

**UNIVERZITA KARLOVA V PRAZE**

**FAKULTA SOCIÁLNÍCH VĚD**

Institut ekonomických studií

**Bakalářská práce**

**2011**

**Alžběta Mošnová**

**UNIVERZITA KARLOVA V PRAZE**

**FAKULTA SOCIÁLNÍCH VĚD**

Institut ekonomických studií

**Alžběta Mošnová**

**Rating the Sovereigns: Does It Work?**

*Bakalářská práce*

Praha 2011

Autor práce: **Alžběta Mošnová**

Vedoucí práce: **Petr Janský M.Sc.**

Datum obhajoby: **červen 2011**

## **Bibliografický záznam**

Mošnová, Alžběta. *Rating the Sovereigns: Does It Work?* Praha, 2011. 66 s.

Bakalářská práce (Bc.) Univerzita Karlova, Fakulta sociálních věd, Institut ekonomických studií. Vedoucí bakalářské práce Petr Janský, M.Sc.

## **Abstract**

The sovereign rating business has developed very fast in the last two decades. The recent economic turmoil proved how important it is to set up sovereign ratings in a correct, objective, transparent way and at the right time. The goal of this thesis is to look under the surface of Rating Agencies and analyze their sovereign rating methodologies from the economic perspective. I describe the individual indicators of the sovereign rating assessment, as well as the differences in the sovereign rating methodologies of the three biggest Rating Agencies. The empirical section tries to verify the ability of sovereign ratings to predict sovereign default as well as it explores the possibility that one of the three biggest Rating Agencies would provide systematically higher or lower sovereign ratings.

## **Abstrakt**

Vliv ratingových agentur a tedy i sovereign ratingu se značně zvyšoval zejména v posledních dvaceti letech. Nedávná ekonomická krize zdůraznila, jak důležité je stanovovat sovereign ratingy správně, objektivně, transparentně a ve správný okamžik. Cílem této práce je podívat se pod pokličku ratingových agentur a analyzovat metodologie, které používají při stanovování sovereign ratingu. Podrobně popisují jednotlivé indikátory, které jsou brány v úvahu, stejně tak jako rozdíly v metodologiích tří největších ratingových agentur. Empirická část mé práce se snaží ověřit schopnost ratingových agentur předvídat sovereign default a dále prověřuje, zda jedna z největších ratingových agentur neposkytuje obecně vyšší či nižší sovereign ratingy než ostatní.

## **Keywords**

Sovereign rating, rating methodologies, sovereign default, Credit Rating Agencies, global financial crisis

**Rozsah práce:** Počet znaků bez mezer: 69 935. Počet znaků s mezerami: 82 895.

### **Prohlášení**

Prohlašuji, že jsem bakalářskou práci vypracovala samostatně a použila pouze uvedené prameny a literaturu.

V Praze dne 17.5.2011

podpis studenta

**Poděkování:**

Děkuji Ing. Petru Vinšovi, Ph.D., generálnímu řediteli Moody's Central Europe, za ochotu při poskytování dokumentů a za možnost osobní konzultace. Dále bych ráda poděkovala vedoucímu mé práce Petru Janskému M.Sc. za cenné rady a za čas strávený při konzultacích.

## Table of contents:

<b>1. INTRODUCTION .....</b>	<b>1</b>
<b>2. BASIC CONCEPTS .....</b>	<b>2</b>
2.1. CREDIT RATING AND CREDIT RATING AGENCIES .....	2
2.2. SOVEREIGN AND SOVEREIGN DEBT .....	3
2.3. SOVEREIGN CREDIT RATING .....	4
2.3.1. Sovereign ceiling .....	5
2.3.2. Sovereign rating in local and foreign currency .....	6
2.4. DEVELOPMENT OF SOVEREIGN RATING BUSINESS .....	6
<b>3. METHODOLOGIES OF SOVEREIGN RATING ASSESSMENT.....</b>	<b>9</b>
3.1. INTRODUCTION .....	9
3.2. QUANTITATIVE VERSUS QUALITATIVE SOVEREIGN RATING INDICATORS.....	11
3.3. SOVEREIGN RATING METHODOLOGY .....	11
3.3.1. Country's economic strength .....	12
3.3.2. Country's institutional strength .....	15
3.3.3. Financial strength of the government .....	17
3.3.4. The country's susceptibility to event risk.....	25
3.3.5. Final determination of the sovereign rating .....	26
3.4. DIFFERENCES IN SOVEREIGN RATING METHODOLOGIES .....	28
<b>4. SOVEREIGN RATING IN PRACTICE.....</b>	<b>30</b>
<b>5. EMPIRICAL PART .....</b>	<b>32</b>
5.1. SOVEREIGN DEFAULT .....	32
5.2. DATA COLLECTION .....	33
5.3. DO RATING AGENCIES SYSTEMATICALLY PREDICT SOVEREIGN DEFAULTS? .....	34
5.4. ARE THERE ANY SYSTEMATIC DIFFERENCES IN THE SOVEREIGN RATING ASSESSMENTS OF THE THREE MAIN RATING AGENCIES? .....	38
5.5. CONCLUSION OF MY EMPIRICAL RESEARCH .....	40
<b>6. SOVEREIGN RATING AND THE RECENT FINANCIAL CRISIS 2008-2009 .....</b>	<b>41</b>
<b>7. CONCLUSION .....</b>	<b>44</b>
<b>APPENDIX.....</b>	<b>45</b>
<b>REFERENCES .....</b>	<b>52</b>

## List of figures:

Figure 1: Differences in sovereign rating scales .....	3
Figure 2: Distribution of sovereign ratings 1975-2006 .....	7
Figure 3: Assessing Resiliency.....	17
Figure 4: Assessing Financial Robustness.....	26
Figure 5: Final determination of the Sovereign Rating .....	26
Figure 6: Adapting Moody's and Fitch rating scale to the Fitch rating scale .....	34
Figure 7: Periods of sovereign defaults.....	35
Figure 8: Number of rated states 1980-2010 .....	36
Figure 9: Differences in sovereign rating of defaulted states .....	37
Figure 10: Comparison of sovereign rating levels for pairs of Rating Agencies .....	39
Figure 11: Comparison of average sovereign rating levels by "Investing Countries" .....	40
Figure 12: The spiral effect caused by the sovereign downgrades.....	42

## List of abbreviations

CRA	Credit Rating Agencies
ESME	European Securities Markets Expert Group
IMF	International Monetary Fund
S&P	Standard and Poors
WB	World Bank

## 1. Introduction

During the recent global financial crisis of 2008/2009, many countries went through a deep crisis of their public budgets or balance of payments. Rating Agencies had to react to the situation mostly through sovereign rating downgrades or negative outlooks.

Negative rating actions have serious consequences for investors as well as for Sovereigns themselves. However, only a few investors and government representatives understand how the sovereign rating is actually assessed and what the differences among the sovereign ratings provided by different Rating Agencies are. The goal of my thesis is therefore to look under the surface of the Rating Agencies and analyse their sovereign rating methodologies. The key chapter is the empirical part which tries to verify the ability of sovereign ratings to predict sovereign defaults as well as it tests the systematic differences in sovereign ratings provided by three biggest Rating Agencies. The final chapter comments on the characteristic features of sovereign rating development during the recent financial crisis.

My thesis is mainly based on the official literature provided by the Rating Agencies. A detailed literature review of economic papers concerning the respective topics can be found at the beginning of every chapter.

However, I would like to mention already here that my biggest inspiration were works by Carmen M. Reinhart and Kenneth S. Rogoff. Their research, which is usually associated with the sovereign default, culminated in the book *This Time is Different*, published in 2009. This book provides a quantitative history of the financial crisis which was useful especially for my empirical part. I try to contribute to their work by the analysis of sovereign defaults in the last twenty years which the book does not focus on.

### 2. Basic concepts

The goal of the introductory chapter is to introduce the sovereign credit rating and explain the main related terms, such as credit rating, Sovereign and sovereign debt, rating in local and foreign currencies, short-term and long-term rating, and country ceiling. Despite the fact that some of the mentioned terms are not closely related to sovereign rating, I consider this introduction necessary for further understanding of my thesis.

Before I start to define sovereign rating, let me introduce the concepts of credit rating and Sovereign.

#### 2.1. Credit Rating and Credit Rating Agencies

A credit rating is an opinion provided by an independent body, a *Rating Agency*, on the ability of a subject to meet its financial commitments. Rating is especially important for investors, as it expresses the probability of repayment of money owed to them under the conditions they invested, which means in full and on time.

Agencies usually rate a wide spectrum of issuers, such as governments and corporations, as well as specific debt issues, such as bonds and other debt securities.

Altogether, about 70 Credit Rating Agencies exist in the world; however, most of them operate only regionally or specialize just in a particular industry<sup>1</sup>. The most famous international Credit Rating Agencies (CRAs), the so-called “Big three”, are *Standard and Poors (S&P)*, *Moody’s Investor Service*, and *Fitch Ratings*. Moody’s and S&P control about 40% of the market each; Fitch controls 14% of the market<sup>2</sup>.

Ratings are usually expressed as letter grades on a scale from AAA to D, where AAA means the best rating and D the worst one. The rating categories (AAA, AA, A, BBB, BB...) are usually divided into multiple subcategories (AAA+, AAA, AAA-). If the country is downgraded from AAA+ to AAA, for example, the Rating Agencies say it was downgraded by one “notch”.

We distinguish between investment-grade (“AAA” to “BBB-”) and speculative or non-investment grade (“BB+” to “D”) ratings. A rating in the investment-grade category indicates a relatively low risk of default, while a speculative-grade rating is a

---

<sup>1</sup> A list of all Rating Agencies is available on: [www.defaultrisk.com/rating\\_agencies.htm](http://www.defaultrisk.com/rating_agencies.htm)

<sup>2</sup>Source:(Klein 2004)

## Rating the Sovereigns: Does It Work?

signal or warning of a higher credit risk. As you can see in the table, rating scales differ slightly among Rating Agencies.

**Figure 1:** Differences in sovereign rating scales

Investment grade			Speculative grade		
Moody's	S&P	Fitch	Moody's	S&P	Fitch
Aaa	AAA	AAA	Ba1	BB+	BB+
Aa1	AA+	AA+	Ba2	BB	BB
Aa2	AA	AA	Ba3	BB-	BB-
Aa3	AA-	AA-	B1	B+	B+
A1	A+	A+	B2	B	B
A2	A	A	B3	B-	B-
A3	A-	A-		CCC+	CCC+
Baa1	BBB+	BBB+	Caa1	CCC	CCC
Baa2	BBB	BBB		CCC-	CCC-
Baa3	BBB-	BBB-	Caa2	CC	CC
			Caa3	C	C
					RD
			Ca		DDD/DD
			C	SD	D

**Source:** Author and Rating Agencies

Simultaneously with the concrete rating, the Rating Agencies issue so-called “Rating Watches” and “Rating Outlooks”. Rating Watches express the probability of a rating change and the likely direction of such a change. A positive Rating Watch indicates a potential rating upgrade, and a negative Rating Watch indicates a possible rating downgrade. However, ratings can be changed without a corresponding Rating Watch issuance. Additionally, Rating Outlooks denote the direction a rating is likely to move in a two-year period. They reflect trends that have not yet reached the level that would initiate a rating action.

### 2.2. Sovereign and sovereign debt

According to Fitch’s sovereign rating methodology, a Sovereign issuer or Sovereign is a government (national or federal). It is the highest authority, characterized by unlimited control over a jurisdiction.

Sovereigns are special in many ways. They have an unlimited privilege of taxation, and they have a high probability of survival, as countries rarely disappear.

## Rating the Sovereigns: Does It Work?

---

Sovereigns are not controlled by a superior judiciary authority, which means that creditors have very limited opportunities in a case when a Sovereign is unable or unwilling to repay its debt.

Sovereign debt includes all financial liabilities of a Sovereign. Governments usually borrow by issuing a combination of bonds, bills, and notes, and their debt structure is based on market conditions and government policy. In the vast majority of the world's debt capital markets, country governments are the largest borrowers. According to Moody's (2010), governments globally borrowed close to US \$8.3 trillion and accounted for 61.5% of debt issuance in the world's capital markets in 2009.

Sovereign debt can be categorized according to its maturity as short-term or long-term. Short-term debt includes all obligations with a maturity within one year (for example, Treasury bills), while long-term debt includes obligations with a maturity longer than one year. The main medium- and long-term borrowing instruments of Sovereigns have traditionally been sovereign bonds.

Just for the sake of completeness, there are also special categories of bonds called *semi-sovereigns*, which are issued by lower-level governmental bodies, for example by cities or provinces, and *quasi-sovereigns*, issued by governmental agencies or companies owned by a government. These bonds are not subjects of my thesis.

### 2.3.Sovereign Credit Rating

As we have defined Sovereign and credit rating above, we are now able to define sovereign credit rating. A sovereign credit rating expresses the risk associated with investing into sovereign obligations in general. In other words, sovereign rating relates to the probability of default on debt issued by a Sovereign.

In addition to this general sovereign rating, Rating Agencies also assess the risk of every particular sovereign bond issuance.

It is important to stress the difference between country risk and sovereign risk. These terms are related but not identical. Country risk is a risk associated with doing business in particular country, which includes weak property rights, unpredictable tax regimes or legal systems, and volatile and unpredictable operating environments. Sovereign risk is the risk of governmental default on its debt obligations. It is a

## Rating the Sovereigns: Does It Work?

---

narrower term. Even when there is a positive correlation between sovereign and broader country risk, the sovereign rating can improve without an improvement in the “business environment”. Similarly, deterioration in country risk conditions does not always mean a worsening in sovereign rating, although in most cases that will be the case.<sup>3</sup>

Why is the sovereign rating so important? Firstly, the sovereign rating is very important for Sovereigns themselves. A high sovereign rating enables access to the global financial markets. It is a key factor for determining the interest rates that a country faces in the international financial market, and therefore influences the country’s borrowing costs. However, a high sovereign rating can also be beneficial in other ways; it can, for example, attract foreign direct investment or support private-sector access to global financial markets. Secondly, sovereign ratings enable broad comparisons of Sovereigns, which is particularly important for sovereign bond investors. Investors cannot understand the credit risk of particular Sovereigns exactly, and they therefore make decisions based primarily on the sovereign rating. Finally, the sovereign rating influences ratings assigned to domestic corporations or banks by so-called the sovereign ceiling.

### 2.3.1. Sovereign ceiling

Until 1997, rating agencies used the so-called “Sovereign ceiling policy”, under which any issuer in the country could not get a higher rating than the sovereign rating. This meant that the sovereign rating strongly influenced corporate ratings. However, later this policy was relaxed by rating agencies because of strongly dollarized economies. The reasoning was that in highly dollarized economies like Panama or Uruguay, corporate credit risk is usually not affected by a potential sovereign default; therefore, there is no reason to rate corporations lower than Sovereigns. However, it is fair to say that there is still a significant sovereign ceiling effect on the rating of corporations, even when the effect varies across countries and economic sectors. A much stronger effect exists in emerging countries.

---

<sup>3</sup> The terms Sovereign and Country are often substituted. Even though it is intuitive to speak about a Sovereign as a Country, we should keep in mind that these terms are not interchangeable.

### 2.3.2. Sovereign rating in local and foreign currency

Rating Agencies distinguish two kinds of sovereign rating: in local and in foreign currency.

“Local currency sovereign bond ratings reflect the opinion on the capacity and willingness of a government to raise resources in its own currency to repay its debt to bondholders on a timely basis.”<sup>4</sup>

“Foreign currency sovereign bond ratings reflect the capacity of a government to mobilize foreign reserves to repay its debt on a timely basis.”<sup>4</sup> In this case, the government usually also generates resources in the local currency for debt repayment, but it additionally has to exchange the local currency for the foreign one. As history shows, countries may be able to repay debts in local currency without being able to repay them in foreign currency.

However, sovereign ratings in local and foreign currency are identical nearly 70% of the time. When they are different, the foreign currency rating is usually lower than the local one. Over time, Rating agencies tend to narrow the rating gap between the foreign and local currency sovereign rating.<sup>5</sup>

### 2.4. Development of sovereign rating business

The first CRA that started to rate bonds issued by governments was Moody's in 1919. Over the next ten years, the international bond market developed very quickly; Moody's was rating about fifty governments by 1929. According to (Cantor & Packer 1995), there was a strong decline in demand for sovereign ratings after the Great Depression and World War II. Debt capital markets in general played a limited role and were in the shadow of the banking market.

