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SCOTT VINCENT

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CHARLES W MULFORD & EUGENE E COMISKEY

THE UNIVERSITY OF
SYDNEY

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Please address all enquiries to:
Dr Nigel Finch
Co-Editor, JARAF
The University of Sydney Business School
The University of Sydney NSW 2006
Australia

Email: business.jaraf@sydney.edu.au
Phone: + 61 2 9036 6177
Fax: + 61 2 8080 8381

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Nigel Finch

Senior Lecturer
Academic Program Director, Master of Management
The University of Sydney Business School
The University of Sydney NSW 2006 Australia

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EDITORIAL

As this issue goes to press, the world has witnessed a massive retreat from stocks and commodities following the downgrading of the United States' triple-A credit rating. The rating agency Standard & Poor's argued that there was evidence of diminished creditworthiness in the world's largest economy, finally making the unprecedented decision to downgrade the US credit rating to AA+ on 5 August 2011. This action, along with continued concerns over European sovereign debt, has shocked global equity markets which eroded up to US\$7.8 trillion in value since the end of July.

Such a reaction by global markets might suggest that investors had assumed that there would never be a situation where the US would lose its AAA credit rating, let alone a situation where choruses of nation states cry in unison as they stand on the edge of sovereign default. Without the benefit of such hindsight, events such as these were not considered reasonable assumptions by the consensus of financial decision makers; and it is exploring this consensus that sits at the heart of this issue of JARAF.

In understanding decision-making, managers need to reflect on how their bias, beliefs and experiences influence their perceptions of new situations. While the problem of managers being misled by untested assumptions is not new, the effect witnessed in global equity markets demonstrates that it can be fatal.

In this issue of JARAF, we focus on three significant assumptions that commonly underpin financial decision-making: modern portfolio theory, credit ratings and asset valuation. For each of these focus areas, our contributors highlight flaws in the way that managers rely on this information and they offer guidance on ways to better approach decision-making in these domains.

We start with an article from hedge fund manager Scott Vincent on the flawed assumption underpinning Modern Portfolio Theory (MPT). The consensus view has been that a well-diversified, index-type portfolio will deliver superior returns and it is this belief that has underpinned the unfathomable flow of capital to index fund over the past decades. However, as Vincent explains, there is compelling evidence that a sub-set of active managers persistently outperform indexes, suggesting a result inconsistent to the consensus view.

Next, Ulrich Schroeter from the University of Mannheim provides a timely overview of credit rating agencies and discusses the growing risks from their widespread use and increased dependence in trade, commerce and market operation.

Finally, and of particular interest to investors and analysts, Charles Mulford and Eugene Comiskey shine a spotlight on the valuation of deferred tax assets, an ever-growing intangible asset found sprouting on many corporate balance sheets. This research investigates the tax planning strategies supporting their valuation and the underpinning assumptions regarding a firm's future profitability. It is evident from their research that there is much inconsistency, and as such, uncertainty regarding the valuation of this burgeoning asset class. **JARAF**

NIGEL FINCH

SYDNEY, AUGUST 2011

THREE LETTERS THAT MOVE THE MARKETS: *CREDIT RATINGS BETWEEN MARKET INFORMATION AND LEGAL REGULATION*

ULRICH G SCHROETER

As demonstrated by the market reactions to downgrades of various sovereign credit ratings in 2011, the credit rating agencies occupy an important role in today's globalised financial markets. *This article provides an overview of the central characteristics of credit ratings and discusses risks arising from both their widespread use as market information and from the increasing references to credit ratings contained in laws, legal regulations and private contracts.*

INTRODUCTION: CREDIT RATINGS AND THE 2011 SOVEREIGN DEBT CRISIS

On 8 August 2011, the Dow Jones industrials fell 634.76 points (or 5.6 per cent), with every single stock in the Dow 30 and the S&P 500 index trading lower. It was the sixth-worst point decline for the Dow in the last 112 years and the worst drop since December 2008. The drop came on the first trading day after Standard & Poor's, one of the major international credit rating agencies, had — for the first time in history — downgraded the United States' credit rating from 'AAA' to 'AA+'. The reaction on the global financial market was drastic, with investors scrambling to 'sell first and ask questions later', as one market observer put it. It is telling that even President Obama spoke in credit rating categories, when he criticised the downgrade in an attempt to calm the markets: 'No matter what some agency may say, we've always been and always will be a AAA country.'¹ Despite this assertion, the market prices continued to fall.

The downgrade of the United States' sovereign rating wasn't the first time the credit rating agencies have dramatically moved the markets in recent times. Throughout the Eurozone's sovereign credit crisis that erupted in early 2011, the sovereign credit ratings of struggling economies like Greece, Portugal and Italy were repeatedly downgraded in spite of the ongoing support measures adopted by the European Union and national governments. To the dismay and (sometimes) outright anger of European politicians, the markets usually followed the credit rating agencies' assessments, resulting in falling bond prices and increasing capital costs for the countries concerned. In reaction, Greece's Prime Minister George Papandreou accused the rating agencies of 'seeking to shape our destiny and determine the future of our children', while the Portuguese Attorney-General even commenced a criminal investigation into the conduct of the rating agencies Moody's, Fitch and Standard & Poor's.

The developments described above invite us to investigate the characteristics of credit ratings and their role in the global financial markets. In doing so, this article² will focus particularly on the increasing importance that legal regulation has gained in the context of credit ratings, both due to the increase in *regulation through* credit ratings and the ongoing discussion about the *regulation of* credit rating agencies. The article is organised as follows: The upcoming section provides an introductory overview about credit ratings, before the following section outlines possible objects of credit ratings, distinguishing between private

and public debt. The next sections then address the business models of credit rating agencies (including the conflicts of interest potentially resulting therefrom) and the functions of credit ratings and credit rating agencies, thereby introducing the distinction between their 'market information function' and their 'regulatory function' and providing an alternative theoretical explanation for the significant market effects that rating changes cause. The market structure of the credit rating agency market and its lack of competition are the subject of the following section, which argues that the credit rating agency market constitutes a natural oligopoly. The next section outlines the present legal regulation of credit rating agencies, before the final section briefly concludes.

CREDIT RATINGS AND CREDIT RATING AGENCIES

Credit ratings are a unique type of financial market information. At the outset, they provide no more than independent risk assessments, offering investors some orientation within the vast amount of information available on the globalised financial markets today. Despite their technical content and appearance, credit rating changes are at the same time front-page news, providing credit rating agencies with a significant influence on the financial markets and beyond. The fact that private rating agencies effectively have the power to destabilise major corporations, municipal governments and — as seen during the sovereign credit crises already mentioned — whole national economies³, has made them and their credit ratings a much discussed subject in economics, politics and law.

Credit Ratings

A credit rating is an assessment of the creditworthiness of an obligor as an entity or with respect to specific securities, financial instruments or debt obligations. Prepared and published by specialised credit rating agencies, it predicts the relative likelihood of the full and timely performance of the rated financial obligation, i.e. the payment of interest and the eventual repayment of the amount borrowed. Credit ratings are usually published when a security is being offered to investors, and are subsequently maintained and updated by the respective credit rating agencies throughout the security's life. Should a rating agency's ongoing assessment indicate that the creditworthiness has deteriorated, the credit rating will be adapted by way of a downgrade, while an improved creditworthiness results in a rating upgrade.

