

The influence of the country risk rating on the foreign direct investment inflows in Romania

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Abstract

Assessing country risk through its specific indicators is an important signal conveyed to the external environment by an economy; it contributes to the overall economic development of the territory if the final grade is high or the dynamics of the grading is upwards. Country Risk Agencies have credibility in the market, and capture the impact of relevant macroeconomic variables in an adequate manner, resulting in a distribution of FDI in relation to the recognized competitiveness of economies seeking increasingly profitable investments. Scoring country risk is the most difficult and complex process of all the types of risk assessments, and this paper presents the scoring scales of the three main U.S. rating agencies: Moody's, Standard & Poors, and Fitch, and also that of the European Agency Euromoney.

Key words: country risk, foreign direct investments, country risk rating, macroeconomic variables, econometric modelling

JEL classification: G1

1. INTRODUCTION

Risk and uncertainty are natural components of market economy and its globalization through international investment (FDI, FPI, etc.). Risk is often associated with uncertainty, and is defined as *exposure to uncertainty* (Glyn Holton). There are four degrees of uncertainty: a) certainty or uncertainty of zero degree (i.e. theoretical, where the consequences of an action can be predicted

accurately, having a probability equal to 1); b) objective uncertainty (real / actual and foreseeable, where the possible consequences are identified with the probability associated with each single consequence); c) subjective uncertainty, or of grade 2 (real, but difficult to predict, where the consequences can be identified, but the related possibilities are not known); d) complete uncertainty, or grade 3 uncertainty (theoretical, where neither the consequences of the actions, nor their probabilities are fully identified). Risk assessment as a relative statistical indicator represents the most common of the economic ways of presenting risk. The relative indicator thus obtained is called either rate hedging, or insurance level or margin of safety, or simply risk, as when it refers to the bankruptcy risk of a foreign direct investment.

A special risk, fundamental through its overwhelming importance in the development of any external marketing activity, is country risk. Actually, this kind of risk could be synthesized through the witticism “no company can get a better risk grade than the country of whose economic territory it is part”³...

Country risk through its specific indicators can be said to be a crucial signal sent to the external environment by an economy, and it contributes to the overall economic development of the respective territory to the extent to which the final grade is high, or the dynamics of scoring is ascending. Synthetically, country risk is the risk of default, or recovery risk. As a rule, country risk should not be confused with the actual risk of credit, as the debtor's location is the root cause of failing to pay back the debts in due time, or even default of loans, rather than degradation of its financial situation.

Country risk theory terminology naturally follows the landmarks of historic development as far as this concept is concerned, too. In the immediate postwar period, through the accumulation of capital in U.S. commercial banks and in some European countries, a new type of risk was identified as regards the pragmatic capitalization of those sums, in the sense that repayment of a loan from a commercial bank to a company located in another country could be blocked by the government of that country by imposing currency transfer restrictions.

This is the historical beginning of a concept which is essential in today's ranking of world economies. This type of risk, which is actually a composing part of the risks in the current concept of country risk, was called *capital transfer risk*, and only affected the borrowers of capital and private law, without

³Lăzărescu, S.. (2000). Rating. *ASE Publishing House*. Bucharest, 7

however being confused with insolvency; the debtor was not insolvent, and wanted to meet the payment obligations, but their country's government required multiple restrictions on transfer rate, which made conveying the amounts owed to foreign creditors impossible.

The risk of capital transfer occurred when the multinational company or corporation has difficulty in repatriating the profits in the host economy to the country of origin, and to the extent that these difficulties were caused by measures to limit capital outflows that the government adopted, they affected all the companies or corporations owning FDI, i.e. investment located in that space.

The collapse of the colonial empires favored the emergence of new categories of applicants for loans on the international capital markets, who came from the broad scope of the governments of the new independent states. Those sovereign entity with a special status did not allow an execution levy, which generated a new risk component of the current notion of country risk, credit risk related to governments, called sovereign risk or *sovereignty risk*.

Thus, sovereign risk is a macro-risk that affects particularly foreign loans granted to a state (country risk affecting not only the conditions for granting and repayment of external credit, but also international business located in a national space), and can be considered as a dominant component of country risk as far as failure to repay the international loans received is due to the inadequate economic policy measures adopted by the government, which limit the ability of that country to meet debt service, and if the government in question does not want that, and prohibits capital outflows abroad. The location of a host company in which foreign capital was invested has become a problem, no less than the vicinity of the areas of military conflict, which foreshadowed a risk component called *location or neighborhood risk*.

New solutions were sought for all these new risks, which were generated by the long experience of transnational corporations and companies in the field of investment, particularly in foreign direct investment, but the expectations and results did not coincide, setting up their idea of renaming them through complex aggregation to form a new concept of major risk.

Another risk has emerged on the same occasion, namely a risk that primarily affected foreign direct investment, which showed an increasing dependence in relation to political developments in the host

country, which is why the new risk component of risks in the current notion of country risk has received the name of *political risk*.

Matters were further complicated when private companies located in developing countries without government guarantees emerged as having loans on capital markets: their loans are at a complex, political, economic and social risk.⁴ Political risk is considered the most important risk to be taken into account when making an investment decision of the FDI type; this virtually affects to a major extent the development of the investment because, in a politically stable economic environment, the economic dynamics will evolve favorably, while in a politically unstable economy the economy will be the first to demonstrate that instability and show a downward trend, or even a trend of the recession type.

In the area of politics, several key issues were integrated with different consequences, emphasizing especially the type of ruling party (liberal, social or communist); political risk increases from liberal to social, and worsens for the communist parties.

The economic component of country risk has an extensive coverage area, including virtually the entire economy of the host country, including especially its vulnerabilities, being driven by factors that can affect the general economic environment, which can be systematized in different groups generically called: a) the state of national economy; b) sectoral factors group; c) internal market dimension; d) the group of the factors that shape the domestic finances; e) the group of the geographical factors, etc.

Besides the components mentioned, many other manifestations of country risk coexist, from the risk specific to quasi-sovereign borrowers (when the amounts due must be paid by government agencies or public institutions, and is associated with sovereign risk), to the systematic risk (generated by the impact of global phenomena on national economies, and affecting all countries regardless of characteristic features or size, recession and its implications being the most often cited illustration of it), and generalized country risk (an excessive multifactorial risk, where economic recession, significant changes in economic policy, social unrest, discrimination against foreign companies, and several hundreds of other collateral factors interact, amplifying the impact of this risk).

