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The Systemic Regulation of Credit Rating Agencies and Rated Markets

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Abstract

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Credit ratings have contributed to the current financial crisis. Proposals to regulate credit rating agencies focus on micro-prudential issues and aim at reducing conflicts of interest and increasing transparency and competition. In contrast, this paper argues that macro-prudential regulation is necessary to address the systemic risk inherent to ratings. The paper illustrates how financial markets have increasingly relied on ratings. It shows how downgrades have led to systemic market losses and increased illiquidity. The paper suggests the use of “ratings maps” and stress-tests to assess the systemic risk of ratings, and increased capital or liquidity buffers to manage such risk.

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I. INTRODUCTION

Credit rating agencies (CRAs) have played a key role in the origins of the current crisis prompting calls for their regulation. Abrupt and unanticipated credit rating downgrades of a number of participants and securities in the structured credit markets have led to large market losses and a rapid drying up of liquidity. As a result, there has been strong pressure on policy makers to regulate the credit rating industry, which has mostly relied on self-regulation.

Rating crises—unanticipated and abrupt credit rating downgrades—are quite common. Prior to the current crisis, there has been about one rating crisis every three years in the past twenty two years.² These include the downgrades of a number of Asian countries in 1998 and large corporates such as Enron, the California utilities, Worldcom, Global Crossing, and AT&T Canada. More recently, the downgrades of a number of structured credit products and market participants in 2007 has been a catalyst of the current crisis.

Previous rating crises also show that ratings increase systemic risk and may be pro-cyclical, helping fuel investments in “good times” and accelerating market losses in “bad times.” For instance, although CRAs identified weaknesses in the financial systems of a number of Asian countries before the crisis, the maintenance of investment-grade ratings for many countries and the subsequent sharp downgrades during the crisis have been seen by some observers as imparting a pro-cyclical element, exacerbating herding behavior before the crisis and contributing to massive turnaround in capital flows.³ Unanticipated abrupt downgrades of securities are therefore negative shocks to securities markets and can affect one issuer, a whole sector, or the entire financial system.

In spite of the systemic risk inherent to ratings, current efforts to regulate CRAs focus mainly on micro-prudential issues and typically aim at reducing conflicts of interest and increasing transparency and competition. Ensuring financial stability by reducing the potential procyclicality and systemic risk stemming from CRAs is, however, an important objective of financial regulation.

This paper discusses the systemic regulation of CRAs in light of the current crisis with a focus on macro-prudential issues. It proposes a 3-step approach to address the system risk of credit ratings. As a first step, policymakers should have a good grasp of the risk inherent to credit ratings. “Ratings maps,” which attempt to identify the different channels through which rating downgrades can lead to systemic risk can be a useful tool to policymakers. Second, once the risks inherent to ratings are identified, policymakers will need to measure them by stress testing systemic institutions’ balance sheets and off-balance sheet positions.

² See Moody’s, 2007.

³ See IMF (1999) and Moody’s (1998).

Finally, systemic institutions that are vulnerable to abrupt ratings downgrades may have to hold more capital or liquidity buffers.

The rest of the paper is organized as follows: first, the paper reviews useful lessons from previous rating crises such as the Asian crisis and the fall of Enron and Parmalat. Second, it discusses key characteristics of rated markets, where the rating of securities plays a central role because of legislation, regulations, supervisory policies or market practice. The paper then focuses specifically on the rating of structured credit products (SPs) and their role in the current financial crises. It also discusses trends and developments in rated markets, which have led to higher systemic risk. These include (i) the rapid growth of the rated market, (ii) the use of standardized metrics to assess credit risk and model risk in rating methodologies, and (iii) governance issues in the rating process. Against this background, the paper reviews current proposals for the regulation of CRAs and suggests a number of policy recommendations to reduce the systemic risk of credit ratings.

II. LESSONS FROM PREVIOUS RATING CRISES

The rapid and large market losses associated with rating downgrades have often raised concerns related to CRAs, especially after the fall of Enron and WorldCom. Such widespread concerns are summarized in SEC (2003) following the Sarbanes-Oxley Act of 2002, which asked whether more was needed in the following five areas:

- Information flow, including disclosure about ratings decisions; the extent and quality of disclosure by issuers (including disclosures relating to ratings triggers);
- Potential conflicts of interest such as procedures to manage potential conflicts of interest that arise when issuers pay for ratings; prohibition (or severe restriction) of direct contacts between rating analysts and subscribers; procedures to manage potential conflicts of interest that arise when rating agencies develop ancillary fee-based businesses;
- Alleged anticompetitive or unfair practices, including the extent to which allegations of anticompetitive or unfair practices by large credit rating agencies have merit and, if so possible SEC action to address them;
- Reducing potential regulatory barriers to entry such as clarifying the existing regulatory recognition criteria for rating agencies; the institution of timing goals for the evaluation of applications for regulatory recognition; recognition for regulatory purposes of CRAs that cover a limited sector of the debt market, or confine their activity to a limited geographic area; viable alternatives to the recognition of rating agencies in SEC rules and regulation.
- Ongoing oversight, including direct and ongoing oversight of rating agencies and the appropriate means for doing so (and whether it is advisable to ask Congress for

specific legislative oversight authority); general standards of due diligence in performing rating analysis, and with respect to the training and qualifications of credit rating analysts.

CRAs typically present the same types of arguments to address such concerns, insisting that ratings are merely opinions. For instance, in public hearings held by the SEC in 2002 in the aftermath of Enron, CRAs insisted that ratings are only opinions and should have a limited role which is to assess the creditworthiness of issuers on an ongoing basis, and the likelihood that debt will be repaid in a timely manner.⁴ The fact that ratings are “opinions” is important in the U.S. legal context as it allows them to be protected by the First Amendment and from civil and criminal liability.⁵

Ratings are also not intended to predict the precise timing of when a given borrower might default. CRAs argue that ratings “look through the cycle.” Ratings are, in principle, changed only when the CRA believes an issuer has experienced what is likely to be enduring changes in fundamental creditworthiness. Even though an issuer might experience a change in its financial performance as a result of an adjustment in the macroeconomic environment, its rating may be maintained if it is likely that previous financial condition will be restored during the next phase of the cycle. Credit ratings are, in principle, more stable than “point-in-time” ratings, such as those obtained from bond or equity prices, which may capture transitory market expectations and volatile risk premia⁶.

CRAs also insist that their analysis is largely dependant on the quality of information provided to them. For instance, the largest rating downgrades during the Asian crisis, occurred following the revelation of what the CRAs regarded as material new information. Major rating reviews were triggered by the reports on the size of the Bank of Thailand’s forward exchange position; the extent of the Bank of Korea’s placement of its foreign exchange reserves in offshore Korean banks and the emergence of widespread political disturbances in Indonesia⁷. In the case of Enron and WorldCom, CRAs also stressed that they do not conduct formal audits of rated companies or search for fraud.

CRAs typically revise their methodologies in the aftermath of rating crises, which can lead to further downgrades. Following the Asian crisis, CRAs expressed the need to put more emphasis on a country’s balance sheet mismatches, including the strength of its banking system and its corporates. CRAs realized the need to focus more on the risks associated with reliance on short-term debt for otherwise creditworthy countries; the identity and

⁴ See, for instance, SEC (2003) for a summary of public hearings of rating agencies held by the SEC in November 2002 in the aftermath of Enron.

⁵ Partnoy, Frank (2006), “How and Why Credit Rating Agencies Are Not Like Other Gatekeepers,” Research Paper No 07-46, Legal Studies Research Paper Series, University of San Diego School of Law, May 2006.

⁶ See Cantor and Mann (2009).

⁷ See IMF (1999).

creditworthiness of a country's short-term borrowers; a greater appreciation of the risks posed by a weak banking system (including the contingent liabilities of such weaknesses for the authorities); identification and consideration of the likely behavior of foreign short-term creditors; and increased sensitivity to the risk that a financial crisis in a country may be contagious for its neighbors.

CRA's also stress the paramount importance of safeguarding their reputation for issuing objective and credible ratings. They claim that reputational concerns should reduce issuer influence, especially when fees from any single issuer typically comprise a very small percentage. Furthermore, the rating agencies insist that they have implemented a number of policies and procedures designed to assure the independence and objectivity of the ratings process, such as requiring ratings decisions to be made by a ratings committee, imposing investment restrictions, and adhering to a fixed fee schedule. In addition, CRA's assert that rating analyst compensation is merit-based and is not dependent on the level of fees paid by issuers the analyst rates. Regarding advisory services, CRA's typically represented that they have established extensive guidelines to manage potential conflicts in this area, including firewalls to separate the ratings services from the influence of other businesses.

Previous crises have led to calls for regulation of CRA's but regulatory action has been reactive and slow. CRA's have been typically unregulated and have instead relied on industry self-regulation. SEC (2003) notes that reviews of the regulatory treatment of CRA's have often coincided with a large scale credit default, such as those of Orange County, California, and the Washington Public Power Supply System. In 1992, the SEC considered a number of alternatives in an attempt to determine the appropriate regulatory treatment of rating agencies for purposes of the federal securities laws but finally retained the existing system of NRSRO recognition and oversight⁸.

In the aftermath of Enron and WorldCom, there has been some regulatory response in the U.S. as Congress passed the Credit Rating Agency Reform Act of 2006, ending a century of industry self-regulation and providing the SEC authority for the first time in this space. The Act's overriding purpose was to promote competition in the rating industry by establishing a transparent and rational registration system for rating agencies seeking NRSRO status. It was also designed to enhance industry transparency, address conflicts of interest, and prohibit abusive practices.