Credit ratings reduce the asymmetry of information that exists between borrowers and debt securities issuers

on one side, and lenders and purchasers of debt securities on the other. Due to investor demand as well as certain regulatory requirements, it is today impossible on many financial market segments to sell debt securities that have not been rated. At the same time, a credit rating's informational content is more restricted than its practical importance suggests.

Credit Ratings As Subjective, Predictive Opinions

Credit ratings are not factual, verifiable statements about a security and its issuer, but the subjective, predictive opinions of a private credit rating agency. Although the rating agencies will typically consider numerous objective factors during the rating process, the credit rating itself is ultimately derived from the subjective weighing of those factors. It therefore constitutes a mere opinion which heavily relies on human judgment, and is as such neither a fact susceptible of being proved true or false nor a guarantee of credit quality. Since credit ratings furthermore express a prediction of the likelihood that the rated security will (or will not) default in the future, their content is inherently forward-looking. As with any prophecy, this by their nature makes them a subjective statement, because no one can objectively (i.e. with provable certainty) predict the future.

The subjective and therefore necessarily uncertain content of credit ratings alone cannot explain the global investor community's apparent trust in the credit rating agencies and their statements. The two additional factors that are usually mentioned as explanations are (1) the credit rating agencies' position as a third party acting independently from the borrowers they evaluate, and (2) the reputation for generally reliable creditworthiness opinions which credit rating agencies have managed to build over the years, securing their position as private 'gatekeepers' on the global financial markets. A third factor is arguably the information's understandable 'coding', which is unique to credit ratings (to be discussed below).

Credit Ratings As Global Information: Rating Symbols and Reports, and the Importance of the Information's 'Coding'

Credit ratings differ from other information available on the financial markets by the particular format in which rating opinions are communicated. Each credit rating published by a credit rating agency has two components: The credit rating proper, which is typically expressed as a letter grade (e.g. 'AA+' or 'Baa2'), communicating the agency's opinion of relative level of credit risk (the rating symbol); and an accompanying rating report, which outlines the reasons for the rating grade assigned and provides additional information about the rated object's financial situation.

It is the communication of their credit assessments through easy-to-understand rating symbols which primarily distinguishes credit rating agencies from other information providers, and which arguably is the main reason for their extraordinary market influence: The brief and standardised rating symbols can be easily and quickly digested by every market participant, independent of his financial expertise and language knowledge. Their 'coding' thus guarantees credit ratings their role as a truly universal standard, understandable on every financial market segment worldwide. It is accordingly not primarily the informational content of ratings, but the information's 'coding' through the use of rating symbols that makes credit ratings special: To real-world market participants with a limited capacity to assimilate and process information, three letters say more than a thousand words.

Rating Scales

In order to 'code' their creditworthiness assessments, each credit rating agency uses a specific standardised rating scale which encompasses a range of rating categories and sub-categories (so-called 'notches'). The same rating scales are used for all rated objects without regard to the country in which the issuer is based, the type of security concerned or other factors, thereby ensuring that rating symbols are globally uniform in their use and easy to compare.

The most common among the rating scales was initially developed by John Fitch and is used today by two of the major international credit rating agencies (Fitch and Standard & Poor's), as well as by numerous smaller rating agencies. It distinguishes between the rating categories 'AAA'/'AA'/'A'/'BBB'/'BB'/'B'/'CCC'/'CC'/'C'/'D', which may be modified by the addition of a '+' or '-' sign to indicate relative standing within the rating categories. The credit rating agency Moody's uses a somewhat different rating scale with the categories 'Aa'/'Aa'/'A'/'Baa'/'Ba'/'B'/'Caa'/'Ca'/'C', and adds '1', '2' or '3' to show relative standing.

'Investment Grade' and 'Non-Investment Grade'

Although rating scales are designed as continuous gradual scales, the financial market has long preferred a coarser distinction by distinguishing between the broader categories 'investment grade' ('BBB'/'Baa3' and above) and 'non-investment grade' ('BB+'/'Ba1' and below). Market parlance commonly refers to the latter category as 'junk'. The distinction described effectively results in an even more radical complexity reduction, since it divides the entire credit universe into merely two sections. In doing so, it may create a systemic risk by causing herding behavior among investors whenever

a credit rating is downgraded across the 'BBB-/BB+' boundary⁴ — an effect that is further enhanced by the frequent references to the investment grade threshold contained in legal rules (to be discussed below in connection with the 'regulatory function' of credit ratings).

Credit Risk as the Sole Subject of Credit Ratings

The informational content of a credit rating is comparatively narrow, since it only expresses an opinion about the creditworthiness of the rated object, i.e. the credit risk involved. It thereby assesses the most important type of risk that investors in debt securities face, but not the only one: Credit ratings do neither directly nor indirectly address, for example, the market liquidity of a debt security (liquidity risk), its price in the secondary market, the likelihood of price fluctuations (volatility risk) or the risk arising from exchange rates moves (currency risk). The proverbial 'AAA' rating does therefore not indicate a risk-free investment (although it is often misconstrued as such), but merely the investment's low credit risk in relation to other investments.

Credit ratings are furthermore neither investment advice nor recommendations to buy, hold or sell a security, as continuously pointed out by the credit rating agencies. This also follows from the fact that investment decisions are necessarily influenced by other factors beside the credit risk, as notably the individual investor's risk preference and the security's interest rate: An AAA-rated bond might therefore be an undesirable investment when it is selling at 110 per cent of par (its face amount), while a BBB-rated bond might be an excellent investment at 50 per cent of par.

Credit Rating Agencies

Credit rating agencies are private companies engaged in the business of determining and issuing credit ratings. To determine their credit ratings, rating agencies employ either a quantitative or a qualitative model or — frequently — both. In doing so, their rating analysts collect and evaluate information from a variety of sources and essentially distill it into rating opinions, which are then communicated to the market. Economic theory accordingly qualifies credit rating agencies as informational intermediaries.

The first credit rating agency was founded in 1909 by John Moody, who used credit ratings symbols in the rating manuals he published about US railroad bonds. His credit ratings quickly gained acceptance among investors, and other credit rating agencies were soon established. Already in the mid-1920s, credit ratings covered almost 100 per cent of the US bond market.

Until the 1970s, however, credit rating agencies largely remained an exclusively US-American phenomenon. Driven by the increasing financial globalisation, the 1970–90s then saw a rapid expansion of the US rating agencies to foreign financial markets. Today, credit rating agencies have arguably become the most important informational intermediaries in global finance.

It is estimated that there are currently some 150 credit rating agencies worldwide. This number includes agencies of greatly varying size and rating coverage: The vast majority of credit rating agencies (approximately 140) are merely active in a single country and/or a specific market sector, assigning a comparatively small number of credit ratings. Their market influence is small or negligible. A second group of credit rating agencies (5–10 agencies, mostly from the US, Japan and Canada) possess a somewhat larger rating coverage and are active in more than one country. For all practical and theoretical purposes, however, the global credit rating market is dominated by the following three international credit rating agencies:

- Standard & Poor's Financial Services, a subsidiary of The McGraw-Hill Companies with its headquarters in New York ('Standard & Poor's')
- Moody's Investors Service, a company headquartered in New York and wholly-owned by Moody's Corporation, a Delaware-incorporated company listed on the New York Stock Exchange ('Moody's')
- Fitch Ratings, dual-headquartered in London and New York, a majority-owned subsidiary of Fimalac, S.A. headquartered in Paris ('Fitch').

