The Guiding Principles of Credit Rating

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Credit ratings and the corresponding rating principles provide methods for market participants to understand the credit risks (i.e. debtors' repayment abilities) inherent in our economy. Rating methodologies to address different asset classes are then developed under such rating principles. The Global Financial Crisis, which in part was due to the failure of Western credit rating agency methodologies, has caused severe damage to the international credit rating system and revealed the deficiencies of such methodologies. Therefore, it is important for market participants to re-examine the fundamentals governing the functioning of our credit-based economy and develop new principles and methodologies. It is this background that leads to the emergence of Dagong Global Credit Rating Co. Ltd.'s (Dagong) *Guiding Principles of Credit Rating*, a new chapter in the history of credit ratings.

I. Background to the Emergence of *The Guiding Principles of Credit Rating*

The Guiding Principles of Credit Rating came into being against the background of the unprecedented Global Credit Crisis. This was triggered by inadequacies in Western rating methodologies, as well as their implementation and interpretation by both the major rating agencies and the vast number of market participants.

Since Western rating principles are one of the root causes for the Global Credit Crisis, new rating theories and methodologies are needed to guide credit ratings for the smoother and more efficient development of the global economy going forward. Credit expansion required by the contradiction between production and consumption has directly created pervasive credit relationships, which is the economic base of a modern society, while credit ratings affect the stability of the socio-economic base. In the process, however, the theoretical basis that directs the rating philosophy plays a decisive role. The pervasiveness of credit relationships brings market participants into the development phase of a credit-based economy, which has been characterized by pervasiveness of the actual credit risks. The discovery and revelation of such rules will crystallize as new credit rating theories. Only rating methodologies based on such a theoretical basis can precisely reveal credit risks and ensure the reliability of the credit rating information.

The Global Credit Crisis is the latest and best verification that the historical Western rating philosophy, which has triggered turbulence in the international credit system at numerous times throughout economic history through incorrect use and implementation of credit ratings well outdated, and signals the end of the usefulness of that rating philosophy. Research on Western rating philosophy shows that the dominant Western rating philosophy, being highly ideological and subjective, is short of support of rating theories and fails to represent the essential requirements to reveal the inherent links among important credit risk factors. Actually some isolated and irrelevant indicators are employed to measure these credit risks. The fundamental issue with Western rating philosophy is that it lacks a rating theory that reflects the formation of credit risks. Consequently, its methodologies cannot correctly identify and interpret credit risks, thus the rating information provided by the Western rating system is inevitably flawed, and the credit relationships based on it will ultimately result in further crises. Rating theory – rating methodology – rating information – credit relationships constitute the inherent logic of the development for the economic base in a credit-based economic society. Well-developed credit rating theories, which are consistently implemented are fundamental for the sound economic and social development. After the Global Credit Crisis, a new rating theory and accompanying rating methodologies are eagerly anticipated and expected by most market participants, especially in high growth markets, like Asia Pacific, Latin America and Eastern Europe, as well as newly emerging markets, such as Africa, the Middle East and Western Asia.

Committed to the mission of exploring and better understanding the rules governing the credit-based economy and credit ratings following the Global Credit Crisis, Dagong is championing the development of a new rating theory and philosophy. Moving forward with its leading national brand through Dagong’s international expansion and development strategy, will guide the company to develop itself into a world-wide and highly influential credit rating agency. Dagong has a strong motivation to innovate existing rating theories, to build a competitive edge in rating philosophy and make it widely recognized by the international community. Twenty years of rating practice and research achievements by Dagong has laid a solid foundation for it to design and develop a new rating theory and philosophy for the next chapter in economic development and history to be written. After the Global Credit Crisis, it is the broad approval of Dagong's rating values and methodologies by the international community that has pushed Dagong onto the international credit rating arena. Dagong's international influence provides advantages and vast opportunities for the recognition and application of its new credit rating theory and philosophy.

II. The Thinking Method behind *The Guiding Principles of Credit Rating*

Choosing the appropriate thinking method and perspective to precisely develop the underlying principles governing the formation of credit risks is the premise of developing *The Guiding Principles of Credit Rating* in a scientific manner. Dialectical materialism is the philosophy used in deriving Dagong's new *Guiding Principles of Credit Rating*. The ultimate task of a rating is to discover and analyze the elements, and their interrelationships, which underpin and form credit risks existing in real life and reveal those credit risks. Therefore, we must consider both subjective and objective factors affecting solvency as the object of study, and analyze the particulars of credit risk factors of different debtors and study their universality, which is the material base and source of ideas for developing these new rating principles. Analyzing the interconnectivity of all the credit risk factors is the cognition basis to discover the principal risk factors, as well as their position and role enabling the principles of credit rating to be firmly grounded in reality. It is by applying the thinking method of dialectical materialism that Dagong can get into the very core of the extremely complex global credit risk system and discover the true elements and mechanisms that form credit risks. Dagong has also systematically studied the Western rating ideology, its general context, its way of presentation and its rating thoughts and methodologies, and believes they provide positive reference for understanding the correct way of thinking in Dagong's *Guiding Principles of Credit Rating*.

III. The Theoretical Basis for *The Guiding Principles of Credit Rating*

The theory chosen as guidance determines whether the rating ideology revealing the rule of formation of credit risks which reside in the credit-based economy can be formulated.

The theoretical basis for *The Guiding Principles of Credit Rating* is the theory of a credit rating as a countercyclical element. The pro-cyclical and counter-cyclical nature of credit-based economies discovered by Dagong ensures the position and role of a credit rating in such economic systems and a precise theoretical description of that theory is provided. Guidance of such a scientific theory empowers the rating principles to have a solid foundation. This will assist to clearly depict and allow for the proper analysis of the numerous elements underpinning the array of credit risks, and their complex relationships, in the modern day world.

The global credit revolution established the historical position for credit ratings, which play the role of a countercyclical driver for credit-based economies by revealing the strength of debt repayment capabilities. After World War II, the contradiction between production and consumption promoted a credit revolution around the globe, by changing the then existing credit model which was based on material wealth worldwide exceeding realistic material wealth creation capability. To maintain and expand consumption, credit relationships were integrated into the whole social function process, resulting in a dramatic expansion of commercial loans as well as the issuance of public and private debt borrowings. This then made credit relationships the economic base of the modern economy, which affects socio-economic activities in an overall manner. Meanwhile, the contradiction between production and consumption is then converted into a contradiction between production and credit. These new and expanding credit relationships chose credit ratings as the medium to establish debtor-creditor relationships, thus engendering the contradiction between credit and ratings.

The contradiction between production and credit in essence demands the infinite expansion of credit to satisfy the growth of production, making it a driving force for the pro-cyclicality of credit-based economies. The contradiction between credit and ratings demands control of credit expansion risks, making it a driving force for the counter-cyclicality of credit-based economies. Pervasive credit relationships are established through utilizing ratings as the medium and creditors requiring ratings to answer the following three questions about debtors:

(a) What is the maximum debt burden?

(b) Will the outstanding debt be repaid on schedule?

(c) Is there any room for incremental debt?

By giving definition of the quantitative boundaries of these kinds of debts, credit ratings provide creditors with clear metrics for assessing debt risks, which may objectively play the countercyclical role of preventing debt from excessive expansion. The counter-cyclicality nature of credit ratings determines not only their historical status in the course of social-economic development based on credit relationships, but also the mission of creating *The Guiding Principles of Credit Rating*. The significant theoretical contribution also means Dagong has the wisdom to create a set of credit rating principles independently, filling a void in the over 100 years of rating history and changing the paradigm of how rating agencies operate.

IV. The Ideological System of *The Guiding Principles of Credit Rating*

Guided by the theory of credit ratings as a countercyclical element, Dagong created its own rating ideological system. Dagong's credit rating ideological system is a way of thinking about ratings that reflects the counter-cyclical nature of credit ratings, and is a holistic description of the fundamentals of credit ratings. The ideological system for Dagong's credit ratings provides principles and a direction for the implementation of the theory that credit ratings are a counter-cyclical element, and serve as a powerful ideological instrument to excavate and restore the inherent links among credit risk factors.