As a result, CRA's in the U.S. are now required to make a series of disclosures and can be inspected by SEC. Disclosures include information on policies and procedures for determining ratings and preventing the use of material non-public information, conflicts of interest, and performance measurement statistics. The Act also mandates that the SEC

⁸ The term "NRSRO" which stands for nationally recognized statistical rating organizations. The SEC considered in 1992 whether to (i) eliminate reliance on NRSRO ratings for purposes of SEC rules; (ii) retain the use of NRSRO ratings in SEC rules and the current method for designating rating agencies as NRSROs; and (iii) implement more direct and expanded oversight of CRA's, given their growing importance in the financial and regulatory scheme.

prohibit conflicts of interest, or require their disclosure and management, particularly any conflicts relating to compensation of the NRSRO for ratings and other services. The Act gives the SEC authority to conduct a robust inspection, examination, and investigation program to ensure that the rating agencies are operating in a manner consistent with their disclosures and the federal securities laws.

In the European Union, the Commission’s 2004 review of the regulatory framework for CRAs, following the bankruptcies of Enron and Parmalat (often dubbed the “European Enron”) did not lead to new legislation.⁹ The European Commission (EC) review was guided by the principle of “Better Regulation,” which stipulates that legislative solutions should be applied only where they are strictly necessary for the achievement of public policy objectives.¹⁰ The EC concluded therefore that the existing EU framework struck the right balance between legislation and self-regulation.

The EU legislation of CRAs—which had to be transposed into national legislation—was based on three Directives relating to the Commission's Financial Services Action Plan (FSAP). The Directives relevant to CRAs are (i) the Market Abuse Directive (MAD), which covers insider dealing and market manipulation and promotes market transparency; (ii) the Capital Requirements Directive (CRD), which sets out the main criteria CRAs must meet in order to be recognized as External Credit Assessment Institutions (ECAI). The CRD allows the use of credit ratings in the determination of capital requirements for banks and investment firms¹¹; and (iii) the Markets in Financial Instruments Directive (MiFID), which is applicable only to CRAs undertaking investment services and activities in addition to their regular credit rating activity. It imposes a number of rules concerning organizational structure and conduct of business. In addition to the above legislation, the EC recommended that CRAs incorporate the 2004 IOSCO Code in their own codes of conduct and be in full compliance.

Globally, concerns about CRAs led to the 2004 IOSCO Code of Conduct as an effort to strengthen self-regulation.¹² The Code was based on a the “IOSCO Principles,” which set high-level objectives for CRAs, regulators, and market participants to improve investor protection and market fairness, efficiency, and transparency, as well as reduce systemic risk. The Code sought to improve the role CRAs along three dimensions: (i) the quality and integrity of the rating process; (ii) CRA independence and the avoidance of conflicts of Interest; and, (iii) RA responsibilities to the investing public and issuers.

⁹ The Bankruptcies of Enron and Parmalat led to a resolution by the European Parliament on the role and methods of rating agencies (February 2004). They also led to a resolution by the German Federal Parliament on improving the integrity, independence, and transparency of rating agencies through a code of conduct (March 2004), see Matsuo (2005).

¹⁰ See European Commission (2006).

¹¹ This is related to the implementation of Basel II, which stipulates that national supervisors are responsible for determining the eligibility of ECAIs.

¹² See IOSCO (2004).

A key lesson is that past crises did not result in rapid or increased regulation of CRAs despite their systemic risk. CRAs are currently not regulated in most jurisdictions and rely on a self-regulatory model. Even in the U.S., implementation of the Rating Agency Act of 2006 was not fast enough to address issues leading to the current crisis.

There could be a number of reasons why previous crises did not lead to major changes in the regulation of CRAs. These include aspects of political economy such as lobbying by CRAs. For instance, SEC Commissioner Casey (2009) remarks that the U.S. Congress passed the Act, thereby ending a century of industry self-regulation, “in the face of strenuous opposition and a high-powered lobbying campaign waged by the largest two agencies.” There was also great reluctance to regulate financial markets further because of the estimated costs of inhibiting financial innovations. Finally, policy makers may have simply underestimated the magnitude of systemic risks stemming from CRAs.

III. CREDIT RATINGS IN CAPITAL MARKETS

A. The Demand and Supply for Credit Ratings

Previous crises have shown the central role that credit ratings play in the investment decisions of financial market participants. SEC (2003) provides a good review of the role of rating agencies in securities markets.¹³ Issuers of securities seek credit ratings to improve the marketability or pricing of their securities, or to satisfy investors, lenders, or counterparties who want to enhance management responsibility.

Buy-side firms, such as mutual funds, pension funds, and insurance companies, are substantial users of credit ratings, even though they claim to typically conduct their own credit analysis for risk management purposes or trading operations. Buy-side firms use credit ratings to comply with internal by-law restrictions or investment policies that require certain minimum credit ratings. Finally buy-side firms use credit ratings to ensure compliance with various regulatory requirements.

Sell-side firms also use credit ratings in addition to their own credit analysis for risk management and trading purposes.¹⁴ Many broker-dealers maintain rating advisory groups which generally assist underwriting clients in selecting appropriate credit rating agencies for their offerings and help guide those clients through the rating process. In addition sell-side firms often act as dealers in markets that place significant importance on credit ratings. For instance, in the OTC derivatives market, broker-dealers tend to use credit ratings (when available) to determine acceptable counterparties, as well as collateral levels for outstanding

¹³ U.S. Securities and Exchange Commission, January 2003, “Report on the Role and Function of Credit Rating Agencies in the Operation of the Securities Markets,” As required by Section 702(b) of the Sarbanes-Oxley Act of 2002.

¹⁴ Sell-side firms include broker-dealers that make recommendations and sell securities to their clients.

credit exposures. Finally, large broker-dealers themselves frequently obtain credit rating ratings as issuers of long-and short-term debt.

Credit ratings even play a key role in private contracts, which in turn enhance their importance to the marketplace. SEC (2003) notes the widespread use of “ratings triggers” in financial contracts. These are contractual provisions that terminate credit availability or accelerate credit obligations in the event of specified rating actions, with the result that a rating downgrade could lead to an escalating liquidity crisis for issuers subject to ratings triggers.

The supply of and demand for rated securities are associated with the market for savings instruments. Until the advent of credit risk transfer instruments, the supply of “safe” assets, such as rated triple-A debt instruments, was relatively small. Holmstrom (2008) notes that three channels have been used to increase the supply of savings instruments as market participants: (i) built new assets (ii) turned privately held assets into marketable assets; and (iii) used existing assets to create state-contingent claims. For instance, banks increasingly issued credit transfer instruments to diversify risks and reduce the costs of raising external capital for loan intermediation (see Duffie (2008)).

In addition, macroeconomic factors may have encouraged the growth of “safe” assets. Caballero and Krishnamurty (2008), notes that global imbalances have led to the large demand for “riskless” assets from the rest of the world, which in turn has contributed to the growth of “safe” assets.

B. Use of Credit Ratings in Legislation, Regulations and Supervisory Policies (LRSPs)

A recent international stocktaking exercise conducted by the Joint Forum (2009) reveals that credit ratings are generally used in member jurisdictions for five key purposes, especially in their LRSPs covering the banking and securities sectors¹⁵: (i) determining capital requirements; (ii) identifying or classifying assets, usually in the context of eligible investments or permissible asset concentrations; (iii) providing a credible evaluation of the credit risk associated with assets purchased as part of a securitization offering or a covered bond offering; (iv) determining disclosure requirements⁷ and (v) determining prospectus eligibility. A key finding of the Joint Forum (2009) exercise is that no member authority had conducted a formal assessment of the impact of the use of credit ratings in LRSPs on investor behavior.

In the U.S., the SEC started using ratings by NRSROs in 1975 to determine capital charges for broker-dealers. The term “NRSRO” which stands for nationally recognized statistical rating organizations, was originally adopted by the U.S. SEC that year solely for determining capital charges on different grades of debt securities under the Net Capital Rule. The rule

¹⁵ The Joint Forum (2009) received a total of 17 surveys from member authorities, representing 26 separate agencies from 12 different countries and five response describing international frameworks.

allowed broker-dealers to apply lower “haircuts” to debt securities that were rated investment grade by a NRSRO.¹⁶ Partnoy (2009) notes that private reliance on ratings has typically followed its public use and this phenomenon predates the 1975 rule and traces its origins to the aftermath of 1929 Crash.

The regulatory use of ratings expanded quickly to other segments of the financial markets. SEC (2003) illustrates how issuers of commercial paper find it difficult to sell paper that does not qualify for investment by money market funds under Rule 2a-7 under the Investment Company Act. Rule 2a-7 under the Investment Company Act of 1940 limits money market funds to investing in only high quality short-term instruments, and NRSRO ratings are used as benchmarks for establishing minimum quality investment standards. It also notes that most money market funds voluntarily limit themselves to investing in securities rated higher than necessary to be eligible under Rule 2a-7¹⁷.

