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Full Length Research Paper

Sovereign Credit Rating Changes and its Impact on Financial markets of Europe during debt Crisis Period (Greece, Ireland, Portugal, Spain & Italy)

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The purpose of this study is to examine the impact of sovereign credit rating changes on financial markets using database of five countries (Greece, Ireland, Portugal, Spain and Italy) covering the major regions in the European union over the period March,2008- Dec, 2015. In general researcher examines sovereign rating impact in stock and bond markets during Euro-zone debt crisis period. First to check the impact of sovereign rating on stock markets returns and researcher also investigate the correlation between credit rating and stock markets returns of each country during the crisis period. Second to check the influence of sovereign credit rating on bond market yield and researcher also examine the correlation between sovereign credit rating & bond market yield of each country during crisis period. For better result three moderating variable inflation, GDP real index and current account to GDP% which are considered as determinants of sovereign credit rating as a moderating variable in the research .Quarterly basis data of all variables is used in the research. By using regression analysis with Durbin Watson test and Pearson correlation for each country financial markets the findings indicated that sovereign credit rating has a significant impact on stock markets of all countries except Portugal. The findings regarding stock markets also states that there is positive correlation among sovereign credit rating and stock markets returns. Stock markets shows negative return in case of rating downgrades. In bond market ten year bond yield reaction is examined due to sovereign rating announcements. The finding shows that regression models are more significant in all countries in case of bond markets. The finding summarized that credit rating has a major influence on financial markets during crisis period. This study is useful for investors, policy maker and Govt. to rebalance their portfolios across member countries and provide reliable picture of financial markets in distress period. The Study is also beneficial for all regulatory bodies like Basel Committee who mostly depend upon Sovereign Credit ratings for their regulatory regimes.

Keywords: Sovereign credit rating, Stock markets, Bond yield, Euro-zone debt crisis, Inflation, GDP real index and Current amount of GDP%

INTRODUCTION

The study is used to examine the impact of credit ratings on stock and bond market indices conveyed information that only downgraded in ratings have impact on financial markets (Brooks et al.,2004). Credit rating agencies played a vital role in International markets. Many researchers examined the role of credit ratings (Kaminsky and Schmukler 2002) using rating changes data of S&P, Moody's and Fitch examined the contagion across securities &countries. Its research confirmed the spillover among markets. Event study is used to examine the impact of credit ratings on stock market indices conveyed information that only downgraded in ratings have impact on financial markets (Brooks et al.,2004). By constructing Speculative market pressure index to examine rating impact on financial markets They found that Sovereign rating changes & credit outlooks have a significant effect on the size & volatility in case of ratings downgrades & negative outlook (Kraussal 2005).

By examining the impact of sovereign credit rating changes on capital markets They found that credit rating announcements provide new beneficial information to financial markets(Rose 2007). By investigating the effects of various rating announcements on Asian equity & currency markets they found that rating events had greater impact on intraday market data & national markets during Asian financial crises (Sirimon and wu 2012).By analyzing the macroeconomic factors behind rating results stated that Gdp, Inflation, foreign reserves, and current account are the main determinants of credit ratings(Cantorpecker 1996, Erdem and Varli 2014).By investigating the impact of sovereign credit rating announcement on financial markets during financial crises period they take data regarding Yield, CDS& foreign exchange markets. The finding stated that downgraded in ratings provide useful information during crises period.(Christopher 2013, Brooks and Srimon 2011, D.Gibson 2014).

The motivation behind this research is that researcher investigate the impact of sovereign ratings by taking overall long term foreign currency ratings and short term foreign currency ratings observations. This study included all countries that were affected from Euro-zone crisis and requested to European Central Bank and IMF for Bailouts to examine the impact of rating news on financial markets of Greece, Ireland, Portugal, Spain and Italy. It also capture the financial markets (Stock markets& Bond markets) reactions which is considered as a main perspective regarding Investors point of view and Bond markets represents directly credit worthiness of the Government of any Country. Stock market indexes of all countries and ten year bond yield that is considered as a benchmark for pay its sovereign debts in Europe is included in the research. So this is considered to be best way to capture the implications of rating news on markets. By examining the role of credit ratings the study not just explore the relationship among variables by multiple regression analysis also investigated the correlation between sovereign ratings and included all variables of each country. The aim of study is to investigate the impact of sovereign credit ratings and its correlation with stock and bond market returns of Greece, Ireland, Portugal, Spain and Italy during financial crises period.