⁴ Gaftoniuc, S. (2000). International finances. *Economic Publishing House*. Bucharest, 355

Two aspects have gradually increased in importance in the analysis of country risk, namely implicit credit risk, manifested by: a) late payment; b) inability to pay debt service; c) debt repudiation; d) renegotiation of external debt; e) debt rescheduling; f) moratorium of foreign debt, etc. and investment risk, usually visible through: a) confiscation; b) nationalization; c) expropriation; d) indigenization; e) limitation / restriction on repatriation of capital; f) partial or temporary destruction of the investment due to political or social events (strikes , military conflicts, elections); g) loss of profits caused by economic crisis, the fall of the internal market, instability or legislative failure, corruption, etc.

The analysis and evaluation of country risk for FDI involve solving major issues such as: a) complete and accurate information on current political and economic situation in the host country; b) detailed analysis of risk factors, and structuring a system of specific indicators; c) building the country matrix through mathematical modelling of the system of indicators; d) evaluating and determining the dynamics of country risk or country risk index; e) formulation, based on the ratings and the country risk index, of strategic alternatives that should also include elements of risk management, etc. Analysis of country risk (or Country Risk Analysis – CRA) identifies the likelihood of this risk, and specialized agencies duly rate its components.

All these actions are centred on the idea that economic imbalances, such as transfer of capital, exchange rate, location or neighborhood, politics and sovereignty, increase investment risk and, in particular, the FDI.

The emergence of “rating” or the risk grading process, can be practically identified with the financial crisis of 1837 in the U.S., and especially with the birth of the first companies that sold financial information. The first company conducting a rating activity was “The Mercantile Agency”, founded in 1841 in New York, and the first rating textbook, published in 1857, belonged to the “Bradstreet’s-ICA” agency.

The expansion of the new activity occurred after 1970, on the short-term debt market. A major incident happened there, i.e. the bankruptcy of „Penn Central Transportation”, which caused investor losses of \$ 80 million, although the company issued securities enjoyed very good appreciation of the U.S. Office of National Credit.

The ever more pressing need for informing investors was met by the specialized rating agencies, whose tradition exceeds one century: Standard & Poor's, Moody's Investor's Service, Fitch, Duff & Phelps, Mc Carthy, Crisanti and Maffei, Coface, etc., most of them located in the U.S. After 1970, rating agencies spread consistently, being located in a wider area, from Canada to Asia and Australia. Europe, with the only exception of Sweden, is rated by the large American companies.

These specialized companies respond in more detail, through increasingly relevant information, to more diverse financial interests, and thus become a real alternative to traditional financial evaluation services offered by the major European banks.

Risk rating and scoring is closely related to the development of investment and mandate theory. Custody of savings to an investment fund turns the investor into a person less prudent and informed than agent (the fund). The conflictual component of the relationship between investors (shareholders) and agent (credited) has led to the development of rating agencies aimed essentially at “estimating risk as effectively and accurately as possible”, based on the internal information of the fund, company, country, etc. Foreseeing the investor's risk is done in time, in time information series of increasing size, and at ever shorter intervals. This attitude transforms, and establishes rating agencies as financial intermediaries for possible investors. Usefulness of rating is given by the markets with a large number of investors and high risk; risk rating or scoring is a solution for selecting the risks “favorable compared with the unfavourable ones”.

Studies on the relevance and resonance of the information provided by rating agencies note show that the impact of rating or grade changes on the price of a bond is significant over the first six months elapsed after changing the notation, the price being altered with a significant gap. The main complaints that rating faces concern the overrating nature of risk rating as a preventive solution of the agency, and the lack of real protection of investors with a good rating, who, when prices collapse, have not the time to sell their securities. The credibility of rating agencies, particularly of those in the United States, increased after 1989, when the American Congress officially asked to use their information in the field of bonds (requiring investment in those rated at least BBB).

The main stages of rating / quoting are requiring the quoting through the rating application (a real agreement, including terms and obligations of publishing, review, communication, responsibility, price

and payment terms), conducting the study, analysis and quotation proper, and finally publication of the notice. The major objectives of the system of quotation are the delineation of low-risk securities and the hedge or predominantly speculative ones, and ensuring correspondence between the short term and long term scales. The quoting scales vary from one agency to another.

COUNTRY RISK RATING

Country risk is scored differently depending on the nature of the debtor. If the debtor is a private economic entity, the common procedure is current *rating*, if it is a public concern or enterprise (a national enterprise or government body), due to lack of essential documents such as accounting and financial statements, especially the income statement, the procedure becomes one of exception. Assessment, risk analysis and scoring or quoting, in general, have entered the economic literature by the name of *rating*.

A brief overview of rating or grading risk and the agents conducting such an evaluation activity, the history, the content and its concept specificity, represents a useful procedure for our analysis. The definition of rating given by experts is “risk assessment process, attached to a debenture, synthesized in a note, and allowing a ranking according to the particular characteristics of the title and the securities of the issuer”. Although the French Banking Association (AFB) uses the term *to note* risks, the name of *rating* has come to be recognized as a specific activity of a number of agencies, mostly in Anglo-Saxon countries.

Grading scales vary from one agency to another, but whatever the history, tradition or complex, they focus on a single, homogeneous system of thought and translation from one scale to another.

Grading Scales used by the main three U.S. rating agencies Moody's, Standard & Poors and Fitch

Table no.1

AGENCY			CHARACTERISTIC FEATURES OF GRADING
Moody's	S&P'S	Fitch	
Investitional degree – highest credibility			
Aaa	AAA	AAA	Maximal certainty, best quality
Aa1	AA+	AA+	Very high degree, very good quality
Aa2	AA	AA	Very high degree, good quality
Aa3	AA-	AA-	High degree, good quality
A1	A+	A+	Average degree
A2	A	A	Average degree
A3	A-	A-	Average degree
Baa1	BBB+	BBB+	Low degree
Baa2	BBB	BBB	Low degree
Baa3	BBB-	BBB-	Low degree
Speculative investitional degree – low credibility			
Ba1	BB+	BB+	Low (speculative) degree
Ba2	BB	BB	Low (speculative) degree
	BB-	BB-	Low (speculative) degree
	B+	B+	Low (speculative) degree
	B	B	Low (speculative) degree
	B-	B-	Low (speculative) degree
Predominantly speculative investitional degree – substantial risk			
	CCC+	CCC	Substantial risk
	CCC		Substantial risk
	CCC-		Substantial risk
	CC	CC	Risk with high speculative degree
	C	C	Much higher risk than the previous ones
		DDD	Losses
		DD	Losses
	D	D	Losses

Sources: Bran P., Costică I. (1999). International financial and monetary relations. *Economic Publishing House*. Bucharest. and Lăzărescu, S.. (2000). Rating. *ASE Publishing House*. Bucharest

Rating country risk is the process involving the greatest difficulty and complexity of all the current types of risk assessment (scoring the risk of bank issuers, scoring the risk of non-bank issuers, i.e. businesses or local authorities, scoring the risks of international financial institutions or banks, and scoring country risk). Starting from simple elements such as dual approach, namely the short and long-term scoring, one can see that exceptional level of detail and diversity of country risk grading, using the example of the same three main U.S. rating agencies.