The ideological system of *The Guiding Principles of Credit Rating* contains the following nine ideas intending to answer questions about solvency:

1. The Idea that Superstructure Impacts Solvency

The superstructure refers to the state power, which is comprised of the political and economic systems. Regime changes and institutional transitions constitute the institutional environment factors affecting debtors' wealth creation capacity and sources of repayment, which together play a decisive role on solvency. Therefore, the superstructure is the fundamental environmental factor influencing solvency; that is to say, the superstructure, which is comprised of political and economic systems and which is independent of debtors' will, is the first environment risk factor. Assessing the impact of the state institutional environment on solvency shall be regarded as the top-level design for the ideological system of ratings.

2. The Idea that Economic Base Impacts Solvency

The economic base means the credit relationships dominating modern social function, which is the key feature of credit-based economic societies. Credit relationships are a kind of capital combination form, consisting of creditors and debtors; when such a combination form becomes the mainstream capital, its status may directly affect debtors' wealth creation capacity and their sources of repayment. Credit relationships are a basic environmental factor, affecting solvency. Therefore, taking credit relationships as the research subject is an essential requirement of credit ratings.

3. The Idea that Wealth Creation Determines Solvency

Wealth creation is debtors' profitability. Debtors' wealth creation capabilities are the source and cornerstone for debt repayment. It predicts the amount of wealth debtors can create during a debt repayment period by analyzing the key factors affecting profitability, and providing a yardstick for assessing the reliability of sources of repayment.

4. The Idea of the Degree of Deviation between the Sources of Repayment & Wealth Creation Capacity

The degree of deviation is the core rating concept developed by Dagong. Sources of repayment refer to the disposable cash that debtors can use after deducting the liquidity needed for the day to day operation at the point of time of debt repayment. Once the amount of wealth creation capacity as the fundamental source of repayment is confirmed, it is important to clarify the wealth creation nature of the sources of repayment as well as its quantitative relationship with wealth creation capacity. Then, we are able to clearly describe the gap between sources of repayment and wealth creation capacity and exhibit the risk status of the different sources of repayment, in order to provide a scientific base for assigning credit ratings.

5. The Idea of Three Debt Repayment Capabilities

Debt repayment capability refers to the maximum liability of debtors determined by the available sources of repayment within a certain period, which is further divided into maximum debt repayment capability, outstanding debt repayment capability and incremental debt repayment capability. The relationship among the three debt repayment capabilities is the maximum capability minus the outstanding capability equals the incremental capability. Therefore, defining the maximum debt repayment capability (debt ceiling) of the debtors in a scientific manner becomes the key to distinguish among the three debt repayment capabilities. The idea of the three debt repayment capabilities provides the counter-cyclical nature of rating with a clearer foothold.

6. The Idea of Assigning Ratings by a Progressive Matrix Exponent

Transforming the underlying credit risk factors into credit ratings involves converting qualitative factors (e.g. country legal systems) into quantitative symbols, and also quantitative factors (e.g. liquidity ratios) into qualitative benchmarks. Such conversion of various credit risk factors utilizes a matrix.

7. The Idea of Alerting Credit Risks

Alerting credit risks means ratings must continuously display debt risk prediction. The role of the rating is to predict credit risks while a credit rating represents the combination of an elementary prediction with a single rating element and advanced prediction with comprehensive rating elements. To this end, a scientific prediction method and rating verification and adjustment procedures are needed.

8. The Idea of Analogue Simulations of Diversified Credit Risks

Simulations should be regarded as part of the rating information to increase the inclusiveness of the rating and applicability of such information. Displaying the diversified actual credit risks through analogue simulations will make credit ratings more scientific and increase their application value.

9. The Idea of Consistency and Comparability

Consistency and comparability means that credit ratings, as a language system to express credit risk information, must ensure the consistency of the same credit ratings and the comparability of different credit ratings among different debtors. Objectively, capital flows necessitate the barrier-free circulation of rating information around the globe. Only credit information that is functional in terms of consistency and comparability can become the driving force for such flow of capital. Ratings' counter-cyclical function can only be fulfilled through pervasive application of rating information driven by consistency and comparability.

V. *The Guiding Principles of a Credit Rating*

Credit rating principles are a theoretical representation of the methodology that reveals the logical relationships among the factors of debt repayment risks. It is a rating theory that reveals the fundamentals behind the formation of general credit risks. Rating methodologies for various special debtors can be developed based on credit rating principles: therefore, credit rating principles have methodological significance, and *The Guiding Principles of Credit Rating* are the results of application of its rating ideology.

The Guiding Principles of Credit Rating comprises two parts: 1) The analytical logic to determine solvency risk elements; and 2) The analytical results of part one communicated through the rating language. The rating principles consist of the following eight units:

(a) Debt repayment environment

(b) Wealth creation capability

(c) Sources of repayment

(d) Debt repayment capability

(e) Determination of credit ratings

(f) Verification and adjustment of credit ratings

(g) Simulation tests

(h) Credit rating symbols

The logical sequences of steps behind *The Guiding Principles of Credit Rating* are as follows:

(a) Taking debtors' wealth creation capability as the basis and cornerstone of sources of repayment and predicting the profitability by analyzing its subjective and objective influential factors;

(b) Classifying and ranking the sources of repayment and identifying the degree of deviation of risks between each available source of repayment and the wealth creation capability;

(c) Defining the maximum debt repayment capability, outstanding debt repayment capability and incremental debt repayment capability according to the total amount of the available sources of repayment that are structured according to the degree of risk deviation;

(d) Adjusting the composite risks by the degree of risk deviation through applying relevant data and distinguishing the strength of the available sources of repayment, and classifying the strength of the three debt repayment capabilities to determine their credit ratings;

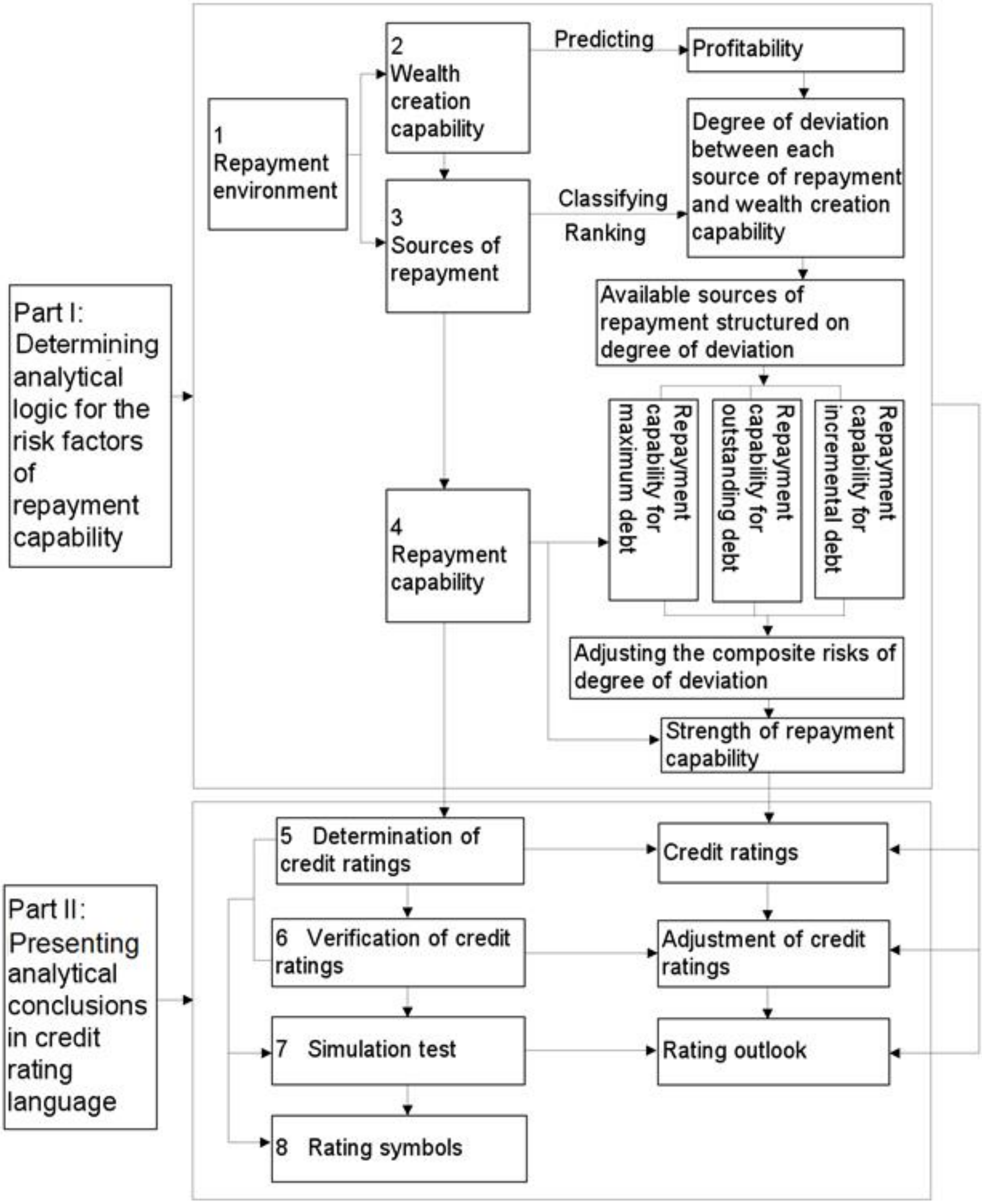
(e) Establishing a database for risk elements changes and comparison to provide evidence for verifying and adjusting credit ratings;

