The SEC's Other Problem

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Testimony prepared for delivery before the Subcommittee on Capital Markets, Insurance and Government Sponsored Enterprises, Committee on Financial Services, U.S. House of Representatives, at the hearing entitled "Rating the Rating Agencies: the State of Transparency and Competition," Wednesday, April 2, 2003, 10:00am, Room 2128 of the Rayburn House Office Building.

I am pleased to have this opportunity to testify about the state of the bond rating industry and its regulation in the United States.

The U.S. Securities and Exchange Commission (SEC) currently has its hands filled dealing with the corporate governance mess. There is, however, another problem that the SEC faces, which may well have as much importance for the efficient operation of the United States' financial markets: the Commission's obscure but nearly impervious regulatory barriers to entry into the bond rating industry.

In January 2003, in response to the requirements of Section 702 of the Sarbanes-Oxley Act of 2002, the SEC released its "Report on the Role and Function of Credit Rating Agencies in the Operation of the Securities Markets." Unfortunately, the report was an excuse for more delay in addressing the problem. Instead, the SEC should be pursuing solutions that would tear down these regulatory barriers.

The SEC's regulation of the bond rating industry began in 1975 with perfectly good intentions. As bank and insurance regulators earlier had done for their regulated institutions, the SEC wanted to use corporate bond ratings to set minimum capital requirements for broker-dealers.

The SEC realized -- apparently, for the first time among regulators -- that specifying the use of ratings also required specifying *whose* ratings. What would prevent a bogus rating company from awarding (for a suitable fee) "AAA" ratings to *any* corporation's bonds? Could the broker-dealers then use those "ratings" for regulatory purposes?

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So, the SEC duly created a new regulatory category -- “nationally recognized statistical rating organization” (NRSRO) -- and immediately “grandfathered” the three major incumbent bond raters -- Moody’s, Standard & Poor’s, and Fitch -- into the category.

In the following 17 years, through 1992, the SEC bestowed the NRSRO designation on only four new entrants — but mergers among them and with Fitch had reduced the field to just the original three by the end of 2000. There were no new NRSRO designees by the SEC between 1992 and February 2003.

After a protracted process, and a month after the SEC’s January 2003 agreement to study the state of competition in the ratings business, the SEC extended the NRSRO designation to Dominion Bond Rating Service, a Canadian firm. As of today, then, there are only four NRSROs.

Why does the NRSRO designation matter? Almost all regulated financial institutions -- banks, insurance companies, pension funds, etc. -- must heed the NRSROs’ ratings in deciding which bonds they can hold in their portfolios. For example, banks cannot hold bonds that are below “investment grade”.

Accordingly, any would-be bond rater, who would not initially have the NRSRO designation, would have great difficulties in getting the time and attention of bond issuers, since the start-up entity’s rating would carry no weight in the portfolio decisions of banks and other regulated financial institutions.

The NRSRO designation thus erects high barricades to entry into bond rating, providing a sinecure for the incumbents and putting a damper on the introduction of fresh ideas, methodologies, and technologies that entrants might otherwise bring.

In essence, the SEC has given the incumbents a captive audience: the entire US bond market. In turn, the weight of US capital markets on the global financial scene extends the influence of these few raters far beyond our borders. Further, the Basel Committee on Banking Supervision, under the auspices of the Bank for International Settlements and representing banking regulators around the world, has proposed expanding the regulatory influence of ratings to other countries as well. One of the

Committee's three proposed methods of determining banks' minimum capital requirements would use the banks' borrowers' bond ratings (when available) in that determination.

There is an irony here: Financial regulators have long been using private-sector information (the ratings) to supplement their safety-and-soundness judgments. Regulatory critics have recently urged regulators generally to incorporate private-sector information into their judgments. Yet it is one thing to use impersonal market information (from, say, the Treasury bill market); it is quite another to require the use of private-sector rating information. The latter effort cannot avoid the "whose ratings" problem -- and the potential abuses that can follow.

