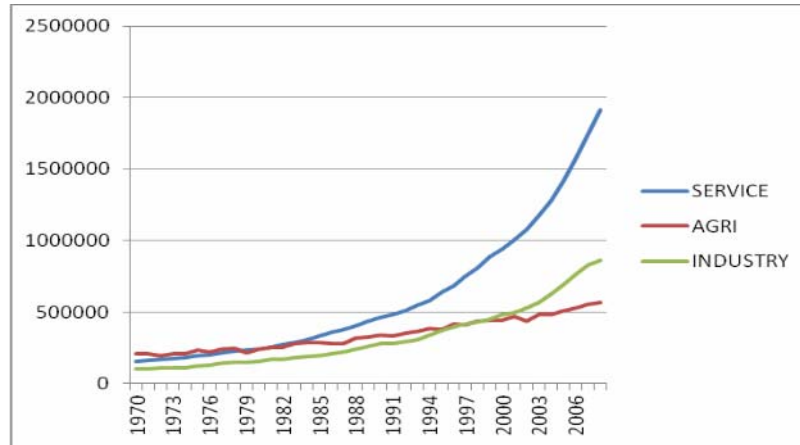


Figure 4. Comparison of Growths of Services, Agricultural and Industry

Not only services sector grew at a superfast rate, it is the only sector which in the last four decades has never experienced a negative growth rate. Figure 5 shows the growth rates of the three sectors of the economy. As the figure suggests, while agriculture and industry experience negative growth rates at regular intervals, during this period services sector does not have a single year with negative growth rate.

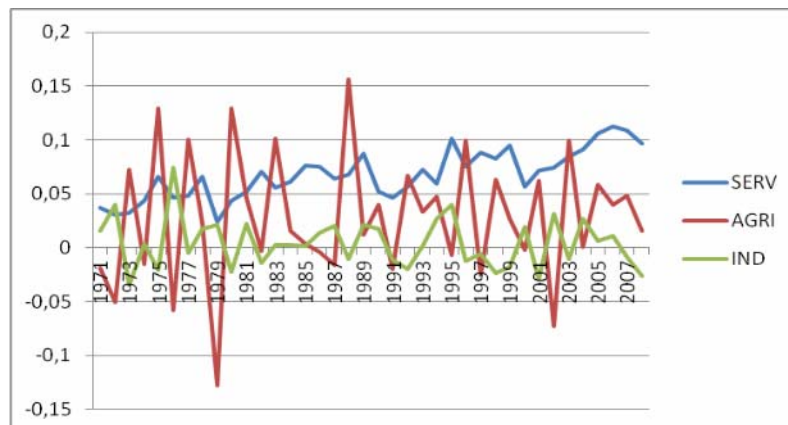


Figure 5. Growth Rates of Services, Agriculture and Industry

The strong performance of the services sector is reflected by its share in GDP. Figure 6 shows the GDP share of the three sectors. From 1970s, the services sector has experienced a consistent growth in its share in GDP. From 33.28% in 1970, the services sector has increased to a 57.28% of the total

Indian GDP in 2009. Agriculture's share in GDP has decreased consistently, while industry's share increased at a very slow rate. Whatever the agricultural sector lost, was gained by the services sector.

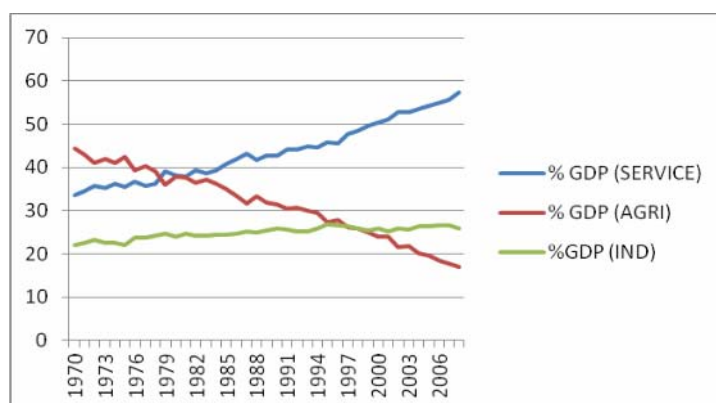


Figure 6. GDP Share of Services, Agriculture and Industry

However, the contributions of services sub-sectors have not been evenly distributed. The three major sub-sectors in services are:

1. Trade, hotels and restaurants, transport, storage and communications (this study will refer to this section as “Trade” now on).