This paper is divided into four headings. 2nd Heading section will give the literature review which explains sovereign credit rating and its impact in financial market (Bonds and stock market). 3rd Heading demonstrates the research methodology of the paper. 4th heading section will give empirical findings and 5th heading section finally concludes with short recommendations as well.

Literature Review

Sovereign Credit Rating and Financial Market

Impact of Rating on Equity and Bond Market

According to Xuan et al., (2014) Fitch's action had largest impact on equity and S&P on FX markets whereas Moody's rating had larger impact in recent euro debt crises. Le et al., (2007), asserted that negative impact of credit rating downgrade on stock return was prominent in case of high rate of inflation, fiscal balances and sovereign debts etc. Credit rating downgrades on bond return shows negative impact in case of low inflation, and during non-crises period. Sirimon and wu (2012) also support this concept and stated that currency markets they also proof that rating events has greater impact on intraday market data & that national market also effects rating impact during the tenure of financial crises. Tran et al., (2014) explained that there is causality between option markets and rating signals that are provided by S&P and Fitch. But Moody's rating shows differences in policies and it also stated that credit rating announcements are useful to reduce market uncertainty. Kraussaal (2005) contradict with the literature he avowed that credit ratings had a smaller impact on financial markets in emerging countries. Analysis results shows that speculative grade rated emerging markets were sensitive to interest rate changes.

Sovereign Market News impact on Market Volatility:

Afonso et al., (2014) Investigated the reaction of bond & equity markets volatilities to sovereign ratings announcements (Moody's standard & poor, Fitch) using a panel of daily stock markets and bond market return they cover 21 Eu countries data set starts from Jan 1995 to

oct 2011 it also cover the tenure of euro debt crises sovereign ratings announcements and ratings outlook changes is provided by three ratings agencies S&P Moody's & Fitch. They used fixed effect analysis of Eu stock market & bond market to see the impact of ratings agencies announcements on financial markets volatilities practically the also filtered the equity & bond return volatilities through EGAARCH models they also analyzed the information of sovereign downgrade & upgrade on these volatilities they concluded that sovereign ratings changes have lopsided effects on both bond & equity volatilities in fact upgrade ratings don't have any high effect on volatility, but downgrades rating increase stock market volatility moreover rating announcements create interlinked among European financial markets with upgrade in one country leadings to downgrade in volatility in other countries they also explained financial gains & risk reductions for portfolio returns.

Sovereign Credit Rating impact on CDS Market

CDS market is also affected by credit rating. XIE (2013) conducted a study and asserted that there is stable long term co-integration relationship and had a significant relationship between sovereign ratings, outlook to CDS markets and countries. Results showed that outlook changes had provided more information to financial markets. There is a significant impact of abnormal performance in case of rating downgrades, however in significant in case of rating upgrades. CDS market responded earlier that stock market. Analysis justified that downgrade in watch listings for S&P and Moody's linked with Abnormal performance in both markets, but a dual downgrades are not. They also found that difference between the average rating and old rating only had significant impact on CDS market (Norden and Weber, 2004). The credit ratings had a significant effect on CDS spreads. Positive ratings had a great impact on CDS spreads however negative ratings had no impact on CDS markets. They found that upgrades in ratings conveyed more information that downgrades. While estimate negative ratings CDS provide more and useful information but were unable to predict positive ratings (Ismailescu and Kazemi, 2010)

Impact of Sovereign Credit Rating on Banking Sector

Sovereign credit rating have also impact on banking sector many researcher conducted a research on banks and they found deep impact of credit rating on banks abnormal returns. Gan et al., (2014) investigated the effects of change in credit ratings on abnormal returns of banking sectors of emerging countries of the world. Four countries (Philippines, Indonesia, Turkey, and Mexico) were included in the dataset. They found that exchange rate and stock prices were contributed as a significant variable for CAR of banking sector in four emerging countries. The results also stated that there were no significant relationship on stock prices and volume of trading. They found that as upgraded in credit ratings resulted increase in stock prices at Philippines stock market. However these prices were not sustained after 60 days of credit rating announcements. Exchange rate was also a significant variable after upgrades in ratings. So the findings indicated that there was no long term effect of credit ratings in stock market.