Confrontation of short and long-term scales in keeping with the agencies Moody's, Standard & Poors and Fitch

Figure no. 1

Moody's		S&P		Fitch		
Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	
Aaa	P-1	AAA	A-1+	AAA	F1+	Prime
Aa1		AA+		AA+		High grade
Aa2		AA		AA		
Aa3		AA-		AA-		
A1		P-2	A+	A-1	A+	F1
A2	A		A			
A3	A-		A-2	A-	F2	Lower medium grade
Baa1	BBB+			BBB+		
Baa2	P-3			BBB	BBB	
Baa3		BBB-	BBB-			
Ba1	Not prime	BB+	B	BB+	B	Non-investment grade speculative
Ba2		BB		BB		
Ba3		BB-		BB-		Highly speculative
B1		B+		B+		
B2		B	B			
B3		B-	B-			
Caa1		Not prime	CCC+	C	CCC	C
Caa2	CCC		Extremely speculative			
Caa3	CCC-		In default with little prospect for recovery			
Ca	CC					
		C				

Source: http://en.wikipedia.org/wiki/Credit_rating

Out of the methods of country risk analysis, the Delphi method, the method of “business environment risk index” (BERI), and the method based on the theory of firm value stand out. The Delphi method involves going through the following steps: listing the criteria considered as representative in the political domain (establishing the political regime, location in an area of conflict, military power, etc.), in economy (the structure of exports and imports, the situation in banking, savings rate, growth rate, inflation rate, etc.), and financial domain (indicators of external debt, solvency, etc.), and examination of adequacy of scoring criteria, as well as determining the criterion weighting and the ultimate goal or the actual notation. The result is the rating or scoring of the country submitted to the detailed analysis, which indicates the overall risk rating of a country.

The BERI method is characterized by periodic reviews at the country level, and uses a total of 15 criteria. The criteria have weight coefficients of importance marked “0” to “4” on an ordinal scale,

where “0” coincides with a high risk and “4” with a low risk. The product of weighting coefficients $(C_p) \times \text{grade}$ represents the final score, and the rating of the country, or the country risk indicator is: $\Sigma C_p N = \max 100$.

Country risk by BERI method

Table no. 2

BERI scoring criteria	Weighting coefficient (C_p)	Number of points (N) (from 0 to 4)	Total (maximum=100) $(\Sigma C_p N)$
Political stability of the debtor's country	3.0		
Attitude of authorities with regard to foreign investment and <i>țîilor străine</i> și repatriation of profits	1.5		
Nationalization trends	1.5		
Red tape constraints	1.0		
Observance of contracts	1.5		
Quality of legislation / accountancy norms	0.5		
Quality of infrastructure (communications and transports)	1.0		
Managerial competence of debtor	1.0		
Country's economic growth	2.5		
Inflation	1.5		
Payments balance	1.5		
Degree of convertibility of local currency (in hard currency)	2.5		
Cost of labour and productivity	2.0		
Short-term credits available on local market	2.0		
Possibilities of long-term debt in local currency, especially as capital increases	2.0		

Source: Sylvie de Coussergues, (1996), *Gestion de la banque* Dunod Publishing House, Paris.

Country risk (final scoring or grading) brings together countries in four categories, according to the score:

- countries with unacceptable risk $(\Sigma C_p N \leq 40 \text{ points})$;
- countries with high risk $(41 \leq \Sigma C_p N \leq 55)$;
- countries with moderate risk $(56 \leq \Sigma C_p N \leq 69)$;
- countries with low-risk $(\Sigma C_p N \geq 70)$.

A synthetic method used in Europe is that employed by Euromoney, drawing on the scores given by experts and coming to six categories of indicators, three types of qualitative risks, namely political risks (30%), economic performance (30%), and structural evaluation (10%), plus another three quantitative categories: external debt indicators (10%), credit ratings (10%) and access to finance through banks or capital markets (10%):

- political risk (30%), defined as the sum of the risk of default or the risk of not servicing external debt, which arises from corruption, the risk of default and failure to repatriate capital, stable government, access / transparency information, institutional risk, regulatory and policy environment;

the general indicator is obtained from the average values assigned by risk analysts, each analyst with the right to give 10 points (when the political risk is zero) and a minimum of zero (when the chances of recovering the debt are considered null);

b) economic performance (30%), considered as an average forecast for the current year and the following year, made by the global forecasts, and the economic variables on which a score is given by the experts interviewed by Euromoney, a score between 0 (a disastrous economic situation) and 100 (the most powerful economy); the criteria are: economic growth, monetary stability, current account and budget, unemployment and structural imbalances;

c) performance, defined structurally (10%), derived from the assessments of the indicators relating to demographics, heavy and light infrastructure, labour and employment / industrial relations.

d) external debt indicators (10%), which are calculated based on information published in World Bank "World Debt Tables" on foreign debt service / exports (A); current account balance / GDP (B); foreign debt / GDP (C), and the final score = $C + (A * 2) - (B * 10)$;

e) credit ratings (10%), determined as the average of sovereign risk ratings established by Moody's, Standard & Poors and Fhitch (10%);

f) access to financing through banks or on capital markets (10%), finally measured through the rate of each country's accessibility to international markets.

The average qualitative country risk can also be determined, by combining the political risks (43%), the economic (43%) and structural risks (14%) coming from experts around the world.

Detailed country risk score awarded by Euromoney

Table no. 3

Romania expert scores	
Average score	48.83
Economic assessment	50.87
Political assessment	47.95
Structural assessment	45.28
Last updated: On December 15, 2011	
Other data scores	
Access to capital	61.70
Credit ratings	41.70
Debt indicators	69.90
Last updated: On December 15, 2011	

Source: <http://www.euromoneycountryrisk.com/Countries/Romania/Overview>

The method previously analyzed is regarded as one of the easiest modalities, both in terms of design and the application, and has a higher degree of objectivity in comparison with the other international

risk assessment agencies (which it also includes in its calculation, through their mean value). The extreme simplification of the economic, political and social features of the countries analyzed does not prevent investors from also using individual methods of assessing the investment attractiveness of a particular country. The general logic of Euromoney rating is “the score is higher, so the country’s situation is more favorable to FDI”.

