

# THE ANALYSIS OF COUNTRY RISK BY MEANS OF ALTERNATIVE METHODS

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## Abstract

*There are many situations in which the country risk must be considered. Those situations could be when one wants to make an investment in another country; when a loan is given; or, even when a stronger and a more powerful economic union is desired. There are many ways to measure the country risk. These methods are created by central banks, rating agencies and international banking institutions. There is a new method the country risk can be measured, with the help of a financial instrument, derived from lending. This paper presents the bond between country risk and credit default swap. Because of the financial-economic crisis, the values of country risk fluctuated considerably, especially in those countries with a large public debt.*

**Keywords:** country risk, derivative instruments, country rating, crisis, default

## Introduction

For a better understanding of the concepts, these elements must be explained: country risk, rating agencies or derivative financial instruments. First of all the country risk and its components must be explained. This type of risk is indeed a special risk.

This paper examines the impact of sovereign credit default swap's price over the deterioration or improvement of the country's rating. In the first part of the paper two key concepts are explain. Those concepts are: country risk and the financial derivative instruments known as credit default swap. The country risk is split in three components.

The fact that the global economy is going through some changes must be taken into account. These shocks are of course the effect of the global financial-economic crisis during 2008. There are countries that they manage to survive the crisis, of course with some loss. These ones are the countries with advanced economies. Some countries suffered shocks so big that their economy dropped, along with that, the macroeconomic indicators fallen also. During the actual economic crisis the classification of countries by the gross domestic product changed. And therefore, it is a good opportunity to make the country risk analysis.

In this study it will be given the values of country risk with the help of the sovereign credit default swap's market. This idea is based on the fact that the price is set free on this market, at the intersection of supply and demand. In this type of market the information reaches the recipient in a very short time. This is presented parallel with the country rating calculated by various rating agencies.

## The country risk

In a broad sense, country risk is the probability of financial losses in international business, losses generated by certain macroeconomic or politic events of the considered country. Although it is unlikely that a country can go bankrupt, a country can declare its independence in any

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ways and a country cannot be sued in without its consent. In the '70, during the oil crisis, the country risk played an important role. In those times, countries like Argentina and Mexico almost went into default.

The country risk can be defined in many ways, the uncertainty that arises when there are funds to be transferred abroad, the evaluation of a country's credibility, especially in terms of external debt payment, the scenario that a country don't want or cannot honor their commitments to foreign partners or the borrowers from a country cannot pay their debt obligations because of some factors beyond their capacity.

This type of risk could appear in other situations also, the government of a country could suspend the assets of foreign companies; the military conflict could damage the goal of investors or could stop the ongoing operations; the economic difficulties from a country may hold back the repatriation of profit into a powerful currency.

Following, it can create strong relationships between the country risk and its components: political risk, economic risk and social risk. Country risk is divided into three types of risk mentioned above.

The political risk is linked with the country's willingness to meet its external commitments. The political instability can develop certain negative situations for creditors, like the denial of loan contracts; limit or ban foreign investment; the interdiction of the transfer of capital; the cease of payments to abroad partners or the stopping of imports and exports.

The social risk is resulting from exposure to losses in terms of international flows of transactions caused due to social events. These social events could mean: strikes, civil war, conflicts of interest arising from regional political polarization.

The last component of the country risk, the economic risk is represented by the ability of a country to be able to pay its external debt. This type of risk is resulting from a country's inability to transfer a loan obtained by a public or private entity, although the company may be solvent. The lack of foreign currency reserves is determining insolvency.

Of course, when one wants to determine the risk of a country one must take into consideration the values and the evolution of that country's macroeconomic indicators.

The country risk analysis is not a reliable answer, the results are estimated. This happens because the measurements have a qualitative feature and they are done with the help of quantitative indicators. These types of analysis are done by specialized organizations. The entities that make the analysis regarding the country risk are divided as follows:

- International financial organizations: B.I.S., I.M.F., B.E.R.D.
- universities
- authorized commercial banks
- specialized rating agencies: Euro money, Institutional Investors, Standard and Poor, Moody's, Fitch