And the potential for bad economic outcomes under the SEC's restrictive and protective regulatory regime is clear. Not only are the standard consequences of inadequate competition -- excessively high prices and profits, and stodgy behavior -- to be expected. The current regulatory arrangement also runs the risk of the squelching of new ideas and innovations in bond ratings and solvency assessments if the handful of incumbents somehow concludes that the innovations are not worthy of their notice.

This innovation question raises a larger issue: How could one tell if the incumbent bond rating firms currently meet a market test? With regulatory requirements that the incumbents' ratings must be heeded, the capital markets have no choice but to heed them. The capital markets have no way of knowing or discovering whether there are better, more efficient and effective ways in which the capital markets might assess the creditworthiness of bond issuers -- or whether there are better, more efficient organizations that could conduct those assessments. The efficiency of those markets themselves is potentially affected.

Clearly, the public policy goal that should be sought is to improve competition and to increase the potential for innovation in the ratings business. How can public policy get there? There are two sensible routes. By far the best is for the SEC, and other financial regulators, to cease delegating their safety judgments to a handful of protected bond raters. In essence, the regulators should make the same safety-and-soundness judgments about bonds that they currently make about loans and other financial assets.

The SEC could then withdraw the NRSRO designation. The financial markets would then be free to make their own decisions as to which rating companies, incumbents or entrants, offered the best judgments about the relative safety of a company's bonds -- or even whether rating companies (which began in the early twentieth century) are still needed in the twenty-first century. Also, if rating firms are still valued, the markets could make new judgments as to what business model is most appropriate. Should the raters earn their revenues from fees charged to the rated companies, as is currently the case for the three incumbents? Or should they charge investors, as was true prior to the 1970s and as a few small non-NRSRO raters still do?

If the removal of the NRSRO designation is too radical, then there's Plan B: The SEC must cease barricading entry and must permit qualified firms to attain the NRSRO designation. This means that the SEC must assess the entrant's track record of bond failure predictions (and should also assess incumbents' performances as well -- which the SEC has never done).

However, the SEC's tentative criteria for assessing a NRSRO, which the Commission proposed in 1997 but never finalized, should be scrapped. Those criteria focused on measuring inputs to the rating process rather on evaluating a firm's rating performance (i.e., a bond rater's track record of accuracy with respect to bond defaults), which could be fatal to a rating firm that might employ innovative methodologies and that might not use traditional inputs. Those criteria also would create a "Catch 22" requirement: To receive the NRSRO designation, a rating organization would already have to be "recognized as an issuer of credible and reliable ratings by the predominant users of ratings in the United States." Instead, sensible criteria should focus on the accuracy/efficacy/competency of rating firms -- incumbents, as well as prospective entrants -- with respect to bond defaults.

Of course, if such assessments are beyond the SEC's capabilities, there's always Plan A: Cease the safety delegations to the bond raters, and eliminate the NRSRO category.

The possible paths are clear. Further study will mean only delays in needed reform. The time for action is now.

I have appended to this statement the text (which was subsequently lightly edited) of an article that appeared in the Winter 2002-2003 issue of Regulation magazine, which provides a more complete elaboration of my position with respect to the SEC's regulation of the bond rating industry. I have also appended a brief bio; my longer curriculum vitae is available on my website at http://pages.stern.nyu.edu/~lwhite/Ljwvita.htm. And I have previously faxed to the Subcommittee a signed copy of the Committee's "Truth in Testimony" disclosure form.

I welcome the opportunity to respond to questions from the Subcommittee.

The SEC's Other Problem: The Bond Rating Industry

(from Regulation magazine, Winter 2002-2003, pp. 38-42)

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The U.S. Securities and Exchange Commission (SEC) currently has its hands full with its efforts to deal with corporate governance issues and oversight of the accounting industry. Lurking in the background, however, is a different and less well known problem of SEC regulation -- but one that seriously undercuts the SEC's frequent claim that it promotes open and efficient capital markets.