Country risk rating has an influence on investment decisions, and correlates with profits significantly, rating agencies have credibility in the market and capture the impact of relevant macroeconomic variables properly, resulting in a distribution of FDI in relation to the recognised competitiveness of economies seeking ever more profitable investments. Eight major macroeconomic variables can be distinguished, which are related to FDI and hence the risk rating of the country, to which they have a significant contribution: income per capita, GDP growth, inflation, fiscal balance, external balance, external debt, economic development and history of default. Country risk rating is statistically correlated more intensely with per capita income growth, inflation, external debt, economic development and default history (which generates changes in the tax regime), and the ratings have correctly anticipated the impact of these variables over time.

Traditionally, country risk analysis is based on financial performance, characterized by various economic indicators, including *liquidity* (through such indicators as the ratio of export entries and the debt level, the ratio of the country’s foreign exchange reserves and imports, etc.), *profitability* (through indicators such as GDP growth, export growth and increase in per capita income, etc.), and *debt structure* (by comparing the total external debt to recover and the exports index, the ratio of debt to gross domestic product, etc.). These economic indicators, and many others gathered in the complex concept of country risk rating, evaluated and rated, affect rating in a positive or negative manner.

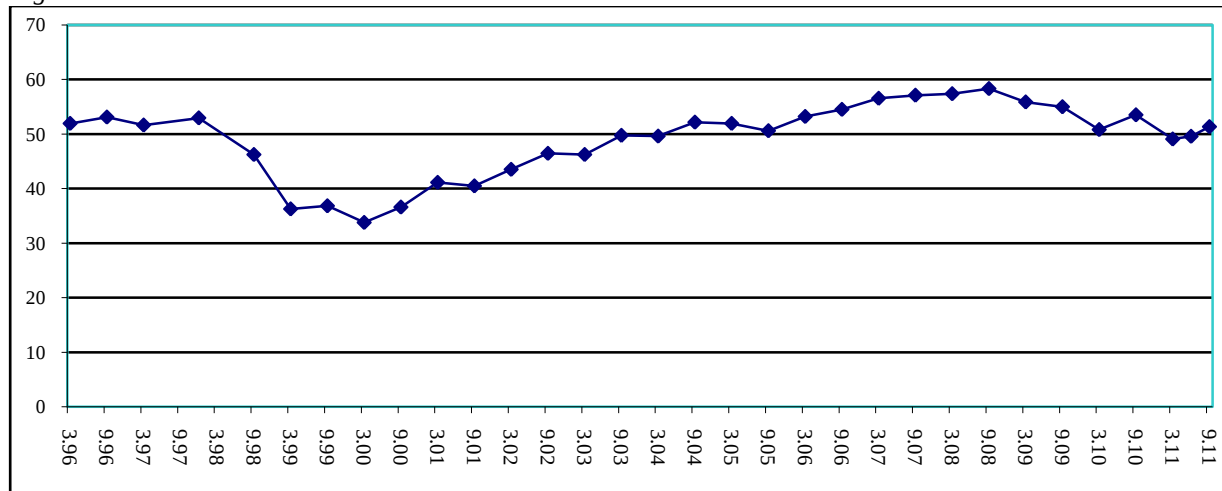
It should always be borne in mind that country risk also includes political risk, and political realities tend to be more volatile in the future than in the recent past, suggesting the vital importance of political factors in country risk analysis, by permanently including three evaluation directions: a) changes in government regime, i.e. the frequency of change or the smooth process of transition in political leadership; b) political legitimacy, i.e. the extent to which the economic process is democratic or authoritarian; c) military conflict, i.e. the period when the country is involved in armed conflict. Also there are a large number of general factors including *poor management* of the economy and *corruption*,

which can significantly change the volume of FDI, not only directly but also indirectly, mainly correlated (high corruption levels can sometimes promote the growth of FDI, and a low level of corruption can also generate the same effect, but taking into account the impact limits).

ROMANIA'S RATING

Dynamics of Romania's country risk rating according to the Euromoney agency

Figure no. 2



Source: The data was selected by the author from <http://www.euromoneycountryrisk.com/>

The following table describes the changes in ratings according to information provided by three agencies:

Dynamics of changes in Romania's country risk rating according to the Moody's, Standard & Poors and Fitch agencies

Table no. 4

Annual report of December or on the date of the rating change	Moody's	S&P	Fitch - IBCA
6 March 1996	Ba3	BB-	BB-
23 December 1996	B1		
30 April 1997		BB-	
11 September 1997			BB-
21 December 1997	B1		
23 January 1998		BB-	
20 May 1998		B+	
23 September 1998			BB-
7 August 1998	Ba3		
19 October 1998		B-	
23 December 1998			B
24 March 1999			B-

1 April 1999		B-	
7 September 1999	B3		
21 December 1999	B3		B-
4 August 2000		B-	
21 September 2000			B-
16 November 2000			B
21 December 2000	B3		
5 March 2001		B-	
7 June 2001		B	
10 September 2001	B3		
14 November 2001			B
19 April 2002		B+	
14 June 2002			B+
30 October 2002			BB-
21 December 2002	B1		
27 February 2003		BB-	
17 September 2003		BB	
24 September 2003			BB-
11 December 2003	Ba3		
18 December 2003			BB
23 August 2004			BB
14 September 2004		BB+	
21 December 2004	Ba3		
17 November 2004			BBB-
1 February 2005		BB+	
2 March 2005	Ba1		
6 September 2005		BBB-	
1 November 2005		BBB-	
21 December 2005	Ba1		
30 March 2006	Ba1		
31 August 2006			BBB
5 September 2006		BBB-	
6 October 2006	Baa3		
5 April 2007		BBB-	
31 January 2008			BBB
1 May 2008	Baa3		
27 October 2008		BB+	
9 November 2008			BB+
21 December 2008	Baa3		BB+
20 March 2009	Baa3		
5 October 2009		BB+	
21 December 2009	Baa3		
2 February 2010			BB+
9 March 2010		BB+	
22 December 2010	Baa3		
4 July 2011			BBB-
29 November 2011		BB+	
22 December 2011	Baa3		

Sources: <http://www.moodys.com/cust/default.asp>; <http://www.standardpoor.com/> și <http://www.fitchratings.com/>

From the practice of international rating in the last two decades, one can infer several important conclusions. The main consequence of improved country rating lies in the increase in the accessibility of economy on the international capital markets, lending and increase in the attractiveness of

international investment of the FDI type. In the context of global financial crisis and recession, the advanced countries have reached the level of debt they had at the end of the Second World War, yet without it being the result of another world conflict (according to a statement by José Vinals, director of the IMF, in *Financial Times*, April 21, 2010). Interpreting ratings of the multiple developments, or according to several rating agencies can sometimes be a contradictory process. A telling example can be provided by the very notation of Romania country risk for the first eight months of 2010, within a context where the national economy coming out of recession was expected, and was to become an economic reality.