2. Community, social and personal services (public administration, defence and others) (“Community” now on).

2. Financing, insurances, real estate and business services (“Finance” now on).

Figure 7 demonstrates the growth of the three service sub-sectors. The trade and transportation sector grows fastest. While community services and financial services sectors grow more or less in a similar fashion, they both lag behind the trade sector in terms of growth. This is one interesting characteristic of the Indian services sector. As the country develops, one can expect the financial services sector to become predominant but this is not the case with India.

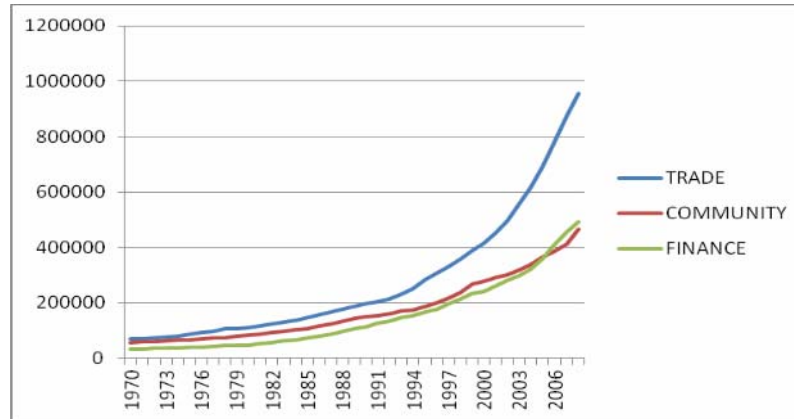


Figure 7. *Growth of service sub-sectors*

The dominant position of the trade sector is reflected through its growth rate in Figure 8. For the period 1970-2009, this sector experiences only a single year of negative growth, in 1979. In comparison, the community services sector has predominantly negative growth rate for most of the years (25 out of 39). The financial services sector is also characterized by several years of negative growth rate (14 out of 39).

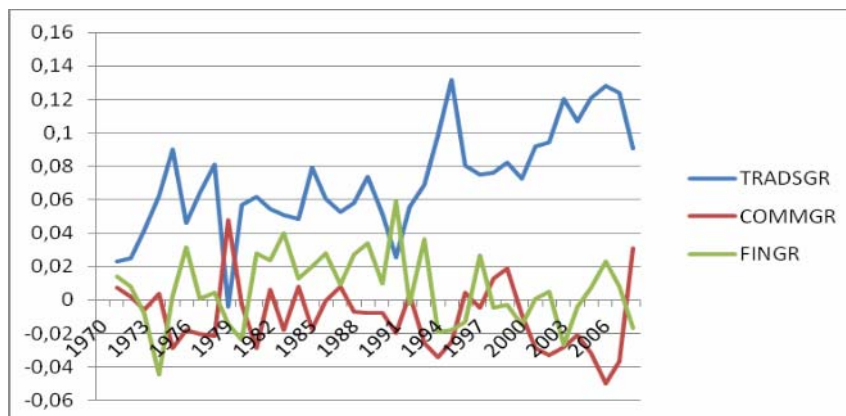


Figure 8. *Growth rate of service sub-sectors*

As expected, trade has the lion's share in the services sector. This sub-sector has consistently contributed for more than 40% in the services sector output. Lately, its contribution is touching 50%. The other two sub-sectors are clearly lagging behind this sub-sector. The community services sector

experiences a steady decline in its share in services sector output (from 35.79% to 24.20%) and the financial services sub-sector, although characterized by a steady growth over the years (from 20.31% to 25.79%) is yet to catch up with the trade sub-sector.

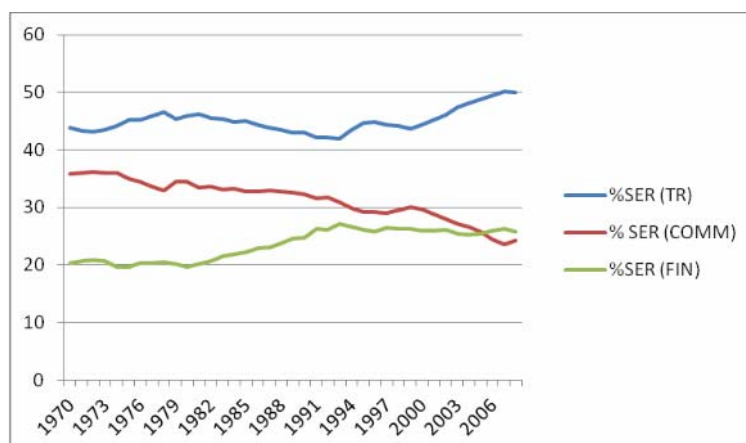


Figure 9. Subsectors' share in services

II. Database and methodology

This study uses annual data from 1970 to 2008 on the relevant macroeconomic variables. All data are collected from the website of RBI, UNCTAD and Business Beacon database. The study now examines whether FDI can be used as a propagator of growth for the Indian economy via its contribution to the services sector. For that, seven relationships are tested using regression models. The variables considered for the regression are natural logarithmic transformations of the raw data. Log transformations are very useful in handling exponential growths and stabilizing the variability in the data. Not only that, the slope coefficients of the regression equation will represent elasticities if log transformation is taken. It would be easier that way to gauge the impact of the regressors.