Policymakers’ reliance on credit ratings is even illustrated in the resolution of the current crisis. Indeed, the U.S. government continues to rely on AAA ratings as illustrated by their use in the Term Asset-Backed Securities Loan Facility (TALF), established in November 2008. Indeed, the U.S. authorities will allow use of the TALF only for the purchase of AAA-securities.¹⁸

Under the 2004 Basel Committee on Banking Supervision (BCBS) new capital adequacy framework (Basel II), banks can use ratings assigned by a recognized CRAs in determining credit risk weights for many of their institutional credit exposures. The objective of Basel II, Pillar 1 is to align a bank’s minimum capital requirements more closely to its risk of economic loss. To do so, a bank capital is made more sensitive to such a risk by requiring higher (lower) levels of capital for those borrowers with higher (lower) credit risk, and vice versa. Under the “standardized approach,” banks that engage in less complex forms of lending and credit underwriting and that have simpler control structures may use external measures of credit risk to assess the credit quality of their borrowers for regulatory capital purposes. This framework is currently under review.

¹⁶ The NCR requires broker-dealers, when computing net capital, to deduct from their net worth certain percentages of the market value of their proprietary securities positions. SEC (2003) notes that the Commission determined that it was appropriate to apply a lower haircut to securities held by a broker-dealer that were rated investment grade by a credit rating agency of national repute, because those securities typically were more liquid and less volatile in price than securities that were not so highly rated. A primary purpose of these “haircuts” is to provide a margin of safety against losses that might be incurred by broker-dealers as a result of market fluctuations in the prices of, or lack of liquidity in, their proprietary positions. The requirement that the credit rating agency be “nationally recognized” was designed to ensure that its ratings were credible and reasonably relied upon by the marketplace.

¹⁷ See SEC (2003) for more regulatory use of ratings, including in a wide range of financial legislation at the federal, state, and foreign laws and regulations such as the definition of “mortgage related security,” institutions that wish to participate in student financial assistance programs, or appropriate investment for insurance companies.

¹⁸ See Ng and Rappaport (2009).

Over time, marketplace and regulatory reliance on credit ratings has increased to the point where ratings are widely used for distinguishing among grades of creditworthiness. The regulatory use of credit ratings may have increased the demand for highly rated products, in particular those issued by off-balance sheet entities. It may have also reduced incentives for investors to conduct appropriate due-diligence on the quality of their investments and manage risks adequately¹⁹.

As a result, some argue that policymakers should consider withdrawing financial regulation that imposes the use of ratings while others stress that they should recognize the limits of regulation.²⁰ For instance, the U.S. Treasury (2009) plans to reduce investors' and regulators' reliance on CRAs. Richardson and White (2009) suggest that one policy option would be to allow regulated financial institutions to take advice from any sources that they consider to be most reliable. Financial institutions would, however, justify their choice of advisor to their regulator. They conjecture that this would open the advisory information market to new ideas and new entry. In contrast, the Turner Review (2009) notes that factors other than regulation may have a bigger influence on the use of ratings and on the extent to which they are procyclical. These include investor wariness, especially with instruments such as complex CDO structure such as CDO², higher capital requirements for trading books, countercyclical macro-prudential policies relating to capital, accounting, and liquidity.

C. Costs and Benefits of Ratings

There are at least three key functions that rating agencies perform for the international financial system. For instance, Bank of England, (2007) notes that:

(i) CRAs can help mitigate the fundamental information asymmetry in capital markets between investors and firms seeking external financing. This inherent asymmetry may deter some investors from providing financing to firms because of the cost of acquiring the necessary information. A detailed analysis of credit risk would be impracticable for most investors to carry out; it might also be inefficient if the investor's stake is small relative to their overall portfolio. A rating from a neutral third party can enable small investors who could not afford to carry out their own risk assessments to enter the market. As a result, external ratings can help lower the cost of capital. However, investors need to be conscious of any potential conflicts of interest when interpreting ratings—given that the issuer of an instrument pays for the rating.

¹⁹ The Joint Forum (2009) notes that respondents to its survey were split as to whether their use of credit ratings and/or reference to CRAs has had the effect of implying an endorsement of such ratings and/or agencies, although a slight majority answered in the affirmative.

²⁰ See for instance Partnoy (2006). See also SEC (2009) and the April 2009 SEC Roundtable to Examine Oversight of Credit Rating Agencies for current views regarding the oversight of CRAs.

(ii) Ratings can be a useful mechanism to solve some principal agent problems. Principal investors can attempt to cap the amount of risk that the agent (such as pension funds, life insurers, and money market mutual funds) takes on their behalf by stating a minimum rating for assets in which to invest or counterparty exposures to take. In addition, access to some financial markets or business models can be restricted to issuers with ratings above a minimum level.

(iii) Ratings can be used to solve collective action problems between dispersed bond investors. It may not be rational for individual investors to monitor and trigger a debt restructuring of a firm in difficulty. But if the firm continues trading without action being taken, this could reduce recovery values for investors. A credit rating downgrade can act as a clear signal for individual investors to take action, triggering a debt restructuring.

In addition, ratings help standardize securities. Gale (1992) emphasizes the value of “standard securities,” those for which investors have overcome much of the fixed costs of understanding the security design. Credit ratings standardize assets through a simple linear rating scale.

There are numerous examples from previous crises where the reliance on ratings have been costly:

Abrupt downgrades increase the cost of issuance and make market access more difficult for issuers. This was true during the Asian crisis as the ratings of Indonesia, Korea, Malaysia, and Thailand fell by an average of five notches (a one step movement in the rating). These downgrades were accompanied by simultaneous increases in interest spreads.

Some studies have noted that credit ratings are procyclical, fueling market growth in good times and leading to an abrupt halt following downgrades.²¹ Cantor and Mann (2009) distinguish three ways—ordered in terms of increasing complexity regarding their empirical verifiability and policy implications—in which rating actions may be cyclical or procyclical: (i) rating actions may be statistically correlated with the credit cycle; (ii) rating actions may cause or amplify the credit cycle; or (iii) rating actions may initiate or increase the poor condition of individual companies. Using U.S. historical data, they find that, although corporate ratings are cyclical, the extent of this cyclicity is quite small and ratings reversal are rare.²² They also find that U.S. corporate ratings are much less cyclical than bond and equity-market based credit measures.

Rating downgrades typically lead to market losses for investors. Asset managers whose holdings are restricted to investment grade securities have to liquidate their holdings if they

²¹ See IMF (1999) for instance.

²² Cantor and Mann (2009) study the correlation between the “net downgrade rate,” the sum of all downgrades (weighted by the number of notches downgraded) minus the sum of all upgrades (weighted by the number of notches upgraded) divided by the number of rated issues, and fluctuations in economic activity and credit availability.

are downgraded below a pre-set level. The use of rating triggers, which is typically not publicly disclosed, can also lead to collateral calls following downgrades. SEC (2003) notes that once Enron's credit rating declined to certain levels, trading and other financial agreements gave counterparties the right to demand cash collateral, and lenders the right to demand repayment of outstanding loans. Such ratings triggers contributed to Enron's financial difficulties. Similarly, SEC (2003) notes that the impact of credit rating downgrades on PG&E's financial agreements limited its ability to borrow funds to repay its short term debt obligations²³.

Rating downgrades can have a systemic impact on financial markets whether they convey new information or not. Cantor and Mann (2009) consider two broad cases in which credit ratings can have a significant impact on security prices. First, rating changes may convey new information about fundamental credit risk. They can also reveal new information about a CRA's view of an issuer's long-term credit prospects even though the market has already developed a more negative view of its short-term prospects. Second, even without conveying new information, an issuer can be penalized, for instance through a lower access to credit, if investors or lenders reflexively pull back from downgraded issuers, based only on the self-fulfilling assumption that other market participants will behave in a similar fashion. In addition, downgrades can lead to a breach of rating thresholds in financial contracts and regulations. These rating triggers can be embedded in portfolio composition guidelines, regulatory holding guidelines, or rating thresholds in financial contracts and regulations.

IV. THE SYSTEMIC RISK OF RATINGS

The current crisis highlights how ratings downgrades can lead to rating-based triggers, with devastating effects on the financial system such as the rapid drying up of liquidity. The winding up of several structured investment vehicles (SIVs) in the current crisis, following credit rating downgrades, are examples of this mechanism at work. Typically, senior notes of structured investment vehicles (SIVs) were highly rated. Such ratings were based on the existence of preset triggers for the value of the asset, which when reached would lead to the SIV being wound up so as to protect senior note holders.

As CRAs made multiple-level downgrades of subprime-backed SPs, investors lost confidence in the ratings of a wider range of structured assets. In August 2007, money market investors in ABCP refused to roll over investments in bank-sponsored conduits and SIVs backed by SPs. As multiple sponsoring banks moved to fund liquidity commitments to ABCPs and SIVs, they sought to build up liquid resources and became unwilling to provide term liquidity to others. This led to a severe contraction of activity in the term interbank

²³ Credit ratings are only one form of debt covenant and a broader issue is to what extent debt covenants may trigger systemic events.

market and a substantial rise in term premia in the U.S. and Europe and dysfunction in a number of related short-term financial markets (see The Joint Forum (2008))

The current crisis also highlights how ratings downgrades or their anticipation can lead to collateral calls, with devastating effects on market participants such as insurers like AIG. Credit derivative product companies typically need an AAA rating to avoid posting collateral upon marked-to-market changes in their derivatives positions. Credit rating downgrades lead such companies, as per their derivatives contract, to post more collateral. Furthermore, collateral calls can occur if the issuer of the underlying securities is itself downgraded. This is illustrated by the threat by a CRA to downgrade AIG in September 2008, which led to multiple collateral calls, increased liquidity stress, and falling market confidence.^{24, 25}

Monoline insurers, which insure against the risk of a bond or other security defaulting, were also on the verge of being downgraded by all major rating agencies as losses in the mortgage markets mounted, with potentially large negative spillover effects on many securities. The downgrade of monoline insurers would have led to a loss of AAA-insurance for hundreds of municipal bonds, corporate bonds, and structured products, resulting in a sweeping rating downgrade across financial instruments with a face value of \$2.4 trillion and a subsequent severe sell-off of these securities (Brunnemeier (2008)).