---

<sup>4</sup> Citation from: Moody's (2008)

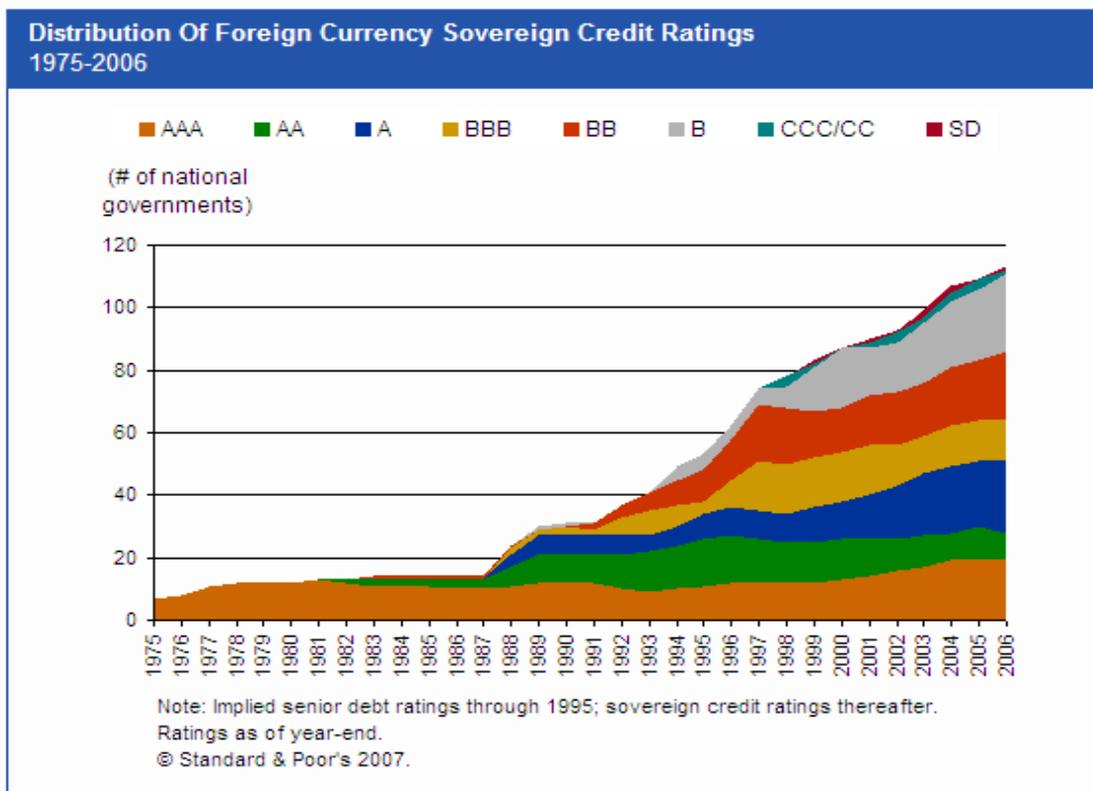
<sup>5</sup> In the past, the rating gap was related mainly to emerging countries because their governments had an easier approach to local currency funding, as their Central banks were able to print fresh money, while the approach to foreign currency was constrained by Balance of Payment development and thus frequently difficult. Nowadays, the Central banks in emerging countries are more independent and their ability to print money is therefore limited. Besides that, local currency capital markets have developed. The volume of local currency bonds has grown substantially, as has the liquidity and transparency of local currency capital and FX markets. That is why foreign investors nowadays do not greatly differentiate between investments into foreign and local currency sovereign bond issues.

## Rating the Sovereigns: Does It Work?

Governments did not come back to capital markets to issue bonds until the 1970s. However, the demand for sovereign ratings was still low. The real growth in the number of sovereign ratings was notable during the 1980s and 1990s, as more emerging market countries gained access to debt markets. By that time, the demand for sovereign ratings had returned to the pre-Great Depression level.

The share of the rating distribution in the speculative grade category has risen with the increasing number of rated states. While all rated Sovereign issuers in 1983 were investment-grade, the share of investment-grade sovereign ratings had declined to approximately 60% by 2009. You can see the growth in the number of sovereign ratings during the 1980s and 1990s and the distribution of sovereign ratings in the following chart.

**Figure 2:** Distribution of sovereign ratings 1975-2006



## Rating the Sovereigns: Does It Work?

---

There was one more milestone that emphasized the need for the credit rating to include the sovereign credit rating. In 2006, the second document implementing the global standards for regulation of internationally active banks, “Basel II”, was issued. This widely-accepted document primarily motivates banks to better measure and manage risk in order to make the use of their capital as efficient as possible. Basel II gives banks flexible options for the measurement of the risk they are facing, that is, for the measurement of the risk of default of their debtors. They can use either external credit risk assessment, including primarily the independent credit rating of Rating Agencies, or their own internal models of credit risk assessment. Basel II newly enabled banks to use the external credit rating for assigning debtors’ risk weights, including the risk weights of Sovereigns.

Today, the sovereign bond market has grown into a real giant, with Fitch and Moody’s rating around 105 countries each, and Standard and Poors rating 130 countries.

### 3. Methodologies of sovereign rating assessment

#### 3.1. Introduction

I have already explained why sovereign ratings are so important. But how do the Rating Agencies determine the sovereign rating? What are the magic determinants that mainly influence sovereign risk? I find these questions very interesting, and therefore I decided to look under the surface of rating agencies and their work. The goal of the following chapter is to illustrate the methodology of sovereign rating assessment in detail.

Rating Agencies were criticized for insufficient transparency in the past, as they did not publish detailed methodologies of their rating assessments (this fact is evident, for example, from the ESME (2008) report). The insufficient transparency made it very hard to understand how their ratings were assessed, and almost impossible to compare methodologies used by different Rating Agencies. In recent years, Rating Agencies have tried to create a new image and improve their reputations, attempting to prove that they are as transparent as possible.

But what is the reality? Do Rating Agencies nowadays really provide sufficient information to allow us to understand how sovereign ratings are assessed and what the differences in methodologies of the biggest Rating Agencies are?

After reading through all the documents available on the web pages of the three main Rating Agencies, I am able to make the following conclusion. All of the Rating Agencies provide at least one document that describes the methodology of their sovereign rating assessment. However, these documents outline only basic information about the key indicators used for a Sovereign's risk valuation, which is useful for complete beginners to gain a basic awareness about sovereign rating assessment, but definitely cannot provide a deeper understanding of this process. What is more, the mentioned indicators have different weights from different Agencies, and they are weighted differently even in the case of concrete states within one concrete sovereign rating assessment (for example, for emerging countries there are different indicators stressed than for developed ones). I find this very problematic as Rating Agencies do not publish any documents that clearly describe the weights of individual indicators.

## Rating the Sovereigns: Does It Work?

---

Due to this fact sovereign rating methodologies are, in my opinion, still insufficiently transparent.

I had the opportunity to interview the General Manager of Moody's for Central Europe, Mr. Vinš. He argues that Moody's is as transparent as possible: for every concrete sovereign rating assessment, there is a report published describing the circumstances that were crucial for the final sovereign rating in detail. That means that even though there is no general report describing the weight of the indicators used, an interested person should be able to find out the weights of these indicators, at least for every Sovereign separately. However, for the mentioned reports, the Rating Agencies charge fees that complicate access to the required information. I didn't have an opportunity to read even one report of that kind.

In my opinion, Rating Agencies are trying to make the impression that they are more transparent, but for people who would like to go deeper, their sovereign ratings procedures still remind a kind of black box. The ESME (2008) report only confirms my impression:

“While the CRAs have greatly increased the volume of communication on their websites on rating methods and assumptions to a lesser extent, this information is presented in a manner that typically does not facilitate easy access and understanding on the part of the investors, in the absence of direct dialogue with the CRAs.”

### Literature review concerning this chapter:

A wide range of literature exists concerning the methodologies of sovereign rating assessment. The reliability and transparency of sovereign ratings assessment is tested in an article by (Iyengar 2010). Considerable attention to the determinants of sovereign rating assessment is paid in economic papers by (Afonso et al. 2007), (Cantor & Packer 1996), (Mellios & Paget- Blanc 2006), (Afonso 2002). These articles try to determine the most significant determinants, and moreover they try to measure the weights of these determinants by econometric models. The differences between the sovereign ratings of individual rating agencies are described by (Hill et al. 2010).

### 3.2. Quantitative versus qualitative sovereign rating indicators

Before I start to describe sovereign rating methodology, I would like to mention that all agencies are similar in one way. All examined Rating Agencies agree on the fact that the methodology of sovereign rating assessment has to consist of a combination of both quantitative and qualitative parameters. Models using only quantitative factors certainly would provide useful information about the historical performance of the economy, but they are necessarily backward-looking, while sovereign ratings should provide information about medium- or long-term time horizons. Moreover, qualitative parameters are already necessary for the interpretation of quantitative ones. Another rationale for qualitative parameters stems from the nature of government sovereignty. The lack of a higher authority enables a government to decide not to repay its debt, which sometimes happens when the costs of repaying the debt are higher than the costs of not repaying it. No quantitative model can take this possibility into account.

All Rating Agencies combine quantitative parameters with qualitative ones simply because pure quantitative models cannot cover the complexity of interactions between economic, financial, political, and social factors.

Of the three biggest Rating Agencies, Moody's has issued the most detailed and schematic methodology of sovereign rating assessment. For this reason, I decided to illustrate the guidelines of this process with Moody's sovereign rating methodology. My key sources of information for this section are, therefore, *Moody's Rating Methodology (2009)* and *Moody's Statistical Handbook (2010)*.

### 3.3. Sovereign rating methodology

Moody's takes into account four main factors when assessing sovereign rating:

- The country's economic strength
- The country's institutional strength
- The financial strength of the government
- The vulnerability to event risk

The first and the second factors examine the capacity of the country to absorb shocks, which is defined as the degree to which a Sovereign is able and willing to meet its financial commitments without imposing an extreme burden on the population. The third and the fourth factors analyze debt matters directly.

## Rating the Sovereigns: Does It Work?

---

Which kinds of information sources does Moody's use? Indicators determining the two first factors are taken from international organizations like the IMF, the World Bank, OECD, or Eurostat, and Moody's does not assess them. For the third and fourth factors, Moody's calculates its own indicators, which are based on information provided directly from the Sovereign. Moody's thus trusts approximately 50% to widely-accepted international organizations and generates 50% of its own indicators. I emphasize that it is not possible to describe all indicators absolutely. For every single factor, I always chose the most important and significant indicators.

Moody's divides all rated countries into two groups: advanced industrial countries and developing countries. About 30 countries belong to the group of advanced industrial countries, and the rest, developing countries, are divided into 4 more groups according to their ratings. For example, the Czech Republic belongs to the highest developing country group. This division enables comparison of countries within a group of similarly-rated states. From the comparison of individual indicators, we can see the weak and strong sides of a particular economy.

### 3.3.1. Country's economic strength

The primary indicator of a country's economic strength is its *GDP per capita*. *GDP* is an international measure of the size of an economy. It measures the total sum of final goods and services produced in a country in a given period of time, usually one year. The GDP concept is often criticized, as it does not take into account the accumulation of any intangible assets (innovations, knowledge), or, for example, environmental degradation. Despite this criticism, it remains the only internationally-comparable measure of the size of the economy.

*GDP per capita* is the ratio of GDP to population. It informs us about a country's relative wealth and also about its productivity, which are factors both intuitively and statistically correlated with the risk of default. Here you can see that the population is indirectly a very important indicator too, as it is used for determining certain quantitative indicators.

GDP has to be comparable across countries, and therefore it is usually converted into dollars at current exchange rates. However, the use of exchange rates may distort

## Rating the Sovereigns: Does It Work?

---

real differences in income. For this reason, Moody's uses the *GDP per capita on a Purchasing Power Parity (PPP)* basis for assessing the sovereign rating. This is the best measure of the GDP when comparing the differences in standards of living between nations, as PPP respects the relative costs of living and inflation of countries. The calculation of GDP per capita on a PPP basis is rather complicated; therefore, Moody's uses the calculations of the World Bank. The disadvantage of this measurement is, in addition to its cumbersome way of measurement, the time delay (lagged data). Moody's uses a 3-5 year average of the GDP per capita in order to moderate cyclical effects.

The world GDP (PPP) per capita is currently \$10 500; Luxembourg has the highest one (above \$80 000). The lowest GDPs in the world are around \$300.<sup>6</sup> Moody's has not registered any sovereign default by countries with an HDP per capita higher than \$11 000.

Economic growth as measured by the annual *percentage change in real GDP* adjusted for inflation is another important factor of economic performance. Having a higher economic growth than population growth is considered to constitute an increase in the standard of living of inhabitants. According to Moody's statistics, in 2010, advanced industrial countries had a real GDP growth on average around 2%, while developing countries had growth of around 4%. In assessing developing countries, we have to be careful, as too-rapid economic growth can cause inflationary pressures and external deficits. As you can see in this example, it is important not to follow quantitative parameters blindly, but to interpret them correctly.

Complementary information to real GDP growth is provided by the *Gross investment/GDP ratio*. Investments include, for example, expenditures by firms on machines and on change of inventories or expenditures into immovables by households and firms. Gross investment is investment that does not take costs of depreciation into account. Countries with a stable, high investment rate will very probably grow stronger and faster in the future. However, not only the absolute value but also the efficiency of the investment, which means how much profit can be gained from the investment, is important. The gross investment/GDP ratio was on average around 20% in 2010; in the case of emerging countries, this ratio is usually higher than for developed ones.

---

<sup>6</sup> Source: The World Bank

## Rating the Sovereigns: Does It Work?

---

As you would surely expect, the *inflation rate* belongs among the most important indicators describing the country economic performance. Inflation can be a sign of excess domestic demand pressure. Moody's uses a widely-known measure of inflation: the Consumer price index (CPI), which compares the costs of buying a basket of items commonly used by an average household. However, we have to take into account the CPI's limitations. This index is not appropriate for a cross-country comparison, as it does not measure prices as production costs but as retail costs, which are affected by import prices and exchange rates. For these reasons, analysts usually complement the information gained from CPI by taking into account another way of measuring inflation, the GDP deflator, which studies the changes in prices of domestically-produced output. The inflation rate as measured by the CPI is at around 2% for advanced industrial countries; in developing countries the inflation rate is usually higher, between 5% and 8%.

All of the abovementioned indicators (GDP per capita, GDP growth, inflation...) are considered to be quantitative parameters of sovereign rating assessment. Moody's complements this information with secondary, more or less qualitative indicators which especially evaluate the *country's diversification*. Less diversified economies are often one-sidedly orientated, and therefore are not able to absorb shocks as well as economies that can rely on a widely-diversified basis. A country's diversification is correlated with *the size of the economy*, as small countries are often less diversified. A small and even rich country can experience sudden unexpected changes in fortune that are not positive for the creditworthiness of the economy or, therefore, for the sovereign rating. On the other hand, huge states, like China, are well-diversified, and their economic performance can be underestimated by the GDP per capita ratio.

To perfect the analysis of the country's economic strength, factors such as *investment into human capital* or the *country's integration into economic and trade zones* are taken into account. The former is measured as the percentage of children in primary or secondary education. In association with the latter indicator, the so-called EU "Halo effect" can be mentioned, which is based on the fact that countries that are members of the European Union are more trustworthy. Many people were surprised at how much the sovereign rating of countries improved after they became members of the EU in 2004.

## Rating the Sovereigns: Does It Work?

---

On the basis of all the above mentioned indicators (in italics), Moody's assesses the Economic strength of the economy on a scale from very low to very high.



As this chapter describes countries' economic strength, I would like to add that Fitch examines one more factor in this category, which is the stability of the banking sector. According to Fitch (2009), a well-supervised and regulated banking and financial system is a positive sovereign rating factor. Primarily, a weighted average of individual ratings of banks in a system is examined. This sorts systems from weak to strong. Financially-weak banking systems with substantial liabilities imply large contingent liabilities for the Sovereign, and hence will be a negative rating factor. Another indicator of banking sector stability is the capital adequacy ratio based on the Basel definition. It is interesting that neither Moody's nor S&P examines the stability of the banking sector at all.

### 3.3.2. Country's institutional strength

Since the establishment of the New Institutional Economic School in the second half of the 20<sup>th</sup> century, the role of institutions in the economy has had a strongly upward tendency. Institutional strength is very important for the rating process too, as it provides us with useful information about the effectiveness of governance.

Institutions are generally defined as any formal rules or widely respected conventions that regulate relationships between people, including traditions, habits, and legal rules but also states, languages, and many other. In connection with the sovereign rating, important institutions include property rights, the efficiency and predictability of government's actions, and transparency of policies.

Even though institutional strength is more or less a qualitative parameter, it is indeed strongly correlated with sovereign risk. Unstable or unpredictable political and economic institutions imply a higher probability of unpredictable behavior, especially in

## Rating the Sovereigns: Does It Work?

---

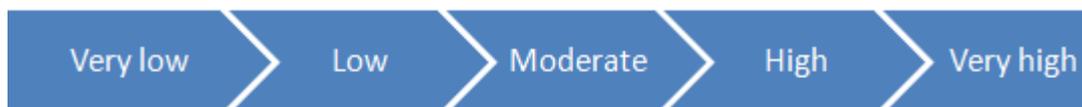
unfavorable times. On the other hand, very strong institutions usually do not enable a country to adjust its policy operationally according to the actual situation.

Are there any possibilities for measuring government effectiveness? The World Bank launched the so-called Worldwide Governance Indicators (WGI) project, which reports 6 governance indicators for 213 economies over the period 1996-2009.<sup>7</sup> Moody's uses two of them for sovereign rating assessment: the *Government Effectiveness Index* and *Rule of Law*.

“Government Effectiveness index captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.”<sup>8</sup> Its values move within the interval from -2,5 to +2,5, where +2,5 indicates excellent performance.

Rule of law examines the confidence of the country in the quality of contract enforcement, property rights, policy, and the courts, as well as the likelihood of crime and violence.

The Country's institutional strength is assessed on the basis of the indexes mentioned above, together with analysts' judgment on the predictability of policies. It is finally scaled into five categories:



Combining the first and the second factors, we can gain an idea about the shock absorption capacity of the country. It is important to be aware of the correlation of these two factors. The quality of institutions can influence income disparities between countries. What is the additional information gained from the combination of these two factors? A wealthy country with weak institutions can obtain a similar rating to a relatively poor country with strong institutions.

---

<sup>7</sup>For more information see: <http://info.worldbank.org/governance/wgi/index.asp>

<sup>8</sup> Kaufmann et al (2010)

**Figure 3:** Assessing Resiliency

Assessing resiliency		Factor 2- Institutional strenght				
		Very low	Low	Moderate	High	Very high
Factor 1- Economic strenght	Very high					
	High					
	Moderate					
	Low					
	Very low					
Economic resiliency		Very low	Low	Moderate	High	Very high

Source: Moody's 2008

### 3.3.3. Financial strength of the government

An important factor for sovereign rating assessment is the capacity of the government to mobilize resources to repay its debt, meaning the strength of a government's finances. The analytics of rating agencies need detailed information about "what is available against what must be repaid". Let me remind that my key sources of information are still *Moody's Rating Methodology (2009)* and *Moody's Statistical Handbook (2010)*.

As for the previous factors for assessing a government's financial strength, we need both quantitative and qualitative indicators. There are two main areas or categories of information that are studied. The first is a *country's Balance Sheet* and the second is a *country's Balance of Payment*.