This problem concerns the SEC's regulation of the bond rating industry. Until recently few people, even among knowledgeable Washington insiders, were aware that the SEC regulates the bond rating industry. But it has done so since 1975: by limiting entry, in an indirect but powerful way. And that's the problem. Incumbent bond rating firms are protected; potential entrants are excluded; and new ideas and technologies for assessing the riskiness of debt, and thereby the allocation of capital, may well be stifled.

This entry regulation is a perfect example of good intentions going awry, via the "law" of unintended consequences. The good intentions were to improve the safety-and-soundness regulation of financial institutions, and even to use "market" information to do so. But the unfortunate result has been a distortionary entry restriction regime with respect to bond rating firms.

Fortunately, there are better ways to achieve the desired goals.

Some background.

Bond rating firms primarily provide judgments about the credit quality of debt instruments: bonds and similar debt obligations, issued by companies and by governments. The information provided by the bond raters can be seen as part of the process by which lenders (bond buyers) try to gather information so as to pierce the "fog" of asymmetric information and determine to whom to lend (whose bonds to buy) and on what terms, and also part of the efforts by borrowers (bond issuers) to "tell their story" as to why they are worthy recipients of lent funds.

In the U.S. today there are only three debt rating firms of any significant size: Moody's; Standard & Poor's (S&P); and Fitch. Moody's is the largest. It is currently a free-standing corporation, having been spun off by Dunn & Bradstreet in 2000 (which acquired Moody's in 1962). Moody's had revenues of $797 million in 2001, of which 87% was derived fom its bond rating activities; 70% of its revenues arise from its U.S. activities.

S&P's bond rating activities are embedded in S&P's wider financial information activities (e.g., the compilation of stock market indexes), and S&P itself is part of McGraw-Hill. Consequently, far less is known about the specifics of S&P's bond rating activities. Fitch is distinctly the third-place bond rater. It is part of a French conglomerate and has a larger relative presence in Europe than in the U.S.

There are a few smaller bond rating firms, and at least one specialized firm (A.M. Best) that focuses on the obligations of the insurance industry. But the major players number only three, and historically their numbers have fluctuated only within a narrow range of three to five since the 1920s.

Why so few? Partly, there are fundamental economic forces at work. Economies of scale and scope are surely important in allowing a rating firm to gain a reputation as a reliable rater across a variety of industries, time periods, and economic situations. Reputation is important for market participants who are trying to deal with asymmetric information. Also, investors may prefer to keep track of just a few rating scales in assessing bonds, just as college admissions offices surely prefer dealing with only one or two standardized entrance examinations in assessing potential admitees.

But something more has been at work, at least since 1975. That something is the SEC's restrictive regulation.

<u>The history</u>.

John Moody published the first public bond ratings, for railroad bonds, in 1909. Poor's Publishing Co. followed in 1916; the Standard Statistics Co. began issuing ratings in 1922 (S&P was formed through the merger of the two in 1941; McGraw-Hill absorbed S&P in 1966); and the Fitch Publishing Co. began its ratings in 1924. The standard business model was that the companies sold their ratings to investors.

The financial markets' ready embrace of the information provided by the ratings firms in that era is understandable, since financial disclosure was quite limited, at least by modern standards. Recall that the SEC and its requirements for corporate financial disclosure (which would provide further information for lenders) came into existence only after 1933. Through the 1920s, then, it is clear that the bond rating companies were meeting a market test as to the value of their services.

A major change occurred in the 1930s. In 1930 the Federal Reserve began using ratings in its informal judgments about the suitability of the bond portfolios of its member banks. In 1931 the Office of the Comptroller of the Currency (OCC), the federal regulator of nationally chartered banks, formally required banks to use current market prices ("mark to market") for any bonds in their portfolios that were below "investment grade"; e.g., below a "BBB" rating, which was (and still is) S&P's designation of investment grade; but they could continue to value bonds that were rated at BBB (or its equivalent) or higher at original purchase cost.

The OCC followed in 1936 with a far more draconian measure, which persists to the present day: Banks could not hold bonds in their portfolios that were below investment grade.

Notice the impact of these regulatory measures: For the first time, government regulators were *requiring* major transactors in the bond markets to pay attention to the ratings of the bond rating firms.