Such rating downgrades would have triggered a huge sell-off of these assets by money market funds. Money market funds pledge never to “break the buck” –that is, they promise to maintain the value of every dollar invested and hence demand that underwriters of assets agree to buy back the assets if needed. However, this buy-back guarantee is conditional on the underlying assets being AAA-rated. The bankruptcy of Lehman Brothers in September 2008 caused one large money-market fund, (Reserve Primary Fund), to “break the buck,” leading to a run on money-market funds.

Government intervention was needed to avoid the cascading effects of rating downgrades. About \$500bn had been pulled out of prime money-market funds, part of the \$3.45 tn mutual funds’ industry, in the aftermath of Lehman’s bankruptcy. To stop the run, the U.S. Treasury temporarily offered to guarantee existing investors’ deposits at money-market funds as of September 2008, with more than 1,900 funds chose to participate in the Treasury’s voluntary program.²⁶ The U.S. Treasury is also calling for a strengthening of the SEC regulations of

²⁴ As of May 2009, the U.S. government held about 80 percent of AIG's assets and had injected about \$70 billion into the company through the \$700 billion Troubled Asset Relief Program (TARP).

²⁵ Some market participants argue, however, that the collapse of AIG may instead be attributable the refusal by a number of key market participants refused to pay AIG for some intraday transactions.

²⁶ In October 2008, the Fed announced the inception of a \$540 bn Money Market Investor Funding Facility (MMIF) to provide liquidity to money market mutual funds facing large redemptions. The plan guaranteed the \$1 a share price for money-market funds that have been taking part in the program since September 19, 2008. The MMIF was the third facility that was wholly or partially directed at assisting money market funds, and operated by offering to purchase 90-day commercial paper and similar instruments from money market funds, if necessary, at close to par.

money market mutual funds to reduce their credit and liquidity risk. The Investment Company Institute (ICI) is also recommending that funds increase their minimum holdings of liquid assets.

The current crisis has also raised concerns about the use of SPs ratings by different types of investors. The Turner Review (2009) notes that as a greater proportion of SPs was held not by end investors intending to hold to maturity (and therefore interested only in the probability of default), but by investing vehicles (such as SIVs and mutual funds) performing maturity transformation, some of these investors seem to have assumed quite wrongly that a rating carried an inference for liquidity and market stability, rather than solely for credit risk. The Bank of England (2008) also reaches a similar conclusion and adds that the search for yield may have encouraged these perceptions, with investors looking for assets with the highest returns for a given rating category and thereby failing to recognize fully that these higher returns were providing compensation for some additional risks. Inferring characteristics other than credit risk from ratings is particularly problematic for structured finance products.

V. ROLE OF CRAS IN STRUCTURED PRODUCTS MARKETS

A. The Rapid Growth of Structured Products

From the beginning, structured finance has largely been a “rated” market.²⁷ Issuers of SPs apparently wanted them to be rated according to scales that were identical to those for bonds. The use of one single rating scale would have encouraged investors to purchase SPs, especially for those whose investment mandates included rating-based constraints.

Unlike the rating of debt instruments such as sovereign and corporate bonds, SPs are structured to obtain a targeted rating, a process which increases considerably the involvement of CRAs. SPs involve the pooling and tranching of assets and involve third parties. CRAs play a dual role in this process: (i) they provide credit assessments of the underlying collateral asset pools; (ii) they are also involved in designing the specific structure of SPs. In their second role, CRAs need to judge the extent to which the SP’s structure provides the credit support needed for the senior tranche to receive the AAA rating targeted by the deal’s arrangers. CRAs can and have provided implicit structuring advice during the deal origination stage. As a consequence, ratings of SPs have a decidedly ex-ante character, which contrasts with traditional bond ratings, where pre-rating discussions between issuers and agencies play a more limited role.

CRAs play a more important role than in other credit markets given the complexity and opaqueness SPs. As a result of the complexity and opaqueness inherent to SPs, investors typically face relatively high costs in assessing their structure and risk profile. Lack of transparency at the origination stage increased investors’ reliance on credit ratings. In particular, it appears that the cost of obtaining relevant and timely information about

²⁷ See Committee on the Global Financial System (CGFS), 2005.

underlying assets was relatively high. For instance, Gorton (2008) notes that the current crisis is due to a loss of information about the location and size of risks of loss associated with excessively complex financial contracts.

The “rated” market for SPs—mostly AAA-rated securities—grew rapidly to surpass other segments of the rated markets. High quality ratings were the “Gold Standard” during the SP boom. Pooling and tranching generated complex SPs that appeared to meet the CRAs criteria for high ratings. Successful issuance of SPs depended on the ability to attain AAA credit ratings on large portions of these securities. As illustrated by Figure 1, the SP industry has created a very large supply of high quality fixed-income assets out of a pool of lower quality assets, by concentrating the credit risk into a small amount of highly risky assets. With respect to these new instruments, credit rating agencies have become more like “gate openers”—as illustrated by Partnoy (2006)—than gatekeepers. In particular their rating methodologies for CDOs have created and sustained that multi-trillion dollar market.

This rapid increase in presumably safe assets was not just transferring risk, it actually injected new systemic risk in the financial system. Actually, diversification using SPs, increased systemic risk and leverage. Securitization spreads default risk across the financial system, leading to systemic risk in case of massive defaults in the underlying loans. In addition, structuring such as tranching, which occurs prior to securitization adds an additional layer of leverage on this risk, thus exacerbating the susceptibility to losses when defaults occur in the underlying loans²⁸.

B. AAA as the Gold Standard²⁹

Successful issuance of SPs depended on the ability to obtain AAA credit ratings on large portions of the securities but these AAA ratings, and by implication, their valuations, were fragile. For instance, as of April 2008, about 75 percent of recent U.S. subprime mortgage loan originations were securitized, of which about 80 percent were funded by AAA-rated MBS “senior” tranches.

The issuance of SPs relied on internal credit enhancements, including over-collateralization and subordination, which under “normal” circumstances would make senior tranches very secure against credit risk. Collateralization implies that the value of the loan pool exceeds the total principal amount of securities issued. Subordination involves the sequential application of losses to the securities, starting with the equity tranche and moving up through the junior tranches before being applied to the mezzanine and then the senior tranches. Only when a tranche is depleted are losses applied to the next tranche in the sequence.

²⁸ See, for instance, Bruyere et al. 2005.

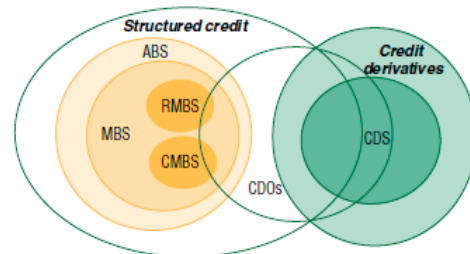
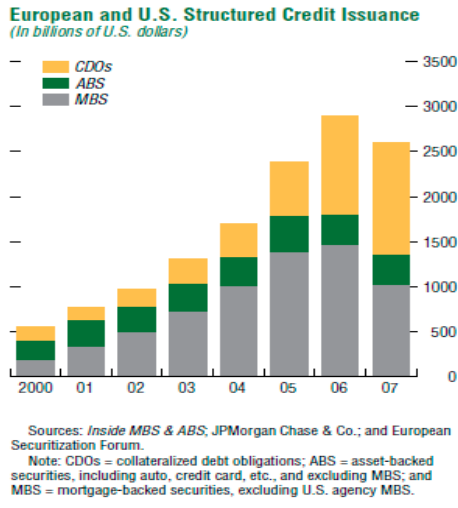
²⁹ This section is largely based on Chapter 2 of IMF (2008).

Before the subprime crisis, it had been thought that a 20 percent enhancement amount would make it virtually impossible to “break” a AAA-rated subprime MBS tranche. IMF (2008) notes that it had been typical to assume that when a subprime mortgage foreclosed, about 65 percent of its outstanding balance could be recovered. Such a 35 percent to 50 percent loss-severity assumption implied that from 50 to 65 percent of the mortgages would have to default before losses would impact the MBS senior tranche, However, a more realistic loss-severity assumption for subprime mortgages might be as high as 70 percent, for which 28 percent mortgage default rate would compromise the senior tranche. This shows that the probability of MBS senior tranche defaults could be higher than 0.05 percent or the default probabilities associated with AAA corporate securities (at a five-year maturity). Structured finance CDOs are even more fragile than above because they effectively leverage BBB- to AA-rated subprime MBS tranches.

The multiple-notch downgrades and the severe valuation losses during the second half of 2007 and early 2008 suggest that the CRA’s key assumptions on the underlying subprime mortgage performance have been overly optimistic. IMF (2008) remarks that CRAs underestimated the joint effect of house price declines and high loan-to-value ratios. In addition the risk assumptions for low- and no-documentation housing loans were too low and the likelihood of early delinquencies going into foreclosure seems to have been underestimated. Even more striking has been the gap between rating agency and market participant mortgage performance expectations. For example, credit spreads on AAA-rated U.S. RMBS have been priced at about the same level as BBB-rated corporate bonds since August 2007.