According to generally-accepted estimates, Standard & Poor's and Moody's each publish approximately 40 per cent of all credit ratings available globally, with Fitch publishing another 15 per cent. About 95 per cent of the global market for credit ratings is therefore supplied by these three major rating agencies, making the credit rating industry one of the most heavily-concentrated industries on earth.

OBJECTS OF CREDIT RATINGS: PRIVATE AND PUBLIC DEBT

As an assessment of creditworthiness, a credit rating can theoretically be given to any possible object of credit risk. In practice, credit rating agencies primarily assign ratings to borrowing entities, for example, private corporations and financial institutions (issuers), to specific debt securities and to structured finance instruments. While private debt was the first segment of the debt market covered by credit rating agencies (starting with bonds issued by private railway companies

in the US), their business has since expanded: Today, they also publish rating opinions on public debt, i.e. the creditworthiness of governments and their securities (so-called sovereign ratings).

Private Debt

Borrowing Entities

A 'borrower rating', 'corporate rating' or 'issuer rating' is an assessment of the creditworthiness of an obligor as an entity. It assesses the relative likelihood of timely repayment of the borrower's senior unsecured obligations. In order to form their rating opinions about a corporate issuer, credit rating agencies typically analyse financial and non-financial factors as key performance indicators, economic, regulatory and geopolitical influence, management and corporate governance attributes, and competitive position of the company. During the rating process, the management of the borrowing entity often discloses confidential information to the rating analysts, which thus can influence the credit rating without itself having to be disclosed to the market (and to competitors).

Debt Securities

More common than issuer ratings are credit ratings assigned to a specific debt issue, for example, corporate bonds, debentures, notes or commercial paper, or to debt-like securities, as preferred stock. Credit ratings of this type are based on an evaluation of the issuer's creditworthiness, but in addition take into account other factors influencing the credit quality of the specific security, as its terms and conditions and legal structure, its relative seniority with regard to the issuer's other debt issues and the priority of repayment in the event of default, and the existence of external support or credit enhancements (collateral, letters of credit, guarantees, insurance). A debt security's credit rating may therefore deviate from its issuer's corporate credit rating.

Individual debt issues are usually rated before they are offered to investors, and empirical studies show that the credit rating influences a security's initial yield more than any other factor. Two reasons contribute towards making a sufficient credit rating a condition precedent for the successful sale of debt securities to international investors, as well as for its domestic placement on some domestic markets (as notably in the US, where almost 100 per cent of publicly-offered securities are rated). Many investors simply refuse to invest in debt that is not accompanied by a credit rating from a major rating agency, thereby elevating credit ratings to a market-induced placement

requirement. In addition, legal rules frequently require a credit rating as condition, for example, the security's admission to regulated markets (stock exchanges), for the applicability of reduced disclosure requirements, or for its eligibility as investment for regulated institutional investors (banks, insurance companies, pension funds).

The number of credit ratings that are assigned to a given debt security varies in accordance with the demands of the market. Many issuers obtain credit ratings from two or even three credit rating agencies for their bonds,⁵ while sometimes a credit assessment by one rating agency is considered sufficient.

Structured Finance

Credit ratings for structured finance instruments as residential mortgage-backed securities (RMBS), asset-backed securities (ABS) or collateralised debt obligations (CDOs) are a special type of debt security rating.

Although they share the general characteristics of debt issue ratings discussed above, structured finance ratings are marked by a number of important particularities, which mostly result from the complex nature of structured finance instruments: First, the involvement of multiple parties in securitisation transactions (originator, arranger, special purpose vehicle acting as the issuer) makes a creditworthiness assessment more difficult than in the case of traditional bonds. Second, the evaluation of a pool of financial assets (such as mortgages or auto loans) that form the basis for the financial instrument's creditworthiness largely relies on a quantitative assessment in accordance with mathematical models, thereby introducing a model risk not prevalent in other rating contexts. And third, the structuring of the security into different tranches with varying levels of seniority (resulting in different credit ratings) furthermore adds to the complexity of the rating task, making incorrect repayment prognoses more common than in case of other debt ratings.

During the global financial crisis in 2007–09 it became clear that many of the then structured finance ratings had been based on overly optimistic assumptions, leading to widespread rating downgrades and subjecting the credit rating agencies to significant criticism. The precise reasons for their strikingly weak performance in this segment of the rating market are not entirely clear. Much is to be said for the assumption that conflicts of interests were stronger than in the area of traditional bond rating and resulted in the credit rating agencies adapting their mathematical rating models to the wishes of large investment banks, who could believably threaten to otherwise take their substantial

rating business elsewhere (see in more detail below). In addition, investor over-reliance on credit ratings contributed to the systemic effect of rating actions.

In the reaction to the financial crisis, various legal requirements aimed at increasing the transparency of structured finance ratings were introduced. Furthermore, regulations enacted in the European Union⁶ now require credit rating agencies to use an additional symbol with ratings for structured finance instruments in order to distinguish them from the rating categories used for other financial obligations. In accordance with this rule, the three major credit rating agencies now add the symbol 'sf', '(sf)' or '(SF)' to their structured finance ratings.

Public Debt: 'Sovereign Ratings'

The largest borrowers on today's financial markets are not private corporations, but sovereign borrowers (national governments, states, cities and municipalities, as well as international entities like the European Financial Stability Facility and — from 2013 — the European Stability Mechanism⁷). The credit rating agencies therefore also determine credit ratings for sovereigns and their individual debt issues (treasuries). In recent years, the importance of sovereign ratings has steadily increased, along with the increasing indebtedness of many governments.

The rating process and the methods employed when determining sovereign ratings are broadly similar to those used with respect to corporate credit ratings, although the borrower's willingness (as opposed to its ability) to repay plays a more important role since central governments profit from immunity under public international law, which makes enforcement of repayment obligations by investors difficult or impossible. A second difference lies in the fact that sovereign ratings are particularly often published unsolicited, i.e. without cooperation and compensation from the government concerned.

As they decisively influence any sovereign's borrowing costs, sovereign credit ratings directly affect the budget available to the respective government, and thereby its political options. In case of highly indebted states and municipalities, rating downgrades therefore often attract significant criticism, as recently demonstrated during Greece's and Portugal's financial crises (2010–11). Such criticism tends to overlook that credit ratings are an assessment of the borrower's financial situation, but not its cause.

The 'Sovereign Ceiling'

A state's credit rating can furthermore affect the

credit rating of private companies, since the major credit rating agencies traditionally treat the sovereign rating as the notional maximum rating for all foreign currency debt issues by borrowers from that state (so-called 'sovereign ceiling'). Behind this approach lies the expectation that governments facing default may force private sector defaults by imposing exchange controls or other restrictive measures that impede private issuers' access to the foreign currency necessary to service their obligations. A limited exception to the sovereign ceiling approach is made for members of currency unions (such as the Euro area), which instead are subject to a rating ceiling for the currency area.

BUSINESS MODELS OF CREDIT RATING AGENCIES

All of today's credit rating agencies operate as private for-profit organisations. Among them, two different basic business models are employed, the 'investor-pays' and the 'issuer-pays' model. The differences between these models are two-fold and concern both the credit rating agencies' relationship towards the issuer of the rated debt and towards the investors, thereby at the same time affecting the degree to which their ratings become publicly-available information.