These bank regulatory requirements were followed in the 1930s and 1940s by state insurance regulators, who began to link insurance companies' capital requirements to the ratings of the bonds in their portfolios. Again, regulators were requiring major bond transactors to heed the ratings of the bond rating firms.

There was, however, a curious blind spot in the bank and insurance regulators' requirements: The issue of *whose ratings* -- which rating firms' ratings should be heeded -- was not addressed specifically. Instead, there were vague references to "recognized rating manuals", which were probably understood to mean Moody's, S&P, and Fitch.

One other historical fact is worth noting: In the early 1970s the rating firms' business model changed from one in which rating manuals were published and sold to investors to one in which the bond issuers paid for the privilege of providing information to the raters, who would subsequently openly publish and distribute the ratings. It seems likely that the technological phenomenon of low-cost photocopying was the major source of the change, although financial historians also point to the trauma of the Penn-Central bankruptcy in 1970 and its effect in heightening the bond market's sensitivity to credit quality issues and especially in making issuers willing to pay to have the quality of their bond obligations certified by the rating firms.

<u>The SEC's actions</u>.

In 1975 the SEC proposed (in Rule 15c3-1) the establishment of minimum net worth (capital) requirements for securities broker-dealers. It wanted to link those requirements to the quality of the bonds of the broker-dealers' portfolios; and, following the lead of the other financial regulators, it wanted to employ the bond rating firms' ratings. But the SEC apparently noticed the "whose ratings" problem: What was to prevent the bogus XYZ rating firm from issuing AAA ratings to any company that paid a suitable sum to XYZ? And what was to prevent a broker-dealer from claiming that XYZ's ratings were "reputable" and therefore should be used in judging that broker-dealer's bond portfolio and its capital requirements?

Consequently, as part of the broker-dealer capital regulation, the SEC also established an entirely new regulatory category for bond rating firms -- nationally recognized statistical rating organizations" (NRSROs) -- and designated the NRSROs' rating as the only ratings that could be used for determining the broker-dealers' capital requirements. The SEC also immediately "grandfathered" the three incumbents (Moody's, S&P, and Fitch) into the NRSRO category.

Over the next few years other financial regulators adopted the SEC's NRSRO category designation, so that the regulators' requirements as to the use of bond ratings would mean the required use of only the NRSROs' ratings. Further, the use of bond ratings for financial regulatory purposes greatly expanded during the 1980s and 1990s. The SEC, for example, again invoked the NRSRO category in 1991 when it declared (in Rule 2a-7) that no more than 5% of the assets of money market mutual funds could be invested in low rated commercial paper. And, most recently, in 2001 the regulator of Fannie Mae and Freddie Mac (the Office of Federal Housing Enterprise Oversight) linked its minimum capital requirements for Fannie and Freddie to the NRSROs' bond ratings of the insurers that often provide mortgage insurance on the mortgages that the two enterprises buy and hold or securitize.

The SEC was not wholly dormant with respect to the new category that it had created. In 1982 and 1983 it designated Duff & Phelps and McCarthy, Crisanti, & Maffei, respectively, as NRSROs. And in 1991 and 1992 it designated IBCA (a British rating firm) and Thomson BankWatch, respectively, as specialized NRSROs for the obligations of banks and financial institutions only. However, mergers among these entrants and with Fitch subsequently removed all of the entrants from the field by the end of 2000, leaving only the original three grandfathered incumbents as the current NRSROs.

A point of further interest: The SEC did not state any explicit criteria for admission into the NRSRO category at the time of the original grandfathering, nor at the time of its subsequent approval of the four entrants.

<u>Good intentions... and the consequences</u>.

Consider the sequence of regulatory events. Initially, bank regulators, entrusted with the safety and soundness of banks, decided to make use of outside parties -- the bond rating firms -- to help in evaluations of the appropriateness of bonds in banks' portfolios. Regulators today are often urged to make more use of market information. The bank regulators of the 1930s would appear to have been ahead of their time.