1. The impact of FDI inflow on GDP

If FDI inflow has significant impact on GDP, then it can be said that FDI, if channeled properly, can be used as an engine of growth. To find out the impact of FDI on GDP, the following regression equation is estimated:

$GDP_i = \alpha_1 + \beta_1 \times F \times DI_i + u_{1i}$ Where GDP_i and FDI_i are the simple logarithmic transformation of the GDP output and FDI inflow data.

And a set of hypothesis is tested:

$H_0: \beta_1 = 0$ i.e. FDI has no influence on GDP;

$H_1: \beta_1 \neq 0$ i.e. FDI has a significant impact on GDP.

2. The impact of services sector, agricultural sector and industrial sector on the GDP

Next, the study aims to investigate the comparative impacts of the three major sectors in Indian economy on the country's GDP. The three sectors are services sector, agricultural sector and industrial sector. The result will give a clear picture of the relative importance of the three sectors in GDP.

The regression equation is:

$$GDP_i = \alpha_2 + \beta_2 \times SER_i + \beta_3 \times AGRI_i + \beta_4 \times IND_i + u_{2i}$$

Where SER is the simple logarithmic transformation of the services sector output, AGRI is the simple logarithmic transformation of the agricultural sector output and IND is the simple logarithmic transformation of the industrial sector output.

For this equation, three sets of hypotheses are tested. The hypotheses are:

Hypothesis I:

$H_0: \beta_2 = 0$ i.e. SER has no influence on GDP,

$H_1: \beta_2 \neq 0$ i.e. SER has a significant impact on GDP.

Hypothesis II:

$H_0: \beta_3 = 0$ i.e. AGRI has no influence on GDP,

$H_1: \beta_3 \neq 0$ i.e. AGRI has a significant impact on GDP.

Hypothesis III:

$H_0: \beta_4 = 0$ i.e. FDI has no influence on SER,

$H_1: \beta_4 \neq 0$ i.e. FDI has a significant impact on SER.

3. The impact of FDI on the services sector as a whole

Thirdly, the study examines if the FDI inflow has any significant influence on the services sector output. If any discernible impact is noticed, it can be concluded that the growth in services sector is to some extent propagated by FDI.

The regression equation for this relationship is

$$SER_i = \alpha_3 + \beta_5 \times FDI_i + u_{3i}$$

The hypotheses are:

$H_0: \beta_3 = 0$ i.e. FDI has no influence on SER,

$H_1: \beta_3 \neq 0$ i.e. FDI has a significant impact on SER.

4. Impact of the services sector on FDI

Earlier, the study tested if FDI has any significant impact on the services sector output. In a macroeconomic perspective, a growing services sector would in turn attract FDI in the economy. The study goes on farther to test whether services sector output has any discernible impact on the FDI inflow.

The following regression equation is estimated as

$$FDI_i = \alpha_5 + \beta_7 \times SER_i + u_{5i}$$

The hypotheses are:

$H_0: \beta_7 = 0$ i.e. services sector output significantly influences the FDI

$H_1: \beta_7 \neq 0$ i.e. services sector output does not have any significant impact on FDI

5. Impact of GDP on FDI

The study has already considered the impact of FDI on GDP. Now, the study tests any possible impact of GDP on FDI. Growing GDP symbolizes a country's positive growth. And a country that grows in a healthy rate also attracts FDI. Therefore, a positive directional relationship from GDP to FDI is expected. To test this, the following regression equation is estimated:

$$FDI_i = \alpha_6 + \beta_8 \times GDP_i + u_{6i}$$

The hypotheses are:

$H_0: \beta_8 = 0$ i.e. GDP significantly influences the FDI,

$H_1: \beta_8 \neq 0$ i.e. GDP does not influence the FDI significantly.

6. Impact of the three sub-sectors on the services sector

Next, the study delves deeper and try to gauge the sub-sectoral performances of the services sector. A regression is run to examine the relative importance of the three major sub-sectors in the services sector output.

$$SER_i = \alpha_7 + \beta_9 \times TRADE_i + \beta_{10} \times COMM_i + \beta_{11} \times FIN_i + u_{7i}$$

Where TRADE is the simple logarithmic transformation of output from trade, hotels and restaurants, transport, storage and communications; COMM is the simple logarithmic transformation of output from community, social and personal services and FIN is the simple logarithmic transformation of output from the financial services.

