
The criticality of the rating market views through Greece

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Abstract: The article highlights the limits rating criteria, that after the crisis of 2007 is to influence more and more the operation of financial markets, but also the economic policies of national governments. The work indicates the critical market rating which presents itself as an oligopolistic market. After, in this paper we examine the determinants of credit rating in the Greece issued by agencies such as S&P. The objective of this paper is to analyze a statistic index which is actually the result of unknown algorithms. Therefore, taking a time series variables and choices appropriate to the model, we apply a GARCH model to estimate the economic result of the rating. Although the economic literature there are many contributions (Rowland and Torres 2004, Peter Rowland 2006), most uses of the panel in probit models. However, differences in economic variables from country to country choices in the model do not permit a more uniform result in order to capture the true rating of Greece.

Keywords: Rating, Financial Markets

1. The Ratings Agencies

During the '90s we saw an intense process of credit intermediation. The Credit Rating Agencies (CRA) took on an ever more important role.

Credit rating agencies started in the USA at the beginning of the 1900s, when the corporate bond¹ market developed. They deal with, first of all, the collection of information regarding a company's solvency, and then they process the information and issue a judgement using an alphabetic symbol (rating). This a concise way to express opinions about the creditworthiness of companies and institutional investors. In other words, the ratings judgements represent concise indicators of the credit risk² of investors and of the riskiness of debtors. The CRAs express the creditworthiness of financial products issued by

corporations or national governments.

The process the CRAs use to arrive at expressing a judgement on the different players in the financial market is not simple. The analysis starts with the collection of qualitative and quantitative³ information about the issuer, then considers the financial structure of the issuing company. The evaluation process begins with a meeting between the agency and company management, followed by the constitution of a commission for the rating, which deals with economic-financial analysis and then proposes an alphabetic code rating. According to the BCBS Models Task Force, the rating is a “summary indicator of the risk inherent in an individual credit. Ratings typically embody an assessment of the risk of loss due to failure by a given borrower to pay as promised, based on consideration of relevant counter party and facility characteristics”. In 1991, Moody's declared about the rating system: “The objective of credit analysis can be simply stated: it is to forecast the ability and willingness of borrower to meet its debt obligations when due. The appropriate analytical process for achieving that objective, however, is not so simply stated. And ultimately it cannot be described in its entirety

¹ Specifically, in 1916 the Standard Statistics Company expressed ratings for corporate bonds. Earlier still, in 1909 John Moody produced a manual in which he focused attention on the instruments issued by companies operating in the railroad sector and sought to give investors both indications and especially guidance about investment choices. In the wake of these early operations, Poor's Publishing Company produced the first ratings judgements in 1922. The rating agency Standard & Poor's arose from the merger between Standard Statistics and Poor's.

² When speaking about credit risk, we mean the issuer's inability to pay capital and interest owed.

³ Quantitative analysis covers a temporal arc of three years. The quantitative indicators of financial statements used to evaluate the issuer regard cash flow, profitability and leverage.

because it is based to a large degree on judgment and because it pertains to the future, which by definition is uncertain (...). It follows that all current financial data must be weighted in light of fundamental strengths and weaknesses and possible future developments that will influence those data over time. That is why we say analysis is fundamentally qualitative”.

Although their operational approach is not merely quantitative, and so not the result of simple mathematical calculations, the financial crisis of 2007 and particularly the failure of Lehman Brothers⁴ put the reliability of the principal ratings agencies in doubt. This has led the various rating agencies to review their methods of risk assessment and avoid falling into rating shopping, that is, orienting their choices toward better assessments. The crisis of 2007-2009 has brought to light, therefore, the limits of the rating criteria, and highlighting the need for the reform of rating agencies because of the important role they have assumed in the financial markets. They really ought to have been expressing independent judgments, but in reality, their work has ended up influencing the functioning of financial markets.

2. The Ratings Market

The 2007-2009 crisis brought to light the limits of the ratings market. In this regard, we can observe that there is no lack of proposals to reform the market, trying to make the CRAs' activities more efficient and expressing creditworthiness that does not reflect conflicts of interest. One solution would thus be to compensate investors for the risk assessment services performed. In fact, this solution is not very feasible.

It is obvious that the problem is complex, in that it is not easy to eliminate the critical elements of this market. This is a market in which the CRAs have profited from their privileged position, especially in the United States, where the rating is considered an essential parameter for evaluating the instruments held by financial intermediaries.

The international regulatory framework has helped to strengthen the oligopolistic structure of this market, limiting the freedom of entry and favouring the development of agreements among the most important agencies.

The regulatory approach to which agencies are subject started in 1975 with Rule 15c3-1 of the Securities and Exchange Commission (SEC), which established for securities broker-dealers the required minimum capital tied to qualitative aspects of the bonds held in their portfolios with the attributed rating having to carry out the function of evaluation parameter.