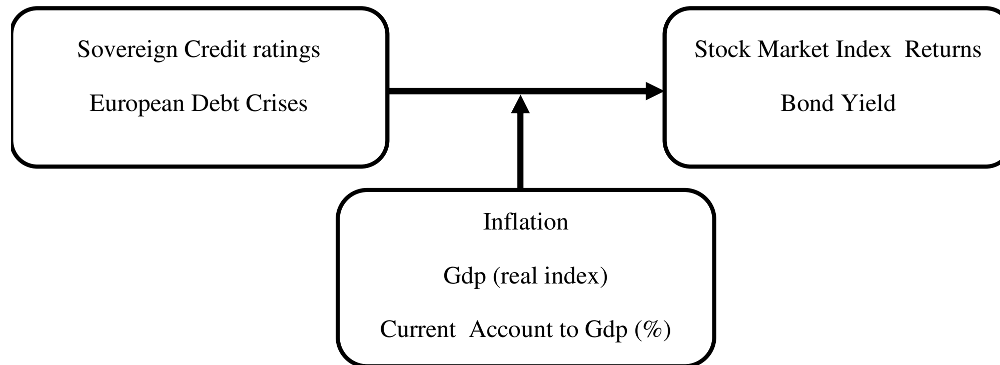
Sovereign Credit Rating Impact during Crisis Period

Many researchers found that upgrades in ratings led to abnormal fluctuations during crises period while downgrades in ratings has no impact on financial markets. However the study suggested regulatory policies that ensured credit ratings to provide timely and transparent research about countries (Lai and B.E.C, 2013). Christopher et al, (2013) analyzed the impact of credit rating agency announcements on the value of Euro and Yield of German, Italian, French and Spanish sovereign bonds during the euro zone debt crises in 2011-2012, he stated that Credit rating Agency watch list and outlook events had no significant influence on the value of euro. However decrease in sovereign ratings had statistically impact because euro depreciates against other crises. Yield of French, Italian and Spanish Sovereign bonds increases but German bond yield decreases in case of credit rating downgrades. Sometimes volatility of euro exchange rates and sovereign bond yields increased due to CRA announcements that showed uncertainty in markets. However CRA announcements may have distributional effects. Rating downgrades were correlated with increases in foreign exchange volatility that multiple downgrades lead to a much higher increase in volatility as compared to single downgrades. Rating downgrades were part of important news for the national markets along with contagion effect in financial markets (Treepongkaruna et al, 2011). According to literature it is found that sovereign credit rating has greater impact on financial market during crisis period.

Impact of Moderating Variable

Inflation: Inflation is used as a macro variable in the research these macro variables are considered as determinants of sovereign credit ratings. Similar to Pecker (1996), Kim and Wu (2007): takes Current price Index inflation as a control variable to check the impact of sovereign credit ratings on financial sector in emerging markets. STANCU et al., (2011) also used inflation as a

Theoretical Framework:



explanatory variable and examined the impact of sovereign ratings on Yield of Europe.

GDP: Gdp abbreviates for Gross domestic product is used as a moderating variables in the research. Cantor(1996), Erdem and Varli (2014): proved Gdp as a major determinant of sovereign credit ratings so This variable is used to moderate independent variables in the research.

Current Account to GDP: Current account balance is the sum of net exports of goods and services, net primary income, and net secondary income. International Monetary Fund, Balance of Payments Statistics Yearbook and data files, and World Bank and OECD GDP estimates. It is also considered as a major indicator of sovereign ratings so used as a moderating variable in the research.