A Case Study: The evolution of Romania's country rating in 2010

In January 2010, Romania considerably improved country rating, from B+ to A4. Country rating was granted by the Coface assessment company, founded in 1996, and which is in turn evaluated by Fitch and Moody's; it assessed over 151 countries worldwide. The country rating in the Coface system combines the analysis of credit rating and that of the score. Credit rating establishes credit limits for companies, being given to 44 million companies in the world. Score rating measures the probability of default of a company during one year (large companies and significant SMEs). The Coface method turns to account seven indicators: vulnerability in development, political and institutional instability, fragility of the banking system, foreign currency liquidity crisis, external indebtedness, vulnerability to foreign capital, payment behaviour of companies. The credit rating agency Fitch has improved Romania's rating expectancy from "negative to stable", while also confirming credit rating on long-term foreign and domestic loans to BB+, respectively BBB-, motivating its decision by better economic conditions. Moody's has taken into account an upward revision of Romania's rating, awarding it rating Baa3, the last step of the category recommended for investment. In March 2010, the rating agency Standard & Poor's (S&P) revised, from negative to stable, the expectancy for Romania's credit ratings on long-term, in hard currency and local currency, following the program supported by budgetary reform and the likelihood that the Government continue observance of the agreement with the International Monetary Fund (IMF) and the European Union (EU), thus attenuating the external financial pressures, (Marko Mrsnik, S & P analyst). Forecasts subsequent to March suddenly became more optimistic. Romania's economy can slightly recover, perhaps in 2010, mainly on account of recovering demand in foreign markets, while domestic demand remains low... In June, Fitch, not wanting to bring up the worst possible scenario, estimated that the Romanian economy would decrease by one percent in 2010 and no significant improvement in the rating given to the state is expected

(Richard Hunter, managing director EMEA & Asia Pacific Fitch Ratings). According to an index overseeing the countries' risks to become bankrupt, calculated using CDS quotations for 5 years, Romania ranks 9. Thus, the country's PCD index (cumulative probability of default) reached on June 9, 2010, 23.99%, which led Romania to get the top 10 countries at risk of bankruptcy. Venezuela remains first, followed by Argentina, Greece and Pakistan. Moreover, according to the source quoted, Romania is ranked worse than Hungary (*National Courier*). Yet the credit rating agency Fitch Ratings confirmed, on August 9, 2010, Romania's rating for long-term debt issued in foreign currency and lei was "BB +" and "BBB-" with stable outlook; at the same time, the rating agency Fitch maintained the Romania maximum country amount and the rating for short-term loans in foreign currency as 'BBB', respectively 'B'. the credit rating agency appreciated, however, that our country may fall into the category of countries with high investment in view of the business environment and its governance, its membership of the European Union and its per capita income. Romania would be able to return to economic growth sustainable through exports and to stabilize its public finances (Fitch). At the end of 2010, more precisely on December 22, the specialized country rating agency Moody's repositioned our national economy on its own scale at Baa3. After this signal a trend of improvement was to be taken over by the other rating agencies, but in 2011, when the Romanian economy confirmed its getting out of recession. Controversial interpretations, tendentious contradiction and differentiated potentiality of developments point clearly enough the complexity of country risk rating. The relevance of the rating agencies' ranking give them the quality of main sources, or the quality of sources with a high degree of objectivity, especially in the field of investment. Country risk scoring is, and will remain, one of the most useful types of statistical information for investors and investments such as FDI, for local authorities and governments. Today's country risk is ever more closely linked to actual or potential inability to ensure debt service. As economic risk is in direct connection with the total and the annuity of external debt, a permanent increase can be noted in the developing countries' risk in recent decades, and even in some developed countries, especially during post-recession.

ECONOMETRIC APPROACH

In order to prove that country risk rating is a factor of influence of the FDI inflows, one of the objectives of this paper is to investigate, to identify, to specify, to parameterize, to test and to validate some modern econometric models of FDI in Romania, after 1990, based on country risk rating. This idea has started from the observation that several models exploit partially the economic, political and

social risk or, at least some components of these risks. The achievement of an econometric model of FDI, based on the correlation between FDI and country risk, more or less multifactorially detailed, is a normal step in the context of increasing importance in world of the specialized agencies of country risk rating, after the latest global recession and the alarming escalation of the external debts by many national economies.

The evolution of country risk rating index in Romania, after 1996, according to the first three American agencies (reviewed in %), and Euromoney

Table no.5

Year	Country risk rating in Romania* (reviewed according to the scale and hierarchy)			Country risk rating index in Romania (Previous year =100%)			Country risk rating in Romania –Euromoney (ECR)			
	Moody's	S&P'S	Fitch	Moody's	S&P'S	Fitch	A.variant annual average	B.variant rating IX Month	C.variant rating III Month	Index of C.Variant III Month
1996	35	45,40	45,40	-	-	-	52,34	53,11	51,95	-
1997	35	45,40	45,40	100,0	100,0	100,0	52,00	52,96	51,65	99,4
1998	40	40,85	40,85	114,3	90,0	90,0	50,72	46,25	46,25	89,6
1999	25	40,85	31,75	62,5	100,0	77,7	38,13	36,85	36,28	78,4
2000	25	40,85	31,75	100,0	100,0	100,0	35,25	36,62	33,80	93,2
2001	25	36,30	36,30	100,0	88,9	114,3	40,17	40,50	41,14	121,7
2002	35	40,85	45,40	140,0	112,5	125,1	44,00	46,46	43,53	105,8
2003	40	49,95	45,40	122,3	122,3	100,0	47,46	49,76	46,25	106,2
2004	40	54,50	49,95	100,0	109,1	110,0	50,50	52,18	49,62	107,3
2005	50	59,05	59,05	108,3	108,3	118,2	51,54	50,61	51,95	104,7
2006	55	59,05	63,60	100,0	100,0	107,7	53,12	54,52	53,22	102,5
2007	55	59,05	63,60	100,0	100,0	100,0	56,40	57,12	56,55	106,3
2008	55	54,50	63,60	92,3	92,3	100,0	57,66	58,33	57,39	101,5
2009	55	54,50	54,50	100,0	100,0	85,7	56,00	55,00	55,88	97,4
2010	55	54,50	54,50	100,0	100,0	100,0	52,42	53,52	50,82	90,9
2011	55	54,50	59,05	100,0	100,0	108,3	50,72	51,51	49,09	96,6

Source: Euromoney (<http://www.euromoneycountryrisk.com/>), Moody's (<http://www.moodys.com/>), S&P (<http://www.standardpoor.com/>), Fitch-IBCA (<http://www.fitchratings.com/>). Note*: The rating of the agencies was recalculated on a percentage scale of 20 steps ranging from 0 to 100% for the Moody's agency, and 22 steps for the S&P, respectively Fitch, according to the number and hierarchy of the ratings declared methodology by each agency.