The SEC also specified that the agencies in the “Nationally Recognized Statistical Rating Organizations” (NRSRO)⁵ are the only ones able to give the ratings needed

to evaluate the required minimum capital. In 2006, the Credit Rating Agency Reform Act was enacted; it was revised in 2007 and in 2009. The Credit Rating Agency Reform Act revised section 15E of the Securities Exchange Act, but most of all clearly sets the characteristics that the agencies of the NRSRO must have.

In its 2009 Report, the SEC showed ten NRSRO-registered CRAs. The ratings model followed by the CRAs⁶ is the “issuer-pay model”; only three agencies use the “subscriber-pay model”⁷. The NRSRO-registered CRAs carry out the role of risk assessment based on the following five ratings classes: 1) financial firms; 2) insurance companies; 3) issues of corporate bonds; 4) issues of asset-backed securities; 5) issues of Government bonds.

Although the ratings market is made up of quite a few agencies, at the international level just three agencies, Moody's, Standard & Poor's and Fitch, control 94 per cent of the international market. In particular the first two control 80 per cent of the market, while Fitch controls 14 per cent. Furthermore, 98 per cent of rating judgements published in the USA are from these three agencies (SEC, 2009).

This is a market, particularly in America, where the agencies have taken on a leading role, as they are the only ones able to collect information about the creditworthiness of bonds issued in the financial market. Their role was further consolidated in 1975 when the SEC instituted the NRSRO, so recognizing to only some agencies the power to exercise the activity of risk assessment. This created an oligopolistic market, in which the incumbents legitimately hold a dominant position. The distortions present in this market, especially in recent years, bring into question their valuations (a low level of accuracy in valuations is noted). This is explained by the fact that the agencies are able to carry out risk assessment activities with lower costs, exploiting the economies of scale. This leads the CRAs to take on a leading role. The central position that the rating agencies hold is ascribable to the fact that their presence reduces the information asymmetry⁸ present in financial markets. Therefore, because of the CRAs there is less opportunistic behaviour (moral hazard) by issuers and they allow the improvement of credit, driving the adverse selection out of the market, which leads the buyer to not recognize the quality of services in the market. The underlying idea is that through their activities the rating agencies allow the realization of greater efficiencies in the financial market. So the agencies are able to give the market *ex ante* signalling of the issuer's future return. In this light ratings improve the quality of credit, because the issuers feel themselves watched by the agencies and so they avoid taking on opportunistic behaviours. A distinction between good and bad issuers is thus reached.

Moody's, S&P and Fitch, obtained the NRSRO title.

⁶ 99 % of the CRAs use such a payment structure.

⁷ These are Egan-Jones Rating Company, LACE Financial Corp and Real point LLC.

⁸ In the financial market the issuers have more information than the investors.

⁴ This was a \$630 billion bankruptcy.

⁵ Naturally, since the beginning the biggest of the current CRAs, that is,

In reality, however, there are critical elements in the rating market: imagine the legal and economical entry barriers. There are several debatable elements seen today in that market. Recall the rule of double rating, that is that the issuers tend to have two rating agencies, or rating shopping, meaning that the issuer is seeking a better rating. This behaviour is explained by the idea that two ratings provide more information, and that it is preferable for investors to be guided toward instruments that have received two assessments⁹.

This brief analysis shows that the problem is very large and complex, since the limits of this market reduce the efficiency of financial markets, presenting distortional elements.

From most parts of the question is whether you can do without the rating. After a careful examination of the problem has come to the conclusion that this possible. Who invests in bonds (bonds with high "references"), issued by listed companies, can effectively realize the risk you run. It is sufficient to consider both the market price of derivatives such as Credit Default Swaps (CDS)¹⁰, and the mathematical model that allows you to evaluate the price. Therefore, to assess the riskiness of the title examines the probability of default. This argument clearly shows such as CDS would be able to replace the assessments of rating agencies

3. The Model and the Results

This paper uses GARCH technique to examine the Greece's credit rating. Since Bollerslev (1986) used an extension to Engles (1982) ARCH model, various hybrids of the GARCH model has emerged over the last decade (see Gouriou, 1997 and Enders, 1995). Suppose we outline the ARCH process about the economic determinant of the rating the allocation of errors of a dynamic linear regression model. Then assuming that the dependent variable, Rating is generated by the autoregressive process:

$$d.\log \text{Rat}_t = \phi_0 + \beta_1 d.\log \text{Sd}_{t-1} + \beta_2 d.\log \text{ir}_{t-1} + \beta_3 d.\log \text{Spr}_{t-1} + \beta_4 d.\log \text{GDP}_{t-1} + E_t$$