Theoretical Framework:

Hypothesis Development:

H1 = There is significant impact of sovereign rating news on stock market returns of Greece during debt crises period.

H2 = There is significant impact of sovereign rating news on bond market yield of Greece during debt crises period.

H3 = There is significant impact of sovereign rating news on stock market returns of Ireland during debt crises period.

H4 = There is significant impact of sovereign rating news on bond market yield of Ireland during debt crises period.

H5 = There is significant impact of sovereign rating news on stock market returns of Portugal during debt crises period.

H6 = There is significant impact of sovereign rating news on bond market yield of Portugal during debt crises period.

H7 = There is significant impact of sovereign rating news on stock market returns of Spain during debt crises period.

H8 = There is significant impact of sovereign rating news on bond market yield of Spain during debt crises period.

H9 = There is significant impact of sovereign rating news on stock market returns of Italy during debt crises period.

H10 = There is significant impact of sovereign rating news on bond market yield of Italy during debt crises period.

METHODOLOGY

Statistical Tools

Table 1 results represents about coefficient of determination r^2 value in stock market and bond yield, r square value of all countries (Greece, Ireland, Portugal, Spain and Italy) shows that stock market return and Bond market is affected and explained by Long term foreign currency rating, short term ratings and other three moderating variables current account, inflation and GDP. Durbin Watson test is used to check the multicollinearity about independent variables, durbin Watson value of all countries independent variable is less than 4 which shows that is no autocorrelation among variables. The result also represents the significance level of model. It shows the value of significance of all countries (Greece, Ireland, Portugal, Spain and Italy) bond and stock market is less than 0.05. It means modal is significant at 0.05 level

Data

Dataset consists of five European countries (Greece, Ireland, Portugal, Spain, and Italy). Secondary data is used for quantitative analyses to examine the impact of sovereign rating news on financial market of European countries during crises period. Researcher examine the sovereign rating changes and their impact on five countries over the period of 2008-2015.Because Effects of Global crises was exist in that period and European crises was started from 2009 in Greece so this time period is selected for research. Dataset comprises of credit rating figures and information regarding indicators of financial markets. Data regarding rating news is taken

Table 1. Model Summary

Stock Market Impact	R Square	Sig. F Change	Durbin Watson
Greece	0.333	0.049	2.073
Ireland	0.475	0.003	1.718
Portugal	0.162	0.030	1.566
Spain	0.358	0.033	1.763
Italy	0.483	0.003	1.882
Bond Market Impact			
Greece	0.784	0.000	1.318
Ireland	0.398	0.016	0.598
Portugal	0.811	0.000	1.404
Spain	0.482	0.003	0.465
Italy	0.533	0.001	0.653
a. Predictors: (Constant), CA, GDP, INF, SFC, LFC			
b. Dependent Variable: STR, BYD			

Table 2. Stock Market Results

Model	Greece		Ireland		Portugal		Spain		Italy	
	Beta	Sig	Beta	Sig	Beta	Sig	Beta	Sig	Beta	Sig
Constant	6.079	.039	-17.898	.012	17.122	.104	3.113	.499	-48.499	.000
LFC	-.619	.601	3.667	.004	-2.975	.103	-1.927	.026	5.647	.004
SFC	-.670	.756	-8.596	.019	6.924	.175	5.533	.029	-7.897	.029
INF	-488.79	.312	539.788	.033	119.690	.732	-140.77	.372	-122.91	.761
GDP	.587	.115	.134	.631	.473	.147	.730	.479	.484	.030
CA	-3.425	.046	.467	.198	.030	.966	-.882	.027	1.430	.004