A government needs to generate resources to repay its debt. For debt in the local currency, it may, for example, raise taxes or cut spending. Information about these possibilities and processes is indicated by the country's Balance Sheet.

However, some governments prefer to borrow in foreign currencies. Creditors are usually unwilling to take the convertibility risk, the risk of exchange rate change, which could cause the amount paid back to them to be lower than the amount lent. Because of this fact, creditors do not want to lend money in a currency other than their own. The convertibility risk is therefore taken by the government, which would prefer to get the loan in the local currency but is forced to borrow in a foreign currency. For the government, it is thus not sufficient to generate resources in the local currency, but it additionally has to convert these resources into a foreign currency. Information about

the ability to generate foreign currency gives us an analysis of a country's Balance of Payment. For the foreign debt rating, it is therefore necessary to have information about both the country's Balance Sheet and its Balance of Payment.

### 3.3.3.1. Balance Sheet

A country's Balance Sheet gives us useful information about the way the government is able to generate sufficient resources to repay the debt.

- a) First, the level of the debt is studied. The absolute amount of the debt is not the most important figure, however. The analysts must dig deeper than just calculating the debt/GDP or revenue/GDP. They have to determine what level of debt is affordable. Affordable debt means that, after taking into account all other requirements for public finance on the liabilities side, the government is comfortable, or at least able to guarantee the repayment of its debt. Different countries can afford different levels of debt. Large and diversified economies, such as Japan's, can afford a much higher level of the debt than small or one-sidedly orientated economies.

The level of the debt is determined by the following quantitative indicators:

- *General Government Debt/GDP (%)*
- *General Government Revenue/GDP (%)*
- *General Government Expenditure/GDP (%)*
- *General Government Financial Balance/GDP (%)*
- *Government external debt*

S&P (2008), unlike Moody's, explains the term "general government". In this context, we should understand the general government as the aggregate of the national, regional, and local governments.

Anyway, the first ratio is widely used for general information about the level of debt. General government debt includes both short-term and long-term obligations held in foreign currency and in domestic currency. It is an appropriate indicator for cross-country comparison; however, we have to be aware of the fact that General Government Debt does not include contingent liabilities such as guarantees. Another problem is that differences in accounting practices still exist across countries. Differences exist especially in the involvement of different debt components (some

## Rating the Sovereigns: Does It Work?

---

of them involve a pension system, some do not) and in the evaluation of the government's securities (nominal value versus market value). The General Government Debt/GDP ratio in reality is around 40%; however, some states, like Japan, have debt of 232% of GDP. In many western European countries, the ratio is close to 100%. It is interesting that in advanced industrial countries, this ratio is notably higher (by about 30%) than in developing countries. Just for a comparison, the Maastricht Treaty, which defines criteria that have to be fulfilled by states entering the Eurozone, determines the acceptable level of the debt-to-GDP ratio as 60%.

According to European Commission General Government Revenues involve especially taxes on income, production and imports, social contributions (paid by employees and employers), property income, and other factors. The ratio of General Government Revenues to GDP in reality is usually between 20% (developing countries) and 40% (advanced industrial countries).

On the other hand, General Government Expenditures involve, for example, salaries of state employees, intermediate expenditures connected with the current operation of the state, some social transfers and benefits, expenditures on infrastructure, and purchase of other assets. The relevant ratio runs from 30% to 50% on average.

The Financial Balance is then the difference between total Revenues and total Expenditures. It is interesting that most countries run a deficit on their Financial Balance.

Another, no less important indicator is the External debt. It is the part of the total debt that is held by nonresidents, regardless of the currency in which the debt is denominated. The problem of using this indicator consists in the absence of a standardized external debt data source. In order to make an estimate of the external debt, Rating agencies' analysts have to draw information from several different sources (WB, IMF, OECD).

Rating agencies are also interested in whether the Sovereign's total debt is stable, decreasing, or expanding. This parameter is more useful, however, for determining the direction or development of the rating than its current level. In this sense, rating can be a little bit confusing, because a country with a low but explosive debt curve

## Rating the Sovereigns: Does It Work?

---

will probably be rated higher than a country with a stable future but high initial debt. The stability of the debt is usually measured by the so-called *General government primary balance* (which is the difference between total revenues and total expenditures of the state budget excluding interest payments on the existing debt) divided by GDP. The surplus is usually a good sign of debt stabilizing; in other words, the state says that the budget is not losing money based on its current operation and the old debt is not growing.

- b) Secondly, the ability to mobilize resources for debt repayment is examined. In other words, the capability of the government to generate financial resources is deeply analyzed. Generally, there are three possibilities for generating the money necessary to repay the debt: refinancing, asset mobilization, and fiscal adjustment.
- i. Refinancing is the most frequent way of repaying existing debt. In practice, it means that the government repays the existing debt by borrowing new money on the markets. Countries that are still creditworthy and therefore have better access to international markets and diversified sources of finance are in a better position than those to which international investors are not ready to lend any more or those which have an undeveloped local financial system and a low private savings basis. The identity of the investor in the existing debt is important. Both foreign and local sources of refinancing are equally important; however, the trust of foreign investors usually evaporates sooner than the support of local institutional and individual investors.
  - ii. Asset mobilization: Governments have assets, such as public companies or deposits in the banking system, which can be sold if necessary, and these privatization proceeds can then be used for debt repayment. The question is whether there are buyers for these assets at the same time and whether they are ready to pay the required price. Usually, at difficult times when the government is the subject to liquidity risk (lack of liquidity), there are either no buyers, or buyers offer a low price for the assets the government wants or is forced to sell.
  - iii. Fiscal adjustment: Another possibility for generating resources is to raise taxes or cut spending.

## Rating the Sovereigns: Does It Work?

---

Raising taxes is not welcomed by anybody in the country and usually means lower competitiveness and attractiveness of the country, especially for equity investors. Moreover, many countries are facing the problem of a rapidly-aging population, which can cause insufficient incomes from taxes in the future. For this reason, governments nowadays think twice before they increase taxes. They prefer to increase the value added tax (VAT) rather than direct taxes, like the corporate income tax. The negative side of a VAT increase is the potential danger of higher inflation due to the higher prices of goods and services.

Cutting spending is no less difficult. Many European countries are going through this exercise at the moment, including the Czech Republic. This usually means lower salaries for state employees and cuts of other state spending, including, for example, state investment into infrastructure. The result is a decrease of the standard of living of a substantial portion of inhabitants, sometimes leading to social unrest, as well as a negative impact on GDP growth.

The ability of the government to adjust the amount of taxes and spending is usually tested by the General Government Debt/General Government Revenue ratio. This is simply the ratio of Debt/GDP to Revenue/GDP. A low ratio usually indicates that a high percentage of the debt can be covered by income from taxes. The value of this ratio is that a government that may have a low debt-to-GDP ratio may still have a serious problem in repaying its debt because it may not be able to generate sufficient revenues from taxes to cover the debt. This is typical for a number of developing countries with insufficiently efficient tax systems.

### **3.3.3.2. Balance of Payment**

A Balance of payment is an accounting sheet that describes all monetary transactions between a country and its foreign partners, between a country and the rest of the world within a specific period, usually one year. It is structured into three sections: Current Account, Capital Account, and Financial Account. For our analysis, the Current

## Rating the Sovereigns: Does It Work?

---

Account is important, as it includes exports and imports of goods and services, interests, dividends, and transfer payments.

An indicator that describes the Current account in its whole complexity is the so-called *Current account balance*. It is the sum of the balance of trade (exports minus imports of goods and services), transfer payments, interest, and dividends. If the Current account balance is positive, the country has a current account surplus. If it is negative, the country runs current account deficit. A current account deficit implies an outflow of foreign (hard) currency from the country and a decrease of foreign reserves, which usually results in depreciation of the exchange rate. Countries with a current account deficit are “balance of payment constrained”. These are countries that have problems in exchanging their local currency for a foreign one, as there is no demand for their local currency. Even when they are able to mobilize local currency resources for debt repayment, they are not able to convert them into foreign currency.

For the purpose of cross-country comparison, the Current Account Balance is divided by GDP. As this current account indicator indirectly measures the demand and supply on the currency market, it has no meaning for countries in monetary union, and it is not as important for developed countries as for developing ones.

The sovereign rating methodology does not take into account only the Current account as a whole, but it pays even more attention to its individual components:

- Nominal Exports of Goods and Services (% change, USD basis)
- Nominal Imports of Goods and Services (% change, USD basis)
- Real Exports of Goods and Services (% change)
- Real Imports of Goods and Services (% change)

These indicators indirectly measure the competitiveness of the respective economy on international markets. In simple wording, the fact that the country sells domestically-produced goods and services abroad and thus obtains foreign currency means that it has sources for repayment of its foreign currency debt. It is important not to reduce the analysis of exports and imports to tangible products (goods), because services, such the tourist industry, are a crucial element of some countries’ national income. For advanced industrial countries, the real exports and imports indicators are

used. Real exports/imports are calculated as nominal exports/imports divided by the export/import price index, which measures the average change in prices of goods that were exported or imported. This simply means that real exports/imports indicators involve information about both the volume and price development of exports/imports. However, in developing countries, information about price development of exports/imports is often not available. For this reason, developing countries use the less accurate nominal indicators of exports/imports converted into USD at the annual average exchange range.

For the analysis of the Balance of Payment but also for converting many indicators into USD, the development of the exchange rate is necessary. Indicators expressed in USD then serve for cross-country comparison. The Exchange rates influence a country's international price competitiveness. Besides the bilateral Nominal Exchange Rate, Moody's takes into account the Real Effective Exchange Rate (REER), which is more suitable for determining a country's currency value relative to other currencies. REER can be understood as a weighted average of bilateral exchange rates of the country's main trading partners deflated by a weighted average of foreign, relative to domestic, prices or costs.<sup>9</sup>

*Openness of the Economy* is another important indicator correlated with the Balance of Payment. The level of cooperation and communication with the rest of the world through trade and investment supports generally beneficial competition in the domestic market and enables the inflow of new technologies and skills. All this positively affects the rate of economic growth. Moody's measures the Openness of the Economy as the sum of exports and imports of goods and services divided by GDP. However, we have to be very careful when interpreting the results of this index. A country with very high exports that are strongly dependent on the import of material can be valued very highly, but the value added by foreign trade can be negligible.

The Balance of Payment can influence the financial strength of the government either by price effects or by quantity effects.

- a) A price effect in this context means a change in the exchange rate. As a consequence of sharp depreciation, the costs of debt repayment can

---

<sup>9</sup> Source: ECB (2011)

## Rating the Sovereigns: Does It Work?

---

increase rapidly, as the government has to pay more for its foreign currency loan. That means that it has to raise more resources in the local currency for debt repayment. A country with large foreign exchange reserves will be able to resist depreciation for a while.

- b) Quantity/scarcity effects can be described as a situation in which the deficit of foreign currency on the local FX market is so big that the government is not able to change the local currency sources into foreign currency. This can push the country into default on its foreign debt.

These two effects influence each other; however, nowadays it may be said that the price effect prevails.

### Summary of 3. Factor:

Historically, government financial strength was more influenced by the Balance of Payment effect than by the Balance Sheet effect. This was because many developing countries were not able to generate sufficient foreign exchange through their weak exports.

Nowadays, we may say that the too-high indebtedness of the budget (Balance Sheet) in a number of countries is the main reason that the investors are shy to lend them money, and rating companies tend to downgrade them as a result. The internal debt crisis in several European developed countries created a situation in which Balance Sheet considerations in these countries were more important than the Balance of Payment ones. The debt of these countries is so high that they are not able to generate sufficient income to repay the debt.

Financial strength based on the Balance Sheet and Balance of Payment analysis is finally scaled into five categories as well.



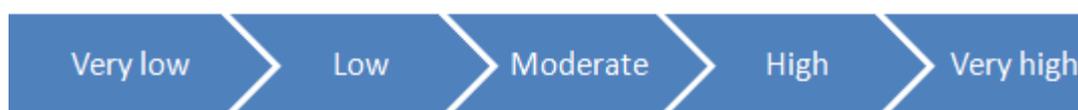
### 3.3.4. The country's susceptibility to event risk

Factor 1 and Factor 2 described the capacity of the government to absorb shocks in a medium-term perspective. The last factor explores the risk of a *sudden unpredictable* event (shock) that would cause a default or dramatic rise of the risk of default. This informs about the probability of a sudden multi-notch downgrade. Note that we speak about a *country's* susceptibility to event risk, not just the government's. Events can be natural (earthquakes, hurricanes), political (political chaos), or financial (speculative crisis).

As an example of political chaos, the recent situation in the Arabic world can be examined. It started in Tunisia in January 2011 and continued through Egypt to a number of other countries in Northern Africa and the Middle East. The result is that rating companies have no other chance than to react with a rating downgrade.

An example of financial chaos can be the situation in which countries have their exchange rate pegged (long-term bound) to the US dollar. When the pressure on the exchange rate of local currency (because of the deficit of the Balance of Payment) is so high that the country must release the peg, sharp depreciation occurs as a result. Recently, this happened at the beginning of the financial crisis in a number of countries like Ukraine, which had to depreciate the currency by almost 60% at the end of 2008 and the beginning of 2009.

The risk of a sudden downgrade due to event risk is assessed like other factors on the scale:



Combining the government's financial strength (the third factor) and resiliency to event risk (the fourth factor), we are given detailed information about a government's financial robustness.

## Rating the Sovereigns: Does It Work?

**Figure 4:** Assessing Financial Robustness

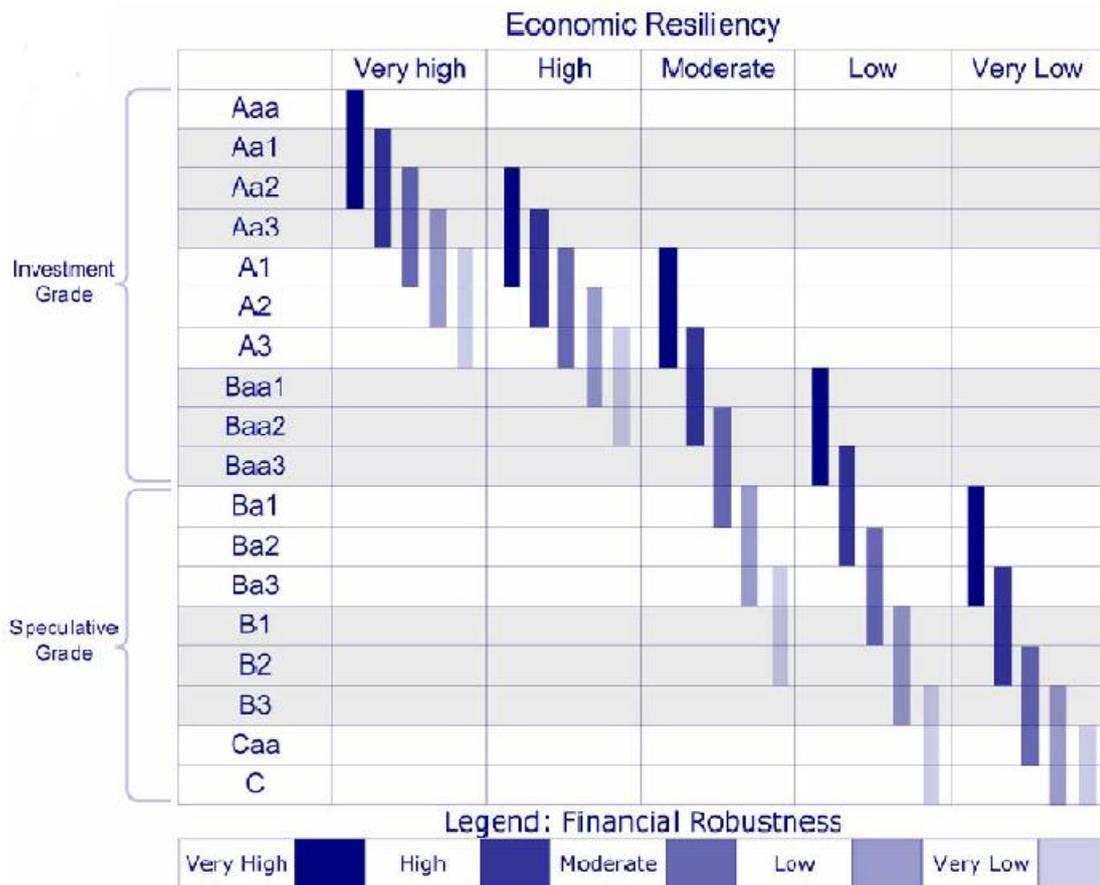
Assessing Financial Robustness		Factor 4- Susceptibility to event risk				
		Very low	Low	Moderate	High	Very high
Factor 3- Government financial strength	Very high					
	High					
	Moderate					
	Low					
	Very low					
Financial Robustness		Very low	Low	Moderate	High	Very high

Source: Moody's 2008

### 3.3.5. Final determination of the sovereign rating

From the graph below, you can see how the sovereign rating is finally assessed based on our 4 widely discussed factors.

**Figure 5:** Final determination of the Sovereign Rating



Source: Moody's 2008

## Rating the Sovereigns: Does It Work?

---

What is the key message of my detailed analysis of Moody's sovereign rating assessment? I would like to emphasize once again that the sovereign rating cannot be assessed on the basis of the values of quantitative indicators only. When interpreting these values, we necessarily have to take into account the characteristics of the specific country, such as the current economic and political situation, historical development, and also the probable scenario of future development.

Additionally, analysts have to be sure exactly what particular indicators indicate. A lot of indicators can be measured in many different ways, each of them taking into account slightly different information and each of them producing a slightly different conclusion.

A danger also occurs when there is a change in the methodology of an indicator over time. These changes should certainly be emphasized under all circumstances, as they can cause deep distortions.

All of this implies that the analysts who gather information for the final decision-making body, *the Rating Committee* (see also p.29), have to be highly educated and experienced as well as perfectly aware of current issues and the economic development of the rated country. This conclusion is not valid only for Moody's, but generally for all rating agencies.