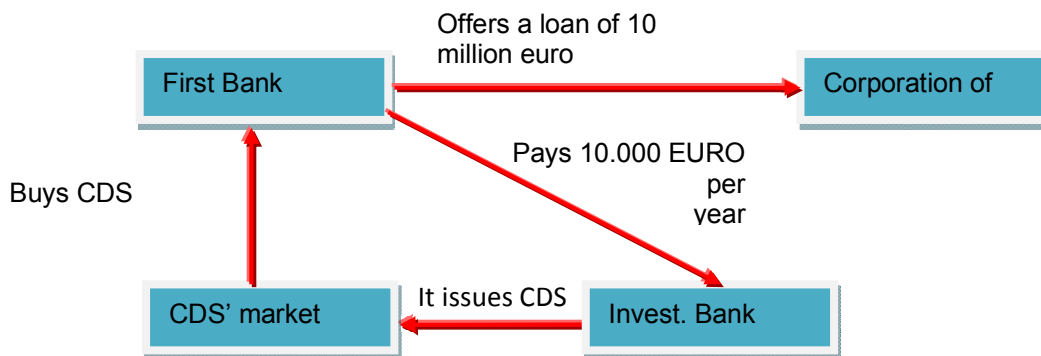
### **Credit default swap**

The credit default swap (CDS) is a financial instrument derived from lending. Its porpoise is to transfer between two parties the risk of exposure to some financial instruments with fix income (loans, bonds). In some cases, for a better understanding of this type of financial instrument, a CDS could be compared to insurance. The first bank that developed this type of derivative was JP Morgan, in the 1997. The buyer of CDS is protected against the risk of default regarding the financial instrument with fix income, while, the seller of CDS guarantees the credit worthiness of the product.

The risk of default is transferred from the holder of the fixed income security to the seller of the swap. For example, the buyer of a credit swap will be entitled to the par value of the bond by the seller of the swap, should the bond default in its coupon payments.

CDS is like insurance because it offers the buyer protection against the risk to default, downgrade or other negative event affecting the perception of the credit worthiness of the issuer (and thereby the price of bonds issued by it). The contract's seller assumes the credit's risk in exchange of a periodic payment (the spread) which is like insurance. The seller must pay the buyer only if a negative event will occur. As the CDS is not directly related to a particular asset or security, but it only refers to it, the buyer of CDS obtains protection, but also may obtain profit when the issuer does not fulfill its obligations. The payment obligations come to an end when the seller delivers the cash value of bonds or the same type of bonds if this is stipulated in the contract. If a negative event won't occur then the swap's seller will get the periodic payment and he will make a profit.

For a better understanding of this derivative financial instrument's mechanism was chosen the next example: suppose that there is a corporation with the name Corporation of Risk and a commercial bank named First Bank. The bank offers a loan of 10 million euro to the company, for a period of five years. The interest rate of this loan is not relevant with this example.



*Figure 1 – The mechanism of CDS with the exposure on a company*

It may happen that the borrower will default on the loan. So, the First Bank won't receive the total amount, the loan and the interest. In this case, a third entity could appear, an investment bank called Invest Bank. This bank issues the CDS with exposure to Corporation of Risk, with a period of five years and a price of 100. To understand better this example we will explain the meaning of the price. In fact, the price of 100 means 100 basis points or 1 per cent (1 basis point = 0.01%). Therefore, First Bank, the one that offered the loan could buy CDS with the exposure to Corporation of Risk from Invest Bank, in the amount of 10 million euro, because this is how much the loan worth. Of course that anyone who is a creditor of Corporation of Risk may buy the CDS issued by Invest Bank.

Because the First Bank acquired 10 million euro worth CDS at the price of 100 basis points, it must pay yearly:

$$0.1\% \times 10 \text{ mil. EUR} = 10,000 \text{ EUR}$$

Therefore to protect against the risk of insolvency of the debtor, the First Bank pays 10,000 euro per year. This complex mechanism is presented in Figure 1.

Of course that First Bank will include this default's risk protection cost in the interest rate. So, if a company has a higher risk of default, it must pay more for the borrowed capital.