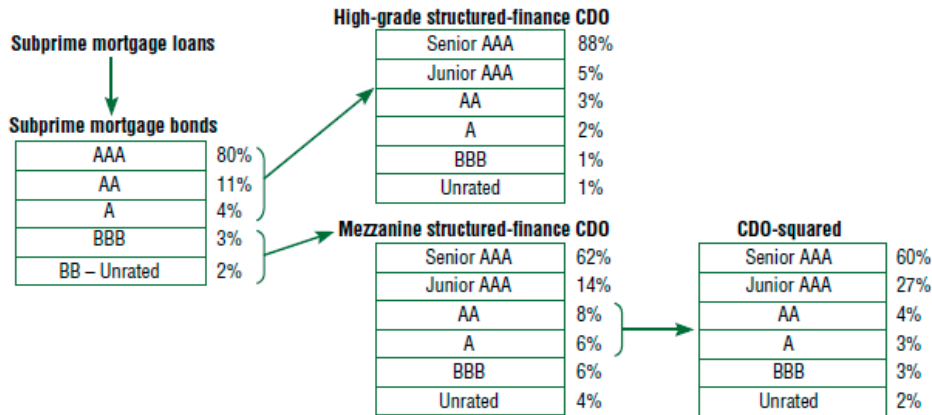
Figure 1. Growth and Complexity of Rated Markets

Boom in the \$(€) issuance of SPs, the number, and complexity of SPs



Note: ABS = asset-backed security; MBS = mortgage-backed security; RMBS = residential mortgage-backed security; CMBS = commercial mortgage-backed security; CDS = credit default swap; and CDOs = collateralized debt obligations. Not proportionally representative.

Matryoshka — Russian Doll: Multi-Layered Structured Credit Products



Source: IMF staff estimates.
Note: CDO = collateralized debt obligation.

Source: IMF (2008), Chapter 2.

VI. MODEL RISK IN THE RATING OF STRUCTURED CREDIT PRODUCTS³⁰

CRA's use the same credit risk metric for all instruments although SPs have very different downgrade dynamics. CRA's use similar letter-grade scales (AAA to C or Aaa to C) to rank the relative default risk of all long-term, fixed-income securities, including structured credit products. However, structured credit products have significantly more abrupt downgrade dynamics of those products discussed above.

Using the same rating scale for structured products leads to an underestimation of systemic risk as structured products have downgrade dynamics, which are different than those of corporate or sovereign bonds. Unlike corporate and sovereign bonds, SPs are option-like. Using a rating scale similar to those of corporate bonds leads to incorrectly using a “linear” function to estimate non-linear function given the optionality³¹.

³⁰ This section is largely based on Chapter 2 of IMF (2008). See also Coval, Jurek, and Stafford (2009) for a useful example of model risk in the rating process for SPs.

³¹ A senior CDO tranche is effectively “short a call option” on the cash-flow performance of the underlying collateral pool. Duffie (2007) notes that the market value of a senior tranche therefore decreases with (risk-neutral) default correlation. The value of the equity price, which resembles a call option on the collateral-pool cash flows, increases with default correlation. There is no clear effect of optionality, however, for the valuation of intermediate tranches. Each of the intermediate tranches has given up an option to the tranches below it in priority and has taken an option from the tranches above it. The over-collateralization of a tranche is the principal amount of debt below it. With sufficient over-collateralization, the option given to the lower tranches dominates, but it is the other way around for sufficiently low levels of over-collateralization.

IMF (2008) gives a simple stylized example, which can help appreciate the rating process and how structured products are structured to earn a particular rating. In particular, the example shows how sensitive a AAA-rating is to assumptions on correlation and loss severity. In this example, a CRA follows a simple two-step rating process for a CDO:

First, the CRA constructs a probability distribution of the estimated losses on the structure's underlying risk. For mortgage-related securities, estimated losses would depend on estimates of foreclosure rates and loan-loss severities, which are themselves driven by assumptions about fundamental factors such as house prices and interest rates. The CRA has to also make an important assumption on the correlation of defaults among the individual underlying risks. The figure below shows the cumulative probability distribution for a portfolio of credits evaluated at three different correlation levels.³² It measures the probability that the number of defaults exceeds the level along the x axis, and show that the higher the correlation, the more likely are multiple defaults.

In a second stage, tranches of the structured products can be structured to earn specific ratings.³³ In the example under the 5 percent correlation assumption, subordination that absorbs the losses associated with the first 40 defaults could get a AAA rating from S&P's. This is because, for AAA ratings, the target default probability is 0.06 percent and the probability of there being more than 40 defaults under the 5 percent correlation is 0.06 percent. This is shown in the second figure. Hence the AAA "attachment" point is 16 percent of the underlying portfolio's notional value (40 defaults \times 50 percent loss severity/125).

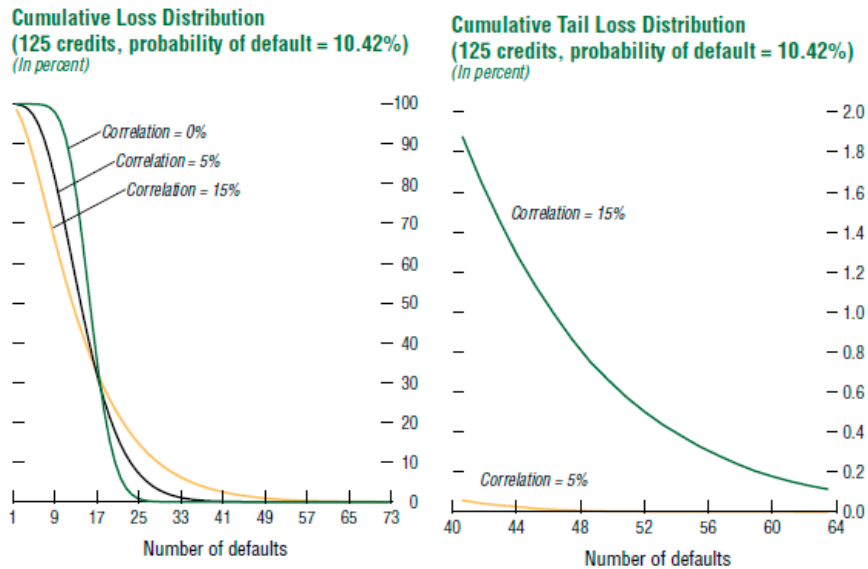
This simple example shows how a AAA rating is highly sensitive to the chosen assumptions on correlation and loss severity, with the associated risk of abrupt downgrades. The figure shows that if the asset correlation were 15 percent, AAA subordination would have to increase from 16 to 25.6 percent (64 defaults). In fact, it shows that if the correlation were to jump from 5 to 15 percent, the originally rated AAA tranche should be downgraded to single-A or below (the probability of more than 40 defaults jumps from 0.06 percent to 1.88 percent, and the target default probabilities for A and BBB ratings are 0.46 and 2.32 percent, respectively). Increasing the loss severity from 50 to 70 percent (holding the correlation at 5

³² The example is based on a portfolio of 125 identical 5-year digital default swaps with a 50 percent loss-given-default, referencing BB-corporate credits with a 10.42 percent default probability (PD). A digital default swap is a credit default swap with fixed recovery rate. The example uses a Gaussian copula to construct cumulative probability distribution.

³³ The principles to determine Fitch's CDO ratings are very similar to those used above by S&P's in that they also target the tranche default probability. However, the process is somewhat more complex for determining Moody's ratings because they target expected loss and their targets are somewhat more stringent (Fender and Kiff, 2005). Also, the expected loss-basis more accurately measures the risk associated with mezzanine tranches, which tend to have very high loss severities.

percent) would also downgrade the AAA tranche to single-A or below, and downgrading the underlying credits from BB to B could downgrade the AAA tranche ratings to BB or below.

Figure 2. The Rating Process for SPs: Loss Distribution



Source: IMF (2008), Chapter 2.

Deficiencies in the models used by CRAs to rate SPs increased systemic risk. Duffie (2007) stressed that default correlation was the weakest link in the risk measurement and pricing of SPs and that existing models could lead to a dramatic loss of liquidity in the event of a sudden failure of a large specialty investor or a surprise cluster of corporate defaults. This was also true for even specialists in CDOs, which were ill equipped to measure the risks and fair valuation of tranches that are sensitive to default correlation. Brunnermeier (2008) notes that investors in a AAA-rated tranche of a CDO combined with a CDS had reasons to believe that the investment had low risk because the probability of the CDS counterparty defaulting was considered to be small. An early warning signal of problems to come was given in May 2005, following the rating downgrade of GM from investment grade to speculative grade, which showed the ineffectiveness of delta hedging of tranches and limitations in using Gaussian copula (Duffie, 2007).

Problems in the rating methodology of SPs are comparable to some extent to those of value-at-risk models (VaR). Four categories of problem with VaR have been recently identified³⁴: (i) risk measures were often estimated using relatively short periods of observation. As a result, they introduced significant procyclicality, with periods of low observed risk driving down measures of future prospective risk; (ii) the use of normal instead of fat-tail

³⁴ See The Turner Review (2009) and Andrew Haldane, "Why Banks Failed the Stress Tests", February 2009 for problem with VaRs.

distributions underestimates the chances of small probability high impact events; (iii) a failure to account for systemic risk; and more fundamentally (iv) the failure to distinguish risk and uncertainty with the associated over-reliance on past distribution patterns to make robust inferences on future patterns.

In spite of all the issues raised above, institutional investors and regulators tended to rely on the ratings of structured credit products and ratings appear to be indispensable to the functioning of credit markets. In a survey of investors by the CFA Institute (2009), 60 percent of respondents find credit ratings are not valid and useful in making investment decisions. Yet, about half of the respondents disagree with steps to deemphasize reliance on credit ratings (by removing any requirements for credit ratings in order to sell corporate debt securities).