Three sets of hypotheses are being tested:

Hypothesis I:

- $H_0: \beta_9 = 0$ i.e. TRADE significantly influences the SER,
 $H_1: \beta_9 \neq 0$ i.e. TRADE does not influence the SER significantly.

Hypothesis II:

- $H_0: \beta_{10} = 0$ i.e. COMM significantly influences the SER,
 $H_1: \beta_{10} \neq 0$ i.e. COMM does not influence the SER significantly.

Hypothesis III:

- $H_0: \beta_{11} = 0$ i.e. FIN significantly influences the SER,
 $H_1: \beta_{11} \neq 0$ i.e. FIN does not influence the SER significantly.

7. Impact of the three sub-sectors on GDP

And finally, the impact of the three sub-sectors on the GDP is examined.

The regression equation is

$$GDP_i = \alpha_9 + \beta_{12} \times TRADE_i + \beta_{13} \times COMM_i + \beta_{14} \times FIN_i + u_{9i}$$

And three sets of hypotheses are tested:

Hypothesis I:

- $H_0: \beta_{12} = 0$ i.e. TRADE significantly influences the GDP,
 $H_1: \beta_{12} \neq 0$ i.e. TRADE does not influence the GDP significantly.

Hypothesis II:

- $H_0: \beta_{13} = 0$ i.e. COMM significantly influences the GDP,
 $H_1: \beta_{13} \neq 0$ i.e. COMM does not influence the GDPs significantly.

Hypothesis III:

- $H_0: \beta_{14} = 0$ i.e. FIN significantly influences the GDP,
 $H_1: \beta_{14} \neq 0$ i.e. FIN does not influence the GDP significantly.

III. Results

The results from the seven regressions are summarized below.

Table 1

Impact of FDI on GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.236335	0.014119	16.73846	0
R-squared	0.883346	Mean dependent var		6.029534

Table 2

Impact of FDI on services sector

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.297801	0.017809	16.72231	0
R-squared	0.883146	Mean dependent var		5.66404

Table 3

Impact of services sector, agricultural sector and industrial sector on GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SER	0.634274	0.063329	10.01555	0
AGRI	0.201658	0.056943	3.541385	0.0011
IND	0.084058	0.084038	1.000232	0.3241
R-squared	0.999493	Mean dependent var		6.029534

Table 4

Impact of the services sector on FDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SERV	2.965563	0.145036	20.44702	0
R-squared	0.883146	Mean dependent var		2.55516

Table 5

Impact of GDP on FDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	3.737692	0.176227	21.2095	0
R-squared	0.883346	Mean dependent var		2.55516

Table 6

Impact of the three sub-sectors on services sector				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRADE	0.484068	0.005243	92.32082	0
COMM	0.272282	0.012486	21.80618	0
FIN	0.237714	0.007516	31.62839	0
R-squared	0.999991	Mean dependent var		5.66404

Table 7

Impact of the three sub-sectors on GDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRADE	0.488688	0.027731	17.62229	0
COMM	-0.10651	0.081763	-1.30268	0.2012
FIN	0.335156	0.041644	8.048224	0
R-squared	0.999438	Mean dependent var		6.029534

The results furnished in Tables 1 - 7 help determine the directional nature of interdependence among the variables.

- FDI has a significant positive impact on GDP as well as the services sector. For every unit increase in FDI, the GDP increases by 0.236 and the services sector output increases by 0.298 units (Tables 1 and 2);

- Services sector has a positive impact on GDP, as reflected by its highly significant positive coefficient in Table 3. Not only that, among the three sectors, the coefficient for the services sector is highest (0.634), indicating that services sector has the strongest influence on GDP, one unit increase in the services sector increases the GDP by 0.634 units. Interestingly enough, the industrial sector's performance has no significant impact on GDP.

- The services sector has a very strong positive and statistically significant impact on FDI (Table 4). FDI nearly trebles with a unit increase in the services sector output. The second regression showed that if FDI increases, services sector output also increases. The fourth regression shows that there is a feedback effect from the services sector to FDI. The growth in services sector actually helps FDI inflow to increase. This indicates towards a two way relationship between FDI and service sector output. The reason behind it is as services sector grows, especially in India, where the services sector growth has mainly generated by hi-tech services and outsourcing to foreign countries, a well-performing services sector will encourage more FDI.