The choice between the 'investor-pays' and 'issuer-pays' model has traditionally been left to the credit rating agencies themselves. Since the global financial crisis 2007–09, however, critics have increasingly demanded a regulatory control of the business model used with an aim towards eradicating conflicts of interest.⁸

'Investor-pays' Model

Under the 'investor-pays' model (or 'subscription model'), the credit rating agency receives compensation for its ratings from subscribers (mainly institutional investors) who pay a subscription fee for ratings publications. At the same time, there is no contractual relationship between the credit rating agency and the issuer of the rated debt; all ratings are accordingly 'unsolicited' ('investor-related') ratings.

The 'investor-pays' model was the prevailing rating business model until the early 1970s, when the three major credit rating agencies (Moody's, Standard & Poor's and Fitch) adopted the 'issuer-pays' model. Currently, only some smaller rating agencies continue to operate under the 'investor-pays' model; its practical relevance is therefore limited. The model's primary disadvantage lies in the fact that it limits the ratings' availability to paying subscribers. By doing so, it affects the credit rating agencies' market information function by effectively creating two classes of investors, 'the

haves and the have-nots of financial information'.⁹ In addition, ratings made under the 'issuer-pays' model are usually based on publicly-available information only, since the issuer's management is not involved in the rating process.

'Issuer-pays' Model

Under the 'issuer-pays' model, on the contrary, credit ratings are initiated by the issuer who approaches the credit rating agency and orders a creditworthiness assessment. The issuer compensates the credit rating agency by paying a rating fee with ranges from \$1,500 to \$2,500,000 (for a Moody's rating), depending on the size of the issue and the type of security rated. Today, the issuer-pays model is the dominant rating model on the global financial markets: In 2009, credit rating agencies operating under this model determined 99 per cent of the total outstanding credit ratings in the US.¹⁰

Conflict of Interest

The contractual bond between issuer and rating agency under the issuer-pays model comes with structural advantages and disadvantages. An advantage lies in the issuer management's cooperation in the rating process which provides the rating analysts with a better understanding of the issuer's financial situation and business prospects, and which often makes confidential information available to the credit rating agency (and thus, indirectly, to the financial market). The primary disadvantage is the conflict of interest arising from the issuer paying the evaluator of his own creditworthiness: Since it is in every issuer's economic interest to receive as high a rating as possible, there is an incentive for the credit rating agency not to displease the paying issuer, lest he may take his future rating business elsewhere. It is frequently argued that credit rating agencies are thereby induced to award higher ratings than they consider warranted. Regulation prohibiting the issuer-pays model or modifying it in order to remove any conflict of interest is under discussion in some jurisdictions, but has not yet been adopted.

The Conflict of Interest's Potential Effects

The conflict of interest described no doubt exists, as does the 'reverse' conflict of interest under the 'investor-pays' model (where paying institutional investors could theoretically try to influence the rating opinions). The relevant question is whether this conflict is likely to practically affect the outcome of a rating process, thereby outweighing adverse incentives as notably the credit rating agency's interest to preserve its independence and reputation. The answer arguably depends on a number of factors and will not be the

same for all segments of the debt market.

Bond Rating

In order for any issuer's displeasure to be relevant at all, there first has to be a realistic possibility of the issuer not returning for future ratings and contracting with another rating agency instead ('rating shopping'). In case of traditional debt securities (bonds), this possibility to refrain from future cooperation is limited, since investors mostly demand securities to be rated by two or even three of the three major credit rating agencies,¹¹ meaning that an issuer cannot make a believable threat to withhold future business. Furthermore, even the largest issuers on the market for corporate bonds each contribute no more than a small portion to the overall income of any credit rating agency. The large number of issuers — Standard & Poor's, for example, is rating approximately 45,000 corporate issuers — makes the risk of potentially losing a single customer negligible when compared to the effects of a loss of reputation.

Structured Finance Rating

The situation is different on the market for structured finance, where both the market structure and the investors' demand for rating coverage are different: In case of residential mortgage backed securities, asset-backed securities and collateralised debt obligations, investors in the past have often considered a credit rating from just one rating agency to be sufficient (the latter being necessary for legal reasons, since prudential guidelines usually demand structure finance instruments to be rated). Wherever the investor community adheres to such a 'one rating' standard (instead of the 'three ratings' standard prevailing on the bond market), the risk of a credit rating agency losing displeased customers becomes realistic. In addition, the market for structured finance is special because a small number of arrangers of structured finance products — primarily large investment banks — repeatedly bring rating business to the credit rating agencies. As sources of constant deal-based revenue, they accordingly have a much greater potential to exert undue influence on a rating agency than a corporate issuer that brings far less rating business to the agency. It is the combination of these factors which creates a situation in which conflicts of interest might realistically affect the credit rating agencies' rating actions. On the eve of the global financial crisis 2007–09, it arguably led the credit rating agencies to apply inappropriately lenient standards in their structured finance ratings, thereby contributing to the development of the crisis.

For the reasons described, it thus appears that under the 'issuer-pays' model, a monopoly (or natural

oligopoly — see below) rating structure is preferable to a competitive structure, since it is the availability of competitive alternatives that allows issuers to play off one credit rating agency against another.

Prevalence of A Mixed Business Model in Practice

Although the three major credit rating agencies are commonly qualified as operating under an ‘issuer-pays’ model, their business model is in practice closer to a mixed model, because it also includes typical ‘investor-pays’ features. On the one hand, the large rating agencies continue to offer rating information to paying subscribers that is not available to the public: in addition to the rating symbols (that are published free of charge), subscribers receive access to accompanying rating reports that outline the reasons for a particular creditworthiness assessment and provide supplemental information. (The economic importance of subscription fees is, however, comparatively limited — they contribute no more than 5–10 per cent to the agencies’ overall income.) On the other hand, rating agencies using a mixed business model occasionally also issue unsolicited ratings in order to complement their existing rating coverage or – as critics suggest – incentivise the issuers concerned to enter into a remunerated rating contract.

FUNCTIONS OF CREDIT RATINGS AND CREDIT RATING AGENCIES

In their role as global providers of financial information, two theoretical functions of credit rating agencies can be distinguished (Schroeter (2012)): In their original function, they provide information to the markets (‘market information function’), while their credit ratings in addition serve as components of laws and other legal rules (‘regulatory function’). Only when viewed together do these two functions provide a convincing theoretical explanation for the market reactions caused by rating actions.

The Market Information Function

First and foremost, credit ratings are information for investors. Initially only available to buyers of rating manuals and later paying subscribers (investor-pays model), they are today published free of charge as publicly available information (issuer-pays model). Their designated addressee is accordingly the financial market in its entirety, including all of its participants. The management of rated issuers — occasionally considered to be a rating addressee in its own right¹² — is merely being addressed as one member of the public.

By informing the financial market about their rating

opinions, credit rating agencies increase the market’s efficiency and lower costs for both issuers and investors. Once published, credit ratings possess the characteristics of a public good — their use by one individual does not reduce their availability for use by others (non-rivalry), and no one can effectively be excluded from using them (non-excludability).