However, it is one thing to rely on market information, where the "market" is a well-defined but impersonal mechanism. The bank regulators of the 1930s appear to have hoped for such reliance, with their reference to "recognized rating manuals". But bond ratings were never going to have the impersonality of, say, market prices of Treasury bills. Thus, the reliance could be considered more as a regulatory *delegation* of safety judgments to specific parties. And so there was no way to avoid the "whose ratings" issue, which the SEC addressed in 1975.

Having addressed it, the SEC opted for a restricted "who": the three grandfathered incumbents, and only four entrants permitted during the subsequent 27 years! Potential entrants -- smaller domestic firms, and foreign rating firms -- have been ignored. Indeed, a major reason for IBCA's purchase of Fitch in 1997 (with the Fitch name persisting) was IBCA's impatience in being restricted to a narrow NRSRO category and not being granted broad NRSRO powers.

Notice the power that the NRSRO bestows on incumbents. Since almost all bond issuers hope that their bonds can be bought by regulated financial institutions, they *must* seek a rating by at least one, and often two NRSROs. Thus, the NRSROs have a guaranteed market for their ratings. Even if the participants in the bond markets were capable of devising better methods, technologies, and/or institutions for helping determine credit risks, those new and improved ways could well falter if the incumbent NRSROs failed to embrace them, *because of the incumbent NRSROs' sinecure*.

The additional difficulties that the NRSRO designation creates for non-NRSRO entrants is worth emphasizing. Entrants, of course, always face difficulties in overcoming the advantages of incumbents. But for a bond rating entrant, the absence of a NRSRO designation could well be fatal. Why should the senior management of any bond issuer spend time "telling its story" to a non-NRSRO, if the latter's ratings cannot help the issuer get its bonds into the portfolios of regulated financial institutions?

<u>Do the incumbent bond rating firms meet a market test?</u>

The fabric of financial regulation is now so tightly woven around the incumbent bond rating firms -- with regulation-driven demand for ratings, combined with regulation-driven restrictions on supply -- that it is impossible to know if the incumbent bond raters currently meet a market test as to the value of their services to the debt markets.

The previous sentence may seem quite strong, especially in light of well-documented evidence that the changing of a bond rating by Moody's or S&P can cause the price of that bond to change. Doesn't this market reaction indicate that the bond rating firms are providing useful information about the likelihoods of bond defaults to the markets?

Not necessarily. The regulatory "cliff" for banks' holdings of bonds -- "investment grade" (BBB or better, in the S&P rating system) -- provides a good illustration of why the responsiveness of bond prices to rating changes may not reflect changes in market beliefs about default probabilities. Suppose that S&P downgrades a bond from AA to A. The market's likely (negative) reaction would be a decrease in the equilibrium price for the bond (and thus an increase in its interest yield). This reaction could be an indication that the market has learned something new about the increased default probability of the bond. *Or the market's reaction could simply be a recognition that the bond has gotten closer to falling off the BBB cliff, with the consequent decrease in price that would surely follow when banks could no longer hold the bond.* Even if market participants believed that S&P's change was erroneous and that there had been no change in the underlying probability of default on the bond, the decrease in the bond's price would still be a sensible reaction to the bond's closer proximity to the BBB cliff.

Thus, unlike the 1920s, it is not possible to say whether the incumbents' ratings today (and since

1975, and arguably since 1930) meet a market test.

The SEC proposes criteria.

In 1997, the SEC proposed regulations that would specify criteria for admitting any new firms into the NRSRO category (if the SEC were to permit any new entry). The proposed criteria for admission (in the SEC's own regulatory language) were as follows:

1) national recognition, which means that the rating organization is recognized as an issuer of credible and reliable ratings by the predominant users of securities ratings in the United States;

2) adequate staffing, financial resources, and organizational structure to ensure that it can issue credible and reliable ratings of the debt of issuers, including the ability to operate independently of economic pressures or control by companies it rates and a sufficient number of staff members qualified in terms of education and expertise to thoroughly and competently evaluate an issuer's credit;

3) use of systematic rating procedures that are designed to ensure credible and accurate ratings;

4) extent of contacts with the management of issuers, including access to senior level management of the issuers; and

5) internal procedures to prevent misuse of non-public information and compliance with these procedures.