As a result of investors' reliance on ratings, there have been calls for the use of a differentiated scale for SPs. For instance, IMF (2008) notes that CRAs should provide investors with more analytical information regarding potential rating volatility. This recommendation is based on the observation that, by design, SPs can suffer more severe, multiple-notch downgrades relative to corporate or sovereign bonds. The additional analytic information, which could take the form of a score or index, would provide investors with a quantification of the increased downgrade risk.

VII. GOVERNANCE ISSUES IN THE RATING OF STRUCTURED CREDIT PRODUCTS

Although not a central issue in the aftermath of Enron and WorldCom, the 2002 SEC hearings of CRAs and market participants raised a number of concerns regarding the rating of structured products. In 2002, CRAs noted that advisory services represented only a very small portion of their total revenues but some hearing participants expressed concern that the potential conflict could become much greater were these services to become a substantial portion of a rating agency's business. On abusive practices, one CRA complained that its competitors were attempting to squeeze them out of certain structured finance markets by engaging in the practice of "notching"—lowering their ratings on, or refusing to rate, securities issued by certain asset pools (e.g. CDOs), unless a substantial portion of the assets within those pools were also rated by them.

In August 2007, the SEC staff initiated in-depth examinations of the three major rating agencies and over a 10 month investigation uncovered significant deficiencies in the rating agencies' policies, procedures and practices.

The examinations found that:

- The CRAs struggled significantly with the increase in the number and complexity of subprime RMBS and CDO deals since 2002;
- None of the CRAs examined had specific, comprehensive, written procedures for rating RMBS and CDOs;

- Significant aspects of the rating process were not disclosed or even documented by the firms;
- Conflicts of interest were not always managed appropriately; and
- Processes for monitoring ratings were less robust than the processes used for initial ratings.

The theoretical literature stresses the importance of restoring the “investor pays” business model. Most analytical studies on the role of CRAs in the current crisis stress that the current model under which issuers of securities pay CRAs to rate their securities gives rise to (1) conflicts of interest, (2) perverse effects of “shopping ” for rating, and (3) issues related to the quality of disclosed information.³⁵ As a result, the academic consensus is that the ratings industry must be regulated to address agencies’ fundamental conflicts of interest. In addition, shopping for ratings should be banned to reduce the conflict of interest of issuers. This could be achieved through a return to the “investor pays” system which would replace the current “issuer pays” business model.

In contrast, Calomiris (2009) argues that an “investor pays” system would lead to inflated ratings. This is because buy-side investors reward rating agencies for underestimating risk as high ratings loosen regulatory restrictions on the types of instruments they can invest in³⁶.

The literature also suggests the establishment of centralized clearing platforms for ratings. Richardson and White (2009) argue that there is a free rider problem in the “investor pays” model which competition may not solve. They therefore recommends the creation of a centralized clearing platform for rating agencies within the SEC. In this scheme, the platform would assess a flat fee for the rating of a security, depending on its attributes. It would also choose a rating agency from a sample of approved CRAs, which would then rate the security. Mathis, Andrews, and Rochet (2008) also suggests creating a platform that would take payments from issuers and assign securities to one or more CRAs, which would then rate them. They argue that this scheme would eliminate conflicts of interest and “shopping” for rating.

³⁵ See Freixas and Shapiro (2009) for a concise review of this literature which includes Bolton et al. (2008), and Mathis et al. (2008), Pagano and Volpin (2008), and Skreta and Veldkamp (2008). See also Benmelech and Dlugosz (2009) who find evidence that ratings shopping may have played a role in the current crisis.

³⁶ Calomiris (2009) recommends that NRSROs provide specific estimates of the probability of default and the loss-given-default for any rated instruments. Regulators would then penalize NRSROs that systematically underestimate risk with a six-month “sit out” during which their ratings would not be used for regulatory purposes. Such reduced demand for their ratings would affect their fee income, thereby giving them an incentive to correctly estimate risk.

VIII. POLICY RECOMMENDATIONS

The current crisis highlights the need for a systemic approach which involves policymakers and all market participants. For instance, the Joint Forum (2008) on credit risk transfer recognizes the central role of credit ratings and accordingly, makes a number of policy recommendations aimed at all stakeholders.³⁷ In particular, the Joint Forum recommends that:

- CRAs should clarify and augment the information provided to investors on structured products; assess the credibility of information received from issuers, underwriters, sponsors; ensure transparency of models and rating methodologies; and address potential conflicts of interest, including concerns about remuneration models.
- Investment and risk management frameworks must not inappropriately rely on ratings; recognize the uncertainty around ratings, and differentiate products according to their risk characteristics;
- Issuers, underwriters, and sponsors should provide accurate and robust information to CRAs and investors;
- Authorities should examine whether rating-based rules (regulatory and supervisory) create “perverse” incentives for investors and induce uncritical reliance on ratings as a substitute for independent evaluation; They should also carefully consider the transitional implications of any changes to ratings frameworks or to regulation and supervisory rules.

The micro-prudential regulation of CRAs is important and is the focus of most current policy proposals. This approach emphasizes a “register and be supervised” regulatory model, with a focus on increasing transparency, independence of CRAs, and competition in the ratings industry.

A systemic approach to regulation should move beyond CRAs to include the role of ratings in securities markets and, more broadly, in financial stability. The regulation of rated securities markets should recognize the importance for market participants to avoid relying too much on ratings in the risk assessment of their investment strategies. It should also stress the importance of opening the “black box” of rating methodology so that investors are well informed of the risks they are taking when investing in rated securities.

³⁷ The Joint Forum on Credit Risk Transfer (2008) includes the Basel Committee on Banking Supervision, the International Organization of Securities Commissions (IOSCO), and the International Association of Insurance Supervisors (IAIS).

The current policy debate has largely focused on the regulation of CRAs and to some extent on the regulation of securities markets. It is, however, crucial for policy makers to reduce the systemic risk and procyclicality inherent to ratings. The current crisis as well as previous ones have shown that the identification of such risks, their measurement and management is an important element of crisis prevention and resolution.

A. Regulating CRAs

Before the crisis, policy makers relied solely on the “comply or explain” model of industry self-regulation. Self-regulation is best illustrated by the IOSCO CRA Code of Conduct, first published in December 2004. The code was revised in 2008 to address concerns about (i) CRA transparency and market perceptions; (ii) independence and avoidance of conflicts of interest, and (iii) CRA competition and the interaction of this competition on CRA independence. The code relies upon disclosure as a compliance mechanism, with individual CRAs publishing their own codes of conduct so that market participants could evaluate the degree to which a CRA had incorporated the Code within its own internal requirements. Most CRAs have adopted the code and IOSCO will monitor its implementation. IOSCO is also encouraging globally consistent oversight of CRAs.

CRAs are now reviewing their methodologies and are working on separate complementary indicators to SPs ratings such as loss given default and loss severity, collateral quality assessment, and rating transition probability and volatility. A number of CRAs have agreed to implement a number of measures to address issues regarding the independence, transparency, and quality of the rating process.³⁸ Cantor and Mann (2009) caution that although transparency in rating methodologies can help reduce the market impact of rating changes, it can never fully eliminate it. They recommend to not only increase CRAs’ transparency but also widen the variety of credit opinions and opinion providers and avoid or disclose the use of ratings as “triggers” in financial contracts as well as other rating sensitive covenants or securities.

Proposed policy recommendations focus mostly on the regulation of CRAs using a “register and be supervised” model. The proposed regulations aim at reducing conflicts of interest and promoting increased competition in the CRA industry. These goals are consistent with meeting two of the key objectives of financial regulation, namely (1) protecting investors

³⁸ See IOSCO (2008b). It should be noted that changes in rating methodology can have an important impact on markets. For instance, one CRA recently initiated a two-stage review process of its rating methodology to account for rising corporate default rates and increased correlation in global credit markets, which led to the downgrade of \$46 bn-worth of collateralized loan obligations (CLOs) in March 2009. The CRA downgraded over 2000 tranches rated A or lower, comprising nearly 670 deals. Over half these tranches were lowered by 4 notches, a third by 5 notches and the remaining by 6-8 notches.

from opportunistic behavior; and (2) enhancing the efficiency of the financial system.³⁹ For instance, the 2006 Rating Agency Act's goals are to enhance transparency, competition and accountability (proposals for the SPs markets were adopted in December 2008). Similarly, the G20 Leaders' Statement (London Summit, 2 April 2009) propose "to extend regulatory oversight and registration to CRAs to ensure they meet the international code of good practice, particularly to prevent unacceptable conflicts of interest." More recently, U.S. Treasury (2009) recommends that national authorities enhance their regulatory regimes to effectively oversee CRAs, consistent with international standards and the G20 Leaders' recommendations⁴⁰.

Currently, CRAs are not regulated in most jurisdiction but the crisis has revived calls for the "register and be supervised" model of regulation of CRAs. In the EU, a legislation which will give new powers to the Committee of European Securities Regulators (CESR) is under consideration. Under this proposal, CESR would be the "single entry point" for CRA's registration in the EU and play a key coordinative role. However, the responsibility for the registration would still rest with the competent authority of the home member states. The proposed legislation also includes measures to improve CRA independence and avoid conflicts of interest, ensure the quality of ratings, and enhance transparency. As noted in ECB (2009), the proposed measures, which have a legally binding character, are based on the IOSCO standards but are stricter in those cases where the standards are not sufficient to restore market confidence and ensure investor protection.