Numerous empirical studies have demonstrated that the publication of credit rating changes causes both changes in the market price of the bonds concerned and changes in their credit spread. Furthermore, the market also reacts through changes in credit default swap spreads and in the stock price of the respective issuer. The market therefore clearly views rating changes as informational events, proving their informational value in the eyes of investors. The empirical evidence shows no difference between the market reactions to solicited and unsolicited ratings. Event studies indicate, however, that the degree of the market’s reactions differs depending on the type of rating change: While rating downgrades typically result in stronger market reactions than rating upgrades, market prices and yields react particularly strongly to rating downgrades from investment grade to non-investment grade and to rating upgrades that cross the investment/non-investment grade boundary in the opposite direction.¹³

In this context, a criticism often directed at credit rating agencies is that their ratings ‘lag the market’: A number of empirical studies have documented that yield spreads of corporate bonds start to expand before a rating downgrade occurs, implying that the market leads the credit rating. The explanation for this phenomenon lies in the general methodological approach applied by the major rating agencies, who evaluate creditworthiness ‘through the cycle’ as opposed to ‘point in time’. Their credit ratings attempt to assess credit quality in a long time horizon incorporating the cyclical aspects of the economy and will accordingly not reflect small changes in the financial condition of the rated object (which, on the contrary, are immediately reflected in the market price) when they are likely to be reversed within a year. This approach guarantees a certain rating stability and limits the pro-cyclical effect of rating changes. Instead of communicating the same informational content with different timeliness, as some critics suggest, market prices and credit ratings are therefore communicating different informational contents.

The Regulatory Function

The second function of credit rating agencies and their credit ratings is their regulatory function, which results from numerous legal rules referring to credit

ratings. It is a derivative function insofar as the credit rating agencies do not publish their ratings for this purpose, but third parties (legislative bodies, regulatory authorities, private contracting parties) refer to them in their legal rules and thereby attach a regulatory function.

References to Credit Ratings in Legal Rules

The use of credit ratings in legal rules is not a new phenomenon. The earliest case of a regulatory provision referring to credit ratings was a regulation issued by a US banking supervision authority (the Comptroller of the Currency) in 1936, which has since restricted the purchase of securities by banks to securities which recognised rating agencies characterise as not 'speculative'. The credit rating agencies referred to had thereby been awarded the task of deciding on the eligibility of bonds for the purchase by banks. Government reliance on ratings has since expanded worldwide, and financial market regulation in most countries today contains (often extensive) references to ratings.¹⁴ While they continue to be mere private information providers, credit rating agencies therefore additionally occupy an important quasi-regulatory role in today's financial markets.

Rating-based rules are used in various areas of financial market regulation and for various regulatory purposes. In the context of financial globalisation, the regulatory function of credit ratings under the Basel Committee on Banking Supervision's 'Basel II Accord' of 2004¹⁵ is particularly important: In establishing internationally convergent capital standards for banks, the Basel II Accord heavily relies on 'external' ratings, ie. credit ratings issued by credit rating agencies recognised for this purpose. Other regulatory key purposes for which credit ratings are used are: the identification or classification of assets, usually in the context of eligible investments ('junk bond prohibition') or permissible asset concentrations in prudential rules for institutional investors (banks, insurance companies, pension funds); providing a credible evaluation of the credit risk associated with assets purchased as part of a securitisation offering or a covered bond offering; the determination of disclosure requirements, which are often more lenient when an issuer or a security has an investment grade rating; and the determination of prospectus eligibility.¹⁶ Moreover, central banks acting as providers of liquidity for banks often rely on credit ratings when determining the credit standards for eligible assets. In addition, credit ratings are frequently used in private rule-making, for example, in internal investment guidelines of institutional investors and in private contracts containing 'rating triggers'.

Risks

The widespread regulatory use of credit ratings can have unintended effects since it grants rating downgrades the force of law, thereby causing systemic reactions by numerous regulated market participants (the 'synchronisation effect'). The particularly strong changes in market prices once ratings migrate across the 'investment grade'/'non-investment grade' boundary are arguably a result of this synchronisation effect, since regulations often provide for a minimum 'investment grade' rating and thereby synchronise investor behavior. At the same time, the regulatory function awarded to credit rating agencies may adversely affect their original market information function by incentivising the credit rating agencies to act overly cautious, knowing that the rating actions contemplated might activate legal obligations to sell debt securities. Against this background, government regulators have recently commenced to reduce rating reliance in laws and regulations.¹⁷ While this is a welcome tendency, it is currently unclear which alternative third-party assessments could adequately replace the use of credit ratings. It therefore seems unlikely that the credit rating agencies' regulatory function will be completely removed in the foreseeable future.

Evaluating the Influence of Each Function: Why Exactly Do Rating Actions Move the Markets?

As demonstrated by the strong market price movements during the 2011 sovereign debt crises (already mentioned in the introduction to this article) and evidenced by numerous empirical studies, rating actions cause significant market reactions. The theoretical explanation for these reactions, however, is less clear. In this respect, different schools of thought have emerged in the literature.

One group of authors traces rating actions' informational value to the fact that the credit rating agencies frequently possess confidential information about the issuer concerned, which is not available to the market public. Even on an informationally efficient capital market, rational market participants with an unlimited capability to access and digest information thus have a rational incentive to react to credit rating changes, since the confidential information reflected in the rating change is not yet reflected in the market price.¹⁸ The approach described accordingly considers the credit ratings' market information function to be the decisive cause of rating-induced market reactions. It cannot explain, however, why the markets also react to unsolicited ratings,¹⁹ since these are exclusively based on publicly-available information and should therefore

not add anything new to the information mix already available to market participants. The recent downgrade of sovereign ratings is a case in point, as neither the government of the United States nor of Greece and Portugal had shared any confidential information with the credit rating agencies and the apparent difficulties concerning the financial situation of those countries had been widely discussed in public.

A different explanation is suggested by the so-called 'regulatory license theory' developed by Partnoy (1999), which denies any informational value of credit ratings and links the market reactions exclusively to their regulatory use forcing regulated market participants to sell securities once certain rating downgrades have occurred. The 'regulatory license theory' accordingly regards the credit ratings' regulatory function as the only possible reason for rating-induced market reactions. It fails to convince since it only takes into account empirical evidence from the United States (where regulatory references to credit ratings are indeed very common), although market reactions to rating actions similarly occur on other domestic financial markets: In a number of jurisdictions where empirical studies have shown significant changes in market prices following rating changes, however, the legal rules in force at the relevant time contained few or no references to credit ratings. A pertinent example are the rating-induced market reactions recorded on the German stock exchanges during the 1980s and 1990s,²⁰ when rating-based regulation was (yet) completely unknown in Germany.

The theoretical explanation developed by Schroeter (2012) on the contrary suggests that both the credit ratings' market information function and their regulatory function contribute to the market reactions following rating changes. The primary reason why investors decide to sell securities following downgrades and buy securities following upgrades, however, is not to be found in the nature of credit ratings as carriers of confidential information, but rather in their 'coding': The investor community pays more attention to credit ratings than to any other type of market information because it is easy to understand them. This also explains why the market reacts not only to solicited, but similarly to unsolicited ratings (which do not transmit confidential information, but share the solicited ratings' coding), and why stock prices — as Goh and Ederington (1993) have shown — also drop after the company's bonds were downgraded because the rating agencies foresee an increase in leverage that will transfer wealth from bondholders to stockholders (which suggests that equity prices should rise): The

reasons behind the decision to downgrade are not reflected in the rating symbol, and the explanation contained in the accompanying rating reports is apparently not accessed and processed by investors. At the end of the day, rating information accordingly moves the market not primarily because of what is being said, but because of the way it is said.

The regulatory function of credit ratings in turn influences the market's reactions by affecting how the markets move, since rating-based legal rules can force numerous market participants to react identically (e.g. through the sale of debt securities) at the same time (e.g. after said security has lost its investment grade rating), causing the synchronisation effect already referred to above. The degree to which the regulatory function influences market reactions of course depends on the degree in which legal rules refer to credit ratings in the jurisdiction concerned.