Similarly to single indicators, the final sovereign rating cannot be assessed mechanically. The Rating Committee decides about the weights of particular indicators for particular Sovereigns, meaning which indicators are crucial for the particular Sovereign. The Rating Committee has to keep in mind that the mentioned factors serve only as an approximate guideline, as they are scaled in five categories only, Low, Very Low, Moderate, High and Very High, which is by itself not sufficient.

Rating agencies have been criticized many times for the fact that they are usually paid by the country that wants to be rated and therefore they have a motivation to rate these subjects higher than they should (we can see here a certain conflict of interest). Rating agencies try to make arrangements that would eliminate these doubts and increase its trustworthiness. The Rating Committee is one of them. The fact that the final decision on the sovereign rating is not made by one person but by a group of people eliminates the possibility of an improper sovereign rating assessment. Another

such arrangement is Moody's wide portfolio of sovereign rating analysts who work on collecting the data for the calculation of indicators and their interpretation.

### 3.4. Differences in sovereign rating methodologies

As I already indicated, Rating Agencies use different methodologies for sovereign rating assessment, which leads to variations in current sovereign rating grades. However, the differences are not only in sovereign rating level, but also in the timing of changes in sovereign rating, as well as in the use and the timing of warnings of changes in the sovereign rating, that is, in the use of credit watch and outlook status. What are the main differences between Rating Agencies when speaking about sovereign rating assessment?

After reading through the methodologies of the two remaining Agencies, S&P and Fitch, and comparing them with the methodology used by Moody's, I would like to conclude that *the differences are usually not in the indicators used for sovereign rating assessment but in the weights individual rating agencies attach to these indicators*. All three Rating Agencies use the same indicators in principle, they just weight them differently.

Regarding this conclusion, I will not analyze the particular differences in the S&P and Fitch indicators here, as this would be very lengthy without any substantial contribution. An illustrative example of the differences in the indicators is that Fitch does not use GDP per capita on the PPP basis as Moody's does, but instead uses a combination of GDP per capita on a market exchange rate basis with the GDI (Gross domestic income) per capita on the PPP basis.

But the question is: How can we find out the crucial differences in methodologies of our Rating Agencies when they do not provide any information about the weights of the indicators they use? I therefore once again asked the General Manager of Moody's for Central Europe, Mr. Vinš, what he thinks the differences between Rating Agencies are. He told me that he would explain it by a comparison of Moody's and S&P. S&P is more oriented towards technical quantitative parameters based on historical information, while Moody's tries to look more into the future and

## Rating the Sovereigns: Does It Work?

---

predict future development. But is this a fact or just an opinion? If it is a fact, shouldn't the Rating Agencies be able to verify this fact? And what about Fitch?

For me, the differences in the weights of individual indicators still remain an unsolved puzzle. I find this a big opportunity for transparency improvement. It would be very useful if Rating Agencies would publish a collective document with an explanation of the main differences in the weights of their sovereign rating indicators. In my opinion, this would improve their credibility further and make their methodologies for sovereign rating completely transparent.

### 4. Sovereign rating in practice

The following chapter is based mainly on the information gained in the personal interview with the General Manager of Moody's for Central Europe, Mr. Vinš.

How does the sovereign rating business work in real life? The biggest Rating Agencies are characterized by using the so-called "Issuer-pays" model, which means that the credit rating assessment is demanded and paid for by a bond issuer, in our case by a Sovereign.

If a Sovereign wants to issue a bond in order to borrow money, it is almost essential to ask one of the Rating Agencies for an evaluation of the probability of its own default. As investors decide whether to invest in a concrete sovereign bond on the basis of the sovereign credit rating, it is in the Sovereign's own interest to be rated by at least one major Rating Agency. Moreover, with the increasing value of issued bonds, investors usually call for more than one sovereign rating in order to compare their credit opinions.

In the past, Rating Agencies used the "Investor-pays" model, but this model turned out not to be that effective. S&P President David Sharma argues that by this model investors, who pay for the ratings, can easily pressure the Rating Agencies to lower initial ratings because such securities pay higher yields. In this point he "Issuer-pays" model is more suitable and ensures that the highest number of bonds get ratings.<sup>10</sup>

The Sovereign is usually represented by *the Central Bank* or sometimes by *the Ministry of Finance*. As I mentioned above, it is the Sovereign who initially applies to the Rating Agency for a sovereign rating assessment.

The entire rating process lasts approximately 2 months. At the beginning of this process, the analysts from the Rating Agency have a meeting with government representatives. As this is the only opportunity for the Sovereign to influence its rating, it is in its interest to provide the Rating Agency with as much accurate information as possible. The moment the Rating Agency finds out that information provided by the

---

<sup>10</sup> Source: Bloomberg (14.4.2009)

## Rating the Sovereigns: Does It Work?

---

Sovereign is wrong, it can unexpectedly downgrade the sovereign rating, which could negatively influence the Sovereign's creditworthiness.

After the meeting, the rating analysts continue to collect information. They make use of statistics from international organizations such the IMF or the World Bank, and also work out their own statistics on the basis of the information provided by the Sovereign. At the end of the rating process, the Rating Committee decides about the final sovereign rating on the basis of the information gained by the analysts.

After the initial sovereign rating assessment, the Rating Agencies continuously monitor the political and financial situation in the particular state, and they are prepared to change the rating if necessary. If there are no important changes, the Rating Agencies refresh their sovereign ratings annually in detail.

Under the "Issuer-pays" model, the Sovereign also has to pay for the sovereign rating assessment. Sovereigns pay a single Rating Agency in orders of *ten thousand Euro annually* in sovereign rating fees. In recent years, Rating Agencies have had a tendency to determine fixed fees, the same for all countries. This arrangement should prevent rumors that the Rating Agencies have a higher motivation to rate the Sovereigns with higher fees higher; in other words, that they can be bribed. However, the fixed fees currently apply only at the level of bank rating; they have not been implemented to sovereign rating yet.

In addition to the annual fees, Sovereigns also pay for every concrete bond issuance. Fees for this purpose are already higher, in orders of *hundred thousand Euro*. They are paid at the date of the issuance and the amount is dependent on the total value of the issued bond.

### 5. Empirical part

As mentioned at the beginning of my bachelors thesis, the main purpose of the sovereign rating is to express *the probability of default* on debt issued by a Sovereign. Do the sovereign ratings indeed properly predict sovereign default? Would it be possible for one Rating Agency to rate Sovereigns generally higher or lower than the others? These questions are the subjects of my empirical analysis, which I would like to introduce in the following chapter.

#### 5.1.Sovereign default

As sovereign default is one of the key terms in the empirical part of my thesis, I would like to introduce it in more detail. “Sovereign default is defined as the failure of the government to meet a principal or interest payment on the due date. In practice most defaults end up being partial, not complete, albeit sometimes after long negotiations and much acrimony. Creditors may not have the leverage to enforce full repayment but they typically do have enough leverage to get at least something back, often a significant share of what they are owed. Even the most famous cases of total default have typically ended in partial repayment” (Reinhart & Rogoff 2009).

When Sovereigns are not able to meet their financial commitments, they try to save the situation by attempting to reschedule their debt. Debt rescheduling usually means that the debtor forces its creditors to extend the maturity of the debt or to provide interest payment relief. The Rating Agencies, of course, consider debt rescheduling as a kind of default.

An important contribution to the research concerning sovereign defaults have been recently done by Carmen M. Reinhart and Kenneth S. Rogoff. Their published book, *This Time is Different* (2009) provides a quantitative history of the financial crisis. Another economic paper (Reinhart & Rogoff 2010) provides a country-by-country history of public debt and economic crises of various forms.

### 5.2. Data collection

For my empirical analysis, I needed sovereign bond rating histories for all the countries from the three main rating Agencies: Moody's, Fitch, and S&P. That meant that I needed to gain a list of all the countries rated by a concrete Rating Agency with the dates when the sovereign rating of these countries changed. Moody's and Fitch have this list freely available on their web pages, and S&P provided me with this list after a personal request. After that, I was able to create my own table with all the information I needed (see Appendix 2). In my research, I tested only long-term foreign currency sovereign ratings. When there was more than one sovereign rating change for a concrete country during one year, I always took into account the last sovereign rating in the year. I used data that were last updated by the Rating Agencies on 22. February 2011.

As the rating scales of the mentioned Rating Agencies differ and I needed the sovereign ratings to be comparable, I had to adjust my data to one rating scale. I decided to translate all the rating scales to the Fitch sovereign rating scale, as Fitch distinguishes between the largest number of rating categories. This transfer was quite intuitive for all the categories except the default category, which for my research is the most significant one. Therefore, I would like to briefly introduce the default categories of our Rating Agencies. S&P has only one category for all types of default, SD, which indicates simply the probability of sovereign default. In contrast, Moody's tries to estimate not only the probability of default, but also the severity of the loss, which means that its sovereign ratings predict the total potential loss of the client. Moody's distinguishes between two categories of default: Ca and C. Category Ca corresponds to an eventual sovereign default within a near time horizon or to an already-defaulted Sovereign with a good chance for the investors to recover substantial part of their debt. C equates to a default with a poor recovery rate. And what about Fitch? Fitch differentiates between Restricted default (RD) and Default (D). While D means the de facto bankruptcy of a country, RD means just a default without the country's bankruptcy.

During my analysis, I also needed to make an average rating for a particular year or state; therefore, I had to convert Fitch's rating scale into numbers.

## Rating the Sovereigns: Does It Work?

**Figure 6:** Adapting Moody's and Fitch rating scale to the Fitch rating scale

Moody's	S&P	Fitch	investment grade	investment grade	Moody's	S&P	Fitch	speculative grade	speculative grade
Aaa	AAA	AAA			23	Ba1	BB+		
Aa1	AA+	AA+	22	Ba2	BB	BB	12		
Aa2	AA	AA	21	Ba3	BB-	BB-	11		
Aa3	AA-	AA-	20	B1	B+	B+	10		
A1	A+	A+	19	B2	B	B	9		
A2	A	A	18	B3	B-	B-	8		
A3	A-	A-	17		CCC+	CCC+	7		
Baa1	BBB+	BBB+	16	Caa1	CCC	CCC	6		
Baa2	BBB	BBB	15		CCC-	CCC-	5		
Baa3	BBB-	BBB-	14	Caa2	CC	CC	4		
				Caa3	C	C	3		
						RD	2		
				Ca		DDD/DD	1		
				C	SD	D	0		

Source: Author

I divided my analysis into two main hypotheses:

- (1) Do the Rating Agencies systematically predict sovereign defaults?
- (2) Are there any systematic differences in sovereign rating assessments of Rating Agencies?

### 5.3. Do Rating Agencies systematically predict sovereign defaults?

What was my research process? First, I searched for a complete list of all the sovereign defaults that occurred during the last two decades with concrete months of default occurrence. This task seemed to be quite easy; however, it was unexpectedly difficult, as no any official organization exists that provides such a detailed list of sovereign defaults. From Reinhart & Rogoff (2009) and Reinhart (2010), I was able to detect which countries defaulted in which years, but I wasn't able to establish the concrete month of the sovereign default. The problem is that usually there is no concrete day of a sovereign default, and it is even hard to determine the particular month in which the sovereign default occurred. Therefore, I have to emphasize here that the months of sovereign defaults as I determined them for my empirical analysis are only approximate, although I tried to determine them as precisely as possible. I had to find

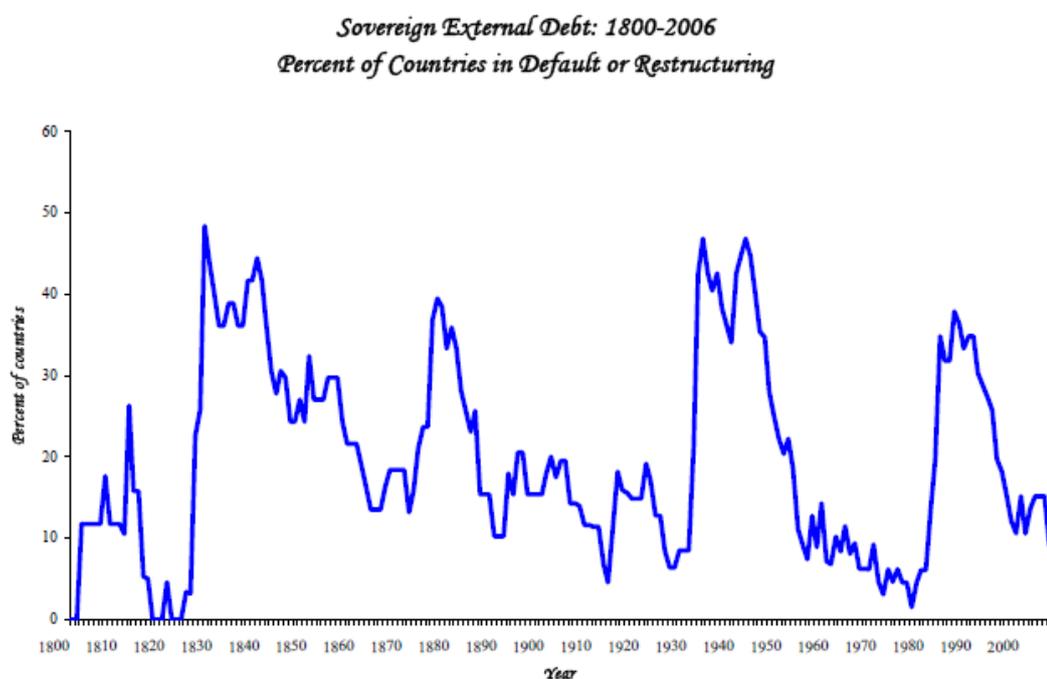
## Rating the Sovereigns: Does It Work?

the concrete months one by one manually on the Internet, from inconsistent information. The results can be seen in Appendix 3.

During this data collection, I made one interesting finding: in the introductory part of my thesis, I mentioned that in the 1980s all rated Sovereigns were investment-grade, while the share of investment-grade sovereign ratings declined to approximately 60% in 2009. From this statement, one could deduce that in the past, sovereign defaults did not occur so often. However, during my data processing, I found out that this is definitely not true. Sovereign defaults were even more frequent in the past than they are today; the problem is that previously, the sovereign rating was only requested by “AAA” countries.

Throughout history there have been a number of periods during which a high percentage (from 30% to 50%) of countries were in default or debt rescheduling. The periods of the Napoleonic wars or the Great Depression in 1930s can serve as examples of such “peaks”. The last peak occurred during the debt crisis in the emerging markets in the 1980s and 1990s.

**Figure 7:** Periods of sovereign defaults

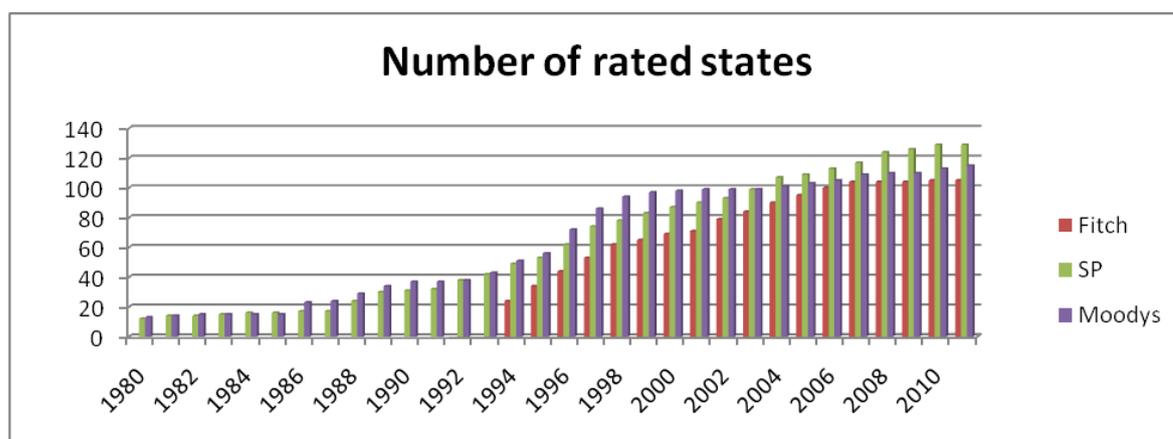


**Source:** Reinhart, Rogoff (2008)

## Rating the Sovereigns: Does It Work?

And now comes the point. As can be seen from the chart below, the most significant increase in the number of rated states occurred in the mid-1990s, after the last wave of sovereign defaults. The majority of states that defaulted in the 1980s and 1990s began to be rated exactly one year after their default occurred. I find this fact very interesting; however, I have not focused on its further investigation in this thesis. This would be an opportunity for further research.

**Figure 8:** Number of rated states 1980-2010

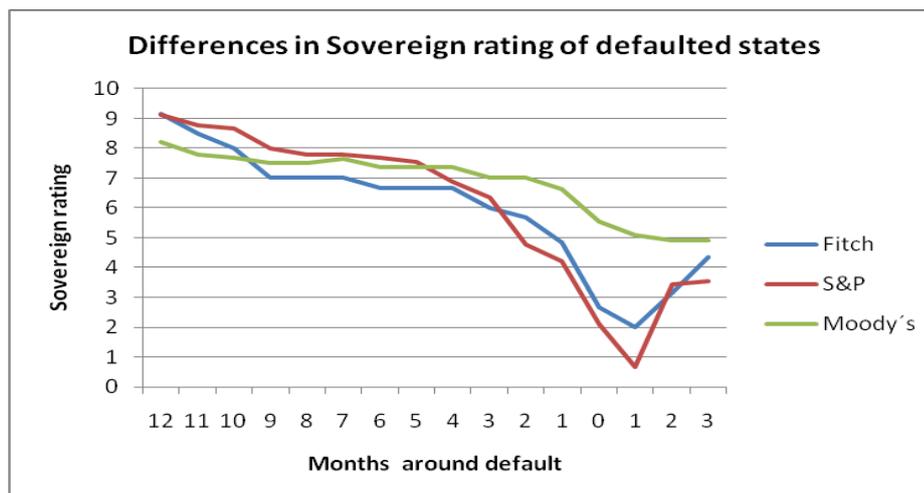


**Source:** Author and Rating Agencies

What I'm trying to point out is that the history of sovereign defaults of countries that have been rated by at least one rating agency at the time of the default is rather short (I found only 13 such cases), and these defaults represent only a small fragment of the total number of sovereign defaults in history.