The shortcomings of the SEC's proposed criteria are readily apparent. First, criterion (1) would constitute an obvious "Catch 22" barrier to entry; criterion (4) also has this quality, since non-NRSROs would have difficulties in establishing managerial contacts. Further, criteria (2) through (5) essentially focus on *inputs* into the rating process, rather than on *outputs* (say, accuracy in predicting bond defaults); firms with innovative technologies that didn't meet the input criteria would flunk the SEC's admissions test.

Mercifully, the SEC has not acted on its regulatory proposal over these past five years.

Global consequences.

The consequences of the safety-and-soundness good intentions gone awry are not confined just to the U.S. They extend beyond our borders in at least two ways. First, Moody's, S&P, and Fitch are important participants in providing ratings in debt markets around the world. Their protected position in the U.S. surely gives them extra leverage in their activities elsewhere.

Second, the Basel Committee on Banking Supervision, under the auspices of the Bank of International Settlements, has proposed a revision (often described as "Basel II") to its 1988 capital standards for banks. The revision, which is far more complicated than its 1988 rules, has three alternative schemes for determining appropriate capital levels for banks, one of which would bring bond ratings directly into the determination of the minimum capital requirements that would be required for a bank's loans to any borrower that had rated debt.

Thus, the Basel II proposals would explicitly expand the role of bond rating firms in the safety-and-soundness regulation of banks in the U.S. and simultaneously expand that infiltration to bank regulation around the world. Perforce, the Basel II proposals would also expand globally the role of governments in limiting entry into bond rating. As the Basel Committee explicitly recognizes, other countries' financial regulators would have to establish criteria to answer the "whose ratings" question for their bank regulation as well. The Basel Committee's suggested criteria for answering that question are slightly better than the SEC's 1997 proposals, but they are nevertheless heavily oriented toward input measures rather than output measures.

What is to be done?

There are two ways that public policy could proceed so as to avoid the distortionary entry limitations of the SEC's NRSRO approach.

First, and by far the best route, would be for financial regulators to cease delegating their safety-and-soundness judgments to the bond rating firms. This may seem to be a step backwards in the efforts to bring more market-oriented information to bear on regulatory decisions. But when the safety delegation is to specific parties, and entry into that category is then restricted and a sinecure is created, the effort to bring more market-oriented information into the regulatory process has been perverted.

How would the cessation of safety delegations work? It is easiest seen for bank regulation. Bonds should be treated by bank regulators on a par with how banks' loans are treated. When a bank examiner is examining a bank's bond portfolio, she ought to ask the same types of questions about the bonds that she asks about the bank's loan portfolio. Are these bonds suitable for holding by the bank? Why? What research has the bank done on the companies that issued the bonds? If the bank has relied on the ratings of a rating firm, what research has the bank done about the reliability of that rating firm's ratings?

These questions would place the responsibility for determining the safety and soundness of a bank's bond portfolio initially on the bank and then on the regulator for review, where it ought to be. Similar methods could be developed to replace the other financial regulators' safety delegations to the bond rating firms, including the safety delegations of the SEC itself.

With the safety delegations withdrawn, there would no longer be a need for the NRSRO category, and the SEC could eliminate it. The participants in the financial markets would then be free to make their own determinations as to whose ratings and which methods provided the most useful information in predicting defaults. The current incumbents might continue to thrive if the markets judge their information to be worthwhile; or upstarts might unseat them. The important thing, of course, would be that these would be the judgments of the capital markets and not of bureaucrats in Washington.

The SEC might lead the way by simply withdrawing its own safety delegations and eliminating the NRSRO category, thereby exposing the other regulators' safety delegations as the specific sinecures that they are.

If this wholesale withdrawal of safety delegations is considered too radical or utopian, then any "plan B" would have to keep the NRSRO designation, so as to deal with the bogus rating firm problem.