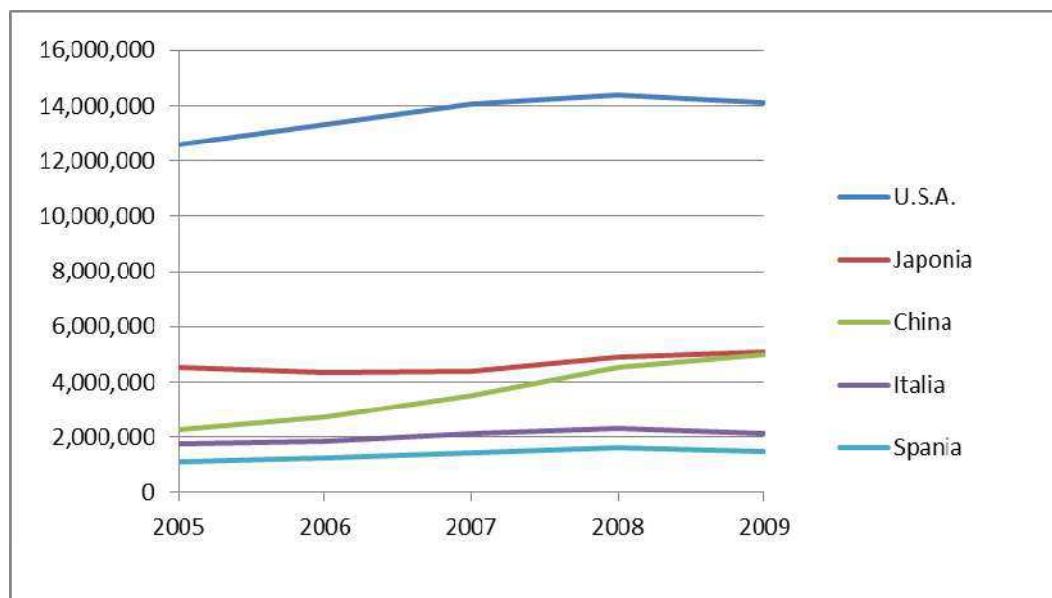
There is a counterparty risk associated to this type of derivative instrument. The buyer assumes the seller's risk of default. The buyer loses the protection against the bankruptcy of the company if Invest Bank and Corporation of Risk default simultaneously. If the Invest Bank goes bankrupt and Corporation of Risk doesn't then the buyer must replace the previous bought CDS.

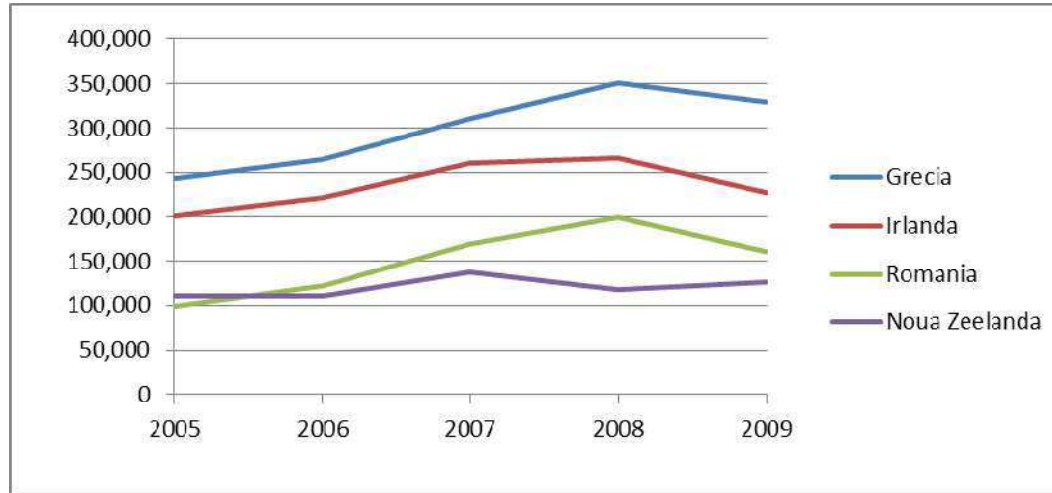
On the other hand the seller assumes the risk that the buyer couldn't compliance the contract. This way, the seller won't receive his income regarding the sales of securities. If the buyer doesn't fulfill his part, the seller can immediately sell the CDS on the market. But, it may happen that the transaction will take place at a lower price so the seller will have a loss.

#### Sovereign credit default swap

When referring to sovereign CDS things are similar. When the price of sovereign CDS goes up, the cost of financing is increased. Basically the more risky a country is the more expensive the cost of financing will be. The price of CDS in the derivatives' market is called spread. The sovereign CDS' spread is often used to indicate a catastrophic situation.

Here are a few countries regionally significant. The data regarding the gross domestic product was taken from annual reports of World Bank.



