



## An Empirical Analysis of Country Risk Ratings

Batool K. Asiri, University of Bahrain  
College of Business Administration, Bahrain batoolasiri@gmail.com

Rehab A. Hubail, University of Bahrain, Bahrain

### Abstract

*Corporations and analysts depend heavily on country risk analysis as a guiding force in strategic decision-making. This paper focuses on identifying the important factors that predict country risk ratings. Political factor and selected economic factors are examined to find their influence on determining country risk ratings for a sample of seventy countries over the period of 2006 - 2011. Based on the ratings provided by rating agencies, the Euromoney and Economic Intelligence Unit, the findings indicate that country risk ratings can be predicted to a significant degree with the selected political and economic indicators. The results also confirmed that no significant differences in ratings exist between these two agencies. Moreover, it is found that the impacts and importance of economic and political factors varied significantly in predicting risk ratings for different country groups and different periods of time especially pre and post financial crisis of 2008.*

**Keywords:** Country Risk Rating, GDP, Gross Capital Formation, Euromoney, EIU.

### 1. Introduction

Globalization has led countries towards economic disclosures and this is essential for keeping them competitive. Countries are taking advantage of foreign trade, which represents huge business opportunities leading to the development of new profitable and promising markets. The expansion of business across country borders requires identification, assessment and analysis of the overall risk that economic agents would face in a targeted national economy. Country risk analysis describes in general the international business risks, reflecting the overall situation and the cumulative effects of these risks on the profitability of investments and returns in the country. Hence it diagnoses the socio-economic potential of the country receiving international economic flows which makes the analysis crucial to investors enabling the economic agents to make rational decisions, minimizing the risks and increasing the profitability of overseas investment. Country risk analysis is the primary step in the process of building an international portfolio. Investors are expected to foresee how macro conditions would change as rating agencies are slow in downgrading country credit ratings when a crisis spreads; PIIGS (Portugal, Italy, Ireland, Greece and Spain) as an example in 2010, had negative consequences on investors. Country risk ratings are an important component of country risk management because they provide a framework for establishing country exposure limits that reflect the institution's tolerance for risk. When investors evaluate a country risk, they base their assessment

on the political, economic and socio-cultural factors. Oetzel et al. (2001) stated that empirical researchers have agreed that country risk is the result of political, social and economic factors. This indicates that businesses with foreign direct investment operations are exposed to lots of undesirable financial outcomes. This fact is reaffirmed by the study by Vij (2005) who has argued that managers must keep count of the results of country risk analysis when developing financial strategies. During the last two decades, there have been a large number of economic and political crises that witnessed widespread default of financial institutions in South East Asia and currency crashes and simulating events. Since the financial crisis spilled over from the US and hit Europe with full force in 2008, the impacts are also felt in emerging markets and the Middle East countries. This validates that country risk affects both emerging and developed economies. The severity of these crises on these countries widened when governments used monetary and fiscal policies to combat recession, which resulted in large fiscal deficits and public debts, for major countries. In addition, in 2011, continued political unrest in Tunisia, Libya, Syria, Egypt, Yemen and Bahrain has had political and economic repercussions for all countries in the Middle East and resulted in the re-rating of these countries by top rating agencies. The 2011 Euro crisis has already resulted in the region's country risk scores falling by a greater margin than the Asian economies in 1997 i.e., before any of the countries involved has actually defaulted. With all these changes in the world economy, country risk assessments and its impact on international business operations is crucial. The primary function of country risk assessment is to anticipate the possibility of debt denial, default or delays in payment by sovereign borrowers (Burton and Inoue, 1985). This could be performed through an evaluation of economic, financial, and political factors, and their interactions in determining the risk associated with a particular country. Perceptions of the determinants of country risk are important because they affect both the supply and cost of international capital flows (Brewer and Rivoli, 1990). The importance of country ratings is seen through the existence of several major country risk rating agencies. Since the Third World debt crisis in the early 1980s, agencies such as Moody, Standard and Poor, Euromoney, Institutional Investor, Economist Intelligence Unit, International Country Risk Guide, and Political Risk Services, have compiled sovereign ratings as measures of country credit risk. These agencies use different methods in determining ratings by combining a set of qualitative and quantitative measures of economic, political and other risks. This paper focuses on identifying the various political and economic factors that can help in predicting country risk ratings by Economist Intelligence Unit (EIU) and Euromoney (Eurom) for the period 2006 to 2011. Seven widely-used measures of country risk across 70 countries are examined through stepwise regression to predict country risk ratings provided by EIU and Eurom. Furthermore the risk ratings provided by these agencies are examined to find if there are any differences between them. In addition, tests are conducted before and after the 2008 financial crisis to examine if there are any significant differences between the two periods. Similarly, tests are conducted to find whether the economic and political factors are significantly different in predicting country risk ratings on different country groups.

**Economist Intelligence Unit (EIU):** It publishes quarterly country risk reports with monthly updates. The reports summarize the risk ratings for all 120 key emerging and highly indebted countries that are monitored by the Country Risk Service (CRS). EIU country risk ratings (thereafter EIU ratings) are determined by: Political 22%; economic policy 28%; economic structure 27% and liquidity 23%. EIU country risk score is displayed on a 100 point scale, with 0 indicating very little risk and 100 indicating very high risk.