- Table 5 shows that GDP has a strong and statistically significant positive impact on FDI. For each unit increase in GDP, the FDI increases by 3.738 units. This indicates that whenever the economy is performing well, FDI increases in a multiplicative fashion. From the result of the first regression, FDI was found to have a significant influence on GDP. These two results together show that there is a two-way relationship between GDP and FDI; they influence each other.

- Tables 6 and 7 takes the study to sub-sectoral level. Table 6 shows that of the three services sub-sectors, the trade-hospitality-transport sector has the strongest impact on the GDP. Financial services, although has a significant positive impact on the total services sector output, is the weakest of the three. Finally, Table 7 tries to measure the impact of the three services sub-sector on the GDP. Trade-transport-hospitality sector turns out to be the strongest while the community services sector has no discernible impact on the GDP.

The relationships 1 – 3 help identify the growth propagation from FDI inflow to GDP via services sector. Relationships 4 and 5 examines the FDI growth, resulting from the growth caused by it in the services sector output and GDP. 1 – 5 together explains the circular interaction channel among the FDI inflow, GDP and services sector output where each causes the other to grow and as a result grows itself. Tables 7 -8 show the sub-sectoral contribution both to the total service sector output and GDP.

IV. Conclusion

Based on these results, it can be inferred that the services sector in India, propelled by inflows of FDI help the economy grow. Not only that, the trade, hotels and restaurants, transport, storage and communications sector is most instrumental behind the phenomenal growth of the services sector. There is no doubt about the performance of Indian services sector and its role in the country's economic growth. But this brings us to the big question. Is this service-led growth sustainable?

A danger in the service-led growth lies in the over dependence on FDI. The service sector growth in India is largely led by hi-tech labour and outsourcing, with the main demand coming from abroad. This makes the sector somewhat vulnerable to external shocks. As the service sector has a multiplier effect on the economy, a negative shock in this sector will be reverberated throughout the whole economy and will spread into other sectors as well, thanks to inter-sectoral linkages of service sector. This also runs a risk of facing unfavourable terms of trade.

The major criticism of the service-led growth came from the fact that the service sector growth has largely been jobless (Gordon, Gupta, 2003). “While output generation has shifted to services, employment generation in services has lagged behind” (Banga, 2005). Since independence, agriculture’s share in GDP has gone down and services sector’s share has gone up. But the services sector has not been able to make up for increasing unemployment. Moreover, the growth within the services sector has been lopsided. While some services grew at a fast rate, some other services experience a negative growth rate. A reason behind this lopsided growth has been the absence of a uniform service policy in India (Banga, 2004). Therefore, impact of the economic reforms could not spread evenly across different services.

Another criticism of service-led growth is that due to a comparatively static industrial sector and a declining agricultural sector, the service sector would not be able to generate its own demand and sustain its growth in the long run. However, Hansda (2002b) and Banga and Goldar (2004) showed evidence that there has been a significant impact of the services sector on the industrial sector output. Their study showed that the demand for services is rapidly increasing in the industrial sector and in turn, the services sector is actually contributing to the growth and output of industries. There are forward and backward linkages between services sector and other sectors – services sector is actually growth inductive. Not only that, the services sector has the largest multiplier effect on the economy. According to Banga and Goldar, “This points to the possibility that the Indian services sector might not only succeed in sustaining its own growth but might also help in improving the growth rate of industrial sector in the near future”.

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Note

⁽¹⁾ All data used in this study has been collected from the website of Reserve bank of India, UNCTAD and Business Beacon database.

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The Economic Theory and the Global Crisis, between Theoretical Solutions and the Economic Reality*

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Abstract. *This work aims to study the evolution of the global crisis and its impact on various areas worldwide, as well as its impact on certain decisions which have been implemented by the authorized bodies.*

The general framework of this analysis starts with a short review of the relevant economic movements and trends; it continues with presenting the potential solutions aimed to overcome the dark period which is currently crossed by the contemporary economy.

In the same time, the authors aim to highlight the impact of the monetary policies throughout the history on the real economy, until the current period.

Keywords: Keynesianism, Austrian School, economic fluctuations, monetary policy, globalisation.

JEL Code: G01.

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At the beginning of 2009, in an interview for *Associated Press* agency, when Dick Cheney, Vice-President in Bush Administration, was asked why the Administration was not capable to foresee this economic disaster, he had quite a revealing answer: "Nobody, nowhere, was clever enough to realize what was going to happen. I don't believe somebody expected this."⁽¹⁾

During the years which preceded the crisis, one hypothesis circulated and it was about the fact that the *Theory of the Business Cycles* was obsolete, while the economic fluctuations were not any more valid. Some economists went even further and said that the business cycles have disappeared, while us – from the perspective of the New Economy – we were witnessing a continuous economic growth. These prolonged periods of economic growth and expansion had only the role of generating clear anomalies in economy; in the same time, preventing us that, when the "bubble" burst, the blast wave will be powerfully felt and not only locally.