*Figure 2 – The evolution of Gross Domestic Product in previous prices in million USD.<sup>1</sup>**Figure 3 – The evolution of Gross Domestic Product in previous prices in million USD.<sup>2</sup>*

The countries' evolution regarding the Gross Domestic Product is fully consistent with the global trend. There are countries with powerful economy like U.S.A., Japan and China. These countries had the same trend in the examined period. Most of the values had been grown until 2008, after that period the values dropped, because of the global financial crisis. From economic point of view, there are countries which seem to have benefited due to this turbulent period. Regarding this fact it could be mentioned China (Figure 2) and New Zealand (Figure 3), first one is one of the great economic powers over the globe and the second one isn't a country of the same rank.

The public debt is another typical indicator which can be used to calculate country risk (Table 1). Due to the high degree of indebtedness of governments, public debt increased. This large public debt will transform itself in the short term into a high financing cost for the countries concerned. The country risk will appear in the price of the treasury bonds and in the spread of the CDS. An economy which has a great need for financing resources will face restricted access to primary markets and high interest rates.

|        | Gross public debt,<br>percentage of GDP | External public<br>debt, percentage of<br>GDP | External financing<br>rating/ outlook |
|--------|---|---|---------------------------------------|
| U.S.A. | 92,7                                    | 26,7  | 10/Stable                             |
| Japan  | 225,9                                   | 11,5  | 8/Negative                            |
| China  | 17,5 <sup>3</sup>                       | -   | -                                     |
| Italia | 118,4                                   | 55,5  | 7/Stable                              |
| Spain  | 63,5                                    | 31,1  | 9/Negative                            |
| Greece | 130,2                                   | 94,2  | 0/Negative                            |

<sup>1</sup> Source: World Bank

<sup>2</sup> Source: World Bank

<sup>3</sup> Source: The World Fact book , CIA

|             |                    |                    |            |
|-------------|--------------------|--------------------|------------|
| Ireland     | 93,6               | 54,9               | 7/Negative |
| Romania     | 16,39 <sup>4</sup> | 41,74 <sup>5</sup> | -          |
| New Zealand | 31,0               | 13,0               | 9/Negative |

*Table 1- Indicators of vulnerability for 2010<sup>6</sup>*

As you can observe in the Figure 2 and Figure 3, most of the countries analyzed had a growth GDP by 2008. At the end of this year the countries had to strengthen their bank sector, due to the economic and financial crisis. This action stopped the deepening of the recession. Those are the causes that drove the rise of countries' public debt. Therefore, most of the countries with advanced economy must sustain equilibrium between fiscal consolidation, on the one hand and rolling risk on the other hand.

Below is the table with countries' ratings provided by the two rating agencies, Fitch, Standard and Poor, and their CDS' prices at the end of 2010.

|             | Fitch Rating | Standard and Poor Rating | CDS Spread 5 year<br>(basis points) |
|-------------|--------------|--------------------------|-------------------------------------|
| U.S.A.      | AAA          | AAA                      | 41                                  |
| Japan       | AA           | AA                       | 79                                  |
| China       | A+           | AA-                      | 77                                  |
| Italia      | AA+          | A+                       | 199                                 |
| Spain       | AA+          | AA                       | 301                                 |
| Greece      | BBB-         | BB+                      | 1022                                |
| Ireland     | BBB+         | A                        | 574                                 |
| Romania     | BB+          | BB+                      | 290                                 |
| New Zealand | AA+          | AA+                      | 61                                  |

*Table 2 - Countries' ratings and sovereign CDS' prices at the end of 2010.*

The investors will demand a higher yield to lend to countries with economies in distress. As it can be seen in Table 2, there are countries that have the same values of rating but the sovereign CDS spread is different.

A very good example is Spain and Italy. Both countries have the same rating given by Fitch, but regarding the price of their sovereign CDS, it is a difference of 102 basis points. This means that Spain is borrowing at an interest rate with one percentage point more expensive than Italy. Although Italy has a higher public debt, than Spain calculated as a percentage of GDP.

Another relevant example is Romania and Spain. Although their country ratings are similar, the sovereign CDS' spreads are very different. The sovereign CDS of Greece have risen at a price of 1022 basis points because of two things. One of them is the massive grown of its external debt and the other is the economic issues that The Hellenic Republic has. The price of Romania's sovereign CDS is 290 basis points.