**Euromoney (Eurom):** It provides semi-annual country risk ratings and rankings (thereafter Eurom ratings). Countries are given scores based on nine components: Political risk 25%; economic performance 25%, debt indicators 10%, debt in default or rescheduled 10%, credit ratings 10%, access to bank finance 5%, access to short-term finance 5%, access to capital markets 5%, and discount on forfeiting, 5%. The best underlying value per category achieves the full weighting, while the worst scores zero. All other values are calculated relative to the best and worst scores. The Eurom country risk score is displayed on a 100 point scale, with 100 being nearly devoid of any risk, and 0 being completely exposed to every risk.

## 2. Literature Review

In the literature of risk management various researchers have defined country risk differently. In this section we will be reviewing various definitions of country risk and also will look into the methodologies used by the rating agencies and available studies on country risk analysis. For example, Krayenbuehl (1985) defined it as the likelihood that borrowers from a country might be unable to repay their obligations towards the foreign lenders. Shanmugam (1990) argued that it is the failure of a country to pay its external debt due to an inability to generate adequate foreign exchange. Shapiro (1999), on the other hand, defined it as the general level of political and economic uncertainty in a country affecting the value of its investments. Furthermore, it is argued in the literature that the three major components of country risk which are economic, financial and political risk, affect each other.

Feder and Uy (1985) and Brewer and Rivoli (1990) developed quantitative models to replicate the country risk ratings by Eurom and Institutional Investor. They are considered as pioneers in identifying the determinants of country risk ratings. They managed to explain 70% of the variance of Institutional Investor ratings for a group of 55 developing countries by replicating the creditworthiness ratings reported in the 1979-1983 issues of the Institutional Investor. Burton and Inoue (1985) studied the effect of economic and socio-political factors on country risk and the following factors: External debt/GNP, maturity structure of external debts, and external debt repayments/export volume. They argued that the assessment of country risk should anticipate the possibility of debt repudiation; default or delays in payment by sovereign borrowers and those disruptive political events frequently precede debt rescheduling. Then, political instability will be followed by ultimate loan default in countries with low foreign exchange reserve or GDP per capita. Nagy (1988) argued that the major components of country risk are economic and financial risks. Based on this claim, they used the following factors: sudden deterioration in the country's terms of trade, rapid increases in production costs (energy prices), unproductively invested foreign funds, and unwise lending by foreign banks. Ghose (1988) argued that political risk is similar to sovereign risk and lies within the broader framework of country risk. Shanmugam (1990) stated that banks and multinational corporations have identified political risk as a factor that could seriously affect the profitability of their global ventures. Hence if a country's neighbor is at war, the country risk will be higher. Brewer and Rivoli (1990) used the 1987 rating of Institutional Investor and Eurom for the top 30 most heavily indebted developing countries to test the effects of political instability on perceived country creditworthiness. They claimed that country risk assessment evaluates economic, financial, and political factors, and their interactions in determining the risk associated with a particular country. Shanmugam (1990) argued that lacking a reserve of foreign currency in managing external debts is a major reason for country risk. Cosset and Roy (1991) replicated Eurom and Institutional Investors country risk ratings on the basis of economic and political

factors. They concluded that per capita income and propensity to invest positively affect the rating of a country and high-ranking countries are less indebted than low-ranking countries. Moreover, the two country risk measures provided by the two rating agencies are highly correlated.

Cantor and Packer (1996) found a close association between credit ratings and per capita GDP, inflation, external debt and default history. Alesina et al. (1996), who modeled the effects of executive instability by measuring the probability of a change in government and then estimated the relationship between growth per capita income and political instability, found that a high executive turnover has a negative impact on growth. Country risk is a global risk with its political, economic and social dimensions. Oetzel et al. (2001) supported the idea that economic, social, and political factors are effective on country risk. Ribeiro (2001) stated that there are some standard economic factors that are found in rating agencies. These factors are related to a country's ability to repay its commitments such as the components of the balance of payments: exports, imports, debt services, direct investments, loans in general, repayments of loans, external debt, and flow of foreign reserves. More factors were suggested such as: the exchange rate, interest rate, public debt and its service, level of investments, budget, internal savings, consumption, GDP/GNP, inflation rate, money supply, population, rate of birthday, life expectancy, rate of unemployment, level of literacy, etc.

Many researchers looked at the macroeconomic indicators that affect country risk. Soussanov (2002) argued that inflation, current account balance, per capita income, GDP, export, import, and external debt volume had significant effects on shaping country risk. Hoti and McAleer (2002) compared 50 international studies in country risk and claimed that political risk is the result of wars, internal and external conflicts, territorial disputes, revolutions leading to changes of government, and terrorist attacks. Social factors include civil unrest due to ideological differences, unequal income distribution and religious clashes. In addition, out of the 70 models used in the studies, all but six are univariate and the most popular model was the Logit followed by Probit, discriminate, and Tobit models. Debt rescheduling (the ability to repay the debt in the future) was used as the dependent variable, and the second variable was agency country risk rating. This was criticized by the ability of aggregating a wide range of factors into one single indicator to assess the risk potential in a specific country at a specific time (Linder and Santiso, 2002). Hammer et al. (2004), and Linder and Santiso (2002) examined the factors to predict country risk changes. In both studies, the country risk ratings published by Eurom and Institutional Investor were modeled based on some macro indicators. The studies were concerned with the extent to which econometric models outperformed the predictions provided by risk rating institutions and most of them judged the dominance of econometric models over rating agencies. Eun and Resnick (2004) argued that country risk is a broader measure of risk than political risk, as the former encompasses political risk, credit risk, and other economic performances. Canuto et al. (2004) concluded that high rating (low sovereign risk) is associated with high per capita income in dollar terms. Other key factors that affect ratings are: inflation (CPI); high economic growth; low total external debt/current account receipts ratio; low central government gross debt/total fiscal receipts ratio; an absence of default events since 1975; and finally, trade flows (the total of exports and imports as a percentage of GDP). Hammer et al. (2004) argued that the purpose of rating is combining many factors in a single value, which can be easily understood and used in decision making to compare between different countries.