Table 3. Bond Yield Results

Model	Greece		Ireland		Portugal		Spain		Italy	
	Beta	Sig	Beta	Sig	Beta	Sig	Beta	Sig	Beta	Sig
Constant	15.219	.000	15.315	.001	26.213	.000	1.632	.357	3.247	.469
LFC	-.239	.720	-.122	.863	-2.183	.003	-.519	.109	-.106	.872
SFC	-1.689	.172	-1.350	.516	1.047	.578	2.206	.024	.348	.784
INF	235.831	.386	-60.903	.675	208.895	.118	56.297	.352	443.097	.006
GDP	-.793	.001	-.411	.019	-.518	.000	-.725	.074	-.230	.006
CA	-.178	.848	-.423	.055	-1.106	.000	.022	.882	-.107	.521

from three leading credit rating companies (Moody,s ,S&P, and Fitch websites) of the world, Countryeconomy.com and The Guardian.com. Data regarding stock markets of Greece (ATHEX Index), Ireland (Irish-20 index), Portugal (PSI 20 index), Spain (IBEX 35), and for Italy (FTSE MIB) is taken from Yahoofinance.com. Data related to ten year Bond Yield is taken from website of economic research Federal reserve bank of st.Louis (FRED). Data related to /moderating variables is taken from Imf, OECD and European central bank website. Data related to inflation of European countries is taken from the website http://www.inflation.eu

Empirical Analysis

The combine financial analysis of five countries (Greece, Ireland, Portugal, Spain, and Italy) explains the impact of long and short term credit rating and inflation GDP on stock market and bond market.

Greece p values shows that short term and long term rating, inflation and GDP values are insignificant which shows that rating have no impact Greece stock market and change of unit of current account is significant which is less than 0.05 so current account have impact on Greece stock market. Ireland p value of long and short

term rating, inflation rate values are less than 0.05 which shows that relationship is significant and impact on Ireland stock market, beta value shows that this impact is positive except short term rating which has negative impact on stock market while GDP and change in current account have no impact on stock market. Portugal p values are greater than 0.05 which shows that Portugal rating, inflation, GDP and current account change have no impact on their stock market. Spain p values of long and short term rating and current account is significant and beta value explain that this effect have negative impact on Portugal stock market and other variables are insignificant which have no impact on Portugal stock market. Italy p value are significant except inflation, long and short term rating, GDP and current account have significant and positive impact on stock market while inflation has no impact on stock market.

Greece p values shows that short term and long term rating, inflation and current account values are insignificant which shows that rating have no impact Greece bond market and GDP is significant which is less than 0.05 so GDP have impact on Greece bond market. Ireland p value of long and short term rating, inflation rate values are greater than 0.05 which shows that relationships is insignificant and have no impact on Ireland bond market while GDP and change in current account have impact on stock market and beta value shows that this impact is negative. Portugal p values are greater than 0.05 which shows that Portugal short term rating, inflation have no impact on their bond market while long term rating, GDP and current account changes have significant and negative impact on their bond market. Spain p values of short term rating and GDP is significant and beta value explain that GDP has negative and rating have positive effect on Portugal bond market and other variables are insignificant which have no impact on Portugal bond market. Italy p value are significant except inflation and GDP have significant and positive impact on bond market while others have no impact on bond market.

CONCLUSION AND RECOMMENDATION

Conclusion

At the end it is concluded that credit ratings have a much power to influence the secondary markets. In Greece by getting bailouts their Leadership fails to overcome the financial crisis financial markets of Greece are effected by rating announcements and these procyclical effects transfer to other countries. It is concluded by findings there is negative correlation among sovereign credit ratings and bond Yield. If sovereign credit ratings downgrades Bond yield moves to up and when rating downgrades stock market returns also goes to be down. By observing Ireland economy, It is concluded that their financial markets don't have power to absorb the reaction of announcements during crisis period. Financial markets shows instability during crisis period. Sovereign credit ratings provide information to financial markets during financial crises period and it is stated that there is positive correlation between sovereign ratings and stock market returns and there is negative correlation among sovereign credit ratings and bond Yield. If sovereign credit ratings downgrades Bond yield moves to up. In respect of Portugal, It is concluded that stock market is not influenced by rating announcements but bond markets is highly influenced so role of credit rating announcements is not ignored. Portugal stock markets is not affected by the ratings announcements as to meet the significance level so the model is statistically insignificant in the research and there is negative correlation among sovereign credit ratings and bond Yield. If sovereign credit ratings downgrades Bond yield moves to up. In respect of Spain, It is summarized that Sovereign rating announcements provide information to financial markets of Spain. After downgrades in announcements stock market index also seems to down and Bond yield up in case of downgrades by rating agencies. results also indicates that stock market returns decreased when sovereign ratings downgrades during crises period. In case of Bond markets ten year bond yield is used as a dependent variable because it is used as a benchmark in Spain. If sovereign credit ratings downgrades Bond yield also down but other macro variables such as Gdp is perfectly negatively correlated with Bond yield. For Italy, Financial markets have same reaction after announcements but not in bond markets because it has not much influenced by rating announcements due to major influence of other macro variables. The findings describe that sovereign credit ratings along with its moderating variables play an important role in secondary markets during crises period.