The econometric models have started from the data series concerning FDI inflows in Romania between 1996 and 2010, according to The World Bank, Moody's, S&P, Fitch and Euromoney.

The FDI are approached as endogenous variable in relation to the ratings of Moody's, S&P, Fitch and Euromoney agencies but also with the other exogenous variables.

Correlation matrix of net FDI and FDI net inflows indexes, and also the GDP shares of FDI net inflows with the variants of Euromoney country risk rating in Romania, between 1998 and 2010

Table no. 6

	FDI net index (previous year = 100 %)	FDI net inflows index (previous year = 100 %)	FDI net inflows (% of GDP)	ECR ROMANIA Variant A Annual average of scores weighted with the months	ECR ROMANIA Variant B Annual score issued in september	ECR ROMANIA Variant C Annual score issued in March	Variant C index
	SER01	SER02	SER03	SER04	SER05	SER06	SER07
SER01	1,000000	0,999290	0,639831	0,127059	0,176272	0,100116	0,320111
SER02	0,999290	1,000000	0,644398	0,132396	0,183654	0,104641	0,316564
SER03	0,639831	0,644398	1,000000	0,522809	0,526907	0,539899	0,240649
SER04	0,127059	0,132396	0,522809	1,000000	0,966732	0,983553	0,134525
SER05	0,176272	0,183654	0,526907	0,966732	1,000000	0,976949	0,248827
SER06	0,100116	0,104641	0,539899	0,983553	0,976949	1,000000	0,254926
SER07	0,320111	0,316564	0,240649	0,134525	0,248827	0,254926	1,000000

Source: Data were collected by the author with the permission of ECR Team for B and C variants from <http://www.euromoneycountryrisk.com/>, and for A variant the calculations have been made. The calculation of the index corresponding to the year 1997 (the first year when FDI reached a billion dollars amount) has shortened the length of data series.

The unusual evolution due to the recession and the atypic investment impact in the pre and post EU accession of Romania, doesn't allow highly correlated models (unifactorial or multifactorial) based on ECR rating, but it can be selected the following model (with the correlation report over 0.5)

Optimal econometric model based on ECR rating

Table no.7

FDI net inflows (% GDP) _i = $\alpha + \beta \times \text{Gross savings (\% W GDP)}_i + \gamma \times \text{ECR var } A_i + \varepsilon_i$
FDI net inflows (% GDP) _i = $-32,82166 + 1,299426 \times \text{Gross savings (\% W GDP)}_i + 0,207089 \times \text{ECR var } A_i + \varepsilon_i$

Parameterization and testing by EViews

Table no.8

Dependent Variable: SER01- Method: Least Squares Sample: 1998 2010				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-32.82166	7.386695	-4.443349	0.0012
W GDP _i	1.299426	0.309634	4.196651	0.0018
ECR var A_i	0.207089	0.052565	3.939656	0.0028
R-squared	0.743404	Mean dependent var		4.715385
Adjusted R-squared	0.692085	S.D. dependent var		2.460300
S.E. of regression	1.365223	Akaike info criterion		3.659687
Sum squared resid	18.63834	Schwarz criterion		3.790060
Log likelihood	-20.78797	F-statistic		14.48589
Durbin-Watson stat	2.263559	Prob(F-statistic)		0.001112

Software: EViews

Correlation matrix of the GDP shares of FDI net inflows with the variants of rating in Romania between 1996 and 2010

Table no.9

	FDI net inflows (% GDP)	GDP Growth rate (previous year = 100 %)	UE Gross saving (% of GDP)	W Gross saving (% of GDP)	Unemployment rate (%)	Moody's rating reevaluated (%)	S&P rating reevaluated (%)	Fitch rating reevaluated (%)	Moody's rating index reevaluated (%)	S&P'S rating index reevaluated (%)	Fitch rating index reevaluated (%)
	SER03	SER08	SER09	SER10	SER11	SER12	SER13	SER14	SER15	SER16	SER17
SER03	1,000000	0,539350	0,562913	0,516813	-0,649969	0,377480	0,640672	0,460396	-0,100422	-0,032081	0,236695
SER08	0,539350	1,000000	0,456398	0,257113	-0,593241	0,007637	0,191845	0,015707	0,129846	0,221195	0,600563
SER09	0,562913	0,456398	1,000000	0,914512	-0,218435	-0,117361	0,099586	-0,020589	-0,090733	-0,156984	0,159953
SER10	0,516813	0,257113	0,914512	1,000000	-0,035392	-0,198727	0,060683	-0,124690	-0,197987	-0,213011	0,081718
SER11	-0,649969	-0,593241	-0,218435	-0,035392	1,000000	-0,637617	-0,796446	-0,728263	-0,155919	-0,137736	-0,391092
SER12	0,377480	0,007637	-0,117361	-0,198727	-0,637617	1,000000	0,891356	0,951578	-0,363830	-0,158825	-0,368191
SER13	0,640672	0,191845	0,099586	0,060683	-0,796446	0,891356	1,000000	0,906512	-0,255500	-0,243078	-0,074998
SER14	0,460396	0,015707	-0,020589	-0,124690	-0,728263	0,951578	0,906512	1,000000	-0,166673	-0,101463	-0,259797
SER15	-0,100422	0,129846	-0,090733	-0,197987	-0,155919	-0,363830	-0,255500	-0,166673	1,000000	0,463613	0,636740
SER16	-0,032081	0,221195	-0,156984	-0,213011	-0,137736	-0,158825	-0,243078	-0,101463	0,463613	1,000000	0,304979
SER17	0,236695	0,600563	0,159953	0,081718	-0,391092	-0,368191	-0,074998	-0,259797	0,636740	0,304979	1,000000

Software: EViews

The ratings of the American agencies have important contribution in final determination: the Country Risk Scores (CRS) of S&P and Fitch are the best correlated with the amount of FDI in Romania between 1996 and 2010, while all the variables representing rating indexes do not present acceptable intensity of modelation.