De Larosière Group (2009) recommends to also undertake a fundamental review of CRA's business model, its financing, and of the scope of separating rating and advisory activities. It also recommend to reduce significantly the use of ratings in financial regulations. Finally, the Group advocates the use of a distinct code for structured products, alerting investors about the complexity of such instruments. It stresses, that these regulatory changes be accompanied by increased due diligence and judgment by investors and improved supervision.

ECB (2009) stresses that the proposed EU regulation and supervision of CRAs should consider (i) the need to avoid duplication of procedures with those put in place by EU banking supervisors to recognize CRAs as ECAIs⁴¹; and (ii) the need to provide for an appropriate level of involvement by the ECB, given the relevance of financial stability issues and existing Eurosystem-wide framework to monitor CRA.

³⁹ See Herring and Santomero (1999), "What is Optimal Regulation" The Wharton School, WP-00-34

⁴⁰ As noted in U.S. Treasury (2009), national authorities should register and oversee all CRAs whose ratings are used for regulatory purposes consistent with the IOSCO Code of Conduct Fundamentals for CRAs by the end of 2009.

⁴¹ Such requirements are within the framework of the EU's Capital Markets Directive (CRD).

The implementation of monetary policy in the EU is also likely to play a role in the regulation and supervision of CRAs. The ECB monitors the performance and activities of CRAs in the context of the implementation of monetary policy operations. The Eurosystem Credit Assessment Framework (ECAAF) for eligible collateral relies on credit ratings to derive a set of rules and regulations to ensure the “quality” of the collateral used by counterparties. CRAs eligible for ECAAF purposes in the EU have to respect a number of performance and operational standards that are defined by the Eurosystem. In the aftermath of the subprime crisis, the ECB has reviewed the monitoring framework for CRAs eligible for ECAAF purposes, especially regarding the rating of asset-backed securities⁴².

In the U.S., the Rating Agency Act of 2006 is being implemented. The SEC voted to issue proposals designed to address the role of rating agencies in the troubled structured finance market and to advance the Rating Agency Act’s goals of enhancing transparency, competition and accountability. The Commission adopted most of these proposals in December 2008 and inspections of CRAs have already taken place, as discussed earlier.⁴³ The Rating Act main objective was to promote competition and so far, the number of NRSROs has about doubled although the industry is still an oligopoly.

The theoretical literature, however, cautions against a rush to increase transparency in markets. Holmstrom (2008) distinguishes markets for liquidity provision (such as interbank, repo, and other near-money markets) from markets for risk sharing (such as stock markets). The first type of markets are low information markets where trading has to be based on trust. One of the main trigger of the current crisis, as discussed above, has been the lost of collateral in liquidity providing markets. In such markets, Holmstrom (2008) notes that complexity and lack of transparency need not cause market illiquidity as evidenced by the growth of the securitization market or in the market for wholesale diamonds. This is because liquidity is driven by symmetric information about payoffs. Total transparency as well as complete ignorance keeps information symmetric and markets liquid. In contrast, symmetric information about payoffs is not guaranteed by increased partial transparency.

B. Regulating Rated Securities Markets

The fact that regulation typically does not open the “black box” of methodologies should be revisited. Although there are clear dangers if market participants assume that regulators “certify” rating methodologies, it is necessary for regulators to ensure the transparency of rating methodologies. This is even more important when the risk and valuation of rated

⁴² See ECB (2009).

⁴³ See SEC Commissioner Casey (2009).

instruments depend mostly on models, without the necessary counter-balancing influence of market prices and analyst reports. Current proposals encouraging the use of different rating scales and complementary indicators for SPs are a step in that direction. Likewise, although it is typical for risk managers to be sidelined by top management in a boom cycle, efforts will be needed to reduce the overreliance on ratings in investment strategies.

It will be necessary to open the black box of rating methodologies and understand better the limitations of models used for rating complex SPs. Such an approach has already been applied in the SPs market by the CGFS, which in 2005 raised the following alarming conclusions:

- risks associated with SPs may not have been fully grasped by some investors;
- “model risk” in instruments such as CDOs is an issue even for the more sophisticated market participants, given the lack of consensus on “best practice” regarding the modeling of portfolio credit risk.
- use of SF instruments, together with the occurrence of worst case scenarios relating to mispriced or mismanaged exposures, might thus lead to situations in which extreme market events could have unanticipated systemic consequences.
- Given these issues and the fact that SF markets are largely untested, continued growth in SF activity warrants ongoing central bank awareness.

There could be a number of reasons why earlier warning signals on the dangers of SPs ratings did not lead to regulation. As discussed earlier, these could include aspects of political economy such as lobbying by CRAs or a faith in the net benefits of financial innovation. Another reason could have been that financial regulators are typically reluctant to open methodological black boxes because this could officially validate them. For instance, SEC Chairman Cox noted about the CRA Reform Act 2006 that “the law declares it is not our role to second-guess the quality of their ratings.” Rather the supervision of CRAs is to ensure that CRAs do what they claim they do.

Holmstrom (2008) flags that a free rider problem in securitization led market participants to ignore systemic risk. Although, failure to account properly for the correlation risk inherent to securitization may have been a key problem, individual players had an incentive not to care about systemic risk. As a result, regulation will have to assess social risk and costs associated with financial innovation.

C. Ensuring Systemic Stability

A key objective of the regulation of CRAs should be to ensure systemic stability. For instance, Buiters (2009) contrasts macro-prudential regulation with micro-prudential considerations. The first type of regulation aims at safeguarding financial stability by preventing or mitigating (i) asset market and credit booms, bubbles, and busts; (ii) market illiquidity in systemically important markets; (iii) funding illiquidity for systemically important financial institutions; and (iv) insolvencies of systemically important financial

institutions. Micro-prudential considerations are concerned with issues of abuse of monopoly power, consumer protection, and micro-manifestations of asymmetric information.

Credit ratings increase systemic risk and may be pro-cyclical, helping fuel investments in “good times” and accelerating market losses in “bad times.” CRAs can increase systemic risk through unanticipated and abrupt downgrades. They may also increase procyclicality. Such rating crises can lead to large market losses, fire sales, a dry up of liquidity and have knock-on effects on a number of systemically important market participants, either through contractual arrangements or investment practice. The system risk stemming from CRAs is higher for structured products markets than for corporate and sovereign bond markets.

Although, conflicts of interests and informational issues are key to understand why such rating crises occur it is critical to identify the different facets of risks in “rated market,” how they can lead to systemic crises, and how to measure them and manage them.

Policymakers should better assess the nature and extent of the use of credit ratings in financial markets as well as their potential impact on financial stability. For instance, it is important to assess how the use of credit ratings because of legislation, regulations, supervisory policies or market practice can increase systemic risk. Such an approach will require an analysis both at the micro and macro level, include all market participants and take a global approach. The determinants of the supply and demand for “rated assets,” especially in “good times” and the implications of unanticipated abrupt downgrades in “bad times” have to be assessed carefully. For instance, the Financial Services Oversight Council of prudential regulators proposed in U.S. Treasury (2009) should address the systemic risk of CRAs.

Such an approach requires an assessment of the systemic effects of rating downgrades. Key questions include: (i) the type of institutions and markets which would be affected by downgrades, whether directly or indirectly, and how systemic and interconnected they are; (ii) the consequences for financial markets and the economy in terms of market losses, liquidity shortages, loss of access to credit and reduced liquidity; (iii) the factors that can increase downgrade risk, including idiosyncratic and systemic ones; (iv) the measurement of systemic downgrade risk; and (v) the management of downgrade risk at the systemic level through increased capital requirements or liquidity buffers, or other means.

We propose a 3-step approach to address the system risk of credit ratings. As a first step, policymakers should have a good grasp of the risk inherent to credit ratings. “Ratings maps,” as in Figure 3 and 4, offer a template for policymakers to identify the different channels through which rating downgrades can lead to systemic risk. In the current crisis, defaults of subprime loans have led to abrupt and unanticipated rating downgrades of a number of rated securities, issuers, and bond insurers (channel 1). These downgrades, in turn, led to larger market losses by investors, including banks’ off-balance sheet entities (OBSEs), such as conduits and SIVs (channels 2 and 3). They also led to larger funding needs from banks sponsoring these OBSEs and larger collateral calls from insurers in the CDS markets such as AIG. Some of these channels, such as rating-triggers were also present in the case of the market disruptions following the fall of Enron and WorldCom. An additional problem with

rating downgrades is that they may be pro-cyclical as first round effects can lead to further downgrades (channel 4).

Given the procyclicality of ratings, questions will also need to be asked in “good times,” during boom cycles. Credit ratings can encourage the growth of the rated market where rated securities are transacted. This growth can also be accompanied by a higher volume of highly rated securities. This “rating inflation” was a key development prior to the current crisis and policymakers will need to get a full grasp of its determinants.⁴⁴ Questions will need to be asked about market participants’ incentives and the methodology used to justify substantially larger volumes of highly rated securities.

Second, policymakers will need to measure risks inherent to ratings once they are identified. A useful method to measure the systemic exposure to downgrade risk during boom cycles, would be for regulators and institutions to stress test their balance sheet and off-balance sheet positions. Risk managers have long been aware of the risks of credit downgrades, especially for fixed income portfolios. The crisis has put to the fore the need for policy makers to manage the risks of such downgrades but, this time, at the systemic level. One first step would be to conduct scenario analysis in which the consequences of ratings downgrades for systemically important institutions and different types of rated securities are analyzed. Such an approach will depend on increased transparency in the rated markets. For instance, it will be key to have a clear sense of “rating triggers” and other contractual arrangements, where ratings downgrades can lead to systemically important market portfolio rebalancing or a dry-up of liquidity. Finally, systemic institutions that are vulnerable to abrupt ratings downgrades may have to hold more capital or liquidity buffers.