(f) Conducting risk diversification model testing and providing an outlook to the credit risks; and

(g) Selecting and locating element indicators according to multi-dimensional internal links and establishing links among the rating elements through a progressive matrix exponent.

In establishing rating principles to better discover the inherent links among the vast array of credit risk factors, combined with building on a more logical thinking approach toward ratings, this will then translate the abstract ideology into rating methodologies with a strong applied value in analyzing and revealing a broader array of credit risks, as well as the relationships and interconnectivity of those risks.

The Guiding Principles of Credit Rating are shown in the following diagram:

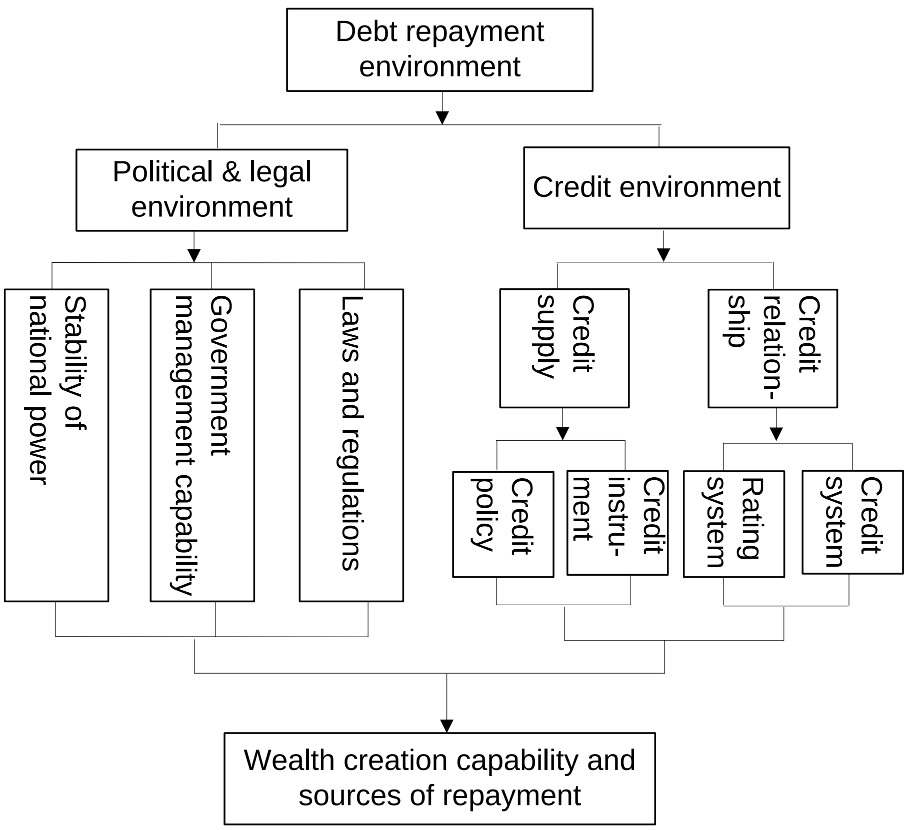


1. Debt repayment environment

Debt repayment environment refers to the macro institutional environment that imposes on debtors and impacts debtors' repayment capability within a nation. This includes, for instance, a nation's political stability, legal system, credit culture, etc. This is the first rating factor to consider as each debtor conducts its economic activities under a nation's institutional environment and is part of a nation's political and economic systems. Therefore, the institutional environment's influence on a debtor's repayment capability cannot be avoided. Such analysis of the influence of a nation's system on a debtor's repayment capability links institutional credit risk factors (macro) to a debtor (micro).

The role of a debt repayment environment in rating is to analyze the impact of a nation's superstructure and economic base on a debtor's wealth creation capability and sources of repayment.

The principles of the debt repayment environment are shown in the following diagram:



Political, legal and credit environments are the key analytical elements for the debt repayment environment.

1.1 The impact of the political and legal environments on debtors

The political and legal environments refer to political and legal conditions affecting debtors' wealth creation capabilities and their sources of repayment. The reason why the political and legal environments are taken as the institutional factors to assess the wealth creation capabilities and sources of repayment is that a nation's political and legal systems determine the macro environment for production, consumption and credit. The political and legal systems also affects the market competitiveness of debtors' products or services as well as the debtors' financing capacity through production factors allocation and market demand, thus affecting the formation and stability of their profitability and sources of repayment. Politics and laws constitute the unchangeable objective environmental factors of the business activities of economic entities. It is the first credit risk element and should also become the top-level design of the rating elements. The political and legal environments affect debtors through the State's power stability, government's management capabilities and the laws and regulations reflecting the role of the superstructure on debt repayment capability.

1.1.1 Impact of a State's power stability on debtors

A State's power stability means whether the power shift of the central government has institutional guarantees. In general, if the power transfers in accordance with political institutions are stable, while the internal and/or external opposition forces aiming at replacing the existing regime are extremely active, then stability of political power will be confronted with realistic challenges. Un-institutional regime shifts are often accompanied by violence and turbulence. Political stability helps the State perform its social-economic management function and facilitates the orderly economic activities, providing a reliable political environment for debtors to create wealth and build sources of repayment. This is clearly a positive factor in developing their debt repayment capabilities. Political instability, however, would force debtors to conduct business in a chaotic social environment, which inevitably increases the volatility of its wealth creation capabilities and sources of repayment.

1.1.2 Impact of a Government's management capability on debtors

A Government's management capability refers to its governance policies and its decision-making capacity on the national economy and debt management. The administrative policies of a government will ultimately form the macroeconomic environment, which may be favorable or unfavorable for the development of debtors' productivity. The impact of foreign policies on debtors is manifested by: a) whether they are conducive to increasing the international sales of a debtor's products or services; and b) whether they are conducive to debtor's obtaining liquidity support from the international market. The impact of domestic policies on debtors are manifested by: a) whether the rationality of the goals of national economic development and the environment of production factors allocation provides for rational consumption growth capacity to meet the needs of the market competiveness of a debtor's products and services as well as sustainable growth of wealth creation capability; and b) whether the rationality and strength of the domestic sources of repayment and indebtedness have the stable financing environment for liquidity needed by debtors in the process of their business operations and debt repayment, which will not worsen the debtor's repayment environment because the social capital flow system is damaged by debt crisis.