THE CREDIT RATING AGENCY MARKET: MARKET STRUCTURE AND (LACK OF) COMPETITION

Oligopolistic Market Structure

The credit rating industry is, and always has been, a highly concentrated industry. At no point in time since the establishment of the first credit rating agency in 1909 have there been more than four credit rating agencies with a significant market share. In economic theory as well as in antitrust law, market concentration is generally measured using the Herfindahl-Hirschman Index (HHI), a measure of the size of firms in relationship to the industry and an indicator of the amount of competition among them. The HHI is measured on a scale of 0 to 10,000 and approaches zero when a market consists of a large number of firms of relatively equal size. According to the US Department of Justice, markets in which the HHI is between 1,000 and 1,800 points are considered to be moderately concentrated, and those in which the HHI is in excess of 1,800 points are considered to be concentrated. In 2009–10, the Securities and Exchange Commission determined the HHI for credit rating agencies active in the US (NRSROs) to be 3,495, which is the equivalent of there being approximately 2.86 equally sized firms. Three credit rating agencies (Moody's, Standard & Poor's and Fitch) issued approximately 97 per cent of all outstanding ratings. The situation on financial markets outside the US is comparable, with the same three rating agencies dominating the market. The economic literature on credit rating agencies accordingly agrees that the market for credit ratings is an oligopoly.

Theoretical Explanations

Why this oligopolistic market structure has developed in the first place and continues to exist is a matter of theoretical dispute. The fact that the credit rating business is highly profitable suggests that it should attract new competitors. In practice, however, none of the more recently established credit rating agencies have managed to seriously challenge the market dominance of the incumbent 'big three'.

Prevailing Theoretical Explanation

Barriers to Entry for Credit Rating Suppliers As Decisive Reason

The prevailing opinion in economics literature²² points to the high barriers of entry that new entrants to the credit rating business face, namely the challenge of having to develop and demonstrate a sufficient track record in order to acquire credibility with investors, which again is necessary to persuade issuers to buy their rating service. According to this view, it is in particular the long history of an oligopolistic market structure that makes market entry for new players difficult, since the dominant three rating agencies each boast more than (or close to) 100 years of experience. New credit rating agencies therefore find themselves in a Catch-22 situation because they need a sufficient number of rating contracts in order to develop a reputation, which they fail to receive for lack of said reputation.

In addition, their lack of recognition by the market traditionally barred new rating agencies from exercising a regulatory function, since a formal recognition by government authorities which is generally a prerequisite for ratings to be usable for regulatory purposes (see in more detail below) was in the past only awarded to agencies with a relevant market share.

Past Attempts to Break Up the Oligopoly and Increase Competition

The oligopolistic structure of the market for credit rating agencies at the same time lowers the competition between the market incumbents. This is viewed as worrisome by economists and regulators, since imperfect competition reduces the effectiveness of reputational pressure: Due to the lack of more competitors, a loss of reputation suffered by one credit rating agency may not necessarily translate into a loss of market share, thereby mitigating the impact of reputational pressure on the established agencies. In addition, traditional theory suggests that a lack of competition will result in a higher price for rating information.

Against this background, there have been frequent calls for a larger number of rating competitors, based on the assumption that an increase in competition will increase the probability of high-quality ratings being produced. Building on the theoretical explanation described above, past attempts to break up the existing oligopoly and thereby increase competition have focused on measures designed to overcome the barriers of entry to the rating market. On the one hand, steps were taken towards the establishment of new rating agencies, either through initiatives by banks and other financial institutions or through support by public authorities. Projects of this kind, which were initiated on a number of occasions, often pursued the additional goal of creating a 'local' or 'regional' credit rating agency in order to break the dominance of rating agencies based in the US. Most recently, such calls were raised in the EU in 2011 as a reaction to the downgrading of Greek sovereign bonds by the three major rating agencies that some European governments and the EU Commission considered unwarranted. It is noteworthy that none of these projects succeeded in establishing a new credit rating agency with a relevant international market share.

On the other hand, attempts were made to lower the entry bar for the regulatory use of credit ratings. Regulatory authorities in some jurisdictions (notably in the US since 2007, and in the EU since 2010) therefore commenced to formally recognise credit rating agencies that had little market acceptance and no significant track record, in order to enable the use of their credit ratings for regulatory purposes. While this new regulatory approach resulted in a larger number of government-recognised credit rating agencies, it did not (indirectly) change the preference of issuers and investors: the market dominance of Moody's, Standard & Poor's and Fitch remained completely unaffected.

An Alternative Explanation: The Credit Rating Market as An Investor-driven Natural Oligopoly

An alternative explanation developed by Schroeter (2012) rejects the theory that removable entry barriers for rating providers are the cause of the credit rating market's long-standing oligopolistic structure, and argues that the market for credit ratings is an investor-driven natural oligopoly.

According to traditional economic theory, a natural oligopoly is a market structure in which a small number of firms compete and natural or legal barriers restrict the entry of new firms. The prevailing theoretical explanation of the rating oligopoly assumes that new

competitors cannot enter the market because they lack features necessary to gain acceptance for their ratings (like the sufficient track record or governmental recognition), suggesting that the barriers to entry reside on the supply-side of the market. It cannot explain, however, why the oligopoly's composition has remained identical over time, although some smaller agencies have been active on the market for decades and recently also received recognition in their regulatory function.

The evidence suggests that the decisive barrier to entry rather resides on the rating market's demand-side, namely in the investors' preference for a market with only a few rating suppliers: Since a central reason for credit ratings' usefulness to investors is that they reduce complexity by distilling a wealth of market information into an easy-to-process rating symbol, this advantage would be lost again had the investors to assimilate and process ratings from a large number of credit rating agencies. Financial markets occupied by investors with a limited capacity to assimilate and process information — the latter being a natural characteristic of real-world investors, although not reflected in the theoretical economic model of an efficient market — therefore always result in an investor-driven natural oligopoly of rating suppliers, making attempts to increase the number of relevant credit rating agencies futile.

THE REGULATION OF CREDIT RATING AGENCIES

In 2003, Jochen Sanio, president of the German banking supervision authority BaFin,²³ famously described the credit rating agencies as 'the greatest unregulated force within the global financial system'. In the mere eight years since this statement was made, much has changed in the area of credit rating agency regulation. Today, the credit rating agencies have been subjected to a range of regulatory measures, both because of their significant influence on the financial markets (through their market information function) and their increasing role in financial market regulation (through their regulatory function).

Domestic Regulation of the Global Rating Oligopoly: A 'Race to the Top'

All credit rating agency regulation that currently exists has been created by domestic or — in the case of the European Union — regional regulators; there are accordingly no internationally uniform rules in this area. In conjunction with the oligopolistic market structure already discussed, this lack of uniformity causes a somewhat unusual effect: Since all regulations are primarily directed at the same three major credit rating

agencies (Standard & Poor's, Moody's and Fitch) which publish 95 per cent of all international credit ratings, the result is a 'race to the top', with all internationally active rating agencies having to comply with the strictest among the regulatory requirements imposed by the different regulators.

In addition, the coordination between the various regulatory bodies is currently limited, so that regulatory requirements in one country may well prove incompatible with regulatory rules in force in one of the other jurisdictions. Credit rating agencies would face a difficult dilemma should such an incompatibility arise. It is accordingly essential for domestic regulators to improve their coordination when regulating these global information providers.