IX. CONCLUSIONS

The current crisis has revived calls for increased regulation of the financial sector. In particular, there is a broad consensus that policymakers should ensure financial stability through systemic regulation. Proposed regulatory measures are comprehensive and cover a broad range of markets, institutions, and instruments.

In spite of CRAs’ role in increasing systemic risk, the proposed regulations of CRAs are of a micro-prudential nature. Current efforts to regulate CRAs aim at reducing conflicts of interest and increasing transparency and competition. Such objectives are important for regulators but they overlook the broader issuer of systemic financial stability.

Current efforts are also reminiscent of the regulatory debate in the aftermath of abrupt downgrades such as during the Asian crisis in 1998, or large scale credit defaults such as that of Orange County in 1994 and Enron in 2001 in the U.S. and Parmalat in 2003 in the EU.

⁴⁴ See Skreta and Veldkamp (2009).

These previous “rating crises” did not lead to less reliance on self-regulation and resulted in regulation, if any, only very slowly. In the U.S., implementation of the 2006 Rating Act lagged the start of the current crisis and in the EU previous crises did not lead to new regulation. A key policy issues therefore is to assess why the micro-prudential regulation of CRAs has been so slow.

This paper argues for the systemic regulation of CRAs and rated markets as a complement to current micro-prudential regulatory proposals. In spite of the recognition that credit ratings can have systemic effects, there are no formal assessment of the impact of their use on financial markets. Yet, the current crisis shows that the unanticipated and abrupt downgrades of structured products, their underlying securities, or financial institutions can lead to systemic market losses and increased illiquidity. Conflicts of interest and lack of transparency as well as limited competition are important considerations for policymakers. However, it is critical to assess how credit ratings, especially that of new financial instruments, can lead to boom and bust cycle and endanger financial stability. “Rating maps” can be a useful tool to identify such risks and stress tests can help measure them.

Once the systemic risks inherent to credit ratings are assessed, a challenging task for policymakers will be to design the best way to manage them. Increasing capital or building liquidity buffers may be needed for systemic institutions to manage the risks inherent to credit ratings.

Finally, concerns about over-regulation and the costs of reducing financial innovation are, not surprisingly, put on hold at the moment. However, policymakers will have to strike a delicate balance between the benefits and costs of systemic regulation. This challenge is, however, not specific to CRAs and rated markets.

Figure 3. “Ratings Map”: The Systemic Risk of Credit Rating Downgrades (Bust Cycle)

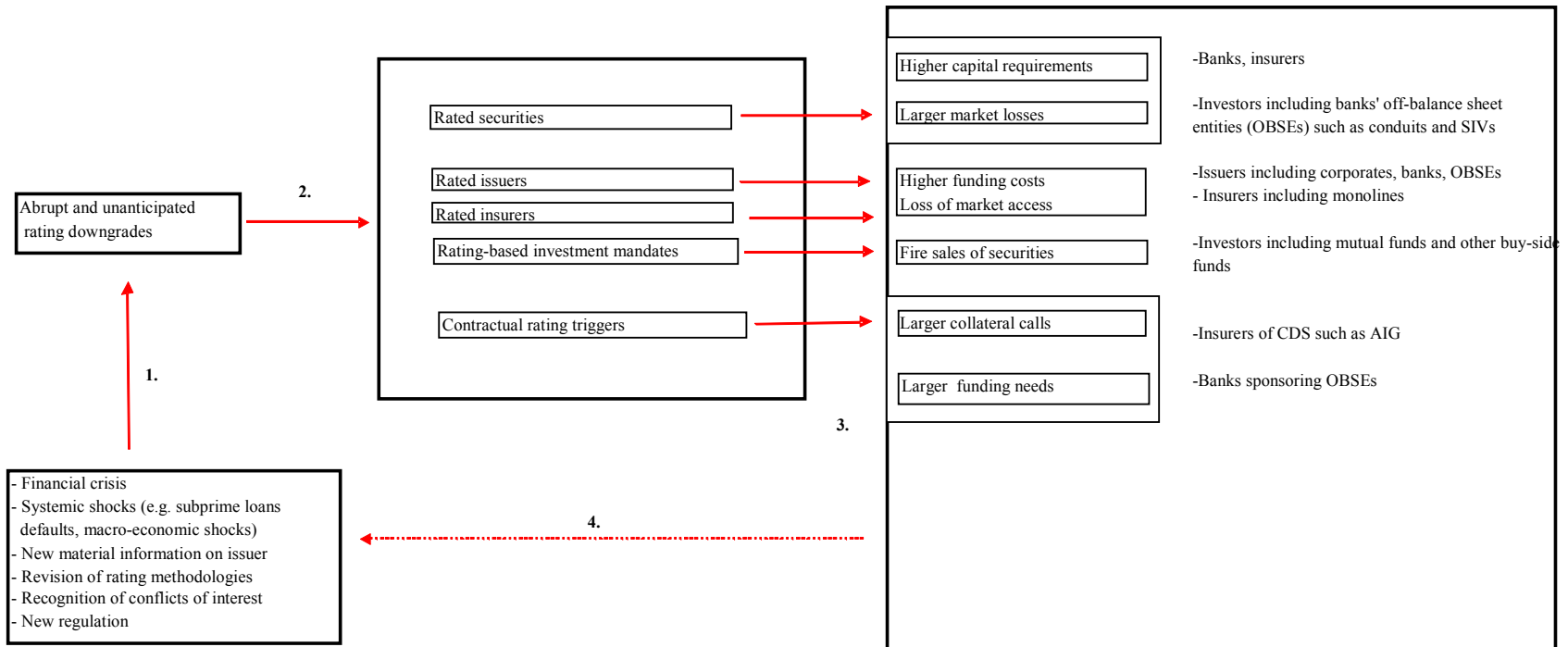
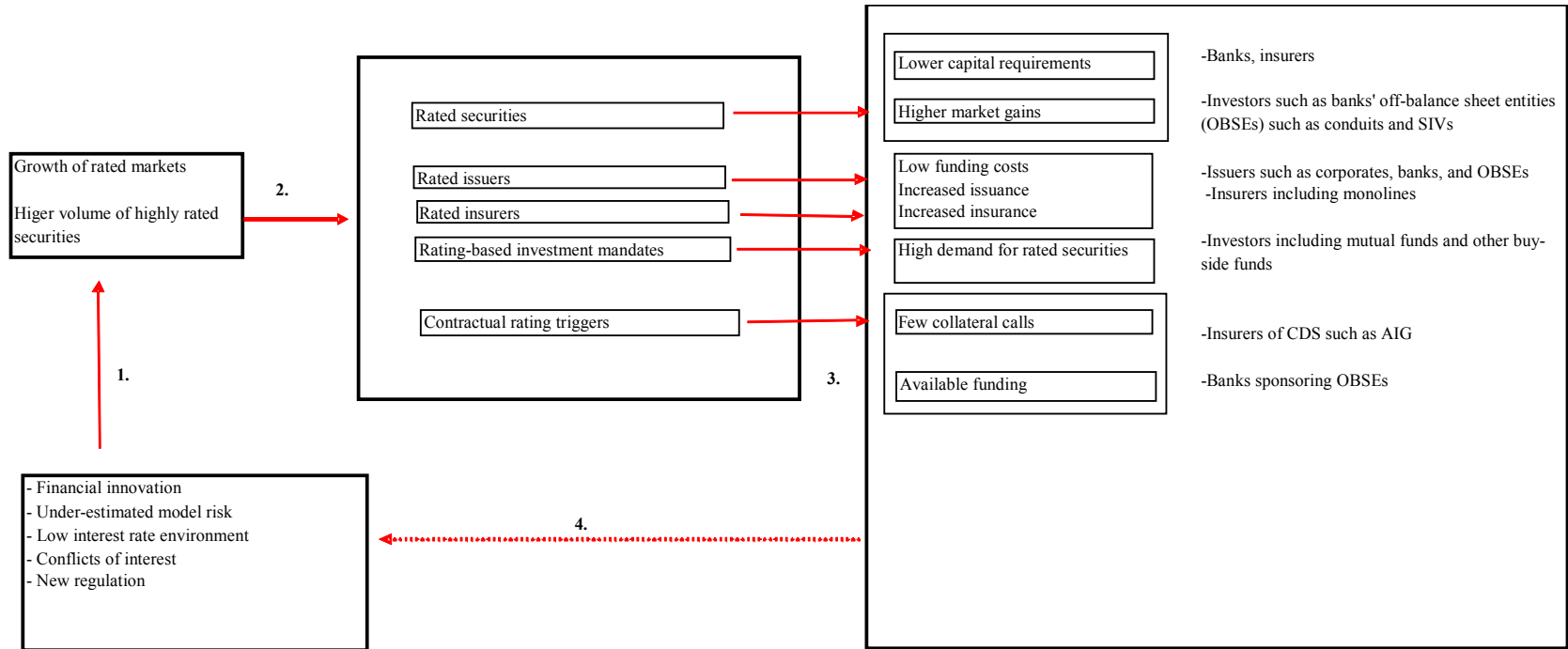


Figure 4. “Ratings Map”: The Systemic Risk of Credit Rating Downgrades (Boom Cycle)



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