Let's go back to my analysis. Once I had a complete list of all sovereign defaults, I studied the sovereign rating development of defaulted countries 12 months before and 3 months after the sovereign default. Finally, I made an average rating for every month separately for each Rating Agency, and I compared my findings in the chart below.

**Figure 9:** Differences in sovereign rating of defaulted states



**Source:** Author

On the horizontal axis, 0 indicates the moment of default; on the vertical axis, the numbers represent the sovereign rating: 10 is assigned to B+ and 0 to Default. We can see that the sovereign ratings provided by S&P corresponded the best; on the other hand, Moody's sovereign ratings surprisingly did not react correctly at the moment of default. *Maybe more interestingly, none of our Rating Agencies predicted the sovereign default before or even at the time of default.* In all of them, we can see a strong tendency to downgrade during the month after the sovereign default occurred.

The development of the curve that represents Moody's ratings is very surprising. How is it possible that at the time of default, the average sovereign rating is "only" Caa1? A possible explanation can be found directly in Moody's sovereign rating methodology: "Some governments may remain in the low B range even though the likelihood of a credit event is very high – simply because the loss-given-default will likely be mild. Alternatively, some countries that may be given a high B or even low Ba rating from a pure default risk perspective will have a low B rating based on the potentially devastating impact of a default."<sup>11</sup> Moody's default rating does not express only the probability of default, but also the loss given by the default. As many of the

<sup>11</sup> Moody's (2008)

## Rating the Sovereigns: Does It Work?

---

defaulting countries considered in my analyses are very small economies (for example, the Dominican Republic or Uruguay), the consequences of their default would not be that crucial. This could explain why some countries in default are rated by Moody's as high as the B category.

According to Moody's (2010) "Sovereign ratings have proven to be accurate predictors of default risk, providing consistent and timely information. All sovereign defaulters have had ratings of Ba2 (BB) or below within one year prior to default." This is an example of how Rating Agencies represent themselves to the public. It is true that all sovereign defaulters have had ratings of Ba2 or below within one year prior to default; however, this fact definitely does not imply that sovereign ratings have proven to be accurate predictors of default risk. From my analysis, I can say that Rating agencies react correctly to current economic issues, but they cannot predict these issues in advance.

### **5.4. Are there any systematic differences in the sovereign rating assessments of the three main Rating Agencies?**

Shreekant Iyengar (2010) tested the differences between the sovereign ratings provided by Moody's and S&P in two years, 1995 and 2007. He came to the conclusion that the sovereign ratings provided by S&P are generally lower than those provided by Moody's. The variations in sovereign credit quality assessments across rating agencies are also studied by Hill et al. (2010). These works inspired me to verify the differences in sovereign rating assessment in more detail.

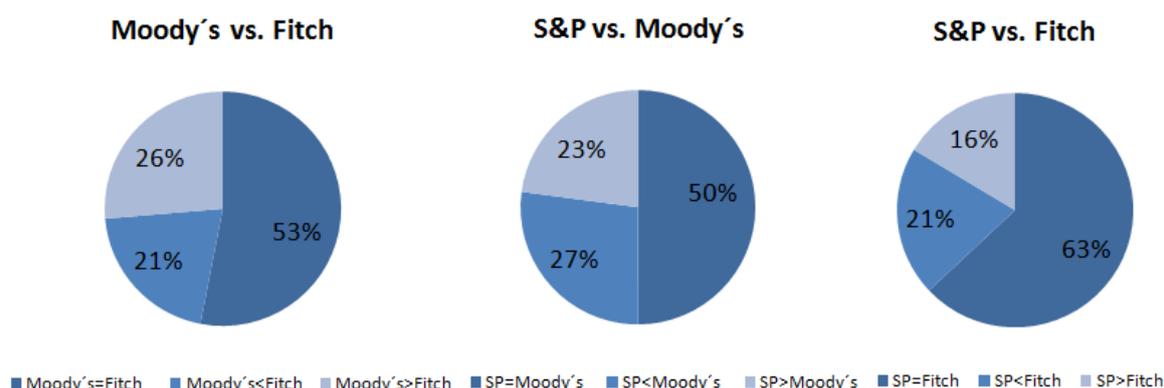
To add to Shreekant Iyengar's research, I compared not only Moody's versus S&P but also Moody's versus Fitch and Fitch versus S&P. To make my findings more significant, I did not take into account only two particular years, but every year from 1994 to 2011.

I took pairs of rating agencies and made a list of all the countries that are rated by both rating agencies. I transferred all the ratings to the rating scale of the Rating Agency with the higher number of sovereign rating levels. Finally, I converted these already-adjusted ratings to a numerical scale and compared the concrete levels of sovereign ratings.

## Rating the Sovereigns: Does It Work?

You can see my findings in the chart. All pairs of Rating Agencies assess the same level of the sovereign rating at least 50% of the time. I didn't prove in any case that one of the rating agencies rated Sovereigns generally higher or lower than the other ones.

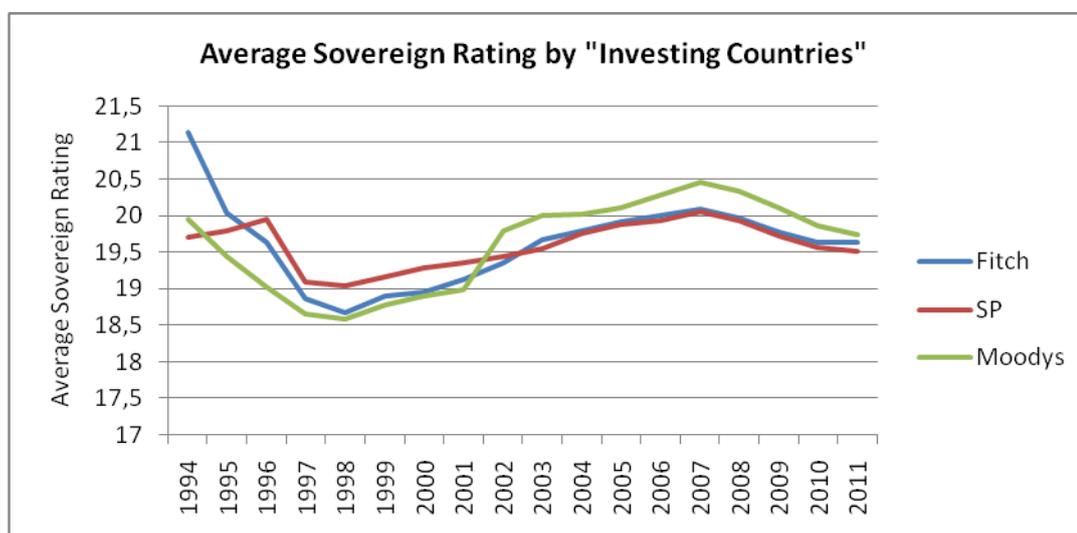
**Figure 10:** Comparison of sovereign rating levels for pairs of Rating Agencies



**Source:** Author

Another question is whether one of our Rating Agencies overestimates Sovereigns with high sovereign ratings or underestimates Sovereigns with low sovereign ratings. In order to work out this puzzle, I divided the Sovereigns into three categories: States with sovereign ratings moving within the investment-grade rating, states with sovereign ratings usually in the speculative category, and states with ratings on the edge between the investment-grade and speculative categories. I compared sovereign ratings in every mentioned category separately. In all categories, the levels of average sovereign ratings of different Rating Agencies copied each other; in other words, I did not find that one of the rating agencies overestimated or underestimated a category of sovereign ratings. For an illustration, I include the chart describing my findings for countries with ratings usually in the investment-grade category. You can see that the average rating levels for all Rating Agencies ranged around 20, which means around AA-. More information about other categories of states can be seen in Appendix 4.

**Figure 11:** Comparison of average sovereign rating levels by “Investing Countries”



**Source:** Author

By testing my second hypothesis, I found that there are no systematic differences between the sovereign ratings of Moody’s, Fitch, and S&P.

### 5.5. Conclusion of my empirical research

In my opinion, it is unfair to blame the Rating Agencies for the fact that they are not able to predict sovereign default in advance. No one is able to predict what will happen in the future when these predictions are based largely on historical information. From my perspective, it is important that Rating Agencies provide a relative comparison of sovereign risk without any systematic differences in their ratings. The problem is that Rating Agencies should not try to persuade the public that they can predict a sovereign default when they cannot.

There is one more aspect. Should Rating Agencies publicly predict the default of a country? Imagine that a Rating Agency declares a default rating before it actually happens. This action would quite certainly speed up the default itself. Couldn’t the rated government sue the Rating Agency, trying to prove that without the default rating the country wouldn’t have defaulted?

### 6. Sovereign rating and the recent financial crisis 2008-2009

The recent world financial crisis has had a substantial impact on governments and their sovereign ratings.

How did it begin? According to Wignall (2008), the global macro policies positively affecting liquidity on the markets were the main reason for the recent financial crisis. The global policies with very low interest rates caused the financial markets to become “overliquid”. Because of low inflation and extremely low interest rates, mortgages in the United States and elsewhere were generally very cheap and therefore in strong demand. Based on this, the so-called mortgage bubble grew to a huge size. Liquidity started to evaporate from the markets gradually in the second half of 2007, and that triggered the bursting of the bubble.<sup>12</sup>

The financial crisis blew up in full force at the end of summer 2008, namely after the bankruptcy of the bank Lehman Brothers in September 2008. Central banks in the U.S. and many other countries had to lend as a case of emergency huge liquidity to the banks that invested heavily into mortgage-related securities, and their existing owners were not able to bring additional capital. Of course, the governments had also another possibility, to let the banks become bankrupt, but the liquidation of such banks would have had unprecedented consequences for some countries.

The enormous amounts of fresh capital that the governments had to provide to avoid the bankruptcies of their banks soon caused the financial crisis to move from the financial sector and the real economy to the level of individual states. The fast-growing indebtedness of many states became unacceptable for investors, which caused the inability of these states to raise more debt or at least to refinance their existing debt on the international capital markets.

Governments' deficits were noticeably increasing. Many countries have gone through a deep crisis in their public budgets or Balance of Payments, namely, for

---

<sup>12</sup> It is important to mention that Rating agencies also contributed to the triggering of the global financial crisis. They were publicly declared as one of the 3 participants in the financial markets responsible for the financial crisis. It is said that the Rating Agencies issued unreasonably high ratings of highly structured and technically complicated securities without analysing the risks connected with them properly. For more information, see the bachelor's thesis by Petra Anderlíková (2010).

## Rating the Sovereigns: Does It Work?

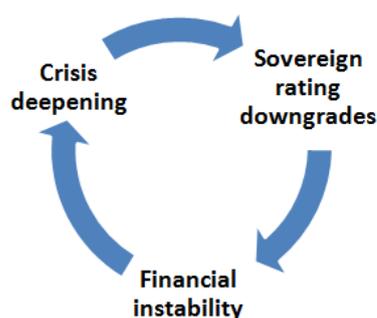
---

example, Ireland, Iceland, Greece, Portugal, Spain, and Ukraine. Rating Agencies had to react on this situation by frequent rating actions, mostly by sovereign rating downgrades, negative outlooks, and credit watches. Some of mentioned countries have been downgraded by more than one notch, and some of them even multiple times. However, it is interesting to mention that none of these states has officially defaulted on their debt so far. Sovereign defaults are nowadays quite rare, as states in trouble are usually saved by the timely assistance of the International Monetary Fund or the European Union. During the crisis, the opinion that the costs of the bankruptcy of a country are higher than the costs of salvation by the IMF or EU prevailed in the international political and financial community.

From the arguments above, we can see that the recent financial crisis has strongly, and in most cases negatively, influenced the sovereign ratings. However, Arezki et al (2011) and Gande & Parsley (2003) argue that simultaneously, sovereign rating downgrades have a spillover effect across both countries and financial markets; in other words, that *negative rating announcements can cause further financial instability*, especially during a crisis. As a consequence of a number of sovereign downgrades during the crisis, uncertainty has prevailed on the financial markets.

It is therefore possible that the recent financial crisis was influenced by the so-called spiral effect. A number of sovereign downgrades caused further financial instability on the financial markets. As the crisis deepened, a higher number of countries got into trouble, which meant another wave of sovereign downgrades as a result. Here I find a great opportunity for further research. It would be really interesting to try to verify this feature using real data, for example through the use of econometric regression.

**Figure 12:** The spiral effect caused by the sovereign downgrades



Source: Author

## Rating the Sovereigns: Does It Work?

---

The financial crisis has proven the importance and the influence of the rating for the world economy. Sovereign ratings are one of the few indicators on which the development of the financial crisis can be seen. They inform investors, borrowers, bankers, and economists all over the world about which countries are in trouble. On the other hand, the rating downgrades may have caused further financial instability and made the crisis deeper.

### 7. Conclusion

With the increasing number of sovereign ratings in the last two decades, their importance has grown as well. The global financial crisis of 2008-2009 proved that the sovereign ratings have become an important indicator of global financial development.

My thesis helps understand the importance of setting up the sovereign rating in a correct, objective, and transparent way and at the right time. In the past, the Rating Agencies were criticized for insufficient transparency. During my research, I came to the conclusion that the transparency of the Rating Agencies has improved substantially, although it is definitely not 100%. All of the studied Rating Agencies (Fitch, S&P, and Moody's) publish the methodologies of their sovereign rating assessments, meaning that they describe the indicators they use for sovereign rating assessments in relative detail, but they do not provide any information about the weights of these indicators. This information is crucial for a deeper understanding and comparison of their sovereign ratings methodologies, and the Rating Agencies could, in my opinion, improve their transparency in this field.

The empirical part of my thesis tested two hypothesis. The first one has proven that the sovereign ratings are not able to predict sovereign defaults in advance, which is definitely very surprising finding. All three tested Rating Agencies have a strong tendency to downgrade the sovereign ratings during the month after the sovereign default has already occurred. On the other hand, the second hypothesis has not proven any systematic differences in sovereign ratings of three biggest Rating Agencies. That means that none of the mentioned Rating Agencies rates Sovereigns generally higher or lower than the others. I would like to conclude that even though the Rating Agencies are not able to predict the sovereign default in advance they can at least provide reliable relative comparison of Sovereigns.

The topic of sovereign rating still provides great opportunities for further research. It would be for example very interesting to verify the spiral effect, caused by sovereign downgrades during the financial crisis, through the use of some empirical analysis or economic regression. However, this research would be much more challenging and time consuming. Hopefully I will have an opportunity to extend my research for example in master's thesis.

# Rating the Sovereigns: Does It Work?

## Appendix

Appendix 1: Key sovereign rating indicators in numbers. An example of developed countries