The events which occurred during the last years hit us morally and not only in this way, because the hit was practically felt in the pockets of the people worldwide, irrespective of the country, nationality or place of work. We are witnessing the worst crisis since the Great Depression. And when I make this statement I take into consideration the fact that, out of the eleven periods of recession which followed the Great Depression, only three of them had been longer than one year (Stiglitz, 2005, pp. 673-675).

How could this boom happen? A starting point was that the speculators start buying and selling parts of land, doubling thus their profits in a very short period. The ordinary people have been lured towards Wall Street, attracted towards the new type of industrialized economy, to the extent to which they risked here their life-time savings.

The politicians, instead of having a rejecting attitude and a hard word against these schemes of quick enrichment, they became supporters of this movement. More than this, the new financial instruments have been praised and included in what was called "economic growth". At a certain moment, all these things became a speculative "bubble". And once this bubble burst, the securities market began to shake, cases of enforcement of the guarantees appeared and many companies became insolvent. As a result, the unemployment rose dramatically, while the industrial production collapsed. They say this was really the end of the economic boom, however a utopian boom and with no solid ground.

The above description it is not about what happened few years ago in the United States economy, but it concerns what happened about eighty years ago, before the Great Depression (Galbraith, 1954). Do we watch a repeating history?

This scenario looks similar to the one which some three years ago generated the burst into the global crisis; today the framework is exactly the same, and the conditions are met for the "bubble" bursting, only that there are

different nuances now. By nuances it is understood financial engineering, which appeared and developed on Wall Street, toxic assets simple called with three letters, almost like a chemical formula: CMO, CDO, ARS or TOB, false debits and credits, the most known being those called NINJA (No Income No Job or Assets). All these, combined with a defining feature of the modern man – the greed – generated the beginning of a grey age of the world economy. When the panic started and it was felt, the first who went into the bankruptcy were the non-banking lenders, followed by the investment banks, hedge-funds, while the climax was reached by the massive cash withdraws out of the banking system. About the end of the year 2008, the effect extended from the United States up to countries like Japan or Ireland. Nobody could resist to the shock wave and the pandemic has spread (Roubini, 2010, pp. 62-70). One fact which fully sustained the pandemic status was the technological progress, one of the most important pillars of *globalization*. Thus, due to the speed of information during the last decades, the less developed countries are connected with the developed economies, those which influence and set the economic trends for the entire world.

Two years have passed since then, however the situation didn't change to a better status, not even to at least a "normal" one. But what does currently mean "normality", when the practical reality is a much harder nut than any theoretical scenario? Well-known economists like Keynes, Minsky, Friedman or Scumpeter became again very much "in-fashion". In continuing this paper, we will try to exemplify some of these theories with reference to the economic recovery during the crisis time; also, to exemplify how the theories are reflected into the daily reality.

The most famous economist who imposed himself during the Crash which started in 1929 was – without any doubt – John Maynard Keynes, who held in several occasions various positions into the British Cabinet of those ages.⁽²⁾

The main factor which made the difference between Keynes and the economists of that age, i.e. classical and neo-classical economists, was the one that Keynes did not believe the economy could recover by itself, irrespective of the premises. The classical economists of the 30-ties thought that the economy could recover by itself, the main premises for this being the fact that the complete occupancy of the labour force is the natural status of the things; and when the salaries became too high, the economy will suffer a necessary contraction, while when the unemployment rises, the salaries will drop. According to this theory, the process is valid in the other sense, too: when the salaries drop, the employers will start making employments and so the economy will reach its natural state of equilibrium.

John Maynard Keynes had a different opinion: the main element determining the level of the labour force occupancy is actually the aggregate demand (AD). If the salaries drop and the employees are fired they will have

smaller incomes and consequently will consume less, which will continue to lead to a decrease of the aggregate demand. So, the ordinary consumers will save more and consume less, which will lead again to a drop of the aggregate demand. This dilemma was called by Keynes (1936) “the paradox of saving”. All this process will lead to a state of underemployment of the labour force and when the aggregate demand drops below the level of the aggregate offer, the firms will have to reduce the costs in order to sell the stocks, the whole cycle leading to deflation; thus we will have a new decrease of the profits and of the money supply available in economy.

His suggested solution was quite simple: the Governments should replace the entrepreneurs, who were either absent on the market or having no more force to make important investments; in this way, through Government spending, the State will stimulate the demand.