Optimal econometric models based on S&P country risk rating

Table no.10

A	FDI net inflows (% GDP) $_i = \alpha + \beta \times \text{GDP rate}_i + \gamma \times \text{W gross savings}_i + \delta \times \text{S\&P rating}_i + \epsilon_i$ (optimal multifactorial model)
B	FDI net inflows (% GDP) $_i = \alpha + \beta \times \text{EU gross savings}_i + \gamma \times \text{S\&P rating}_i + \epsilon_i$ (minimal multifactorial model)
A	FDI net inflows (% GDP) $_i = -19,47693 + 0,139842 \times \text{GDPrate}_i + 0,739328 \times \text{W gross savings}_i + 0,163845 \times \text{S\&P rating}_i + \epsilon_i$ (optimal maximal multifactorial model)
B	FDI net inflows (% GDP) $_i = -27,65951 + 1,173013 \times \text{EU gross savings}_i + 0,174937 \times \text{S\&P rating}_i + \epsilon_i$ (optimal minimal multifactorial model)

Software: E Views

The Durbin-Watson test and the F-statistic test validate both models.

Table no.11

Dependent Variable: FDI net inflows (% GDP) _i Method:Least Squares Sample: 1997 2010 A. Maximal multifactorial (optimal) model				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-19.47693	6.978087	-2.791155	0.0191
GDP rate _i	0.139842	0.071926	1.944247	0.0805

W gross savings _i	0.739328	0.310692	2.379621	0.0386
S&P rating _i	0.163845	0.048814	3.356498	0.0073
R-squared	0.738555	Mean dependent var		4.621429
Adjusted R-squared	0.660122	S.D. dependent var		2.389779
S.E. of regression	1.393219	Akaike info criterion		3.736067
Sum squared resid	19.41059	Schwarz criterion		3.918655
Log likelihood	-22.15247	F-statistic		9.416331
Durbin-Watson stat	2.031165	Prob(F-statistic)		0.002924

Table no.12

Dependent Variable: FDI net inflows (% GDP) _i Method: Least Squares Sample: 1997 2010 B. Minimal multifactorial (optimal) model				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-27.65951	8.449746	-3.273413	0.0074
EU gross savings _i	1.173013	0.409883	2.861824	0.0155
S&P rating _i	0.174937	0.052188	3.352079	0.0065
R-squared	0.662067	Mean dependent var		4.621429
Adjusted R-squared	0.600625	S.D. dependent var		2.389779
S.E. of regression	1.510247	Akaike info criterion		3.849833
Sum squared resid	25.08932	Schwarz criterion		3.986774
Log likelihood	-23.94883	F-statistic		10.77544
Durbin-Watson stat	1.707082	Prob(F-statistic)		0.002562

The originality of these models overcomes prior difficulties and certifies the character of signal in terms of the country risk rating and its impact over the FDI inflows and the GDP shares of FDI net inflows for the foreign investor. The quality of the econometric models of

FDI based on country risk rating has been confirmed in Romania, between 1996 and 2010, and the perspective increases the importance of this variable for the determination of the FDI volume.

The main conclusions of the paper are drawn from the theory of country risk and the specific evaluation by specialized agencies, and seek to exploit different notations or specific scores and their dynamics with respect to the Romanian economy, according to data available for the most relevant U.S. and European agencies, after 1996. The fundamental and original hypothesis of the present study is related to country risk rating as a signal of oscillations in FDI dynamics. The major investor's behaviour holds true for all investments, slightly more nuanced for FDI, defined by a corollary based on the assertion that "*fear is stronger than greed*". This psychological approach explains why in practice FDI collapse faster than it expand or grow, as the credible signal of expected FDI variability over the last two decades has been established the country risk rating assessed by specialized agencies, for the direct investor and direct investment firms.

CONCLUSIONS

The conclusion of this theoretical approach is that the country risk rating affects the investment decision, and correlates with profits to a significant degree, which is assumed and subsequently also verified. Country Risk Agencies have credibility in the market and capture the impact of relevant macroeconomic variables properly, resulting in a distribution of FDI in relation to recognized competitiveness of economies seeking more profitable investments. Eight major macroeconomic variables, related to FDI and hence to the risk rating of the country, to which they have a significant contribution, can be distinguished: income per capita, GDP growth, inflation, fiscal balance, external balance, external debt, economic development and history of default or payment failure. Country risk rating is statistically correlated more intensely with per capita income growth, inflation, external debt, economic development and default history (generating changes in the tax regime), and the ratings have correctly anticipated the impact of these variables in time.⁵

The proposal derived from this is to set up and maintain a number of databases concerning Romania's country rating, in a national publication for economics or statistics, which could be exploited in modelling and forecasting, for a time interval relating to the nearer or remoter future, which we think will have a significant positive impact on future research.

⁵ Săvoiu Gh., Popa Suzana. (2012). An original econometric model of FDI in Romania. *Romanian Statistical Review*. No.3. 54. www.revistadestatistica.ro