Constitutional Protection of Credit Rating Agencies as A Limit to Regulation

Any regulation of credit rating agencies must take into account the rights of the rating agencies themselves, as defined by the applicable law. Under most legal systems, rating agencies profit from constitutional protection, since their credit ratings usually qualify as 'opinion' or 'speech' and are thus protected by applicable constitutional guarantees, notably the freedom of speech and/or opinion. In addition, credit rating agencies share all characteristics of a member of the press, since they publish their ratings (based on their own independent research and analysis) in periodicals and on websites for the information and benefit of the general public. Against this background, credit ratings have aptly been described as 'the world's shortest editorials'.²⁴ In some jurisdictions, credit rating agencies therefore fall within the ambit of the freedom of the press, which often results in their enhanced protection from government intervention. This protection seems both necessary and appropriate since national governments responsible for regulating credit rating agencies are at the same time the largest borrowers on the international financial markets, creating a dangerous incentive to silence information providers who may point out their possible lack of creditworthiness.

The constitutional protection of credit rating agencies is particularly strong in the US, where courts have developed a significant body of case law outlining the limits of admissible government regulation.²⁵ Since the three major international rating agencies all have their seat and headquarters in the US, the First Amendment to the United States Constitution (protecting the freedom of speech and of the press) constitutes the most important barrier for any credit rating agency

regulation.

Overview of Existing Credit Rating Agency Regulation

The existing credit rating agency regulation employs a variety of legal tools.²⁶ With their formal and technical particularities being of limited interest in the context of this article, these regulatory measures can be broken into three groups in accordance with their content and focus:

Governmental Recognition or Admission of Credit Rating Agencies

In many jurisdictions, the law provides for a preventive control of credit rating agencies. Measures of this type take either the form of a recognition requirement for purposes of the rating agency's regulatory function or — further-reaching in both content and intensity of control — a general admission requirement.

Recognition Requirements for Purposes of the Regulatory Function

Laws and regulations which contain references to credit ratings usually require that the ratings used in order to comply with the regulation were issued by a 'recognised' credit rating agency. Regulatory authorities in many countries have therefore introduced formal procedures for a recognition of credit rating agencies provided that they fulfill certain prerequisites, as e.g. the use of a rating methodology complying with the requirements of objectivity, independence, ongoing review and transparency, and the production of credit ratings which meet the requirements of credibility and transparency.

A prominent example for the recognition for regulatory purposes is the recognition as 'Nationally Recognized Statistical Rating Organisation' (NRSRO) that has been granted by the US Securities and Exchange Commission since 1975.²⁷ The Basel II Accord prescribes a similar recognition requirement for purposes of the capital regime for banks (recognition as 'External Credit Assessment Institution'), which many countries have used as a blueprint for domestic regulations.

Recognition requirements of the type mentioned leave it to the credit rating agency's own decision whether it wants to apply for recognition, thereby enabling investors and other regulated entities to rely on its (recognised) ratings for regulatory purposes. A recognition requirement accordingly constitutes a prerequisite only for the exercise of an agency's regulatory function, not for its original market information function: Any rating agency not recognised remains free to publish its credit ratings, and market

participants remain free to use them as a basis for their investment decisions.

Admission Requirements

Admission requirements, on the contrary, are considerably more aggressive in their scope, since they not only apply to the credit rating agencies' regulatory function, but also to their market information function: Without the required admission, it is illegal for the rating agency to publish credit ratings.

General admission requirements of this type were very rare in democratic countries until recently, when the European Union introduced such a requirement through its Credit Rating Agency Regulation.²⁸ It is doubtful whether they are compatible with credit rating agencies' (and their analysts') freedom of speech and of the press, since they effectively introduce a license to speak. At least under the US Constitution's First Amendment, they would arguably constitute an illegal form of prior restraint and would therefore be unconstitutional.²⁹

Regulation of Credit Rating Agencies' Organisation and Rating Process; Transparency Requirements

Rules on the organisation of credit rating agencies and the conduct of their rating process flow from two types of sources: First, the recognition and admission requirements described above typically impose conditions on the credit rating agencies with which they continuously have to comply. The granularity of these conditions and their enforcement vary between two regulatory approaches: Most jurisdictions merely lay down general principles of organisation and conduct, in addition to imposing extensive transparency requirements about rating methodologies and ratings assigned in the past. They thereby rely on market participants to evaluate the disclosed information about the credit rating agencies' performance and compliance, and to decide whether their ratings were determined in a reasonable way (enforcement through market discipline).

The EU Credit Rating Agency Regulation, on the contrary, stipulates detailed rules about rating agencies' organisation, the rating process and the publication of ratings. It primarily relies on government authorities for enforcement, with transparency being relegated to a merely supporting role. Although the EU Regulation insists that its regulatory approach should not provide grounds for interference with the content of credit ratings and methodologies by government authorities,³⁰ its rules come dangerously close to doing just that.

Second, all of the larger credit rating agencies have issued codes of conduct as a measure of self-regulation. Most of these codes of conduct were modeled on the 'Code of Conduct Fundamentals for Credit Rating Agencies' issued by the International Organisation of Securities Commissions (IOSCO), which outline general principles designed to improve the quality and integrity of the rating process as well as the credit rating agency's independence and the avoidance of conflicts of interest. As with most measures of self-regulation, the implementation of the codes of conduct is supposed to be enforced through market discipline.

Regulation through Civil Liability

A third and last avenue of regulatory control is the credit rating agencies' regulation by way of civil liability, i.e. their liability towards market participants for financial harm caused by credit ratings. Specific legal rules on rating agency liability are rare internationally, although France introduced a provision to this end³¹ in 2011. In the past, credit rating agencies have often faced liability suits by issuers or investors based on general rules of contract or tort law (particularly in the US), but have never been ordered to pay damages.

Three factors render it unlikely that civil liability will ever be an effective control measure in the rating context: First, it is and remains impossible to qualify a credit rating as 'false' or 'incorrect', because it is a subjective, predictive opinion and not a factual statement. Second, rating agency liability towards investors who have relied on publicly available credit ratings would potentially subject the rating agencies to unlimited damage claims from innumerable investors, thus pressuring them into issuing less favorable ratings than are deserved and thereby affecting their usefulness as market information providers in general. And third, the protection of the freedom of speech under the US Constitution prevents any liability judgment against a credit rating agency (or its enforcement by the US courts) unless it can be proved that the rating agency acted with 'actual malice' when publishing the credit rating, i.e. with knowledge of falsity or a reckless disregard for the truth.³² Since such proof will only be possible in very rare instances, investors eventually continue to rely on credit rating opinions at their own risk.

CONCLUSION

This article has provided an overview over some of the issues currently discussed in connection with the role of credit rating agencies and their credit ratings on the financial markets. With respect to a number of those issues, it has presented approaches that differ from

the prevailing positions in literature: First, this article has distinguished between the credit ratings' original 'market information function' and their additional 'regulatory function', thereby including the increasing regulatory use of credit ratings into the scope of rating research. While both of these functions arguably contribute to the market effect of credit rating changes, the primary reason for credit ratings' informational value — and thus their market information function — is seen in their 'coding' by way of easy-to-understand rating symbols ('AAA', 'BB-'): Although the format and presentation of information may be without relevance within the economic model of an informationally-efficient capital market, it is a decisive factor in the context of information used by real-life investors with a limited capacity to access and digest information. To them, three letters say more than a thousand words, which explains why the markets react stronger to rating changes than to other types of market information. Second, this article has argued that the frequent call for more competitors on the credit rating market is likely to be futile, since said market shows all the characteristics of a natural ('investor-driven') oligopoly.