Vij (2005) examined the effect of various economic and political factors on country risk ratings done by Eurom and Institutional Investor across 61 countries. He found that political risk had a significant effect on country ratings. Furthermore, GNP per capita and gross capital formations are the main two economic factors that significantly explain country risk ratings. Vij and Kapoor (2007) found that country risk ratings are based on a number of macroeconomic, financial, and political factors. Economic growth rate, current account balance relative to GNP, and various ratios such as: Savings to investment, external debt to GDP, debt service payments to GNP, and interest payments to GNP were the main factors. They also claimed that the main objective of any country risk ratings' system is to find the creditworthiness of countries and this could be achieved through high export growth rates where they can service their debts. However, political instability undermines the capacity of a country to service its debt and hence affects its credit rating. Political risk factors mainly include the extent of political stability, action by a broader group of political leaders, probability of change of government, threat of war etc. Government stability is important because it signals whether government policies will be carried out or not. Karmann and Maltriz (2010) used 19 emerging economies over the period 1998 to 2007 and found that the econometric models developed showed superior performance. Topak and Muzir (2011) found that GDP and country risk are negatively related and the recent failure of Greece is evidence that country risk phenomenon matters not only for emerging countries, but also for the developed economy.

### **3. Data and Methodology**

A sample of seventy worldwide countries is randomly selected with the following criteria: Countries must be rated by two reliable rating agencies (EIU and Eurom); and data should be available for the time period September 2006 until June 2011. The economic factors are collected from the World Bank, IHS Global Insight and Moody's. The political instability indicator is collected from the Eurom and EIU. Risk rating is obtained from Eurom and EIU Country Risk Model.

#### **3.1. The Variables**

**Country risk rating (CR):** This is the dependent variable, which is measured by creditworthiness and is reported by the two rating agencies. Each agency's rating is considered as a separate dependent variable. However, risk rating may be highly subjective, reflecting external perceptions that do not always capture the actual situation in a country. The explanatory variables are described below.

**Gross Domestic Product per capita (GDP):** This variable is used by the World Bank to classify countries and to determine borrowing eligibility. The variable measures the level of development of a country. Countries with low GDP per capita may be less able to solve debt serviced difficulties and hence will be generally less creditworthy.

**Gross Capital Formation (GKFORM):** This variable consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. It captures a country's prospects for the future and is calculated as the ratio of Gross Domestic Investment to Gross National Income and is also known as the propensity to invest. This variable is expected to be positively related to country's creditworthiness ratings.

**Total Foreign Debt to Exports Ratio (FDEXP):** This is the burden of a country's debt relative to the major source of foreign exchange. Total foreign debt is owed to nonresidents repayable in foreign currency goods or services. Frank and Cline (1971) and Cline (1984) argued that a country with high foreign debt to exports ratio could result in foreign exchange crisis and default. Thus, it is expected to be negatively related to country's creditworthiness ratings (Cosset and Roy, 1991).

**Gross International Reserves to Imports Ratio (RESIMP):** Reserves provide a short-term safeguard against fluctuations in foreign receipts. Feder et al. (1981), and Cline (1984), argued that the larger the reserves relative to imports, the lower is the possibility of default and the higher is the country's creditworthiness rating.

**Current Account Balance on Gross Domestic Product (CURGDP):** Countries with large current account deficits are less creditworthy. Cline (1984) argued that this variable is negatively related to the probability of default.

**Exports Growth Rate (EXPGRTH):** Countries with high export growth rates are more likely to service their debt and hence enjoy better creditworthiness ratings (Feder and Uy, 1985). Since for most countries exports are the main source of foreign exchange earnings, it is expected that this variable should be positively related to country creditworthiness.

**Political instability indicator (POL):** Political instability may indirectly accelerate debt service problems through a decline in long-term capital flows and the unwillingness of lenders to roll over matured loans. Over a period of time, political instability may slow economic growth, increase inflation, domestic bottlenecks and production shortages and create foreign exchange shortage from an imbalance between exports and imports (Burton and Inoue, 1985). Aliber (1980) and Brewer and Rivoli (1990) argued that political instability can reduce a country's willingness to service debt. Burton and Inoue (1985) and Citron and Nicklesburg (1987) also argued that countries experiencing high political turmoil are more likely to default. This paper is attempting to replicate the model, which was used by Vij (2005). This model was developed earlier by Burton and Inoue (1985) and was decomposed as follows:

$$CR_t = GNP_{t-1} + GKFORM_{t-1} + FDEXP_{t-1} + RESIMP_{t-1} + CURGNP_{t-1} + EXPGRTH_{t-1} + POL_{t-1}$$

Where:

$CR_t$  = Country risk for period  $t$ , or creditworthiness rating

$GNP^*_{t-1}$  = Gross national product per capita at  $t-1$

$GKFORM_{t-1}$  = Gross capital formation  $t-1$

$FDEXP_{t-1}$  = Net foreign debt/exports ratio  $t-1$

$RESIMP_{t-1}$  = Reserves to imports ratio  $t-1$

$CURGNP_{t-1}$  = Current account balance on gross national income  $t-1$

$EXPGRTH_{t-1}$  = Exports growth rate  $t-1$

$POLRSK_{t-1}$  = Political Instability Indicator  $t-1$

\*Due to unavailability of data for GNI or GNP, GDP is used in this paper

#### 4) Findings and Discussion

Table 1 summarizes the descriptive statistics for the dataset which is 350 observations. The table highlights that GDP per capita, foreign debt to export and reserve to import ratios are

positively skewed, while the other variables are approximately normally distributed. Analyzing the relationship between EIU and the independent variables, Table 2 shows that the political instability indicator has the most positive significant relationship with EIU ratings (0.868), which means that the higher the political instability the higher the country Risk. GDP per capita has the most negative significant relationship (-0.798), which reveals that the higher the GDP per capita the lower is the country risk. Gross capital formation and Growth export rate show no significant relationship. Looking at the relationship between Eurom and the independent variables, political indicator and GDP per capita are having the most positive significant relationship with Eurom ratings (0.943 and 0.873 respectively); which means that the higher Eurom political score (more political stability) and more GDP per capita, the higher the country creditworthiness rating. Reserve to import ratio (-0.219) has the most significant negative relationship and gross capital formation shows no significant relationship.

**Table 1: Descriptive Statistics**

Variable	Minimum	Maximum	Mean	Std. Deviation	Skewness
GDP	177.7	66,757.7	14,145.7	16,023.4	1.1
GKFORM	1.0	48.0	23.4	7.2	-0.1
FD/EXP	7.4	6,805.4	354.8	699.6	5.6
RES/IMP	0.04	39.9	5.5	5.6	3.2
CUR/GDP	-32.6	44.7	0.4	11.2	0.7
EXPGRTH	-37.9	84.1	11.2	18.7	-0.3
POL(EIU)	4.0	88.0	42.1	22.4	-0.02
POL(EUROM)	0.7	28.2	16.4	6.0	-0.1
EIU	9.0	87.0	41.2	15.0	0.1
EUROM	6.7	99.5	61.1	21.0	0.1

**Table 2: Correlation Matrix**

Variables	GDP	GKFORM	FD/EXP	RES/IMP	CUR/GDP	EXPGRTH	POL (EIU)	POL (EUROM)	EIU
GDP	1								
GKFORM	-.222***	1							
FD/EXP	.333***	-.133**	1						
RES/IMP	-.274***	.329***	-.232***	1					
CUR/GDP	.217***	-.097	-.223***	.272***	1				
EXPGRTH	-.145***	.082	-.127**	-.046	.046	1			
POL (EIU)	-.801***	.097	-.277***	.265***	-.068	.135**	1		
POL (EUROM)	.817***	-.069	.300***	-.170***	.137**	-.168***	-.888***	1	
EIU	-.798***	-.002	-.219***	.146***	-.312***	.035	.868***	-.869***	1
EUROM	.873***	-.060	.319***	-.219***	.191***	-.138***	-.867***	.943***	-.892***

\*\*\*Significant at 0.01 (2-tailed), \*\*Significant at 0.05 (2-tailed)

#### 4.1. Economic Factors

Considering the economic factors only, two different models are developed for the two rating agencies as dependent variables, which are summarized in Table 3. Using log transformation for the dependent variable gives a stronger result in terms of t-values and significant level but the coefficients are extremely small. Therefore, unstandardized and

standardized slope coefficients for the variables are reported. Model 1 shows that the economic factors are able to explain 75% (Adjusted  $R^2=0.75$ ) of the variation in EIU ratings. GDP per capita, gross capital formation and export growth rate are found to be highly statistically significant in relation to EIU ratings at 1% level. These three variables are negatively related with EIU ratings. Foreign debt to export ratio is positive and significant at 5% level, while reserve to import ratio is found to be insignificant. Model 2 shows that the economic factors are able to explain 63.1% (Adj- $R^2=0.631$ ) of the variation in Eurom ratings. GDP per capita and gross capital formation are the only two factors that are statistically highly significant in relation to Eurom ratings at 1% level. Reserve to import ratio, export growth rate and foreign debt to export ratio are found to be insignificant. Viewing both models from the economic factors only, it is found that the most important variable for predicting country risk ratings for the two rating agencies is GDP per capita. This is consistent with the theoretical literature since GDP per capita measures the level of development of a country. It has the highest correlation with the two dependent variables. Gross capital formation is the second most important variable and is also consistent with the theoretical literature as it captures a country's prospects for the future. When this variable, along with GDP per capita are used, the predictability of the model increased to approximately more than 63%. Both these variables are positively related to country creditworthiness. These two findings are in agreement with Vij (2005) and Cosset and Roy (1990).