1.1.3 Impact of the laws and regulations on debtors

Laws and regulations refer to systems relevant to debtors' wealth creation capabilities and sources of repayment. The State gives expression to its decisions over economic management through laws and regulations, which, in most cases, are the rules that debtors must follow. Institutional boundaries affecting debtors' wealth creation capabilities and sources of repayment can be detected from the perspective of the regulatory rules and a legal structure comparative analysis.

1.2 Impact of the credit environment on debtors

The credit environment means the status of credit supply and credit relationships affecting debtors' capital sources. The reason why the credit environment is an institutional factor to assess wealth creation capabilities and sources of repayment is because the credit supply and credit relationships determined by a nation's credit system are the supporting environments for liquidity on which debtors depend to develop wealth creation capabilities and sources of repayment. The macro credit environment is the most important source for micro debtors to obtain liquidity. The credit system refers to a series of policies and tools designed by the government for macro credit supply. Credit supply and credit relationships are highly interdependent. The credit supply determines the establishment and development of credit relationships, while credit relationships, as a component and presentation of credit supply, determine the scale, quality and trend of credit supply. The increasing pervasion of credit relationships has led to the high degree of reliance of the credit supply on credit relationships. The development characteristics of blindness and vulnerability of credit relationships intensify the uncertainties of macro credit supply, making the credit environment the most direct risk factor for debtors. Quantifying the dialectical relationship between the two will open the first door for ratings to ultimately reveal debtors' true credit risks. The credit environment affects debtors through the credit supply and credit relationships, which reflects the role of economic base on debt repayment capability.

1.3 Impact of the credit supply on debtors

The credit supply means the government's capability of macro credit resource supply in order to satisfy the demand of domestic social-economic development. The forms of credit supply include:

(a) Monetary policies

(b) Fiscal policies

(c) Policies on investment

(d) Financing and guarantees

(e) Financing tools

During the past sixty years, the contradiction between production and consumption drove a world-wide credit revolution that caused the common creditor-debtor relationship to dominate most social functions. Credit expansion has become the major growth pattern for the modern economy, transferring the driving force for economic development from the relationship between production and consumption to that between production and credit. Therefore, it establishes the special role of credit supply in the credit-based economic development. Credit supply has become the master valve for adjusting social consumption capabilities and the main channel of assessing current capital for debtors by first affecting market demand and supply and then debtors' profitability and competitiveness. Credit supply also concerns the sustainability of credit relationships, directly affecting debtors' sources of repayment generated through debt revenue. The effect of internal rules on production and credit makes credit supply growth inevitable. However, the impact of different types of credit supply on debtors has fundamental differences.

The moderate growth of macro credit that is underpinned by true wealth creation capabilities is conducive to enhancing debtors' wealth creation capabilities. This lays the material foundation for stabilizing the social credit system and creating a relaxed credit environment to satisfy the credit demand of debtors. Under such circumstances, insufficient credit supply will certainly curb wealth creation capabilities, worsening credit relationships and making it difficult for debtors to gain access to debt liquidity.

Macro credit expansion that is not underpinned by valid wealth creation capabilities will bring debtors' wealth creation into a pro-cyclical track. An imbalance between production and consumption will finally be adjusted by reducing the total volume of social wealth creation and thus increase the volatility of debtors' wealth creation. Such credit supply will inevitably become a source of virtual wealth growth, increasing the proportion of virtual credit relationships and accumulating risks for the social credit system. While satisfying debtors' credit demand, it also implies credit crisis. Against such a background, contracting credit supply volume will benefit the stability of debtors' wealth creation capability, curb pro-cyclical risks and avoid debt liquidity bubbles.

Continuous amplification of macro credit supply underpinned by virtual wealth creation capability will surely exacerbate pro-cyclical economic risks and aggravate the real wealth creation environment. Debtors' wealth creation might experience radical changes and the social credit system will enter a new round of adjustment, during which de-leveraging brings new challenges for the sustainability of debt revenue. In such instances, adopting policies that strictly control credit supply will reduce credit bubbles, restrain the excessive growth and scale of debt usage, and prevent the continuing impact of pro-cyclical risks on debtors from the macro level, which complies with the long-term interests of debtors.

Credit supply is carried out through credit policies and credit instruments. Credit policies are all the relevant regulations affecting market credit supply, while credit instruments are the means to carry out credit policies and the bridge to connect credit supply and demand. Credit policies and instruments must be combined effectively to achieve a sustainable and continuous supply of credit.

1.4 Impact of credit relationship on debtors

Credit relationships mean the relationships between creditors and debtors, representing a form of capital combination. The sum of credit relationships constitutes the credit system, and it is the cash flow in this system on which the development of an economic society depends. As a link of the social credit system, debtors meet the funding demand through the credit system. Therefore, the status of the credit system determined by credit relationships will affect wealth creation capabilities and sources of repayment through debtors' liquidity. Credit relationships, as a key means of macro credit supply, objectively constitute a risk factor of credit environment for debtors. Since a nation's credit relationship status is determined by its credit regulations, we can find the transmission route from macro credit risks to debtors starting with analysis of the rating system and credit system.

1.4.1 Rating system

The rating system refers to the system and mechanisms that consists of rating agencies, criteria, methodologies and regulations that provide debtors with risk information. When the economic growth begins to depend on credit relationships to develop consumption capability, it is the objective to realize the capital combination between creditors and debtors in the manner of industrialized production. Consequently, ratings are chosen to be the medium to achieve such a combination, thereby establishing the decisive status of ratings for credit relationships and the credit system. Deciding whether the rating system can fulfill its public responsibility is based on the premise of studying the causes of credit system risks. The nature of the rating system is an institutional design where a nation realizes social capital combination and management of social credit system through ratings. Whether debtors' true credit risks can be correctly revealed or not is the only criterion to determine the rationality of the rating regime. The rating system that prohibits competition over credit ratings, by restraining competition over rating fees and encouraging competition over rating technologies and analysis can ensure the reliability of rating information and security of the credit system. Conversely, a rating system oriented on competition over credit ratings is undoubtedly subversive to the security of the credit system.

1.4.2 Credit system

The credit system refers to the sum of pervasive credit relationships between creditors and debtors linked by the rating system and is the social capital flow system generated in the form of debt chains. Based on the ultimate decisive role of wealth creation capabilities on credit relationships, they display the following three forms:

(a) Credit relationships underpinned by actual wealth;

(b) Credit relationships underpinned by future wealth; and

(c) Credit relationships underpinned by no wealth (also termed as virtual credit relationships)

Generally speaking, the three types of credit relationships in the national credit system developed through actual, future and virtual sequences basically reflect the status of the utilization of current and future credit resources of the whole society and the intensity of development of virtual credit relationships. The status of the composition of the three types of credit relationships in the national credit system reflects the influence of credit system on debtors.

The growth capacity of the macro credit supply determines debtors' incremental credit growth capacity. The proportion of the three types of credit relationships in the national credit system determines the growth capacity of the macro credit supply. These three types are:

(a) When the credit relationships underpinned by actual wealth accounts for a small proportion in the credit system, and the proportions of future and virtual credit relationships are also small, there is the largest growth capacity for macro credit supply;

(b) When the credit relationships underpinned by future wealth accounts for a small proportion in the credit system, and the proportion of virtual credit relationships is also small, there is moderately large growth capacity for macro credit supply; and

(c) When the virtual credit relationships accounts for a large proportion in the credit system, there is the least growth capacity for macro credit supply.

Of course, since factors affecting the three types of credit relationships are contradictive, we need to dig into its fundamental effect on the growth of credit capacity in a multi-dimensional manner to get a more rational expectation. The larger the potential growth capacity for macro credit supply, the more accommodating the credit environment where by debtors have access to the liquidity needed for wealth creation and the sources of repayment by means of credit growth, and vice versa.