	Net Foreign Direct Investment / GDP	Current Account Balance (US\$ Bil.)	Real Effective Exchange Rate (% change)	Nominal Exchange Rate (Local Currency per US\$)	General Government debt/General Government Revenue	General Government Debt (US\$ Bil.)	General Government Primary Balance/GDP	General Government Financial Balance/GDP	General Government Expenditure/GDP	General Government Revenue/GDP	Government Effectiveness	Openness of the Economy	Net Exports of Goods and Services/GDP	Real Imports of Goods and Services (%change)	Real Exports of Goods and Services (%change)	Nominal Imports of Goods and Services (%change, US\$ basis)	Nominal Exports of Goods and Services (%change, US\$ basis)	Gross Domestic Savings/GDP	Gross Investment/GDP	Unemployment rate (%)	Inflation (CPI, % change, Dec/Dec, 2005=100 )	Real GDP (% change)	GDP per capita (PPP, US\$)	Population (mil.)	Nominal GDP (US\$ Bil.)	Rating
Australia	1.1	-43.06	-8.2	1.11	67.6	188.01	-3.1	-3.9	32.3	28.4	1.74	40.4	-0.6	-7.8	0.6	-15.8	26.2	28.0	5.6	2.1	1.2	39 231	21.4	979.9	Aaa	
Austria	0.8	8.78	0.3	0.69	137.6	265.22	-0.8	-3.5	52.3	48.8	1.63	96.5	4.5	-13.6	-15.5	-20.9	21.3	25.7	4.8	1.0	-3.9	38 748	8.3	381.1	Aaa	
Belgium	8.0	3.97	0.4	0.69	200.0	470.00	-2.3	-6.1	54.2	48.1	1.48	143.2	1.7	-11.1	-10.8	-22.8	22.9	20.2	7.7	0.0	-2.8	36 048	10.7	471.2	Aa1	
Canada	-1.5	-38.38	-1.5	1.05	215.1	205.46	-4.6	-5.5	44.0	38.5	1.78	59.1	-1.7	-13.4	-14.0	-18.7	19.6	21.2	8.3	0.8	-2.5	37 946	33.3	1 340.1	Aaa	
Cyprus	5.9	-1.83	3.4	0.69	141.2	13.72	-3.5	-6.0	45.8	39.8	1.32	84.5	-5.8	-19.8	-11.8	-25.2	11.4	17.2	5.3	2.0	-1.7	—	0.9	23.5	Aa3	
Denmark	-2.5	12.94	6.3	5.19	74.8	132.57	-0.6	-2.8	58.1	55.3	2.19	90.9	3.5	-13.2	-10.2	-24.0	21.0	17.4	6.0	1.4	-4.7	36 762	5.5	310.1	Aaa	
Eurozone	-0.9	-88.02	1.0	0.69	177.6	174.42	-3.5	-6.3	50.7	53.3	2.13	72.3	2.5	-11.0	-12.3	-20.1	20.2	19.2	9.4	0.9	-3.6	34 127	326.0	12 441.6	Aaa	
Finland	-1.6	6.53	1.0	0.69	82.2	108.13	-1.3	-2.7	56.0	53.3	2.13	72.3	2.5	-11.0	-12.3	-20.1	20.2	19.2	8.2	-0.6	-8.0	34 65	5.3	238.0	Aaa	
France	-4.1	-77.54	-0.3	0.69	161.3	145.09	-5.2	-7.5	55.6	48.1	1.44	48.0	-1.9	-10.7	-12.4	-19.8	17.0	19.0	9.4	1.0	-2.6	33 655	62.3	2 649.4	Aaa	
Germany	-0.8	165.97	0.8	0.69	166.0	538.64	-10.1	-3.3	47.6	44.3	1.48	76.7	4.9	-14.3	-14.3	-19.9	21.4	16.5	7.5	0.9	-4.7	36 449	82.1	3 330.0	Aaa	
Greece	0.4	-37.00	6.4	0.76	335.4	429.35	-15.4	-15.4	53.1	37.8	0.61	47.9	-9.8	-14.1	-18.1	-19.7	21.4	18.4	9.4	2.6	-2.0	29 663	11.2	326.5	Ba1	
Hong Kong	-1.8	18.26	1.8	1.8	4.1	1.68	1.8	1.8	17.7	19.5	1.76	380.5	1.76	-8.8	-10.1	-10.1	29.7	22.6	5.2	-2.8	—	—	7.0	210.6	Aa1	
Ireland	0.3	-6.20	0.3	0.69	192.3	150.78	-12.2	-14.3	48.4	34.1	1.30	168.3	17.6	-4.1	-4.1	-14.2	29.6	16.0	11.9	-2.6	-7.6	41 278	4.4	221.8	Aa2	
Italy	-0.7	-65.76	0.8	0.69	248.4	536.56	-0.7	-5.3	51.9	46.6	0.52	48.3	-0.4	-14.5	-19.1	-23.9	18.5	18.9	7.8	1.0	-5.0	31 909	59.8	2 112.8	Aa2	
Japan	-1.2	142.20	13.4	90.00	711.1	267.59	-7.7	-10.2	40.8	30.6	1.26	25.9	23.7	-11.8	-9.5	-17.9	26.2	23.4	5.1	-1.5	-1.9	32 443	127.7	5 178.1	Aa2	
Luxembourg	-1.0	11.68	1.0	0.69	34.5	7.87	-0.3	-0.8	42.4	41.6	1.76	302.4	32.9	-10.3	-8.2	-16.0	49.3	16.4	5.4	1.8	-4.1	84 003	0.5	52.8	Aaa	
Malta	9.8	-0.50	1.9	0.69	171.1	5.68	-0.6	-3.8	43.9	40.1	1.11	147.8	0.5	-8.5	-4.2	-19.5	15.1	14.6	6.9	-0.6	-2.1	—	0.4	8.0	A1	
Netherlands	1.2	42.60	1.4	0.69	132.2	500.99	-3.2	-5.4	51.4	46.0	1.69	131.2	7.2	-8.7	-8.2	-17.6	25.6	18.4	3.5	1.2	-3.9	40 715	16.4	794.6	Aaa	
New Zealand	1.0	-3.69	-3.3	5.78	85.0	41.33	-2.2	-3.5	44.7	41.2	1.88	54.1	1.3	-14.9	-4.3	-10.6	20.4	19.0	6.2	2.0	0.5	28 723	4.3	127.2	Aaa	
Norway	-5.1	50.12	-5.1	5.78	96.9	223.49	7.4	9.9	46.2	56.0	1.73	69.9	14.6	-4.3	-19.8	-26.2	35.0	21.6	3.2	2.0	-1.5	55 672	4.8	378.6	Aaa	
Portugal	0.7	-23.98	0.7	0.69	196.1	184.26	-6.6	-9.4	48.2	38.8	1.21	63.4	-7.6	-10.9	-11.8	-22.6	12.1	19.4	9.5	-0.8	-2.6	24 021	10.6	233.5	A1	
Singapore	6.0	33.08	6.0	1.41	271.9	87.94	-1.1	-1.1	18.3	17.2	2.19	137.9	21.1	-19.0	-17.5	-14.7	47.6	27.2	3.3	-0.2	-1.3	50 705	4.8	187.8	Aaa	
Slovakia	-0.8	-2.76	6.9	0.69	104.9	32.54	-6.5	-8.0	42.0	34.0	0.92	140.5	-0.2	-17.6	-16.5	-26.3	19.9	20.6	12.0	0.0	-4.7	22 356	5.4	88.0	A1	
Slovenia	-1.5	-0.44	3.0	0.69	80.9	18.30	-4.1	-5.5	49.9	44.4	1.16	115.0	1.3	-17.7	-17.7	-27.4	24.3	23.0	5.9	2.1	-7.8	27 004	2.0	49.2	Aa2	
Spain	-0.1	-79.40	-0.4	0.69	153.3	807.72	-9.3	-11.1	45.8	34.7	0.94	52.8	1.8	-17.8	-11.6	-27.2	22.3	24.8	18.0	0.8	-3.7	32 545	45.6	1 464.1	Aa1	
Sweden	14.0	29.43	14.0	7.12	76.0	181.80	-2.0	-1.0	55.8	54.8	1.99	90.1	6.9	-13.2	-12.4	-25.3	22.4	19.0	8.3	0.9	-5.1	37 905	9.2	406.1	Aaa	
Switzerland	-1.2	41.05	8.6	1.03	118.5	202.70	-0.9	-0.9	33.9	32.9	1.92	92.4	-0.9	-10.3	-10.3	-11.6	30.7	19.7	3.8	1.9	-7.6	—	7.6	491.9	Aaa	
United Kingdom	1.2	-28.84	1.2	0.62	168.7	538.00	-9.3	-11.2	51.6	40.4	1.48	57.8	-2.4	-10.6	-10.6	-23.2	11.2	13.6	7.5	2.4	-4.9	36 496	61.4	2 178.9	Aaa	
USA	-1.0	-378.43	-10.6	—	276.2	762.00	-9.1	-11.3	41.5	30.2	1.39	25.1	-2.7	-13.9	-9.6	-23.1	14.4	14.8	9.3	-0.3	-2.6	46 436	304.4	14 119.0	Aaa	
Median	-0.7	-50	0.8	0.69	153.3	202.70	-3.1	-5.4	47.6	40.4	1.48	76.7	—	—	—	-19.9	21.4	19.0	9.9	0.9	-2.8	36 449	9.3	381.1		
Mean	-0.5	-10.66	0.4	4.79	168.3	628.34	-3.4	-5.3	45.7	40.3	1.50	109.5	—	—	—	-20.3	22.9	19.7	8.8	0.8	-3.4	37 98	43.1	1 751.5		

## Rating the Sovereigns: Does It Work?

**Appendix 2: Sovereign rating histories of three biggest Rating Agencies**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
<b>Angola</b>																	B+	B+
S&P																	B+	B+
Moody's																	B1	B1
<b>Argentina</b>				BB	BB	BB	BB	DDD	DDD	DDD	DDD	RD	RD	RD	RD	RD	B	B
S&P	BB-	BB-	BB-	BB	BB	BB	BB-	SD	SD	SD	SD	B-	B+	B+	B-	B-	B-	B-
Moody's	B1	B1	B1	Ba3	Ba3	B1	B1	Ca	Ca	Caal	Caal	B3						
<b>Australia</b>			AA	AA+														
S&P	AA	AA	AA	AA	AA	AA+	AA+	AA+	AA+	AAA								
Moody's	Aa2	Aaa																
<b>Austria</b>	AAA																	
S&P	AAA																	
Moody's	Aaa																	
<b>Azerbaijan</b>							B+	BB-	BB-	BB-	BB	BB	BB	BB+	BB+	BB+	BBB-	BBB-
S&P															BB+	BB+	BB+	BB+
Moody's													Bal	Bal	Bal	Bal	Bal	Bal
<b>Bahrain</b>							BBB-	BBB	BBB	A-	A-	A-	A-	A	A	A	A	A
S&P									A-	A-	A-	A-	A	A	A	A	A	A
Moody's			Bal	Bal	Bal	Bal	Bal	Bal	Baa3	Baa1	Baa1	Baa1	A3	A2	A2	A2	A3	A3
<b>Belgium</b>	AA+	AA+	AA+	AA+	AA-	AA-	AA-	AA-	AA	AA	AA	AA	AA+	AA+	AA+	AA+	AA+	AA+
S&P	AA+																	
Moody's	Aa1																	
<b>Bermuda</b>	AA	AA+	AA+	AA+	AA+	AA+	AA+											
S&P		AA																
Moody's	Aa1	Aa2	Aa2															
<b>Bolivia</b>											B-	B-	B-	B-	B-	B	B+	B+
S&P					BB-	BB-	B+	B+	B+	B-	B-	B-	B-	B-	B-	B	B	B
Moody's					B1	B1	B1	B1	B1	B3	B3	B3	B3	B3	B3	B2	B2	B1
<b>Brazil</b>	B+	B+	B+	B+	B+	B	BB-	BB-	B	B+	BB-	BB-	BB	BB+	BBB-	BBB-	BBB-	BBB-
S&P	B	B+	B+	BB-	BB-	B+	B+	BB-	B+	B+	BB-	BB-	BB	BB+	BBB-	BBB-	BBB-	BBB-
Moody's	B1	B1	B1	B1	B2	B2	B1	B1	B2	B2	B1	Ba3	Ba2	Ba1	Ba3	Ba3	Ba3	Baa3
<b>Bulgaria</b>					B+	B+	B+	B+	BB	BB+	BBB-	BBB	BBB	BBB	BBB-	BBB-	BBB-	BBB-
S&P					B	B	B+	BB-	BB	BB+	BBB-	BBB	BBB+	BBB+	BBB	BBB	BBB	BBB
Moody's			B3	B2	B2	B2	B2	B1	B1	Ba2	Ba1	Ba1	Baa3	Baa3	Baa3	Baa3	Baa3	Baa3
<b>Canada</b>	AA	AA+	AA+	AA+	AAA													
S&P	AA+	AAA																
Moody's	Aa1	Aa2	Aa2	Aa2	Aa2	Aa2	Aa1	Aa1	Aaa									
<b>Chile</b>	BBB+	A-	A	A	A	A	A	A	A+									
S&P	BBB+	A-	A	A	A	A+	A+	A+	A+	A+								
Moody's	Baa2	Baa1	A2	A2	A2	A1	Aa3											
<b>China</b>				A-	A	A	A+	A+	A+	A+	A+							
S&P	BBB	BBB	BBB	BBB+	BBB+	BBB	BBB	BBB	BBB	BBB	BBB+	A-	A	A	A+	A+	AA-	AA-
Moody's	A3	A2	A2	A2	A2	A1	A1	A1	Aa3	Aa3								
<b>Colombia</b>	BBB	BBB	BBB	BBB	BBB	BBB-	BB+	BB+	BB	BB	BB	BB	BB	BB+	BB+	BB+	BB+	BB+
S&P	BBB-	BBB-	BBB-	BBB-	BBB-	BB+	BB	BB+	BB+	BB+	BB+	BB+						
Moody's	Ba1	Baa3	Baa3	Baa3	Baa3	Ba2	Ba1	Ba1	Ba1	Ba1								
<b>Costa Rica</b>					BB													
S&P					BB													
Moody's					Ba1	Baa3	Baa3											
<b>Croatia</b>				BBB-	BBB-	BB+	BB+	BBB-										
S&P				BBB-	BBB	BBB	BBB	BBB	BBB	BBB-	BBB-							
Moody's				Baa3														
<b>Cyprus</b>									A+	A+	A+	A+	A+	AA-	AA-	AA-	AA-	AA-
S&P	AA-	AA-	AA-	AA-	A+	A	A	A	A	A	A	A	A	A	A+	A+	A	A
Moody's			A2	A1	Aa3	Aa3	Aa3	A2										
<b>Czech Republic</b>		A-	A-	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	A-	A-	A	A	A	A+	A+	A+	A+
S&P	BBB+	A	A	A	A-	A	A	A	A	A								
Moody's	Baa2	Baa1	A1															

## Rating the Sovereigns: Does It Work?

<b>Denmark</b>	AA+	AAA																	
S&P	AA+	AAA																	
Moody's	Aa1	Aa1	Aa1	Aa1	Aa1	Aaa													
<b>Dominican Republic</b>											B	CCC+	B-	B	B	B	B	B	B
S&P				B+	B+	B+	B+	BB-	BB-	CCC	CC	B	B	B+	B	B	B	B	B
Moody's				B1	B1	B1	B1	Ba2	Ba2	B2	B3	B3	B3	B2	B2	B2	B2	B2	B1
<b>Ecuador</b>										CCC+	CCC+	B-	B-	B-	CCC	RD	CCC	B-	B-
S&P							B-	CCC+	CCC+	CCC+	CCC+	CCC+	CCC+	B-	SD	CCC+	B-	B-	
Moody's				B1	B3	Caa2	Caa2	Caa2	Caa2	Caa2	Caa1	Caa1	Caa1	Caa1	Ca	Caa3	Caa3	Caa2	Caa2
<b>Egypt</b>				BBB-	BBB-	BBB-	BBB-	BBB-	BB+	BB									
S&P				BBB-	BBB-	BBB-	BBB-	BBB-	BB+	BB									
Moody's				Ba2	Ba1	Ba2													
<b>El Salvador</b>				BB	BB	BB	BB+	BB	BB	BB									
S&P				BB	BB	BB	BB+	BB	BB	BB	BB-								
Moody's				Baa3	Ba1	Ba1	Ba1	Ba1											
<b>Estonia</b>				BBB	BBB	BBB	BBB+	A-	A-	A	A	A	A	A	A-	BBB+	A	A	A
S&P				BBB+	BBB+	BBB+	BBB+	A-	A-	A-	A	A	A	A	A	A-	A	A	A
Moody's				Baa1	Baa1	Baa1	Baa1	Baa1	A1										
<b>Finland</b>	AA-	AA-	AA	AA+	AAA														
S&P	AA-	AA-	AA	AA	AA	AA+	AA+	AA+	AAA										
Moody's	Aa2	Aa2	Aa2	Aa1	Aaa														
<b>France</b>	AAA																		
S&P	AAA																		
Moody's	Aaa																		
<b>Georgia</b>																			
S&P													B+	B+		BB-	B+	B+	B+
Moody's																			Ba3
<b>Germany</b>	AAA																		
S&P	AAA																		
Moody's	Aaa																		
<b>Greece</b>		BBB-	BBB-	BBB	BBB	BBB+	A-	A	A	A+	A	A	A	A	A	BBB+	BBB-	BB+	BB+
S&P	BBB-	BBB-	BBB-	BBB-	BBB	A-	A-	A	A	A+	A	A	A	A	A	BBB+	BB+	BB+	BB+
Moody's	Baa3	Baa3	Baa1	Baa1	Baa1	A2	A2	A2	A1	A2	Ba1	Ba1	B1						
<b>Guatemala</b>																BB+	BB+	BB+	BB+
S&P									BB	BB	BB-	BB-	BB-	BB	BB	BB	BB	BB	BB
Moody's				Ba2	Ba1														
<b>Hong Kong</b>	AA-	A+	A+	A+	A+	A+	A+	AA-	AA-	AA-	AA-	AA-	AA-	AA	AA	AA	AA	AA+	AA+
S&P	A	A	A	A+	A	A	A	A+	A+	A+	A+	AA-	AA	AA	AA+	AA+	AAA	AAA	AAA
Moody's	A3	A1	A1	A1	A1	Aa3	Aa2	Aa2	Aa2	Aa1	Aa1								
<b>Hungary</b>			BBB-	BBB	BBB	BBB+	A-	A-	A-	A-	A-	BBB+	BBB+	BBB+	BBB	BBB	BBB	BBB	BBB
S&P	BB+	BB+	BBB-	BBB-	BBB	BBB	A-	A-	A-	A-	A-	BBB+	BBB+	BBB+	BBB	BBB	BBB	BBB	BBB
Moody's	Ba1	Ba1	Baa3	Baa3	Baa2	Baa1	A3	A3	A1	A1	A1	A1	A2	A2	A3	Baa1	Baa3	Baa3	Baa3
<b>Iceland</b>							AA-	A+	BBB-	BBB-	BB+	BB+	BB+						
S&P	A	A	A+	AA-	A+	A+	BBB-	BBB-	BBB-	BBB-	BBB-								
Moody's	A2	A2	A1	Aa3	Aa3	Aa3	Aa3	Aa3	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Baa1	Baa3	Baa3	Baa3	Baa3
<b>India</b>							BB+	BB	BB	BB	BB	BB+	BB+	BBB-	BBB-	BBB-	BBB-	BBB-	BBB-
S&P	BB+	BB+	BB+	BB+	BB	BB+	BB+	BBB-	BBB-	BBB-	BBB-	BBB-							
Moody's	Baa3	Baa3	Baa3	Baa3	Ba2	Ba2	Ba2	Ba2	Ba2	Ba2	Ba1	Baa3							
<b>Indonesia</b>				BBB-	B-	B-	B-	B-	B	B+	B+	BB-	BB-	BB-	BB	BB	BB+	BB+	BB+
S&P	BBB-	BBB	BBB	BB+	CCC+	CCC-	B-	CCC	CCC-	B	B+	B+	BB-	BB-	BB-	BB-	BB	BB	BB
Moody's	Baa3	Baa3	Baa3	Ba1	B3	B3	B3	B3	B3	B2	B2	B2	B1	Ba3	Ba3	Ba2	Ba2	Ba2	Ba1
<b>Ireland</b>	AA+	AA+	AA+	AA+	AAA	AA-	BBB+	BBB+											
S&P	AA-	AA	AA	AA	AA+	AA+	AA+	AAA	AA	A	A-								
Moody's	Aa2	Aa2	Aa2	Aa1	Aaa	Aa1	Baa1	Baa1											
<b>Israel</b>																			
S&P	BBB+	A-	A	A	A	A	A												
Moody's		A3	A3	A3	A3	A3	A2	A1	A1	A1	A1								
<b>Italy</b>			AA	AA-	AA-	AA-	AA-	AA-	AA-	AA	AA	AA	AA	AA	AA-	AA-	AA-	AA-	AA-
S&P	AA	AA-	AA-	AA-	AA-	AA-	AA-												
Moody's	A1	A1	Aa3	Aa2															
<b>Jamaica</b>															B+	B+	B	CCC	B-
S&P							B	B	B+	B+	B	B	B	B	B	B	B	CCC	B-
Moody's							Ba3	Ba3	Ba3	Ba3	Ba3	B1	B1	B1	B1	B1	B1	Caa1	B3