Further, there are presented a few examples of sovereign CDS' spreads and their evolution in time. The spread of sovereign CDS is a price that forms freely in the market. Like any other price, it is the point of balance between the demand and the supply in the market. We chosen a few countries

<sup>4</sup> Source: National Bank of Romania and National Institute of Statistics, November 2010

<sup>5</sup> Source: National Bank of Romania and National Institute of Statistics, November 2010

<sup>6</sup> Source: Global Financial Stability Report – I.M.F.

that have had economic problems; some of them still have. The evolution of countries' ratings is presented; the ratings are given by an international rating agency.

First example is the sovereign CDS of Greece. The Hellenic Republic is facing with a huge value of country risk, because the country rolled over time its own debts, with the help of derivative instruments. The country is on the age of default. At the beginning of 2009, when it was the peak of the financial and economic crisis, most of the spreads of sovereign CDS had been rising. In that period, the ones with the exposure to Greece's default grown to almost 300 basis points. As it can be seen on Table 3, Greece had an A rating with a negative outlook. On the 22th of October 2009 the rating of Greece dropped, although the value of the price of sovereign CDS was close to 100 basis points. Indeed at the beginning of 2011 the country's rating keeps peace with increased protection to insolvency of the Hellenic Republic. On the 14<sup>th</sup> January 2011 the rating of Greece dropped to BB+ and the Greece sovereign CDS spreads increased at 1022 basis points.

| Greece      |      |             |      |
|-------------|------|-------------|------|
| 14 Jan 2011 | BB+  | 20 Oct 2003 | A+   |
| 21 Dec 2010 | BBB- | 23 Oct 2002 | A    |
| 9 Apr 2010  | BBB- | 20 Jun 2001 | A    |
| 8 Dec 2009  | BBB+ | 21 Sep 2000 | A-   |
| 22 Oct 2009 | A-   | 27 Jul 2000 | A-   |
| 12 May 2009 | A    | 13 Mar 2000 | BBB+ |
| 20 Oct 2008 | A    | 25 Oct 1999 | BBB+ |
| 5 Mar 2007  | A    | 10 Aug 1999 | BBB  |
| 16 Dec 2004 | A    | 4 Jun 1997  | BBB  |
| 28 Sep 2004 | A+   | 13 Nov 1995 | BBB- |

*Table 3 – The evolution on long term of the Greece's rating<sup>7</sup>*

Regarding Ireland, the facts are the same. In the middle of September 2010 the spread of Ireland sovereign CDS have risen to 433 basis points. The cost of protection against the default of Ireland was 433,000 \$ for a 10 million \$ debt. The rating of the country has been unchanged until 6<sup>th</sup> of October 2010. On the 23<sup>th</sup> November 2010 the prime minister of Ireland didn't get the support of the parliament for the austerity measures. So, on account of this news, the price of Ireland sovereign CDS boosted at 555 basis points. The country's rating dropped at BBB+ on 9<sup>th</sup> December 2010.

| Ireland    |      |             |     |
|------------|------|-------------|-----|
| 9 Dec 2010 | BBB+ | 21 Sep 2000 | AAA |

<sup>7</sup> Source: Fitch Ratings

|            |     |             |     |
|------------|-----|-------------|-----|
| 6 Oct 2010 | A+  | 16 Dec 1998 | AAA |
| 4 Nov 2009 | AA- | 14 Jul 1998 | AA+ |
| 8 Mar 2009 | AA+ | 26 Oct 1995 | AA+ |
| 6 Mar 2009 | AAA | 10 Oct 1994 | AA+ |

**Table 4** – The evolution on long term of the Ireland's rating<sup>8</sup>

Ireland reaches in the top of the most risky countries over the globe, because of the problems of the Irish banking sector. But the value of the risk is above the investment grade.