Recommendation

The Study is summarizing its suggestions as follows.

- Credit rating agencies give opinion about creditworthiness on the basis of factors those are already fixed by them so these agencies are not responsible to predict the future crisis.
- Credit rating announcements are just opinion and this opinion has much importance during financial distress period and it is proved by our study.
- The Study suggests that Credit ratings should monitor the developments of that country on long term basis which they rated to avoid the pro-cyclical effects of rating announcements.
- When Credit rating agencies downgraded the Greek and Irish bonds its pro-cyclical effects moves to Portugal Spain and other region base countries. To avoid this rating agencies should develop the mechanism to

rated a country in efficient and timely manner.

REFERENCES

Afonso A, Gomes P, Taamoutic A (2014). Sovereign credit ratings, market volatility, and financial gains Computational Statistics and Data Analysis 76 , 20–33

B.E, C & Lai,Yun (2013). Sovereign Credit rating news and financial markets fluctuations: Evidence From the European market Unpublished Working paper Series.

Brooks R, Fatt RW, Hiller D & Hillier J (2004). The national market impact of sovereign rating changes Journal of Banking & Finance 28, 233–250

Cantor R. & Packer F (1996). Determinants and impact of sovereign credit ratings. *Economic Policy Review,* 2.

Christopher R, Kim SJ & Wu E (2012). Do sovereign credit ratings influence regional stock and bond market interdependencies in emerging countries? *Journal of International Financial Markets Institutions & Money,* 22**,** 1070-1089.

Kraussl R (2005). Do credit rating agencies add to the dynamics of emerging market crises? Journal of Financial Stability 1 , 355–385

Erdem & Varli.YO (2014). Understanding the sovereign credit ratings of to international stock markets? Journal of Banking & Finance 31 , 3162–3182

Gibson H, Hall SJ & Tavlas D (2014). The Role of Rating Agencies in the Euro Financial Crisis Working Paper No. 14/16

Rose C, Hong KP, & Fayaz Le A (2007). Equity and debt market responses to sovereign credit ratings announcement.Global Finance Journal 18 , 47–83

Gan S, Ngo L, Say S & Tan R (2014). The Effects of Change in Credit Rating to the Returns of Banking Industry of Different Emerging Countries Presented at the DLSU Research Congress 2014 De La Salle University, Manila, Philippines March 6-8, 2014

Norden L & Weber M (2004). Informational efficiency of credit default

Ismailescu I, Kazemi H (2010). The reaction of emerging market credit default swap spreads to sovereign credit rating changes. Journal of Banking & Finance 34, 2861–2873

Xie H (2013). Sovereign Credit Risk Spillover Unpublished Dissertation

Kim, J.S & Wu, E, 2008. Sovereign credit ratings, capital flows and financial sector development in emerging markets. Emerging Markets Review 9, 17–39

Tran V, Alsakka R & Gwilym, OA (2014). Sovereign rating actions and the implied volatility of stock index options International Review of Financial Analysis 34 , 101–113

Treepongkaruna, S, Bheenick, E.B, Brooks ,R., & Hum , S, 2011 Sovereign rating changes and realized volatility in Asian foreign exchange markets during the Asian crisis. Research in International Business and Finance 26, 335– 352