## Rating the Sovereigns: Does It Work?

<b>Japan</b>	AAA	AAA	AAA	AAA	AA+	AA+	AA+	AA											
S&P	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA											
Moody's	Aaa	Aaa	Aaa	Aaa	Aa1														
<b>Kazakhstan</b>				BB-	BB-	BB	BB-	BB	BB+	BB+	BBB-	BBB	BBB	BBB	BBB-	BBB-	BBB-	BBB-	BBB-
S&P				BB-	BB-	B+	B+	BB-	BB	BB	BB+	BBB-	BBB-	BBB	BBB-	BBB-	BBB-	BBB-	BBB-
Moody's				Ba3	Ba3	Ba3	B1	B1	Ba2	Baa3	Baa3	Baa3	Baa3	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2
<b>Korea</b>			AA-	B-	BB+	BBB	BBB+	BBB+	A	A	A	A+							
S&P	A+	AA-	AA-	B+	BB+	BBB	BBB	BBB+	A-	A-	A-	A	A	A	A	A	A	A	A
Moody's	A1	A1	A1	Ba1	Ba1	Baa2	Baa2	Baa2	A3	A3	A3	A3	A3	A2	A2	A2	A1	A1	A1
<b>Kuwait</b>		A	A	A	A	A	A	A+	AA-	AA	AA	AA	AA						
S&P				A	A	A	A	A	A+	A+	A+	A+	A+	A+	AA-	AA-	AA-	AA-	AA-
Moody's				Baa1	Baa1	Baa1	Baa1	Baa1	A2	A2	A2	A2	A2	Aa3	Aa2	Aa2	Aa2	Aa2	Aa2
<b>Latvia</b>					BBB	BBB	BBB	BBB	BBB	BBB+	A-	A-	A-	BBB+	BBB-	BB+	BB+	BB+	BB+
S&P					BBB	BBB	BBB	BBB	BBB+	BBB+	A-	A-	A-	BBB+	BBB-	BB	BB+	BB+	BB+
Moody's					Baa2	Baa2	Baa2	Baa2	Baa2	A2	A2	A2	A2	A2	A2	A3	Baa3	Baa3	Baa3
<b>Lebanon</b>				BB	BB-	BB-	BB-	B-	B	B	B								
S&P				BB-	BB-	BB-	B+	B	B-	B	B	B	B						
Moody's				B1	B1	B1	B1	B2	B2	B2	B2	B3	B3	B3	B3	B2	B1	B1	B1
<b>Lithuania</b>				BB+	BB+	BB+	BB+	BBB-	BBB	BBB	BBB	A-	A-	A	A	BBB+	BBB	BBB	BBB
S&P				BBB-	BBB-	BBB-	BBB-	BBB-	BBB	BBB+	A-	A	A	A	BBB+	BBB	BBB	BBB	BBB
Moody's				Ba2	Ba1	Ba1	Ba1	Ba1	Ba1	Baa1	A3	A3	A3	A2	A2	A2	Baa1	Baa1	Baa1
<b>Luxembourg</b>	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
S&P	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Moody's	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa
<b>Malaysia</b>				BB	BBB	BBB	BBB	BBB+	BBB+	A-									
S&P	A+	A+	A+	A	BBB-	BBB	BBB	BBB+	BBB+	A-									
Moody's	A2	A1	A1	A2	Baa3	Baa3	Baa2	Baa2	Baa1	Baa1	A3								
<b>Malta</b>			A	A	A	A	A	A	A	A	A	A	A	A	A+	A+	A+	A+	A+
S&P	A	A	A+	A+	A+	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Moody's	A2	A2	A2	A2	A3	A2	A1	A1	A1	A1									
<b>Mexico</b>		BB	BB	BB	BB	BB	BB+	BB+	BBB-	BBB-	BBB-	BBB	BBB	BBB	BBB+	BBB+	BBB	BBB	BBB
S&P	BB+	BB	BB	BB	BB	BB	BB+	BB+	BBB-	BBB-	BBB-	BBB	BBB	BBB	BBB+	BBB+	BBB	BBB	BBB
Moody's	Ba3	Ba3	Ba2	Ba2	Ba2	Ba1	Baa3	Baa3	Baa2	Baa2	Baa2	Baa1							
<b>Mongolia</b>															B+	B+	B+	B	B+
S&P							B	B	B	B	B	B	B	B	B+	BB-	BB-	BB-	BB-
Moody's															B1	B1	B1	B1	B1
<b>Morocco</b>															BBB-	BBB-	BBB-	BBB-	BBB-
S&P					BB	BB+	BB+	BB+	BB+	BBB-	BBB-								
Moody's					Ba1														
<b>Netherlands</b>	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
S&P	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Moody's	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa
<b>New Zealand</b>									AA	AA+									
S&P	AA	AA	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+
Moody's	Aa2	Aa2	Aa1	Aa1	Aa2	Aa2	Aa2	Aa2	Aaa										
<b>Norway</b>		AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
S&P	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Moody's	Aa1	Aa1	Aa1	Aaa															
<b>Panama</b>					BB+	BBB-	BBB-												
S&P					BB+	BB+	BB+	BB+	BB	BB+	BBB-	BBB-							
Moody's	Aa	Aa	Aa	Ba1	Baa3	Baa3													
<b>Papua New Guinea</b>							B+	B+	B+	B+	B	B	B	B	B	B+	B+		
S&P							B+	B+	B	B	B	B	B	B	B+	B+	B+	B+	B+
Moody's							B1												
<b>Peru</b>							BB	BB	BB-	BB-	BB-	BB	BB	BB	BB+	BB+	BBB-	BBB-	BBB-
S&P					BB	BB	BB	BB-	BB-	BB-	BB	BB	BB	BB	BB+	BB+	BBB-	BBB-	BBB-
Moody's					B2	B2	Ba3	Ba2	Ba1	Baa3	Baa3								
<b>Philippines</b>							BB+	BB+	BB+	BB+	BB								
S&P	BB-	BB	BB	BB+	BB+	BB+	BB+	BB+	BB+	BB									
Moody's	Ba3	Ba2	Ba2	Ba1	Ba3	Ba3													
<b>Poland</b>							BB+	BBB	BBB+	A-	A-	A-	A-						
S&P					BB	BBB-	BBB-	BBB-	BBB	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	A-	A-	A-	A-
Moody's					Baa3	Baa3	Baa3	Baa3	Baa1	Baa1	Baa1	A2							
<b>Portugal</b>	AA-	AA-	AA-	AA-	AA														
S&P	AA-	AA-	AA-	AA-	AA														
Moody's	A1	A1	A1	Aa3	Aa2	A1	A1												

## Rating the Sovereigns: Does It Work?

<b>Romania</b>				BB-	BB-	B	B-	B	B	BB-	BB	BBB-	BBB-	BBB	BBB	BB+	BB+	BB+	BB+
S&P				BB-	BB-	B-	B-	B-	B	B+	BB	BB+	BBB-	BBB-	BBB-	BB+	BB+	BB+	BB+
Moody's				Ba3	Ba3	B3	B3	B3	B2	B2	Ba3	Ba3	Ba1	Baa3	Baa3	Baa3	Baa3	Baa3	Baa3
<b>Russia</b>				BB+	BB+	CCC	CCC	B	B+	BB-	BB+	BBB-	BBB	BBB+	BBB+	BBB+	BBB	BBB	BBB
S&P				BB-	BB-	CCC-	SD	B-	B+	BB	BB	BB+	BBB	BBB+	BBB+	BBB	BBB	BBB	BBB
Moody's				Ba2	Ba2	B3	B3	B3	Ba3	Ba2	Baa3	Baa3	Baa2	Baa2	Baa2	Baa1	Baa1	Baa1	Baa1
<b>Saudi Arabia</b>												A	A	A+	A+	AA-	AA-	AA-	AA-
S&P												A	A	A+	AA-	AA-	AA-	AA-	AA-
Moody's												Baa3							
<b>Singapore</b>						AA+	AA+	AA+	AA+	AA+	AAA								
S&P	AA+	AAA																	
Moody's	Aa2	Aa2	Aa1	Aaa															
<b>Slovakia</b>				BBB-	BBB-	BB+	BB+	BB+	BB+	BBB-	BBB	A-	A	A	A	A+	A+	A+	A+
S&P	BB-	BB+	BBB-	BBB-	BB+	BB+	BB+	BBB-	BBB	BBB	BBB	A-	A	A	A	A+	A+	A+	A+
Moody's				Baa3	Baa3	Baa3	Ba1	Ba1	Ba1	Baa3	A3	A3	A3	A2	A1	A1	A1	A1	A1
<b>Slovenia</b>				A-	A-	A-	A	A	A	A	A+	AA-	AA-	AA	AA	AA	AA	AA	AA
S&P				A	A	A	A	A	A	A	A+	AA-	AA-	AA	AA	AA	AA	AA	AA
Moody's				A3	A3	A3	A3	A2	A2	Aa3	Aa3	Aa3	Aa3	Aa2	Aa2	Aa2	Aa2	Aa2	Aa2
<b>South Africa</b>	BB	BB	BB	BB	BB	BB	BBB-	BBB-	BBB-	BBB	BBB	BBB+							
S&P	BB	BB+	BB+	BB+	BB+	BB+	BBB-	BBB-	BBB-	BBB	BBB	BBB+							
Moody's	Baa3	Baa2	Baa2	Baa2	Baa2	Baa1	Baa1	Baa1	Baa1	A3	A3	A3	A3						
<b>Spain</b>	AA	AA	AA	AA	AA	AA+	AA+	AA+	AA+	AAA									
S&P	AA	AA	AA	AA	AA	AA+	AA+	AA+	AA+	AAA									
Moody's	Aa2	Aaa																	
<b>Sri Lanka</b>														BB-	BB-	BB-	B+	B+	B+
S&P														B+	B+	B+	B	B	B+
Moody's																			B1
<b>Suriname</b>												B	B	B	B	B	B	B	B
S&P							B-	B	B+	B+	B+	B+							
Moody's												B1							
<b>Sweden</b>	AA-	AA-	AA-	AA-	AA-	AA	AA	AA	AA+	AA+	AAA								
S&P	AA+	AAA																	
Moody's	Aa2	Aa3	Aa3	Aa3	Aa2	Aa1	Aa1	Aa1	Aaa										
<b>Switzerland</b>	AAA																		
S&P	AAA																		
Moody's	Aaa																		
<b>Taiwan</b>									A+										
S&P	AA+	AA	AA	AA-															
Moody's	Aa3																		
<b>Thailand</b>					BB+	BBB-	BBB-	BBB-	BBB-	BBB	BBB	BBB+	BBB+	BBB+	BBB+	BBB+	BBB	BBB	BBB
S&P	A	A	A	BBB	BBB-	BBB-	BBB-	BBB-	BBB	BBB	BBB+								
Moody's	A2	A2	A2	Ba1	Ba1	Ba1	Baa3	Baa3	Baa3	Baa1									
<b>Tunisia</b>			BBB-	BBB-	BBB-	BBB-	BBB-	BBB-	BBB										
S&P			BBB-	BBB-	BBB-	BBB-	BBB-	BBB											
Moody's			Baa3	Baa2	Baa3														
<b>Turkey</b>	B	BB-	B+	B+	B+	B+	BB-	B	B	B	B+	BB-	BB-	BB-	BB-	BB+	BB+	BB+	
S&P	B+	B+	B	B	B	B	B+	B-	B-	B+	BB-	BB-	BB-	BB-	BB-	BB-	BB	BB	
Moody's	Ba3	Ba3	Ba3	B1	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	Ba2								
<b>Ukraine</b>									B-	B	B+	B+	BB-	BB-	BB-	B+	B	B	
S&P									B	B	B+	B+	BB-	BB-	BB-	B	CCC+	B+	
Moody's									B3	B3	Caa1	Caa1	B2	B1	B1	B1	B1	B2	
<b>U.K.</b>	AAA																		
S&P	AAA																		
Moody's	Aaa																		
<b>U.S.A.</b>	AAA																		
S&P	AAA																		
Moody's	Aaa																		
<b>Uruguay</b>			BB+	BB+	BBB-	BBB-	BBB-	BBB-	B	B-	B	B+	B+	BB-	BB-	BB-	BB	BB	BB
S&P	BB+	BB+	BB+	BBB-	BBB-	BBB-	BBB-	BBB-	B-	B-	B	B	B+	BB-	BB-	BB-	BB	BB	BB
Moody's	Ba1	Ba1	Ba1	Baa3	Baa3	Baa3	Baa3	Baa3	B3	B3	B3	B3	B1	B1	B1	Ba3	Ba1	Ba1	Ba1
<b>Venezuela</b>					BB-	BB-	BB-	BB-	BB-	B	B	B+	BB-	BB-	BB-	B+	B+	B+	B+
S&P	B+	B+	B	B+	B	B	B	B	CCC+	B-	B	B-	BB-	BB-	BB-	BB-	BB-	BB-	
Moody's	Ba3	Ba3	Ba2	Ba2	B2	B2	B2	B2	B3	Caa1	B2								
<b>Vietnam</b>											BB-	B+	B+						
S&P											BB-	BB-	BB-	BB-	BB	BB	B	BB-	BB-
Moody's														Ba3	Ba3	Ba3	Ba3	Ba3	B1

Source: Author and Rating Agencies

## Rating the Sovereigns: Does It Work?

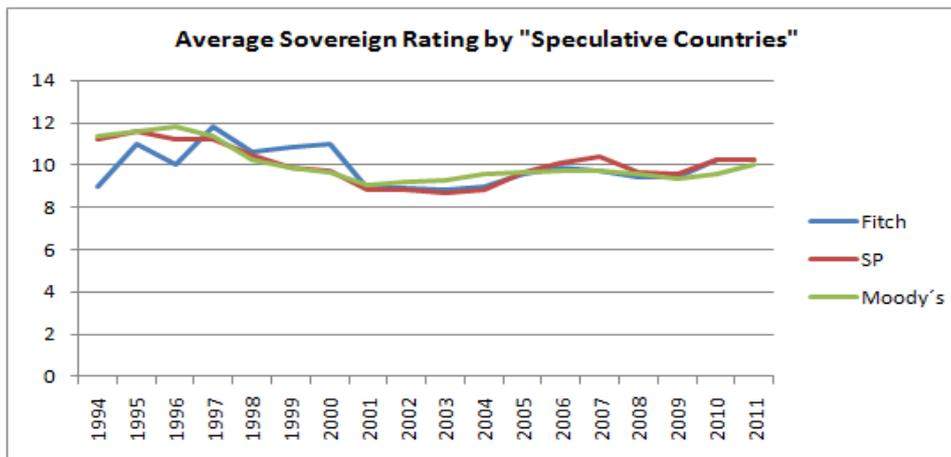
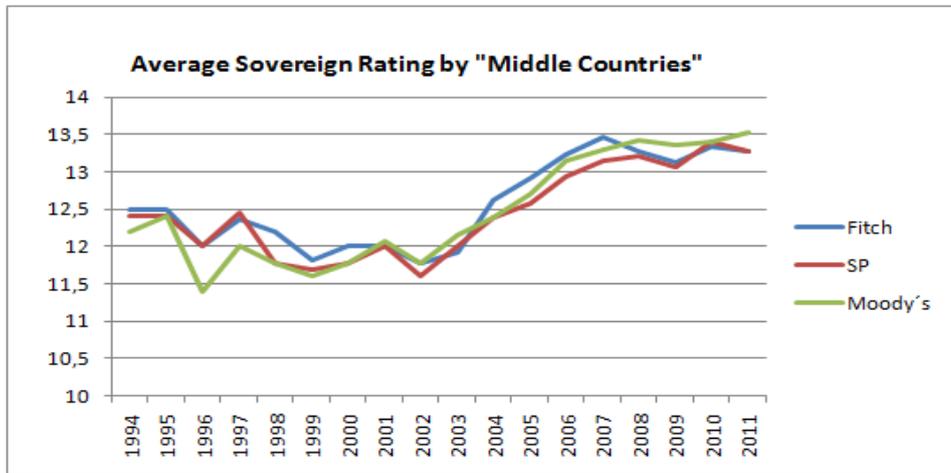
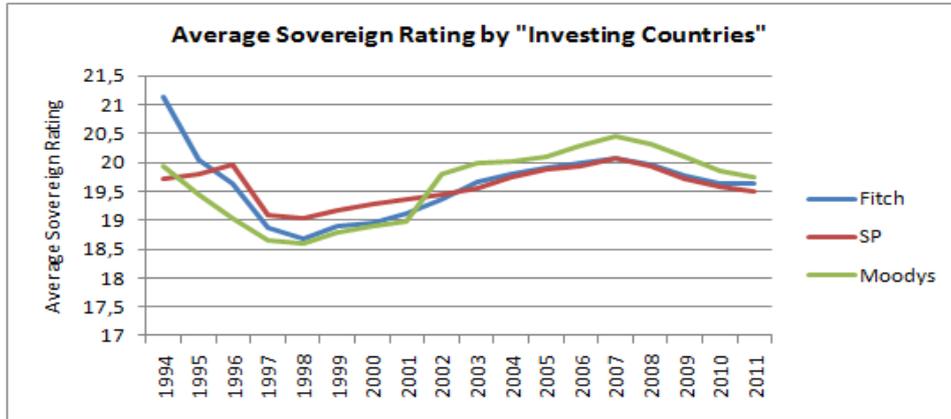
### Appendix 3: Sovereigns with default: changes in rating one year before default has occurred