**Table 3: Country Risk Ratings and Economic Factors**

Model	Dependent Variable	Constant	GDP	GKFORM	EXPGRTH	FDEXP	Adj-R <sup>2</sup>
1	Log EIU (df=349)	1.808 (97.41)***	-0.00001 [-0.916] (-31.12)***	-0.003 [-0.134] (-4.67)***	-0.001 [-0.081] (-2.99)***	0.00002 [0.071] (2.48)**	0.752
2	Log Eurom (df=349)	1.518 (71.39)***	0.00001 [0.816] (22.24)***	0.005 [0.211] (6.20)***			0.631
3	EIU	62.028 (35.525)***	-0.001 (-26.809)***		-0.059 (-2.356)**		0.673
4	Eurom	34.844 (17.586)***	0.001 (35.174)***	0.408 (5.462)***			0.781

\*\*\*Significant at 0.01 (2-tailed), \*\*Significant at 0.05 (2-tailed), t-values shown between (parentheses)  
[Standardized slope coefficient in square brackets]

For predicting EIU ratings, in addition to GDP per capita and gross capital formation; export growth rate and external debt to export ratio must be taken into consideration. The importance of export growth rate is consistent with findings of Feder and Uy (1985) where they argued that the importance of this factor is derived from the assumption that countries with high export growth rates are more likely to service their debt and hence enjoy better creditworthiness ratings. While the importance of external debt derived from the argument that a country with a high external debt to exports ratio is more vulnerable to foreign exchange crisis and more likely to default (Frank and Cline 1971, Cline 1984). To observe the actual slope coefficient for the GDP and other factors, models 3 and 4 are developed using the dependent variable without log transformation.

#### 4.1.1. Economic and Political Factors and Country Risk Ratings

For the same set of economic and political independent variables, two models are developed for each rating agency as shown in Table 4. Model 1 highlights that the economic and political factors are able to explain 83% ( $\text{Adj-R}^2=0.83$ ) of the variation in EIU ratings. GDP per capita, gross capital formation, export growth rate, foreign debt to export ratio and political risk are found to be highly statistically significant in relation to EIU ratings at 1% level of significance, while reserve to import ratio is found to be insignificant.

Model 2 shows that the economic and political factors are able to explain 85% of the variation in Eurom ratings. GDP per capita, gross capital formation and political risk are found to be highly statistically significant in relation to Eurom ratings at 1% level. Reserve to import ratio, export growth rate and foreign debt to export ratio are found to be insignificant. Models 1 and 2 in Table 4 indicate that in addition to the significant economic factors, political risk exerted a significant influence on the ratings and is the most crucial factor driving country risk analysis. The results suggest that political instability may indirectly accelerate debt service problems through a decline in long-term capital flows and a consequent unwillingness of lenders to roll over matured loans. It also reinforces the argument that disruptive political events frequently precede rescheduling. Thus, countries experiencing high political turmoil are more likely to default. These findings are in line with Aliber (1980), and Brewer and Rivoli (1990) who argued that political instability can reduce a country's willingness to service debt. To investigate any significant differences in ratings by the two agencies, the predictability of the models are the same whether EIU or Eurom ratings is used ( $\text{Adj-R}^2 = 0.83$  and  $0.85$  respectively). Therefore, it can be safely concluded that for the time period analyzed, both the rating agencies are moving in the same direction and any of the two ratings can be used for predicting country risk ratings which will give almost the same result. The findings are consistent with Cosset and Roy (1991) and Vij (2005). Models 3 and 4 are developed without log transformation. From tables 3 and 4, it is observed that log transformation gives stronger models. As a result, in the next analyses only log transformation is used.

**Table 4: Country Risk Ratings and Economic and Political Factors**

Model	Rating Agency	Constant	GDP	GKFORM	EXPGRTH	FD/EXP	POL	RES/IMP	Adj-R <sup>2</sup>
1	LogEIU (df=349)	1.564 (63.571)***	-0.00001 [-0.537] (-13.918)***	-0.002 [-0.093] (-3.371)***	-0.001 [-0.091] (-4.252)***	0.00002 [0.079] (3.054)***	0.004 [0.467] (12.638)***		<b>0.830</b>
2	LogEurom (df=349)	1.291 (78.299)***	0.0000013 [0.119] (3.182)***	0.003 [0.114] (5.269)***			0.024 [0.827] (22.584)***		<b>0.851</b>
3	EIU	35.336 (16.468)***	-0.00033 (-8.805)***	-0.216 (-4.108)***	-0.078 (-4.096)***		0.422 (15.947)***	-0.36 (-3.469)	<b>0.811</b>
4	Eurom	12.310 (8.485)***	0.00043 (12.336)***	0.209 (4.507)***			2.358 (25.930)***	-0.140 (-2.364)	<b>0.925</b>

\*\*\*Significant at 0.01 (2-tailed), t-values shown between (parentheses)  
[Standardized slope coefficient in square brackets]

#### 4.1.2. Group-country analysis

Countries are divided into seven groups and a description of each group is given in Table 5. Stepwise regression is carried out for each country group to find if the economic and political

factors have significant importance on different groups. Tables 6 and 7 summarize the regression results for EIU and Eurom. It could be concluded that the determinants of country risk ratings are having different importance on different country groups. These findings are in line with the conclusions of Cosset and Roy (1991) and Vij (2005).

***East Asia and the Pacific:*** The most significant factor for predicting EIU ratings for this group is the political factor followed by GDP per capita. These two variables are able to explain 86% of the variation in the countries risk ratings. The political factor is highly significant at 1% and GDP per capita at 5% level. The most significant factor for predicting Eurom ratings for this group is the political factor followed by gross capital formation. These two variables are highly significant at 1% level and are able to explain 88% of the variation in Eurom ratings. GDP per capita is an important factor for predicting EIU ratings.