The driving forces of market supply and demand have decisive significance for debtors' wealth creation capabilities. When the driving force for economic development transforms from the contradiction between production and consumption to that of production and credit, macro credit supply then becomes the most important driving force for market demand and supply. In an environment with comparatively mature credit relationships, we can radically predict the macro market demand environment on which debtors depend on their profits of products or services by analyzing the status of the three types of credit relationships in the national credit system. These three types of credit relationships in the national credit system are:

(a) When the credit relationships underpinned by actual wealth accounts for a small proportion in the credit system, and the proportions of future and virtual credit relationships are also small, there is a powerful driving force for market supply and demand generated by credit supply growth capacity and a favorable macro market demand environment for debtors to create wealth;

(b) The proportion of the credit relationships underpinned by future wealth in the credit system is an important weight for adjusting the driving forces of market supply and demand; and

(c) When the proportion of virtual credit relationships in the credit system reaches the critical point, there is no more capacity for macro credit supply to grow and the driving forces for market demand and supply vanish by and large and debtors' wealth creation will face a crisis. We can determine the robustness of debtors' wealth creation capability as the fundamental source of debt repayment from analysis of the driving force space of market supply and demand.

The capacity of the sources of repayment directly affects a debtor's debt repayment capabilities. In the context of pervasive credit relationships, the cash flow generated by raising debts is still the most common means for debtors to obtain the liquidity needed for repaying their debts. Debt liquidity is a very important source of repayment. The credit system composed of different credit relationships decides, through the stability of credit supply and credit relationships, the debtors' capability to obtain a source of repayment through acquiring debt liquidity. The different proportions of the following three types of credit relationships in the national credit system decide the impact of different growth capacity of macro credit supply on the sources of repayment generated by debt funding:

(a) When the credit relationships underpinned by actual wealth accounts for a small proportion in the credit system, and the proportions of future and virtual credit relationships are also small, there is the largest growth capacity for the source of repayment generated by debt funding;

(b) When the credit relationships underpinned by future wealth accounts for a small proportion in the credit system, and the proportion of virtual credit relationships is also small, there is moderately large growth capacity for the source of repayment from debt revenue; and

(c) When the virtual credit relationships accounts for a large proportion in the credit system, there is the least growth space for debt funding.

Analyzing the status of the credit system helps judge the fundamental reasons affecting the source of repayment capacity more precisely to avoid deviations in the solvency prediction. The impact of credit supply on a credit system determines the strength of debt assets. The status of the following three types of credit relationships in the credit system also affects the stability of the credit system and determines the macro credit supply:

(a) When the credit relationships underpinned by actual wealth accounts for a large proportion the credit system enjoys the best stability;

(b) When the credit relationships underpinned by future wealth accounts for a large proportion, the credit system has uncertain risks; and

(c) When the virtual credit relationships accounts for a large proportion, the credit system is confronted with the maximum risk.

The risk status of the credit system is a debtors' most direct and biggest macro credit risk factor. A destructive debt crisis will not break out in a stable credit system, and thus no external shock to debtors' credit relationships will occur. The strength of its debt assets will provide a liquidity guarantee and constitute a positive factor for wealth creation and sources of repayment. On the other hand, in a credit system with potential risks of a debt crisis that damages the normal operation of the credit system in a partial or overall manner is likely to occur due to the breaking of the debt chain. Credit relationships will then be undermined tremendously and the capital discontinuity caused becomes a negative factor for wealth creation and potential sources of repayment.

When credit relationships become the basic economic relationships between members of a modern society and those relationships also come to be a dominant position in social functions, it is surely the most active element affecting debt repayment capabilities. Ratings incorporating such elements can fulfil the function of revealing a system's and/or entities' true underlying credit risks.

2. Wealth creation capabilities

Wealth creation capabilities are a key ratings driver. Profitability, which is closely related to wealth creation, is the more important source for debt repayment by any debtor, and hence the basis for any creditor's lending decision. Firstly, creditors will not lend to any debtors (and hence form a credit relationship with the debtors) unless the creditors are confident that the debtors can turn the borrowed capital into debtor's higher profitability and cash flow generation. Secondly, if the debtors cannot efficiently utilize the borrowed capital those debtors with poor profitability who cannot generate sufficient cash flow to meet their debt obligations, will have to rely on borrowing new debt to repay the existing debt. Thirdly, wealth creation capabilities are the key criteria for assessing the solvency of any debtor which can better reveal the true underlying credit risks, and are crucial in determining the credit risks in the following debtor's four scenarios:

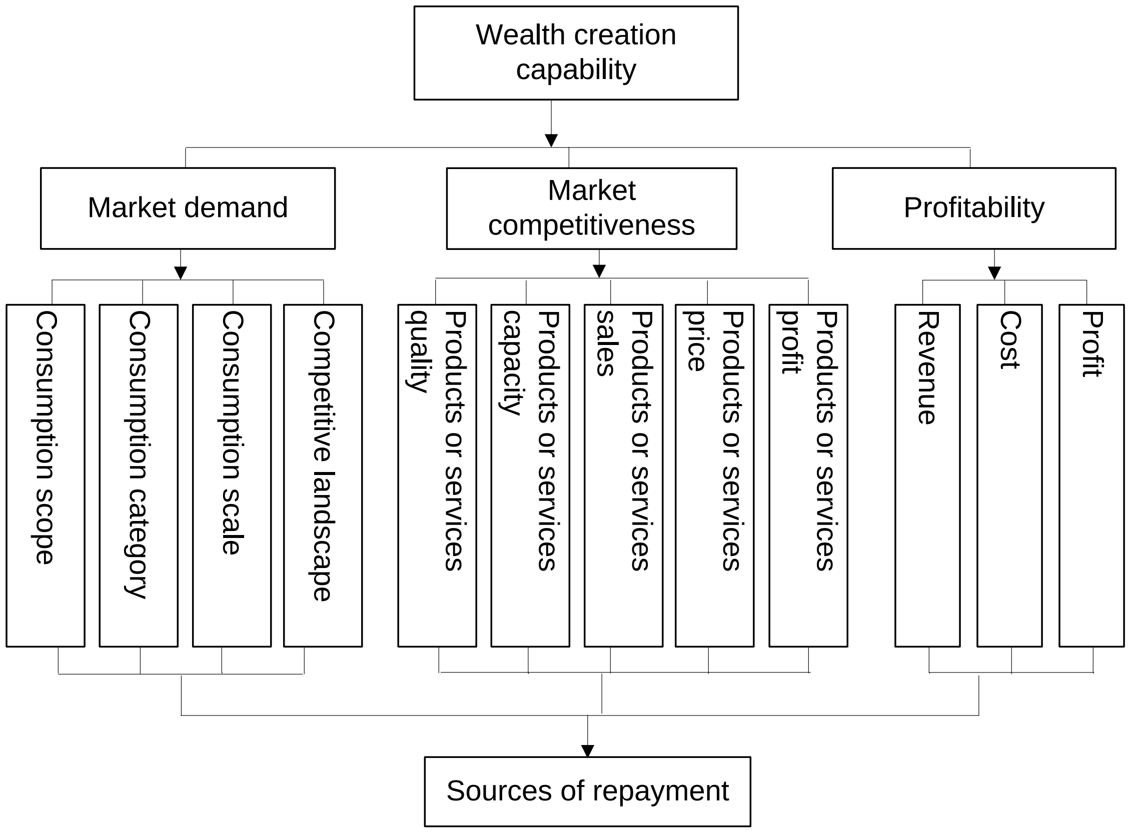
(a) Ability (which could be measured by the debtor's free cash flow or earnings before interest, tax, depreciation and amortization ("EBITDA")) to fully pay debt interest and (assumed) amortized principal;

(b) Ability to partially pay assumed amortized debt interest and principal;

(c) Ability to pay debt interest only; and

(d) Inability to pay even debt interest.

The principles of a debtor's wealth creation capability are shown in the following diagram:



The role of wealth creation capabilities in ratings is to predict a debtor's profitability to facilitate the analysis of its sources of repayment. Market demand, market competitiveness and profitability are the major elements for analyzing a debtor's wealth creation capability.