	Date of Default	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3		
Argentina	January 2002	BB	BB	B+	B+	B+	B+	B-	B-	B-	CCC-	C	DDD	DDD	DDD	DDD	DDD		
		S&P	BB-	BB-	B+	B+	B	B	B-	B-	B-	CC	SD	SD	SD	SD	SD	SD	
		Moody's	B1	B1	B2	B2	B2	B2	Caa1	Caa1	Caa1	Caa3	Caa3	Ca	Ca	Ca	Ca	Ca	
Belize	December 2006	Not Rated																	
		S&P	CCC-	CCC-	CCC-	CCC-	CCC-	CCC-	CCC-	CCC-	CC	CC	CC	CC	SD	SD	B	B	
		Moody's	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	Caa3	
Dominican republic	April 2005	CCC+	CCC+	CCC+	CCC+	CCC+	CCC+	CCC+	CCC+	CCC+	CCC+	CCC+	CCC+	C	DDD	DDD	B-		
		S&P	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	SD	SD	SD	SD	B	B	
		Moody's	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	
Ecuador 1.	October 1999	Not Rated																	
		S&P	Not Rated																
		Moody's	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	Caa2	Caa2	Caa2	Caa2	
Ecuador 2.	December 2008	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	RD	RD	RD	RD		
		S&P	B-	B-	B-	B-	B-	B-	B-	B-	B-	B-	CCC-	SD	SD	SD	SD		
		Moody's	Caa2	Caa2	Caa2	B3	Caa1	Ca	Ca	Ca	Ca								
Grenada	December 2004	Not Rated																	
		S&P	BB-	BB-	BB-	BB-	BB-	BB-	BB-	BB-	B+	B-	B-	SD	SD	SD	SD		
		Moody's	Not rated																
Moldova	June 2002	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	DD	DD	DD	DD		
		S&P	Not Rated																
		Moody's	B3	Caa1	Ca	Ca	Ca												
Pakistan	August 1998	Not Rated																	
		S&P	B+	B+	B+	B+	B+	B+	B+	B+	B+	B-	CCC	CCC	CCC	CCC-	CCC-		
		Moody's	B2	B2	B2	B2	B2	B2	B2	B2	B2	B3	B3	B3	B3	B3	Caa1	Caa1	
Russia	May 1999	BB+	BB	BB-	CCC														
		S&P	BB-	B+	B+	CCC	CCC-	CCC-	CCC-	CCC-	SD								
		Moody's	B1	B1	B1	B3													
Seychelles	July 2008	Not rated at the time of default																	
		S&P	B	B	B	B	B	B	B	B	B	B	B	B	B	B	SD	SD	SD
		Moody's	Not Rated																
Ukraine 1.	September 1998	Not rated at the time of default																	
		S&P	Not rated at the time of default																
		Moody's	NR	NR	NR	NR	NR	B2	B3	B3	B3	B3							
Ukraine 2.	January 2000	Not rated at the time of default																	
		S&P	Not rated at the time of default																
		Moody's	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	Caa1	Caa1	Caa1	Caa1
Uruquay	April 2003	BB+	B+	B+	B	B	B	B	B	B	B-	B-	CCC-	C	DDD	B-	B-		
		S&P	BB+	BB-	BB-	B	B	B	B	B-	B-	B-	CCC	CCC	CC	SD	B-	B	
		Moody's	Baa3	Ba2	Ba2	B3													

Source: Author

## Rating the Sovereigns: Does It Work?

**Appendix 4:** Average sovereign ratings for Investment, Speculative and Middle Sovereign



Source: Author

### References

- Afonso, A., Gomes, P.M. & Rother, P.,** (2007). *What „Hides“ Behind Sovereign Debt Ratings?*, European Central Bank, Working paper series, No 711, January 2007
- Afonso, A.,** (2002): *Understanding the Determinants of Government Debt Ratings: Evidence for the Two Leading Agencies*, February 2002
- Arezki, R. et al (2011):** *Sovereign Rating News and Financial Markets Spillovers: Evidence from the European Debt Crisis*, IMF working paper; 2011
- Bloomberg (2009):** *S&P, Moody's Defend Pay Model Faulted by Regulators (Update1)* ; April 2009
- Cantor, R. & Packer, F.,** (1996): *Determinants and Impact of Sovereign Credit Ratings*, FRBNY Economic policy review, October 1996
- Cantor, R. & Packer, F.,** (1995): *Sovereign Credit Ratings*, Federal reserve bank of New York, June 1995
- Claessens, S., Embrechts, G.** (2003): *Basel II, Sovereign Ratings and Transfer Risk, External versus Internal Ratings*, March 2003
- ESME (2008):** *Role of Credit Rating Agencies*, ESME's Report to the European Commission, June 2008
- Fitch Ratings (2002):** *Sovereign Ratings, Rating Methodology*,2002
- Fitch Ratings (2008):** *Country Ceilings, Criteria Report, September 2008*
- Fitch Ratings (2010):** *Sovereign Rating Methodology*, August 2010
- Fitch Ratings (2011):** *Definitions of Ratings and Other Forms of Opinion*, January 2011
- Fitch Ratings (2011):** *Fitch- Complete Sovereign Rating History* , February 2011
- Gande, A., Parsley, D.**(2003): *New spillovers in the sovereign debt market*, Journal of financial economics, November 2003
- Hill, P., Brooks, R. & Faff, R.,** (2010): *Variations in sovereign credit quality assessments across rating agencies*. Journal of Banking & Finance, 34(6), s.1327-1343, 2010
- Iyengar, S.** (2010): *Are Sovereign Credit Ratings Objective and Transparent?*, The IUP Journal of Financial Economics, Vol. VIII, No. 3, pp. 7-22, September 2010
- Kaufmann, D. et al** (2010): *The Worldwide Governance Indicators: Methodology and Analytical Issue*, World Bank, 2010
- Klein, A.** (2004): *Smoothing the Way for Debt Markets*, Washington Post, Page A18, November, 2004
- Kuhner, CH. (2001):** *Financial rating agencies: Are they credible?*, Schmalenbach business revue, vol. 53, January 2001

## Rating the Sovereigns: Does It Work?

---

- Levinson, M.** (2009): *Guide to Financial Markets*, The Economist, 2009
- Mellios, C., Paget- Blanc, E. (2006):** *Which factors determine sovereign credit ratings?*, Te European Journal of Finance, June 2006
- Moody's Investors Service** (2008): *Sovereign Bond Rating, Rating methodology*, 2008\*<sup>13</sup>
- Moody's Investors Service** (2008): *Sovereign Default and Recovery Rates, 1983-2007*, 2008
- Moody's Investors Service** (2009): *Sovereign Default and Recovery Rates, 1983-2008*, 2009
- Moody's Investors Service** (2010): *European Sovereign Outlook*, 2010\*
- Moody's Investors Service** (2010): *Market Use of Sovereign Credit Rating*, 2010\*
- Moody's Investors Service** (2010): *Moody's Sovereign Rating Process* (Power Point presentation), March 2010\*
- Moody's Investors Service** (2010): *Moody's Statistical Handbook, Country Credit*; Nov 2010\*
- Moody's Investors Service** (2010): *Sovereign Default and Recovery Rates, 1983-2009*, 2010
- Reinhart, C., Rogoff, K. (2008):** *This Time is different: Panoramic View of Eight Centuries of Financial Crisis*; April 2008
- Reinhart, C., Rogoff, K. (2009):** *This Time is different*; Princeton University Press, ISBN 978-0-691-14216-6; 2009
- Reinhart, C. (2010):** *This Time is different chart book: Country histories on debt, default, and financial crises*, National bureau of economic research, March 2010
- Standard & Poors** (2007): *Understanding Sovereign Risk*; August 2007
- Standard & Poors** (2008): *Sovereign Credit Ratings: A Primer*, May 2008
- Standard & Poors** (2009): *Guide to Credit Rating Essentials*, 2009
- Standard & Poors** (2009): *Sovereign Defaults and Rating Transition Data*, 2008 Update,
- Standard & Poors** (2011): *Sovereign Rating History*, February 2011\*
- Sy, A.N.R. (2003):** *Rating the Rating Agencies: Anticipating Currency crisis of Debt Crisis*, IMF Working paper, June 2003
- Wignall, A., Atkinson, P., Lee, S. (2008):** *The current financial Crisis: Causes and Policy Issues*, IOECD, 2008

---

<sup>13</sup> \* Documents gained from Rating agencies on a personal request

## Rating the Sovereigns: Does It Work?

---

UNIVERSITAS CAROLINA PRAGENSIS

založena 1348



Univerzita Karlova v Praze  
Fakulta sociálních věd  
Institut ekonomických studií

Opletalova 26

110 00 Praha 1

TEL: 222 112 330,305

TEL/FAX: 222 112 304

E-mail: [ies@mbox.fsv.cuni.cz](mailto:ies@mbox.fsv.cuni.cz)

<http://ies.fsv.cuni.cz>

Akademický rok 2009/2010

### TEZE BAKALÁŘSKÉ PRÁCE

Student:	Alžběta Mošnová
Obor:	Ekonomie
Vedoucí práce:	Petr Janský, M.Sc.
Konzultant:	Bc. Jan Šolc

Garant studijního programu Vám dle zákona č. 111/1998 Sb. o vysokých školách a Studijního a zkušebního řádu UK v Praze určuje následující bakalářskou práci

❖ Předpokládaný název BP:

Význam ratingových agentur pro jednotlivé státy a světovou ekonomiku

- ❖ Charakteristika tématu, současný stav poznání, případné zvláštní metody zpracování tématu:

Ratingové agentury se v posledních dvou letech výrazně dostaly do popředí zájmu ekonomů, analytiků i laické veřejnosti. Je to především v souvislosti s rozsahem a hloubkou současné finanční krize, kdy ratingové agentury jsou zmiňovány jako jeden z jejích viníků.

Při řešení současné krize došlo k prohloubení zadlužení mnohých zemí. Většina zemí byla nucena podpořit své bankovní systémy. Investoři začínají mít vážné pochyby o tom, jestli některé předlužené země budou schopny splnit své závazky. Ratingové agentury, a jejich hodnocení schopnosti jednotlivých zemí splácet své dluhy, jsou pro chování investorů klíčové. Jejich význam v posledních letech stoupl nejen s krizí, ale už i s tím, jak v předcházejících přibližně dvaceti letech rostlo všeobecné zadlužení ve světě.

Zatímco v dobách ekonomického růstu plní ratingové agentury svoje poslání bez velké kritiky, v dobách krize je jim řada věcí vytýkána. Především pak k tomu, jestli včas reagují na vytváření různých bublin, přehřátí ekonomik v jednotlivých zemích a zhoršení makroekonomické situace. Jsou ratingové agentury připraveny na nově vzniklou situaci? Jsou principy práce odpovídající? Jaké jsou důsledky změn hodnocení ratingu jednotlivých zemí? Tyto otázky byly mou motivací, proč jsem si téma ratingových agentur vybrala. Tato bakalářská práce bude mít dvě hlavní části.

Část popisnou, ve které se budu snažit zhodnotit dosavadní význam činnosti ratingových agentur pro světovou ekonomiku a jednotlivé státy. Budu se věnovat popisu principů práce ratingových agentur Fitch, Moodies a Standard and Poors při určování tzv. sovereign ratingu. Zejména tím, jaké jsou hlavní determinanty při hodnocení ratingů zemí. Zmíním, jakou škálu hodnocení jednotlivé agentury používají a jaký je rozdíl mezi ratingem schopnosti splácet dluh v místní měně a ratingem schopnosti splácet své mezinárodní závazky ve volně směnitelných měnách. V souvislosti se suverénním ratingem je potřeba zmínit význam ratingu státu pro všechny dlužníky v dané zemi. Výše ratingu znamená i strop pro státní organizace, banky či podniky v případě jejich snahy získat financování na mezinárodních kapitálových a bankovních trzích.

Ve druhé části by má bakalářská práce měla dát odpovědi na dvě hypotézy.  
1) Porovnání metodiky tří největších světových ratingových agentur Moodies, Fitch, Standard and Poors. Navenek vystupují tyto agentury identicky, ale ve skutečnosti se jejich metodiky a tím pádem i výstupy liší. 2) Snížení resp. zvýšení ratingu země vede ke zvýšení/snížení nákladů financování dluhu dané země. Zhoršení sovereign ratingu u

## Rating the Sovereigns: Does It Work?

zemí v eurozóně vede k výrazně nižšímu růstu rizikové prémie v porovnání s ostatními zeměmi OECD a obzvláště se zeměmi emerging markets.

Kromě potvrzení či vyvrácení výše uvedených hypotéz a kromě úvodní popisné části by pak práce mohla naznačit, jestli reakce ratingových agentur v krizích je adekvátní a jaká poučení či opatření by mohla vyplynout z poslední finanční krize pro ratingové agentury. Byla nečinnost ratingových agentur jednou z příčin finanční krize? Jak dalece může snížení ratingu země přispět k dalšímu zhoršení schopnosti země splácet svůj dluh a tak k dalšímu snížení ratingu, tedy k určitému lavinovému efektu?

Struktura BP:

Abstrakt:

Ratingové agentury se staly jednou z klíčových částí světového finančního systému. Jejich hodnocení je důležitým faktorem k přístupu jednotlivých zemí ke kapitálovým trhům. Důsledky změn ratingu jednotlivých zemí mohou být veliké, snížení ratingu může např. vést k jeho opětovnému snížení. Odpovědnost ratingových firem je tedy velmi vysoká jak ve vztahu k investorům, tak ve vztahu k dlužníkům. Cílem této práce je popsat a porovnat metodiku ratingových agentur a to především ve vztahu k tzv. sovereign ratingu a dopadům změn ratingu na náklady financování vybraných zemí.

Osnova:

### **1.1. Místo ratingových agentur v současném světovém finančním systému.**

- 1.1.1. Rychlý růst světového finančního systému v posledních dvaceti až třiceti letech.
- 1.1.2. Výrazný rozvoj dluhového financování.
- 1.1.3. Potřeba zhodnocení schopnosti dlužníků, tj. jednotlivých států, bank, společností a dalších subjektů finančního trhu.
- 1.1.4. Důležitost ratingových agentur pro rozhodování investorů.
- 1.1.5. Růst významu ratingových agentur jako systému varování před vznikem krizí.

### **1.2. Principy činnosti ratingových agentur**

- 1.2.1. Co hodnotí ratingové agentury. Sovereign rating.
- 1.2.2. Princip politické nezávislosti ratingových agentur.
- 1.2.3. Rozdíl mezi ratingem schopnosti splácet dluh v místní měně a ratingem schopnosti splácet své závazky ve volně směnitelných měnách.

### **1.3. Sovereign rating**

- 1.3.1. Škála ratingového hodnocení.

## Rating the Sovereigns: Does It Work?

- 1.3.2. Parametry určující hodnocení jednotlivých států.
- 1.3.3. Rating států s rozvinutou ekonomikou a rating států s rozvíjející se ekonomikou.
- 1.3.4. Význam ratingu jednotlivých států jako stropu určujícího dosažitelnou hranici pro rating všech dlužníků v dané zemi- sovereign ceiling.

### 1.4. Změny sovereign ratingu a makroekonomický vývoj země.

- 1.4.1. Zvýšení/snížení sazeb financování dluhu země jako zásadní důsledek snížení/zvýšení ratingu země.
- 1.4.2. Reakce dlužnických zemí na snížení ratingu. Reakce investorů.
- 1.4.3. Může snížení ratingu přispět k opětovnému snížení ratingu: Lavinový efekt.

### 1.5. Chování ratingových agentur v krizích.

- 1.5.1. Včasnost a přiměřenost reakce ratingových agentur na krizové jevy v jednotlivých zemích.
- 1.5.2. Kritika ratingových agentur při současné finanční krizi.

Seznam základních pramenů a odborné literatury:

<http://www.moodys.com>

<http://www.standardandpoors.com>

<http://www.fitchratings.com>

Carmen.M.Reinhart: *Default, currency crises, and sovereign credit ratings*

Graciela Kaminsky, Sergio M. Schmuckler (2002): *Emerging market instability: do sovereign ratings affect country risk and stock returns?* World Bank Economic Review, Vol.16, No.2

Richard Cantor, Frank Packer(1996): *Determinants and impact of sovereign credit ratings*. FRBNY Economic Policy Review

Richard Cantor, Frank Packer(1995): *Sovereign credit ratings*. Federal Reserve Bank of New York

Roman Kraussl (2000): *Sovereign ratings and their impact on recent financial crises*. Center for Financial Studies, Frankfurt/Main

Constantin Mellios, Erik Paget Blanc: *Which factors determine sovereign credit ratings?*

Ashok Vir Batia(2002): *Sovereign credit ratings methodology: an evaluation*. IMF working paper.

## Rating the Sovereigns: Does It Work?

---

Antonio Afonso (2002): *Understanding the determinants of sovereign debt ratings. Evidence for the two leading agencies.* Lisbon/Portugal

Alexis Derviz, Jiří Podpiera(2004): *Predicting Bank CAMELS and S&P Ratings: The Case of the Czech Republic.* ČNB

Petra Davidová a Renata Opravilová(2007): Role ratingu při hodnocení stability finančního sektoru. ČNB

[http://www.cnb.cz/cs/mezinarodni\\_vztahy/rating/index.html](http://www.cnb.cz/cs/mezinarodni_vztahy/rating/index.html)

[http://www.cnb.cz/cs/verejnost/pro\\_media/clanky\\_rozhovory/media\\_2009/cl\\_09\\_09\\_0219a.html](http://www.cnb.cz/cs/verejnost/pro_media/clanky_rozhovory/media_2009/cl_09_09_0219a.html)

Datum zadání:	Červen 2010
Termín odevzdání:	Červen 2011

Podpisy vedoucího práce a studenta:

V Praze dne