***Europe and Central Asia:*** Political risk, foreign debt to export ratio, GDP per capita, export growth rate and gross capital formation are found to be highly significant at 1% level in predicting EIU ratings. Reserve to import ratio is significant at 5% level. All these factors are able to predict 86% of EIU ratings ( $\text{Adj-R}^2 = 0.857$ ). Political risk is found to be the most important factor for predicting Eurom ratings followed by export growth rate, both are highly significant at 1% level. The two factors are able to predict 73% of Eurom ratings. From this result it could be concluded that the most important factor in predicting country risk is the political risk factor.

***High Income:*** Political risk, GDP per capita and export growth rate are highly significant factors for predicting EIU ratings for this group at 1% level. These factors are able to predict 52% of EIU ratings. At 1% level of significance, GDP per capita, gross capital formation and political risk are found to be the most important factors in predicting Eurom. Foreign debt to export ratio is significant at 5%. These factors are able to predict 66% of Eurom ratings. Therefore, it can be concluded that political risk is an important factor for predicting all the two agencies' ratings for high income countries. To predict EIU and Eurom ratings, GDP per capita is found to be an important factor, while export growth rate is important for predicting EIU ratings.

***Latin America and Caribbean:*** Political risk is found to be the most important factor for predicting EIU ratings at 1% level of significance followed by GDP per capita which is the second important factor. Political factor and GDP per capita are able to predict 76% of EIU ratings. Political risk is found to be the most important factor for predicting Eurom ratings followed by foreign debt to export ratio and they are highly significant at 1% level. These two factors are able to predict 92% of Eurom ratings. It can be concluded that the most important factor for predicting country risk ratings for Latin America and Caribbean is the political risk factor for both rating agencies.

**Table 5: Group-country description**

Group	Number of Countries	Countries
East Asia & the Pacific 'EAP'	9	Cambodia, China, Indonesia, Malaysia, Papua New Guinea, Philippines, Singapore, South Korea and Vietnam
Europe & Central Asia 'ECA'	10	Azerbaijan, Bosnia and Herzegovina, Bulgaria, Kazakhstan, Lithuania, Moldova, Poland, Russia, Serbia and Uzbekistan
High Income 'HI'	20	Australia, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain and United States
Latin America & Caribbean 'LAC'	7	Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Venezuela
Middle East & North Africa 'MENA'	10	Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Saudi Arabia, and Tunisia
South Asia 'SA'	4	Bangladesh, India, Pakistan and Sri Lanka
Sub-Saharan Africa 'SSA'	10	Angola, Ethiopia, Gabon, Ghana, Kenya, Mauritius, Namibia, Senegal, Zambia, and Zimbabwe

**Table 6: EIU Group-country Analysis**

Groups	Constant	POL	GDP	EXPGRTH	GKFORM	FD/EXP	RES/IMP	Adj-R <sup>2</sup>
1. EAP (df 44)	1.399 (25.253)***	0.005 [0.662] (5.830)***	-0.000004 [-0.298] (-2.626)**					0.864
2. ECA (49)	1.700 (33.069)***	0.002 [0.536] (4.814)***	-0.00001 [-0.449] (-4.115)***	-0.001 [-0.220] (-3.387)***	-0.003 [-0.209] (-2.937)***	0.0003 [0.283] (4.264)***	-0.003 [-0.184] (-2.749)***	0.857
3. HI (99)	1.456 (24.810)***	0.007 [0.417] (4.844)***	-0.000005 [-0.355] (-4.118)***	-0.002 [-0.214] (-3.079)***				0.523
4. LAC (34)	1.485 (26.165)***	0.006 [0.785] (8.828)***	-0.00002 [-0.221] (-2.485)**					0.755
5. MENA (49)	1.470 (19.891)***	0.005 [0.454] (3.354)***	-0.000004 [-0.404] (-4.091)***	-0.001 [-0.190] (-2.426)**	-0.003 [-0.230] (-2.696)***	0.0002 [0.233] (2.025)**		0.715
6. SA (19)	1.959 (61.511)***				-0.010 [-0.894] (-8.449)***			0.787
7. SSA (49)	1.807 (33.538)***	0.002 [0.276] (2.804)***	-0.00001 [-0.286] (-3.434)***		-0.007 [-0.516] (-6.029)***			0.772

\*\*\* Significant at 0.01 (2-tailed), \*\* Significant at 0.05 (2-tailed), t-values shown between (parentheses)  
[Standardized slope coefficient in square brackets]

**Middle East and North Africa:** At 1% level of significance, the most important factor for predicting EIU ratings is GDP per capita followed by political risk and gross capital formation. Export growth rate is significant but at 5% level. These factors are able to predict 72% of EIU

ratings. Reserve to import ratio is found to be the most important factor for predicting Eurom ratings followed by GDP per capita, political risk, foreign debt to export ratio with a 1% significant level. Gross capital formation is significant but at 5% level. These factors are able to predict 92% of Eurom ratings. Results for Eurom show that when reserve to import ratio increases; the country risk ratings will increase. This result contradicts earlier findings of Feder et al. (1981) and Cline (1984), who argued that the larger the reserves relative to imports, the more reserves are available to service debt and the lower is the probability of default.

**South Asia:** Gross capital formation is found to be the only important factor in predicting EIU ratings and it predicts 79% of EIU ratings while political risk is found to be the only important factor for predicting Eurom ratings with Adj-R<sup>2</sup>=83%. At 1% level of significance, it can be concluded that risk rating for South Asia countries provided by each rating agency can be predicted by different factors.