But then the SEC must cease being an artificial barrier to entry for firms that want and are qualified to become a NRSRO. It must actively consider applicants and have a transparent process for reviewing incumbents as well as potential entrants. Its criteria must be centered on *outputs* -- the efficacy of firms in predicting bond defaults -- rather than on the inputs that were the focus of its 1997 proposals.

If such judgments are considered beyond the capabilities of the SEC, then there's always "plan A": end the safety delegations to the bond rating firms, and eliminate the NRSRO category.

Finally, the Basel II proposals should be similarly revised, so as to eliminate the global delegation of bank regulators' safety judgments to bond rating firms and the concomitant necessity for restrictive entry regulation.

Is change possible?

The bond raters and their special position received a brief flurry of attention in February and March of this year. After Enron declared bankruptcy in early December 2001, it was noticed that Moody's and S&P had persisted giving "investment grade" ratings to Enron's debt until a few days before the company's bankruptcy filing. Newspaper stories were written, and Congressional hearings were held. The SEC promised to look into the matter. To make sure that the agency did so, the Sarbanes-Oxley legislation that was passed in July contained a specific provision (Sec. 702) that instructed the SEC to compile a report for the President and the Congress, within 180 days, that studied "the role and function of credit rating agencies [firms] in the operation of the securities market" including "any barriers to entry into the business of acting as a credit rating agency, and any measures needed to remove such barriers..."

This report could provide the SEC, the Bush administration, and the Congress with the opportunity to re-think the entire issue of safety judgment delegations and the consequent distortionary NRSRO approach. It may well be a once-in-a-lifetime opportunity.

Readings

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"The Credit Rating Industry," by Richard Cantor and Frank Packer. Journal of Fixed Income, 5 (December 1995), pp. 10-34.

"The Credit Rating Industry: An Industrial Organization Analysis," by Lawrence J. White. In Ratings, Rating Agencies and the Global Financial System, edited by Richard M. Levich, Giovanni Majnoni, and Carmen Reinhart. Boston: Kluwer, 2002, pp. 41-63.

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BIOGRAPHICAL SUMMARY

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Lawrence J. White is Arthur E. Imperatore Professor of Economics at New York University's Stern School of Business. During 1986-1989 he was on leave to serve as Board Member, Federal Home Loan Bank Board, and during 1982-1983 he was on leave to serve as Director of the Economic Policy Office, Antitrust Division, U.S. Department of Justice.

Prof. White received the B.A. from Harvard University (1964), the M.Sc. from the London School of Economics (1965), and the Ph.D. from Harvard University (1969). He is the author of The Automobile Industry Since 1945 (1971); Industrial Concentration and Economic Power in Pakistan (1974); Reforming Regulation: Processes and Problems (1981); The Regulation of Air Pollutant Emissions from Motor Vehicles (1982); The Public Library in the 1980s: The Problems of Choice (1983); International Trade in Ocean Shipping Services: The U.S. and the World (1988); The S&L Debacle: Public Policy Lessons for Bank and Thrift Regulation (1991); and articles in leading economics and law journals.

He is editor or coeditor of ten volumes: Deregulation of the Banking and Securities Industries (1979); Mergers and Acquisitions: Current Problems in Perspective (1982); Technology and the Regulation of Financial Markets: Securities, Futures, and Banking (1986); Private Antitrust Litigation: New Evidence, New Learning (1988); The Antitrust Revolution (1989); Bank Management and Regulation (1992); Structural Change in Banking (1993); The Antitrust Revolution: The Role of Economics, 2nd edn. (1994); The Antitrust Revolution: Economics, Competition, and Policy, 3rd edn. (1999); and The Antitrust Revolution: Economics, Competition, and Policy, 4th edn. (forthcoming). He was the North American Editor of The Journal of Industrial Economics, 1984-1987 and 1990-1995.

Prof. White served on the Senior Staff of the President's Council of Economic Advisers during 1978-1979, and he was Chairman of the Stern School's Department of Economics, 1990-1995.