A different opinion had the “father of monetarism”, Milton Friedman, who says that the instability in every economy is explained by the fluctuations of the money supply. He translated the beginning of the Great Depression in 1930 like a direct consequence of the decrease in quantity of the bank deposits and savings. This quantity diminished considerably when the bank account holders started to panic and withdraw the capital, determining so the decline of some important financial institutions of that time. The monetarist movement called this phenomenon “The Big Contraction”. Thus the aggregate demand was seriously pushed down, diminishing the level of incomes, spending and employment, as an emergent effect. Opposed to the Keynesian doctrine, the monetarists were totally against the State intervention in economy, through the Government spending. As a solution they suggested a reduction of the interest rate in economy. The bankruptcy of the financial “dinosaurs” had to be prevented by all means and the central banks - in this case - had to become the last lenders.

At the beginning of the crisis, after the international capital markets fully felt the shock of the bankruptcy of the Lehman Brothers investment Bank, Washington Administration opted quite for this type of solution. The shock was felt by the main part of the stock exchanges worldwide (for instance, Moscow Stock Exchange suspended its operations for an hour, after the bankruptcy of Lehmann Brother determined in the same day a decrease of the market index in Russia by 11%; the most important market index in Asia decreased in that day by 5%).⁽³⁾

The politics of the United States remained still constant: before G-20 Summit in Seoul, the Federal Reserve announced a new infusion of another 600 billion dollars in economy⁽⁴⁾, opting thus for what the specific literature named monetary relaxation or Quantitative Easing (QE). After this announcement, the dollar quotation on the FOREX market has a modest improvement. The first critics to this announcement came from another big power, China, who said that

the monetary politics of the United States, i.e. to infuse with cheap money the emergent economies, could destabilize the international economy, which is still fighting to survive. These capital infusions could have an important effect on the financial markets, in the nominal economy, taking into consideration that the S&P500 index⁽⁵⁾ entered on a positive territory after this announcement was made, however in the real economy the effect was less noticeable.

Is this the right strategy, considering that the international economy still stagnates, even after two years from that very moment? The economic reality cannot currently reveal significant signs with regard to the opportunity of the options which were made.

In theory, Keynes's followers do not have anything against printing currency, but they say this is not enough to help the real economy. An ideal model, for instance, would be Great Britain, where the Bank of England intended to print an alternative pound, maybe having a different colour, in order to distinguish it from the other type of money on the market and having a validity of only few months; during this period, the alternative type of money should be spent only on services and internal goods. This process should be repeated from time to time, till a relaxation of the banking system in England will be noticed (Skidelsky, 2010).

In reality, this is less probable to happen, as it would mean extreme protectionist politics. Another factor which does not allow putting into practice this model is the high level of logistic required and, of course, the consequent expenses.

Let's see what really happened in England. At the beginning of 2009, Bank of England starts printing the currency in order to redeem the public debt. During the year, more than 200 billion pounds or better said 15% of GDP have been used to redeem the bonds issued by the Government. The monetarists thought that such an infusion of capital would be able to change England economy direction, from recession to an easily observable economic growth.

The predictions were not confirmed by the uncovered money infused in economy. In the first quarter of the current year, England GDP grew by only 0.2%. Something must have been wrong! This was due to the fact that the commercial banks used the money taken from the population, either for creating reserves at the Central Bank, or for purchasing bonds issued by the companies. It means we are in a vicious circle. The capital infusion could be felt just on the capital market in England, at London Stock Exchange, but in the real economy the effect was not the expected one.

The above policies can be however applied only in a country which is not part of Euro zone. In an economic and monetary union disappears the right of seigniorage for each country and so the right of printing currency is transferred to the Central European Bank (BCE). This could be an important disadvantage for

certain states who try to implement anti-crisis policies, while on the other hand, in certain countries with a less developed financial market, the solution suggested in England could be fruitful, the money reaching thus the real economy.

By observing from a global perspective the overall economy towards we are slowly moving, we can notice that, besides the positive effects of the globalization process (e.g. the reduction of the transaction costs or the important increase of the standard in living for millions of citizens in emergent economies like Brazil or China), there are obviously minuses generated by the fact that the world economy is set under one single umbrella. The risks have been noticed especially during the last years. It is possible that the globalization opens the ways for crises even more threatening and more frequent. The speed of circulation for the financial capital and hot money, to and from certain markets and economies, amplified the prices volatility and the morbid ability of the financial crises (Roubini, 2010, pp. 498-501). If this mix of social and economic phenomena hadn't had such a huge importance, probably many countries would not have suffered as an effect of the crises born in New World. Also, if such a high grade of trade liberalization hadn't existed, some countries could have been quicker recovered after the serious illness that the economy still has to face.