**Sub-Saharan Africa:** Gross capital formation, followed by GDP per capita, and political risk are highly significant factors for predicting EIU ratings at 1% level of significance. Those factors are able to predict 77% of EIU ratings. Political risk is found to be the most important factor in predicting Eurom ratings followed by reserve to import ratio. These two factors are able to predict 62% of Eurom ratings. It can also be concluded that the most important factor for predicting country risk ratings for this group is political risk factor for the two rating agencies.

**Table 7: Euromoney Group-country analysis**

Group Name	Constant	POL	GDP	EXPGRTH	GKFORM	FD/EXP	RES/IMP	Adj-R <sup>2</sup>
<b>1.</b> <b>EAP</b> <b>(df 44)</b>	1.262 (44.896) <sup>***</sup>	0.026 [0.898] (17.276) <sup>***</sup>			0.002 [0.183] (3.512) <sup>***</sup>			0.884
<b>2.</b> <b>ECA</b> <b>(49)</b>	1.288 (36.060) <sup>***</sup>	0.029 [0.879] (11.536) <sup>***</sup>		0.001 [0.185] (2.435) <sup>**</sup>				0.728
<b>3.</b> <b>HI</b> <b>(99)</b>	1.743 (59.187) <sup>***</sup>	0.003 [0.200] (2.768) <sup>***</sup>	0.000002 [0.586] (8.307) <sup>***</sup>		0.003 [0.317] (5.274) <sup>***</sup>	-0.000004 [-0.136] (-2.068) <sup>**</sup>		0.655
<b>4.</b> <b>LAC</b> <b>(34)</b>	1.495 (65.194) <sup>***</sup>	0.018 [0.888] (16.775) <sup>***</sup>				-0.0003 [-0.147] (-2.773) <sup>***</sup>		0.924
<b>5.</b> <b>MENA</b> <b>(49)</b>	1.561 (42.216) <sup>***</sup>	0.013 [0.398] (6.483) <sup>***</sup>	0.000004 [0.382] (7.752) <sup>***</sup>		0.001 [0.104] (2.208) <sup>**</sup>	-0.0001 [-0.248] (-4.480) <sup>***</sup>	-0.004 [-0.437] (-9.204) <sup>***</sup>	0.919
<b>6.</b> <b>SA</b> <b>(19)</b>	1.447 (64.729) <sup>***</sup>	0.018 [0.918] (9.825) <sup>***</sup>						0.834
<b>7.</b> <b>SSA</b> <b>(49)</b>	1.215 (30.661) <sup>***</sup>	0.024 [0.651] (6.369) <sup>***</sup>					0.022 [0.237] (2.317) <sup>**</sup>	0.619

<sup>\*\*\*</sup>Significant at 0.01 (2-tailed), <sup>\*\*</sup>Significant at 0.05 (2-tailed), t-values shown between (parentheses)

[Standardized slope coefficient in square brackets]

### 4.1.3. The Role of the Financial Crisis

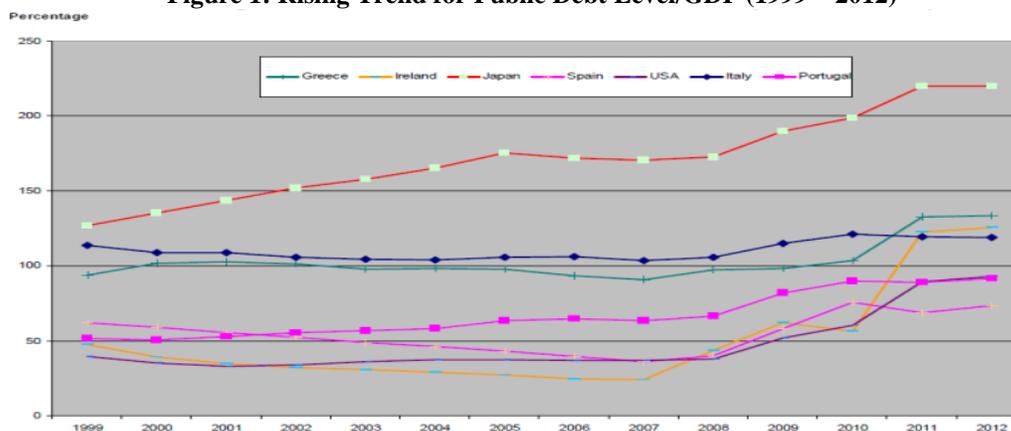
Figure 1 shows public debt level to GDP for selected countries for the period from 1999 until 2012. It clearly shows that public debt level to GDP for all these countries increased substantially after the 2008 financial crisis. The economic and political factors are examined to assess if there are critical changes in their importance in predicting country risk ratings post the financial crisis. Table 8 highlights the critical changes in these factors and the spectrum of their importance as the determinants of country risk after the financial crisis in 2008. Tests are performed for both EIU and Eurom ratings. The economic and political factors are tested against the country risk ratings for the periods 2006, pre the crisis, and 2009-2010, post the crisis, with a dummy variable, D=1 indicating pre and D=0 indicating post the crisis.