One general finding is that the law significantly influences the role of credit ratings in the financial market context. This influence is two-fold: On the one hand, the regulatory use of credit ratings, both through references in laws and regulations and through 'rating triggers' in private contracts, shapes the way that market participants react to credit ratings, thereby potentially creating systemic risks by 'synchronising' their actions (synchronisation effect). On the other hand, the regulation of credit rating agencies may guarantee that they remain fit and proper for their tasks, assuming that the regulation is appropriately designed and not used as a means to silence unwanted critics of increasing government indebtedness. The law is accordingly both a cause of and a (possible) solution to the difficulties caused by the credit rating agencies' overwhelming importance on today's financial markets. The interaction of credit ratings and legal regulation will therefore remain an important and promising subject for further research for some time to come.

Notes

¹ Remarks by U.S. President Barack Obama on August 8, 2011, 1:52 p.m. in the State Dining Room, White House, Washington D.C.

² The present article draws heavily upon the chapter 'Credit Ratings and Credit Rating Agencies' which I wrote for the Encyclopedia of Financial Globalization (Gerard Caprio, ed.), forthcoming in 2011.

³ Schwarcz (2002), p. 2.

⁴ A number of event studies have shown that the market reactions to rating downgrades are particularly severe whenever a debt security loses its 'investment grade' rating; see Brister, Kennedy and Liu (1994) who find a 'uniquely large jump in yield premium per unit of default risk as ratings deteriorate from BBB to BB'; Byoun and Shin (2002); Goh and Ederington (1999); Johnson (2004); Steiner and Heinke (2001).

⁵ In the sample used by Chen, Lookman, Schürhoff and Seppi (2011), 99.5% of the corporate bonds investigated had been rated by two major credit rating agencies (Standard & Poor's and Moody's), while 74% had been rated by Standard & Poor's, Moody's and Fitch.

⁶ Article 10(3) of the Regulation (EC) No 1060/2009 of the European Parliament and of the Council of September 16, 2009 on credit rating agencies, Official Journal of the European Union of November 17, 2009, No L 302, pp. 1–31 (the 'EU Credit Rating Agency Regulation').

⁷ When this article was written, the creation of a European Stability Mechanism was under discussion, but had not yet been finalized.

⁸ See inter alia Manns (2009).

⁹ Manns (2009), p. 1061.

¹⁰ Securities and Exchange Commission (January 2011).

¹¹ Chen, Lookman, Schürhoff and Seppi (2011); Hill (2004).

¹² Krämer (2004).

¹³ See the references in footnote 4.

¹⁴ See the stocktaking by The Joint Forum (June 2009).

¹⁵ Basel Committee on Banking Supervision, International Convergence of Capital Measurement and Capital Standards: A Revised Framework.

¹⁶ The Joint Forum (June 2009).

¹⁷ See in general Financial Stability Board, Principles for Reducing Reliance on CRA Ratings (October 27, 2010); for the United States inter alia Securities and Exchange Commission Release Nos. 33-9193; IC-29592; File No. S7-07-11: 'References to Credit Ratings in Certain Investment Company Act Rules and Forms', Proposed Rule of March 3, 2011.

¹⁸ Lynch (2009), p. 275; Moloney (2008), p. 713.

¹⁹ As established by Behr and Güttler (2008); Byoun and Shin (2002).

²⁰ See, inter alia, the event studies by Kaserer (1995); Nöth (1995); Rottmann and Seitz (2008); Steiner and Heinke (2001).

²¹ Securities and Exchange Commission (January 2011).

²² See inter alia European Securities Markets Expert Group (2008); Hill (2004); Rodríguez (2005); White (2007).

²³ Bundesanstalt für Finanzdienstleistungen = Federal Financial Supervisory Authority.

²⁴ Husisian (1990).

²⁵ See *First Equity Corp of Florida v Standard & Poor's Corp*, 869 F.2d 175, 180 (2nd Cir. 1989); *In re Fitch*, 330 F.3d 104, 109–10 (2nd Cir. 2003); *Compuware Corp. v Moody's Investors Services*, 499 F.3d 520, 531 (6th Cir. 2007); *Jefferson County School District No. R-1 v. Moody's Investors Services*, 175 F.3d 848, 856 (10th Cir. 1999); and many others.

²⁶ See in detail Schroeter (2012).

²⁷ Note that both the conditions and the procedure for granting the NRSRO designation were significantly modified by the *Credit Rating Agency Reform Act of 2006*.

²⁸ Article 14(1) EU Credit Rating Agency Regulation provides that '[a] credit rating agency shall apply for registration for the purposes of Article 2(1) provided that it is a legal person established in the Community', while Article 2(1) states that '[t]his Regulation applies to credit ratings issued by credit rating agencies registered in the Community and which are disclosed publicly or distributed by subscription'. Read together, Articles 2(1) and 14(1) accordingly require every credit rating agency publishing credit ratings to previously 'register' with the European Securities and Markets Authority (ESMA), and not merely those credit rating agencies that want their credit ratings to be usable for regulatory purposes.

²⁹ Bottini (1993); Rhodes (1996). Compare notably the US Supreme Court's decision in *Lowe v SEC*, 472 U.S. 181.

³⁰ EU Credit Rating Agency Regulation, Recital 26.

³¹ Article L. 544-5(1) of the French *Code monétaire et financier* reads: 'Les agences de notation de crédit mentionnées à l'article L. 544-4 engagent leur responsabilité délictuelle et quasi délictuelle, tant à l'égard de leurs clients que des tiers, des conséquences dommageables des fautes et manquements par elles commis dans la mise en œuvre des obligations définies dans le règlement (CE) n° 1060/2009 du Parlement européen et du Conseil, du 16 septembre 2009, précité.' The provision entered into force on January 1, 2011.

³² *First Equity Corp of Florida v Standard & Poor's Corp*, 869 F.2d 175, 180 (2nd Cir. 1989); *Jefferson County School District No. R-1 v. Moody's Investors Services*, 175 F.3d 848, 857 (10th Cir. 1999); *County of Orange v. McGraw Hill Companies*, 245 B.R. 151, 155 (C.D.Cal. 1999); *In re Enron Corp Securities, Derivative & 'ERISA' Litigation*, 511 F.Supp.2d 742, 822 (S.D.)Tex. 2005)

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AUTHOR PROFILE

Dr. Schroeter currently teaches German and European business law, private law and conflict of laws at the University of Mannheim, Germany. Since 2006, he has been an Assistant Professor (Akademischer Rat) at the University of Freiburg, where he was appointed Privatdozent in February 2011. Prior to that, he taught at Humboldt University in Berlin.

Dr. Schroeter's research focuses on financial markets regulation, German and European company law, commercial law, international trade law, German and European contract law and international dispute settlement. He has written a number of books, book chapters and articles on these subjects. Among others, he authored a comparative law treatise on credit rating agencies (*Ratings – Bonitätsbeurteilungen durch Dritte im System des Finanzmarkt-, Gesellschafts- und Vertragsrechts*) which will be published by Mohr Siebeck in 2012.

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