An example which accounts for what has been said before is the subventions program aimed to support an issue we are all facing: environmental degradation. The changing of the car fleet older then 10-20 year is a measure aimed to support the recovery of the automotive industry, but in the same time it aims to decrease the concentration of carbon dioxide in the breathing air for the inhabitants of those countries which run the type of program called in Romania "Rabla" program. There are currently five countries where the program is being implemented: France, Portugal, Cyprus, Holland and – of course – Romania⁽⁶⁾.

If all these countries bought with the issued vouchers cars from their internal production, we would probably witness a positive evolution of the economy of those countries. But most of the times the money is spent on cars produced in a different country than the country supporting the subvention program. In this case, the globalization is a barrier for the economic recovery.

What are the solutions aimed to defend us in front of the financial crises which still exists, irrespective of the historical period? Does the past not succeed to be a good teacher or we do not succeed to be good students?

The Austrian School, represented by Joseph Schumpeter, the most important adversary of J.M. Keynes, resumed in two words the events produced in the economy: *creative destruction*. According to Schumpeter, the capitalism is made up of two cyclical phases: innovation during the prosperity periods, followed by a brutal selection of those who are the players on the market, during the recession periods. As to Schumpeter (2006, pp. 107-109), this forced

selection should not be either avoided or minimized, as it is a painful adjustment, however beneficial, after which the survivors will create a new economic order. The Governments interfered into the natural selection of the players on the market, thus making, according to the Austrians, from private losses – collective losses, with impact on the entire society. The giants should not be sustained with the money of the whole nation, because in this way they will never have the consciousness of their mistake.

They are still looking for solutions to prevent the next crises. Is the regulation the solution? The Austrian economists are against the current tendencies; to more strictly regulate the economic financial system, while diminishing the flexibility which preceded the crises is exactly what the big powers want now. According to the Austrian School, the excess of regulation is the basement of this crisis and, by adding new laws, the situation will become even worse. It is as if one tries to treat a disease with harmful medicines. Should this theory be the explanation of the fact that – overall – the Austrian economy performs better than others during such critical times of crises? Last year the GDP of Austria decreased by only 3.9%, which is less compared with other countries from the Euro zone, while for 2010 the forecast is for an economic growth of 2%.

When the crisis started, the Governments' concerns were related to the fact that it could be deflation, an economic phenomenon which powerfully shook the economy of the United States after 1930. Hoping to move into the opposite direction, towards inflation, they used monetary relaxation and zero interest; however deflation appeared both in the United States and in Euro Zone. Of course, on a short term, the deflationary pressures will continue in most of the advanced economies and even in some emergent economies (Roubini, 2010, pp. 107-109). Here occurs the issue of the unsold stocks, which should be cleared by the companies at reduced prices. In spite of these, according to the economists, there are inflationary expectations regarding the advanced economies starting with the year 2012, as the Governments will continue to decide for currency vs. deficits. In case of the United States, should we further have the dollar depreciation, the prices of the products imported over the Ocean will grow. So, on a short term it is possible to have an insignificant deflation, however on a long term inflation is expected.

It is only the history which can transform a less good decision into a good decision, or vice-versa. Paul Samuelson replied in 2009, during an interview, to the following question: "What would you tell to someone who would like to become a student in economics?" The answer was: "Well, there is probably a change compared with what I would have told to him while I was younger. I would tell him to pay a great deal of respect to the study of the economic

history, as this is the raw material where from his future deductions and tests will be generated.” (Clarke, 2009)

If we do not succeed to learn from the history, it is most probably that, trying to apply some of the theoretical solutions to the daily reality, we only prepare the ground – even we do not realize this – for future economic crashes, perhaps even more dangerous than the current one.

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Notes

- (1) Dick Cheney, interviewed by Deb Riechmann, *Associated Press*, 8 January 2009.
- (2) See Heilbroner, R.L., Thurow, L., *Economics explained: Everything you Need to Know about How the Economy Works and where it's Going*, 4th edition, 1998, pp. 38-39.
- (3) See www.wallstreet.ro – Shock on the international capital markets.
- (4) See www.ziare.com – USA prepare for the relaunch of the monetary policy.
- (5) S&P 500 Index – Standard & Poor's 500 Index - An index of 500 stocks chosen for market size, liquidity and industry grouping, among other factors. The S&P 500 is designed to be a leading indicator of US equities and is meant to reflect the risk/return characteristics of the large cap universe.
- (6) www.money.ro - Rabla program. What countries pay more money for the old cars – 14.11.2010
- (7) Source: Eurostat.

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