**Table 8: Risk ratings and Financial Crisis**

Rating Agency	Constant	Dummy	POL	GDP	GKFORM	FD/EXP	EXPGRTH	RES/IM	Adj R <sup>2</sup>
<b>Log EIU</b>	1.571 (55.689)***	-0.072 [-0.198] (-6.950)***	0.004 [0.499] (10.647)***	-0.00001 [0.488] (-10.146)***	-0.002 [-.002] (-2.152)**	0.00001 [0.070] (2.341)**		-0.002 [0.070] (-1.748)*	0.838
<b>Log Eurom</b>	1.305 (57.039)***	-0.063 [-0.172] (-5.631)***	0.027 [0.924] (32.503)***		0.002 [0.078] (2.762)***		-0.001 [-0.098] (-3.258)**		0.840

\*\*\* Significant at 0.01, \*\* Significant at 0.05, \* Significant at 0.10, t-values shown between (parentheses) and 2-tailed [Standardized slope coefficient in square brackets]

**Figure 1: Rising Trend for Public Debt Level/GDP (1999 – 2012)**



Source: Country Risk Management after the Financial Crisis, ICBC

In Table 8, the dummy variables for both models are highly significant at less than 1% (t-value = 6.950 and 5.631) which strongly reject the null hypothesis of the no difference between the two periods. This indicates that the impacts and importance of political and economic factors have varied significantly in predicting country risk rating pre and post the financial crisis (2008). Table 9 shows that GDP per capita is the most important factor in predicting EIU ratings prior to the financial crisis; followed by political risk then foreign debt to export ratio. All these factors are found to be highly significant at 1% level and are able to explain 90% of the variation in EIU ratings. For post the financial crisis the most important factor is political risk followed by GDP per capita and then reserve to import ratio. These factors are found to be highly significant at 1%

level and are able to explain 82% of the variation in EIU ratings. It can be concluded from Table 8 and 9 that the major differences in predicting EIU rating after the financial crisis are the importance of (1) reserve to import ratio, where it became significant after the financial crisis; (2) foreign debt to export ratio, where it became insignificant after the crisis although having significant importance before the crisis; and (3) GDP per capita was reduced to the second most important factor compared with the period prior to the crisis which was the most important factor. On the other hand, the only important factor in predicting Eurom ratings prior to the financial crisis is political risk which is highly significant at 1% level. Adj-R<sup>2</sup> indicates that the political factor alone is able to explain 94% of the variation in Eurom ratings. Surprisingly, political risk, export growth rate and capital formation are found to be statistically important factors for predicting Eurom ratings post the financial crisis. All factors are highly significant at 5% level and able to explain 80% of the variation in Eurom ratings.

**Table 9: Financial Crisis and Country Risk Ratings**

Rating Agency	Period	Constant	POL	GDP	EXPGRTH	GKFORM	FD/EXP	RES/IM	Adj. R <sup>2</sup>
Log EIU	Before Crisis (df 69)	1.478 (42.720) <sup>***</sup>	0.004 [0.437] (6.880) <sup>***</sup>	-0.000001 [-0.599] (-9.132) <sup>***</sup>			0.00001 [0.112] (2.736) <sup>***</sup>		0.900
	After Crisis (139)	1.532 (61.353) <sup>***</sup>	0.004 [0.579] (9.500) <sup>***</sup>	-0.000004 [-0.406] (-6.654) <sup>***</sup>				-0.003 [-0.133] (-3.480) <sup>***</sup>	0.815
Log Eurom	Before Crisis (69)	1.343 (98.910) <sup>***</sup>	0.027 [0.968] (31.878) <sup>***</sup>						0.936
	After Crisis (209)	1.226 (40.911) <sup>***</sup>	0.028 [0.883] (22.789) <sup>***</sup>		-0.001 [-0.120] (-3.091) <sup>***</sup>	0.003 [0.116] (3.735) <sup>***</sup>			0.794

<sup>\*\*\*</sup>Significant at 0.01 (2-tailed), <sup>\*\*</sup>Significant at 0.05 (2-tailed), t-values shown between (parentheses)  
[Standardized slope coefficient in square brackets]

## 5) Conclusion

The paper demonstrates an approach to country risk appraisal that identifies the important influencing factors to country risk perceptions published by two rating agencies, Euromoney and Economist Intelligence Unit. Using a random sample of seventy countries over the period 2006-2011 it is concluded that political risk exerts a significant influence on the country ratings. Excluding political risk, GDP per capita followed by gross capital formation are the two main economic factors, which significantly explain country risk ratings for both rating agencies. In addition to GDP per capita and gross capital formation; both export growth rate and foreign debt to export ratio are found to be significantly important for explaining Economist Intelligence Unit country risk ratings.

Analyzing the country risk ratings according to the country group indicators, the results highlight the importance of political risk for all regions except for South Asia. The political risk is of greater relevance since most of the government decisions affect the economic factors directly and it is difficult to define an accurate measure to predict cross border risks. The

influence of GDP per capita is found to be particularly important. In addition, it is concluded that the two rating agencies can be used to explain the effects of credit ratings on financial markets. The evidence suggests that country risk ratings can be replicated to a significant degree with a few available political and economic indicators and the dominating influence of GDP per capita on country risk ratings. The other determinants of country risk rating are: Gross capital formation; net foreign debt to exports ratio; reserves to imports ratio; and exports growth rate. All these indicators show a high correlation with Economist Intelligence Unit (EIU) and Euromoney (Eurom) country risk ratings. Furthermore, it is found that economic and political factors are having significant different importance in predicting country risk ratings post and pre the 2008 financial crisis.

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