2.1 The impact of market demand on debtors

Market demand refers to the market consumption demand relating to the products or services provided by debtors. Market demand is important in assessing the wealth creation capabilities because market consumption is the ultimate approach to determine the value and profit of debtors' products or services. The scope, type, scale, mode and prospects of market consumption demand are the fundamental motivators and pathway for debtors to realize their profit goals through their own supply capabilities. Therefore, market consumption demand is the most direct objective factor affecting wealth creation capabilities. Market demand affects debtors through consumption scope, consumption category, and consumption scale and competition pattern.

2.1.1 Impact of consumption scope on debtors

Consumption scope refers to the scope of the market demand for a debtor's products and services. The study of consumption scope should focus its efforts on the impact of different countries' institutional and economic factors influencing consumption, including the political and legal systems, credit relationships, national strategy, economic and consumption structure, and consumption capability on the orientation and macro-environment of consumption demand. Consumption scope determines the geographical expansion space of a debtor's products or services and influences their profit margins.

2.1.2 Impact of consumption category on debtors

Consumption category refers to the industry distribution of market demand for a debtor's products or services. Each industry has its specific influence factors for consumption demand, and the study of these factors will provide clarifying information for assessing debtor's wealth creation capabilities. To study the consumption category, one should focus on consumption habits, consumption tendencies, regulatory systems and policies of relevant industries, as well as their specific influence on consumption capabilities and consumption development trends. The consumption category determines the growth capacity of debtors' products or services in different industries and influences their profit margins.

2.1.3 Impact of consumption scale on debtors

Consumption scale means the quantity of demand for a debtor's products or services in the market place. The analysis of total consumption of debtors' products or services provides the necessary condition for the measurement of profit prospects by predicting the growth capacity of their production facilities. The study of consumption scale should focus on the influence of the income and consumption capacity of the consumer group for relevant products or services on the scale of consumption. Consumption scale determines the theoretical increase in the quantity of debtors' products or services and influences their profit margins.

2.1.4 Impact of competitive landscape on debtors

Competitive landscape means the overall competition in the supply of a debtor's products or services. The analysis of the competitive landscape plays a crucial role in determining the extent to which debtors can enhance profit and cash flow by increasing their market share. The study of competitive landscape should focus on the prediction of quantitative relationship between competitors, quality, price, production capacity of products or services and market demand as well as debtors' market position under various scenarios. Competitive landscape determines the actual increase in the quantity of debtor's products or services and influences their profit margins.

2.2 The impact of market competitiveness on debtors

Market competitiveness means the capability of a debtor's products or services in gaining market share. It is a key element in assessing wealth creation capabilities because market demand only provides debtors with the possibility of realizing the potential for their products or services, while the market position of their supply capability is of vital significance in turning the possibility into reality. Therefore, market competitiveness is a subjective factor that has the most direct influence on wealth creation capabilities. It influences debtors through quality, production capacity, sales, price and profit of their products or services.

2.2.1 Impact of products or services quality on debtors

The quality of products or services refers to the core technical edge of debtors. Not only is it considered the key competitive edge defining their market position, but the decisive factor determining the production capacity, price and profit. To study the market competitiveness of a debtor's products or services one must first take into consideration the competitive position of their key technical know-how among competitors in the industry and the number of consumers in the market consuming these products or services. It influences a debtor's profitability through the price of its products or services.

2.2.2 Impact of products or services capacity on debtors

The capacity of products or services means the market supply capabilities of debtors. With a certain level of quality guaranteed, a debtor's capacity will be a critical factor to establish their market competitive position. To study a debtor's market competitiveness, one must consider the direct elements generating capacity, including: demand/supply fundamentals and the price of upstream products, credit supply, supply and cost of labor force and raw materials, etc. It influences debtor's profitability through the price of their products or services.

2.2.3 Impact of products or services sales on debtors

The sales of products or services refer to a debtor's sales capability for market supply. Sales are the bridge linking production and consumption, as well as the channel through which the quality and capacity of its products or services can be realized, with sales capability forming an inseparable part of market competitiveness. To study a debtor's market competitiveness, one must take into account the following elements influencing their sales capability: sales network distribution; sales mode; sales strategy; and efficiency. It influences a debtor's profitability through the capacity and price of their products or services.

2.2.4 Impact of products or services price on debtors

The price of products or services refers to the sales price of a debtor's production or services. Price is the key factor to realize the value of and ability to generate profit and cash flow for their products or services, as well as the key component of a debtor's market competitiveness. The study of the market competitiveness must take into consideration the following primary elements influencing price formation: cost; profit targets; market price parity; demand and supply fundamentals; and price adjustment potential of their products or services. It influences a debtor's profitability through the capacity of their products or services.

2.2.5 Impact of products or services profit on debtors

Profit of products or services refers to the unit profit of a debtor's products or services. Profit is the representation of wealth creation capabilities of its production or services. Analyzing the profit of a unit product or service is a key element in assessing a debtor's overall wealth creation capabilities. To study the market competitiveness of products or services, one must take into consideration the direct factors affecting profit: price and cost. It has a direct influence on a debtor's overall profits and cash flow generation.

2.3 The impact of profitability on debtors

Profitability is a key element in assessing wealth creation capabilities because profit demonstrates the ability to generate cash flow to pay debt service. Only by integrating the measurements of various products and services profits and identifying the overall profitability of a debtor can one define the role of profit in sources of cash flow generation for repayment, and analyze the risks of all sources of repayment and assess their solvency. As such, profitability directly affects a debtor's repayment capabilities. Revenue, cost and profit are the key factors used to measure the profitability.

2.3.1 Impact of revenue on debtors

Revenue means the debtor's operating revenue from selling its products or services. It is the fundamental source of a debtor's operating profit and cash flow. The rationality in revenue projection directly determines the accuracy of profit projections. To project the revenue of a debtor, one must analyze the elements directly influencing revenue while making comprehensive application of the achievements in the study of such elements, such as the repayment environment and wealth creation capabilities.

2.3.2 Impact of cost on debtors

Cost refers to the relevant expenses arising from production and sales of a debtor's products or services. It is a key factor in deciding the profitability of a debtor, and the accuracy of cost projections relates to the objectivity of the profit projections. For cost projections, attention should be given to the conclusion of the analysis of all relevant elements of the repayment environment and wealth creation capabilities and a thorough examination made on the debtor's cost components.

2.3.3 Impact of profit on debtors

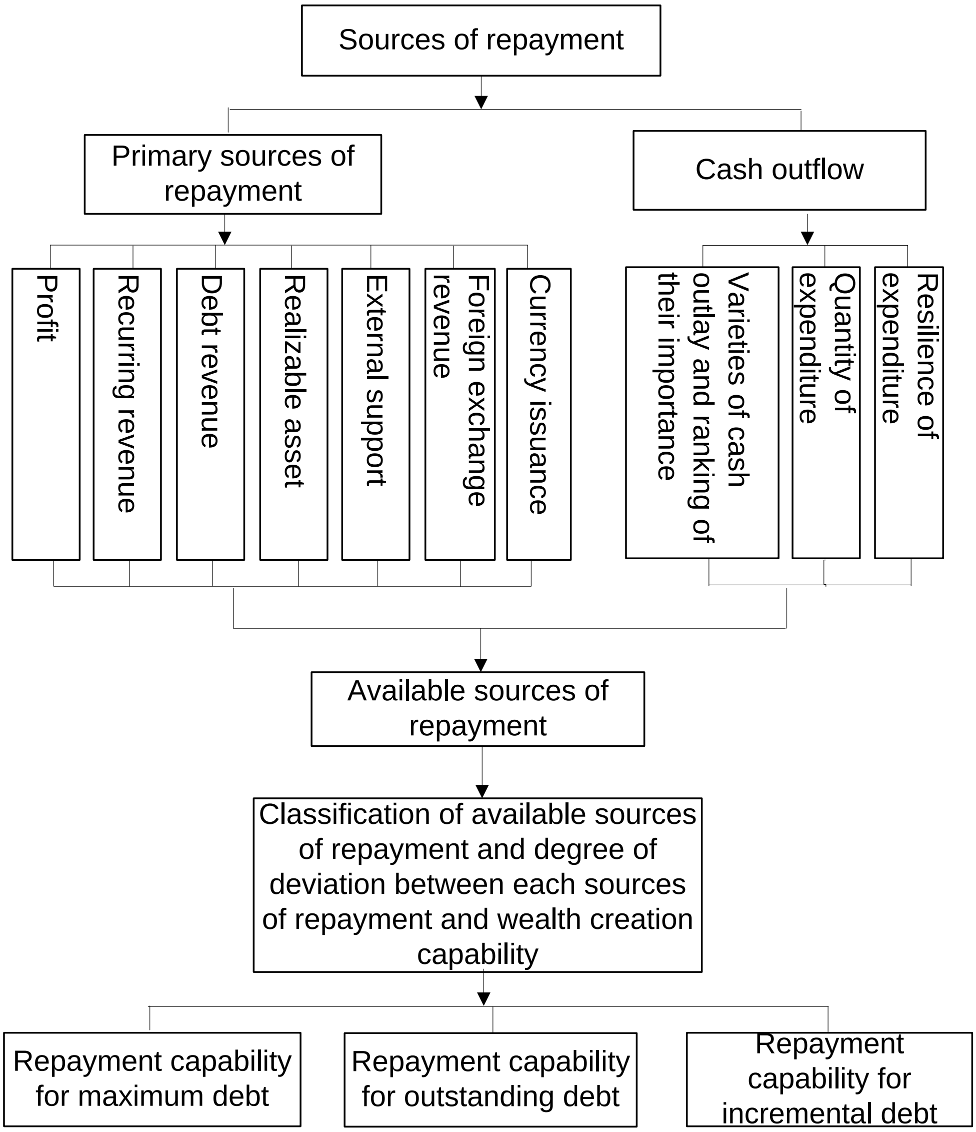
Profit means the overall earnings of debtors. It not only reflects the wealth creation capabilities of debtors, but, is the primary determinant of their solvency. The accuracy of profit projections is fully reliant on whether or not the projection of revenue and cost is reasonable.