with $\Omega_{t-1} \sim N(0, h_t)$ where $d.\log \text{Rat}_t$ denotes the first difference of the logarithm of the rating, h_t denotes the conditional

variance and Ω_{t-1} denotes information set available at time $t-1$, E_t the error term, $\beta_1 d.\log \text{Sd}_{t-1}$ represents the first difference of the logarithm of the sovereign debt, $\beta_2 d.\log \text{ir}_{t-1}$ denotes the first difference of the logarithm of the bank interest rates, $\beta_3 d.\log \text{Spr}_{t-1}$ is the first difference of the logarithm Greece's Spread and $\beta_4 d.\log \text{GDP}_{t-1}$ provides

information about the growth of Greece's GDP. All data represent quantitative information extracted from the dataset "Data stream", in a time series since 2010-2012 2q with daily data.

In financial markets, it has been observed that the values falls are often followed by higher volatility than increases of the same magnitude. Engle and Ng (1993) used a nonparametric sign test to measure the impact of news on asset price volatility. This phenomenon in the variance can be captured by asymmetric ARCH-type models, for example, the Threshold GARCH (Zakonian, 1994; Glosten et al 1994).

After that we have created the dataset and parameterized the employee was in its combinations of letters of credit rating A, B, C, (18 combinations) with the STATA software, We obtained the following results by analyzing a weekly series from 2009 to March 2012:

$$d.\log \text{Rat}_t = 0.1249 + 1.2547 d.\log \text{Sd}_{t-1} - 0.8625 d.\log \text{ir}_{t-1} + 0.7452 d.\log \text{Spr}_{t-1} + 0.9854 d.\log \text{GDP}_{t-1}$$

p-value:	0.0625	0,0000	0,0000
	0,0025		0,0000

The results clearly show how the variables considered as part of the real economy (SD, GDP) shares the values of the growth of the same rating, while the spreads between government bonds of Greece and German, even though they show a sign positive, have less impact on the loss of the rating. The empirical analysis also shows an interesting value of the interest rate. The indirect monetary policy, on secondary markets to ensure liquidity through also LTRO, appears to offset the loss of ratings, but in fact this result clearly shows that a solution to the crisis in Greece and also the euro is to provide liquidity directly to the economic system.

This result therefore suggests the abandonment of a monetary policy of the type *credit easing*, for a policy quantitative easing, mimicking the action of the FED. A proportional model to the case of euro crisis would suggest a direct liquidity to banks and families worth \$ 2 trillion, highlight the importance of an urgent release of money into the economy.

Finally, as highlighted by the analysis of the GARCH model showed many outliers: although these values have been blocked by the econometric techniques can not be considered regardless of their economic importance. the majority of outliers were identified in July 2011, October 2011 and March 2012: failure of the summit in July that turned out to be very incisive and decisions were postponed to October and the default on government bonds snapped a private CDS compensation for the month of March 2012.

4. Conclusion

Following Cooper (1969) defines international coordination is the situation in which each country operating policy instruments which have not only to

⁹ Remember Shapiro's contribution (2009) regarding this, that highlights how the structure through which the rating is awarded conditions the level of rating.

¹⁰ In relation to the basic structure of the CDS, we can say that it is a bilateral contract (in some ways is similar as insurance policy) where the protection buyer pays periodically to the protection seller a premium (*fee*) in exchange for a payment (*contingent payment*) upon the occurrence of a credit event that concerns the reference credit

achieve its own objectives, but also those of the Rest of the World. The need for coordination can arise when there is interdependence between different economies. In this case the action does not coordinate the various countries leads to results of the type sub-optimal. Reliance on this theory is very important to conclude this paper; in fact economic interdependence between different economies is reflected in the globalization of markets and production. In an era of globalization, what happens in one country, due to the action of private or public, has repercussions in other countries. These reflections can be positive or negative and, therefore, constitute forms of externalities that lead to the occurrence of multiple failures of the market. In some cases, for example, are directly applicable to the concepts of external economies and diseconomies and public goods: what happens to pollution or the spread of knowledge through various communications media. In recent years, especially in the presence of the occurrence of the U.S. financial crisis of 2007, the problem of international coordination has affected mainly the purview of the financial market and especially the banking sector. In this context the results of our econometric model can best advise economic reforms: coordination of the European institutions should lead to Pareto optimal outcomes. In primis not appear to be sufficient to reform the tax system alone Europe (*fiscal compact*) and are also insufficient funding schemes "cushion" (ESM) without a reform of monetary policy. We think that only when the ECB will buy our sovereign debt on the primary markets, the crisis will find a solution at least in the short term and then you can take part in political reform along the aggregate supply and then focus on long-term effects that will coincide with the virtuosity of the economic system.

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