As follows, the evolution of Romania's risk is presented. In late September 2010, Romania was on the first place in the Eastern Europe's emerging economies regarding the price of sovereign CDS. The spread overtook 300 basis points, because the government didn't manage to cut back the budget deficit as mentioned in the I.M.F. stand-by agreement. From all the countries in the region of Eastern Europe the Hungary became the most risky, it overran Romania. The Hungary sovereign CDS exceeded 370 basis points.

| România     |      |             |     |
|-------------|------|-------------|-----|
| 2 Feb 2010  | BB+  | 14 Jun 2002 | B+  |
| 9 Nov 2008  | BB+  | 14 Nov 2001 | B   |
| 31 Jan 2008 | BBB  | 16 Nov 2000 | B   |
| 31 Aug 2006 | BBB  | 21 Sep 2000 | B-  |
| 17 Nov 2004 | BBB- | 24 Mar 1999 | B-  |
| 23 Aug 2004 | BB   | 23 Dec 1998 | B   |
| 18 Dec 2003 | BB   | 23 Sep 1998 | BB- |
| 24 Sep 2003 | BB-  | 11 Sep 1997 | BB- |
| 30 Oct 2002 | BB-  | 6 Mar 1996  | BB- |

**Table 5** – The evolution on long term of the Romania's rating<sup>9</sup>

The Romania's rating has been below of the investment grade since the 31<sup>st</sup> January 2008. As it can be seen in Table 5 the value of the rating hasn't been changed since the 9<sup>th</sup> of November 2008. On the other hand the quality has been changed since the 2<sup>nd</sup> of February 2010, that's way the color isn't red anymore. The outlook of the country risk of Romania has changed from negative to stable.

<sup>8</sup> Sursa: Fitch Ratings

<sup>9</sup> Source: Fitch Ratings



## Conclusions

The rating agencies and other international institutions always calculate country risk and they give different notes and ratings. These entities offer precise information. But, as it was demonstrated later, there is another method which indicates the country risk more rapidly. This method involves using a derivative instrument. Of course, the market of those derivative financial instruments isn't regulated in all countries. There are economists who said that these toxic derivative instruments have had an important role in the bursting of the actual financial and economic crisis.

The issue is that not everyone has access to real-time price trends of sovereign CDS, because the costs with this kind of data are expensive. With the help of the sovereign CDS' market it can be anticipated the changes of a country's rating. Although the spread of sovereign CDS was floating, the rating of the country stood still. Or even if the rating changed, that happened over a long period of time. The positive events that could influence the rating can be anticipated faster than the negative ones. When a government is engaged in a stand-by agreement with an international financial institution regarding any type of financing, this is reflected in the CDS spread.

It must be taken into account that sovereign CDS are financial derivative securities, so they can be used for speculative purposes. If panic is created among the investors, due to negative news, this thing will affect almost instantaneously the prices of sovereign CDS. Because of this, the information offered through the spread of CDS' evolution may not always reflect the reality.

We can take the example of a country with economic problems, which is part of a union, like the European Union. In these conditions, the negative events that drove the rising of the country's credit risk could affect other country members in that union. An example is Greece and Ireland.

I think that the sovereign credit default swap must be taken into account when the risk of a country is studied. The correlation must be made carefully, between this type of risk, country risk, and the financial derivative securities mentioned before. It must consider certain things that could affect immediately the price of these derivatives, those things can be news, political events and rumors.

## References

- "Bank for International Settlements" Accessed January 15, 2011, <http://www.bis.org>
- "Ratings & Analysis Center", Accessed January 10, 2011, <http://www3.ambest.com/ratings/cr/crisk.aspx>
- „The National Bank of Romania”, Accessed February 27, 2011, <http://www.bnr.ro>
- „Business Dictionary”, Accessed January 5, 2011 <http://www.businessdictionary.com/definition/sovereign-risk.html>
- „National Institute of Statistics””, Accessed February 27, 2011, <http://www.insse.ro>
- „Market Watch” , Accessed February 27, 2011, <http://www.marketwatch.com>
- „Markit”, Accessed February 27, 2011, [http://www.markit.com/cds/most\\_liquid/markit\\_liquid.shtml](http://www.markit.com/cds/most_liquid/markit_liquid.shtml)
- Alexandru Olteanu , Florin Manuel Olteanu , Leonardo Badea – *Management bancar: caracteristici, strategii, studii de caz*, Editura Dareco, 2003
- CMA Global Sovereign Credit Risk Report 3rd Quarter 2010
- International Monetary Fund - Global Financial Stability Report October 2010
- International Monetary Fund - World Economic Outlook (WEO) Recovery, Risk, and Rebalancing October 2010
- Lăzărescu Sorin - *Rating financiar*, (București, ASE, 2003)
- Mădălina Rădoi – *Gestiune bancară*, Ed. Economică, București, 2009
- Standard and Poor - Sovereign Risk Indicators, dec. 2010