3. Repayment Sources

Repayment sources are a key determining rating factor because the status of a debtor's repayment sources determines its overall repayment capabilities. In reality there are diversified repayment sources with different risk levels (e.g., recurring revenue vs sale of unpledged assets), and hence different support for debt repayments. Differentiating the risks between various repayment sources is crucial in order to form a view of how secure a debtor's repayment capabilities can be. Each repayment source can only support a defined amount of debt, and new repayment sources have to be identified once the current repayment sources are fully utilized in order to continue growing its debt position. Such approaches in identifying and utilizing new repayment sources to repay the current debt deviate from a debtor's focus on profitability, which is the fundamental source of debt repayment. When more repayment sources have to be utilized, the reliability of such new repayment sources can be diminished and a gap may be created between the repayment sources and wealth creation capabilities. The degree of deviation governs the gap between each repayment source and wealth creation capability. It reflects the extent to which repayment sources can secure the actual repayment of debts. The degree of deviation between repayment sources and wealth creation capabilities can distinguish the risk level of every individual repayment source, facilitating the assessment of the repayment capability (see the below section) in a scientific manner. The theory of degree of deviation is a remarkable tool in discovering the inherent relationship among a debtor's wealth creation capabilities, repayment sources, and overall repayment capabilities.

The role of repayment sources in ratings is to estimate the total amount of cash that is available for repaying debts, and the degree of deviation between each individual repayment source and a debtor's wealth creation capabilities, thus facilitating the assessment of its repayment capabilities.

The principles of repayment sources are shown in the following diagram:



The key elements in analyzing repayment sources include primary repayment sources, cash outflows and available repayment sources.

3.1 Primary sources of repayment

Primary sources of repayment refer to the theoretical sources of repayment without subtracting the cash outflows (required to maintain a normal operation) at the time of debt repayment. They are elements in assessing repayment capabilities because these sources of repayment directly determine the size of an entity's debt burden, but different sources of repayment vary in the strength of actual debt coverage. Therefore, it is necessary to classify and sort these sources of repayment and estimate their availability and size, preparing for the calculation of available sources of repayment. Primary sources of repayment includes seven categories: profit; recurring revenue; debt revenue; realizable assets; external support; foreign exchange revenue; and issuance of currency.

3.1.1 Impact of profit on debtors

The cash flow from profit is the first source of repayment, as a debtor can arrange it as repayment cash fully on their own. The higher the percentage in the composition of sources of repayment, the more secure its repayment capability. Profit is also the benchmark against which the reliability of other sources of repayment can be measured. It influences debtors through profit rate, sustainability, and percentage in source of repayment structure.

3.1.2 Impact of recurring revenue on debtors

Recurring revenue refers to regular cash flow from debtor's main businesses and their disposable subsidiaries. The cash flow from recurring revenue is the second source of repayment, as debtors can to some extent independently arrange it as repayment cash. The higher the percentage of sources in the repayment structure, the more secure the repayment capability. It influences debtors through revenue size, stability, and percentage in total sources of cash in the entity's repayment structure.

3.1.3 Impact of debt revenue on debtors

Debt revenue refers to the cash flow generated by raising debts. Debt revenue is the third source of repayment, as debtors have little control over the repayment cash arising from debt rollover due to macro-environment and subjective factors. The higher the percentage in total sources of cash in an entity's repayment structure, the less secure is the repayment capability. It influences debtors through debt revenue size, maturity structure, stability, and percentage in source of repayment structure.

3.1.4 Impact of realizable assets on debtors

Realizable assets refer to all assets not used by debtors as a pledge or guarantee and can be readily converted to cash at any time. Realizable assets are the fourth source of repayment, as in general debtors can make equal pledges with realizable asset(s), but cannot dispose of them independently. The remaining realizable assets can only be used for raising debt or liquidation when other sources of repayment cannot repay debts. The higher its percentage in total sources of cash in an entity's repayment structure, the more security it can provide to repayment capability. It influences debtors through realizable asset size, value, liquidity, and percentage in source of repayment structure.

3.1.5 Impact of external support on debtors

External support refers to the commitment that non-debtor subjects make to debt repayment. The cash flow from external support is the fifth source of repayment, as a debtor does not need to resort to external support unless they have no other source of repayment and can by no means repay debts on their own. External support is another form of indebtedness. The higher the percentage of in source of repayment structure, the less repayment capability a debtor has on their own. It will drastically reduce a debtor's ability to secure their repayment capability. External support influences debtors through the scale and reliability of external cash flow, a debtor's external commitment, and percentage in the sources of an entity's repayment structure.

3.1.6 Impact of foreign exchange revenue on debtors (for sovereigns)

In general, the above five categories constitute the fundamental sources for repaying international debts. However, for a non-international-reserve currency issuer, a debtor's foreign exchange revenue is another determinant in repaying its foreign debts. According to the degree of autonomous disposal that debtors have on the source of repayment in foreign exchange (forex), the three sources of forex revenue are ranked as follows:

(a) Earned forex;

(b) Purchased forex; and

(c) Borrowed forex

Their percentages in the composition of sources of repayment in forex are proportional to the strength of repayment capability. It influences a debtor through the size of earned forex, capability of purchasing and borrowing forex, foreign exchange control, and percentage in source of repayment in forex.

3.1.7 Impact of currency issuance on debtors (for sovereigns)

Currency issuance refers to repayment cash generated through the issuance of currency. The right to issue currency is controlled by central governments, which will have to issue more banknotes if it fails to repay debts or needs to perform its duty to rescue a crisis. As currency issuance is the last resort when all normal sources of repayment are exhausted, its protection or influence on repayment capability is deemed to be the weakest. It influences debtors through the amount of currency issued and the currency's value.

The categorization and ranking of the above sources of repayment basically reflect the different degrees of strength of repayment capability. It is also the theoretical representation of the logic relationship between the repayment factors in real life. The study of the primary sources of repayment shall focus on: categorization and ranking, and the quantity and stability of the various primary sources of repayment at the point of time of debt repayment. In addition, it is still necessary to calculate the term structure of primary sources of repayment by maximum debt, outstanding debt and incremental debt, respectively, when analyzing overall repayment capabilities.