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Year	DI net inflows (% of GDP)	GDP Growth rate previous year = 100 (%)	RON inflation, consumer prices previous year = 100 (%)	RO Gross domestic savings % of GDP)	RO Gross savings % of GDP)	RO Inflation, GDP deflator (previous year = 100 (%)	JE Gross savings % of GDP)	WGross savings (% of GDP)	Real interest rate* (%)	Unemploy- ment rate (%)	ECR Varianta A	ECR index Varianta A	Country risk score Moody's reviewed in (%)	Country risk score S&P reviewed in (%)	Country risk score Fitch reviewed in (%)	Index Country risk score Moody's (reviewed in %)	Index Country risk score S&P (reviewed in %)	Index Country risk score Fitch (reviewed in %)
1996	0.7	4.0					20.0											
1997	3.4	-6.1	154.8	13.6	14.3	147.3	20.6	22.6	-30.2	8.9	52.34	99.5	35	45.40	45.40	100.0	100.0	100.0
1998	4.8	-4.8	59.1	9.7	10.5	55.2	20.9	22.3	0.1	10.4	52.00	97.5	35	45.40	45.40	114.3	90.0	90.0
1999	2.9	-1.2	45.8	11.2	11.8	47.8	20.5	21.8	12.1	11.8	50.72	75.2	40	40.85	40.85	62.5	100.0	77.7
2000	2.8	2.1	45.7	14.3	15.8	44.3	20.3	22.1	6.7	10.5	38.13	92.4	25	40.85	31.75	100.0	100.0	100.0
2001	2.9	5.7	34.5	14.9	17.0	37.4	20.2	21.1	5.8	8.8	35.25	114.0	25	40.85	31.75	100.0	88.9	114.3
2002	2.5	5.1	22.5	16.0	18.4	23.4	20.1	20.4	9.7	8.4	40.17	109.5	25	36.30	36.30	140.0	112.5	125.1
2003	3.1	5.2	15.3	14.3	16.3	24.0	19.8	20.5	1.2	7.4	44.00	107.9	35	40.85	45.40	122.3	122.3	100.0
2004	8.5	8.4	11.9	13.2	16.0	15.0	20.6	21.5	9.2	6.3	47.46	106.4	40	49.95	45.40	100.0	109.1	110.0
2005	6.6	4.2	9.0	12.3	15.8	12.3	20.3	21.9	6.5	5.9	50.50	102.1	40	54.50	49.95	108.3	108.3	118.2
2006	9.3	7.9	6.6	14.7	17.3	10.8	21.2	22.9	2.9	5.2	51.54	103.1	50	59.05	59.05	100.0	100.0	107.7
2007	5.9	6.0	4.8	16.9	20.7	13.0	22.0	22.6	0.3	4.0	53.12	106.2	55	59.05	63.60	100.0	100.0	100.0
2008	6.9	9.4	7.8	18.6	22.6	11.6	20.8	21.4	3.1	4.4	56.40	102.2	55	59.05	63.60	92.3	92.3	100.0
2009	3.0	-8.5	5.6	23.6	29.0	6.5	18.0	18.5	10.1	7.8	57.66	97.1	55	54.50	63.60	100.0	100.0	85.7
2010	2.1	0.9	6.1	25.1	26.3	3.6	18.4	19.3	10.1	7.0	56.00	93.6	55	54.50	54.50	100.0	100.0	100.0

Extended correlation matrix for all the country risk agencies (Moody's, S&P, Fitch and Euromoney)

	SER01	SER02	SER03	SER04	SER05	SER06	SER07	SER08	SER09	SER10	SER11	SER12	SER13	SER14	SER15	SER16	SER17	SER18
SER01	1.000000	0.539350	0.303037	0.258313	0.118077	0.284853	0.562913	0.516813	0.002464	0.649969	0.287253	0.263318	0.377480	0.640672	0.460396	0.100422	0.032081	0.236695
SER02	0.539350	1.000000	0.543415	0.094779	0.023188	0.508073	0.456398	0.257113	0.308671	0.593241	0.323649	0.495096	0.007637	0.191845	0.015707	0.129846	0.221195	0.600563
SER03	0.303037	0.543415	1.000000	0.392694	0.497492	0.996587	0.164531	0.382988	0.828056	0.527657	0.074188	0.200221	0.425496	0.414434	0.384487	0.094787	0.202584	0.180035
SER04	0.258313	0.094779	0.392694	1.000000	0.969849	0.424435	0.667373	0.747204	0.231500	0.371097	0.390651	0.044930	0.594255	0.431137	0.515816	0.017970	0.058347	0.067828
SER05	0.118077	0.023188	0.497492	0.969849	1.000000	0.521194	0.601932	0.722034	0.276111	0.496001	0.412078	0.141205	0.643115	0.525992	0.608765	0.044319	0.030520	0.015771
SER06	0.284853	0.508073	0.996587	0.424435	0.521194	1.000000	0.208580	0.413953	0.844682	0.505421	0.093728	0.174258	0.432013	0.419452	0.382854	0.098558	0.172864	0.174699
SER07	0.562913	0.456398	0.164531	0.667373	0.601932	0.208580	1.000000	0.914512	0.308118	0.218435	0.127325	0.170038	0.117361	0.099586	0.020589	0.090733	0.156984	0.159953
SER08	0.516813	0.257113	0.382988	0.747204	0.722034	0.413953	0.914512	1.000000	0.448265	0.035392	0.112921	0.018471	0.198727	0.060683	0.124690	0.197987	0.213011	0.081718
SER09	0.002464	0.308671	0.828056	0.231500	0.276111	0.844682	0.308118	0.448265	1.000000	0.001944	0.142964	0.139389	0.102034	0.009550	0.030416	0.061960	0.095784	0.026963
SER10	0.649969	0.593241	0.527657	0.371097	0.496001	0.505421	0.218435	0.035392	0.001944	1.000000	0.381678	0.540575	0.637617	0.796446	0.728263	0.155919	0.137736	0.391092
SER11	0.287253	0.323649	0.074188	0.390651	0.412078	0.093728	0.127325	0.112921	0.142964	0.381678	1.000000	0.359801	0.879247	0.748402	0.861990	0.342538	0.191156	0.501990
SER12	0.263318	0.495096	0.200221	0.044930	0.141205	0.174258	0.170038	0.018471	0.139389	0.540575	0.359801	1.000000	0.175094	0.060377	0.009493	0.685327	0.191247	0.751743
SER13	0.377480	0.007637	0.425496	0.594255	0.643115	0.432013	0.117361	0.198727	0.102034	0.637617	0.879247	0.175094	1.000000	0.891356	0.951578	0.363830	0.158825	0.368191
SER14	0.640672	0.191845	0.414434	0.431137	0.525992	0.419452	0.099586	0.060683	0.009550	0.796446	0.748402	0.060377	0.891356	1.000000	0.906512	0.255500	0.243078	0.074998
SER15	0.460396	0.015707	0.384487	0.515816	0.608765	0.382854	0.020589	0.124690	0.030416	0.728263	0.861990	0.009493	0.951578	0.906512	1.000000	0.166673	0.101463	0.259797
SER16	0.100422	0.129846	0.094787	0.017970	0.044319	0.098558	0.090733	0.197987	0.061960	0.155919	0.342538	0.685327	0.363830	0.255500	0.166673	1.000000	0.463613	0.636740
SER17	0.032081	0.221195	0.202584	0.058347	0.030520	0.172864	0.156984	0.213011	0.095784	0.137736	0.191156	0.191247	0.158825	0.243078	0.101463	0.463613	1.000000	0.304979
SER18	0.236695	0.600563	0.180035	0.067828	0.015771	0.174699	0.159953	0.081718	0.026963	0.391092	0.501990	0.751743	0.368191	0.074998	0.259797	0.636740	0.304979	1.000000