3.2 Cash outflows

Cash outflows refer to the flows of cash that must be paid to maintain normal operations at the time of debt repayment. It is a critical element in assessing repayment capability because it is necessary to measure the composition and amount of cash that must be paid at the time of debt repayment, in order to calculate the available sources of repayment. To study cash outflows, one must pay special attention to the categories and ranking of cash spending and the amount of expenditures and expenditure resilience at the time of debt repayment. Generally speaking, the higher an entity's expenditure resilience, or the lower amount of expenditures, the stronger protection it can provide to available sources of repayment. In addition, it is still necessary to calculate the term structure of cash outflow by maximum debt, outstanding debt and incremental debt, respectively, when analyzing repayment capability.

3.3 Available sources of repayment

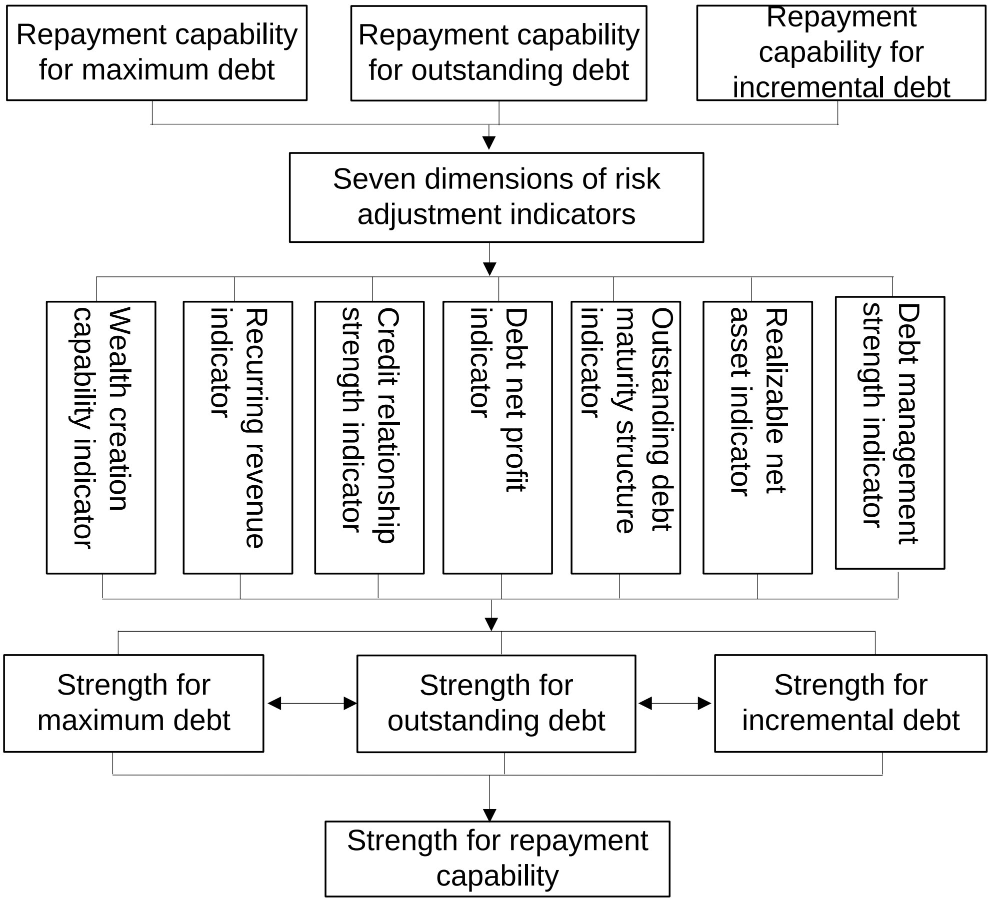
Available sources of repayment refer to the cash that is available to pay debts directly at the time of debt repayment. It is an element in assessing repayment capability because the assessment of repayment capability involves calculating the total amount of cash that is available to pay due debts. It also involves ranking the gaps of all sources of repayment from the wealth creation capabilities and calculating their degree of deviation, in order to prepare an analysis of repayment capabilities. The study of available sources of repayment shall be focused on: a) the structure and quantity between primary sources of repayment and cash outflows; b) the categories of available sources of repayment, and the gap of each source of repayment from the wealth creation capabilities; and c) it is necessary to calculate the term structure of, and apply risk weights to identify the degree of deviation of available sources of repayment by maximum debt, outstanding debt and incremental debt respectively when analyzing repayment capability.

4. Repayment capability

Repayment capability is a key rating factor because creditors will base their lending decisions on a debtor's repayment capabilities, which lays the foundation for the credit relationship between creditors and debtors. Creditors are most concerned about a debtor's repayment capabilities for: a) the maximum debt that the debtor can borrow (maximum debt); b) the debtor's current outstanding debt (outstanding debt); and c) the difference between a and b, or incremental debt, that a debtor can borrow. Answers to these debtor's repayment capabilities will determine whether any credit relationship can be established and also whether such relationship is stable. Repayment capability, through the risk adjustment of the degree of deviation of the available repayment sources, aims to define the degree of protection that available repayment sources can provide to servicing and/or extinguishing a particular debt, in a given period of time.

The role of repayment capability in ratings is to risk adjust the degree of deviation of the available repayment sources of maximum debt, outstanding debt and incremental debt, facilitating the assignment of credit ratings.

The principles of repayment capability are shown in the following diagram:



The main elements in analyzing repayment capability include repayment capabilities of maximum debt, outstanding debt and incremental debt, respectively.

4.1 Repayment capability for maximum debt Repayment capability of the maximum debt refers to the repayment strength of a debtor's maximum debt in a given period of time. It is an element in determining the credit grade because rating grades, as a credit language, require consistency and comparability. Different risks of the same repayment capability, however, cannot be revealed while comparisons are made between different repayment capabilities until after a conclusion is drawn about the debt repayment capability. Therefore, it is necessary to have an evaluation criterion that can not only measure different repayment capabilities, but also differentiate the same repayment capabilities. As such, after the available sources of repayment for the maximum debt are discriminated against the degree of deviation, it is essential to make risk adjustments to the degree of deviation of available sources of repayment for maximum debt from seven facets. These will determine the repayment strength of maximum debt underpinned by total repayment capability.

These seven facets are as follows:

4.1.1 Differentiation of the strength of profit is made by using a wealth creation capability indicator. As the sustainability of profit determines the strength of profit of a given scale, it is required to define its strength with a wealth creation capability indicator, an indicator that is proportional to debt repayment strength.

4.1.2 Differentiation of the strength of recurring revenue is made by using a recurring revenue indicator. The size of recurring revenue alone is not sufficient to determine the impact of the revenue's stability on its strength. Therefore, it is necessary to introduce data that can differentiate the strength of recurring revenue. The recurring revenue indicator is proportional to debt repayment strength.

4.1.3 Primary classification of debt revenue strength is made by using a credit relationship strength indicator. The strength of the credit relationship determines the status of debt revenue, while the stability of debt revenue determines the strength of taking it as a source of repayment. Therefore, it is essential to assess the strength of debt revenue after defining its gap from the wealth creation capability. In general, two elements influence the strength of the credit relationship:

(a) The macro-credit supply and the quality of credit system; and

(b) The continuity of a debtor's wealth creation capability and debt revenue.

A credit relationship strength indicator provides a perspective to analyze the impact of debt revenue strength on the degree of deviation. A credit relationship strength indicator is proportional to debt repayment strength.

4.1.4 Secondary classification of debt revenue strength is made by using the debt net profit indicator. Debt net profit refers to the difference between debt profit and debt interest. The purpose of raising debt is to make profit, and debt yield is another interpretation of the debt revenue strength. Therefore, after the primary classification of the debt revenue strength using the credit relationship strength indicator, it is still necessary to have a secondary classification by using the debt net profit indicator. The influence of the debt net profit on debt revenue strength is reflected in three scenarios:

(a) If the debt net profit is positive, it means that the wealth creation capability is strong and the debt revenue quality is favorable;

(b) If the debt net profit is zero, it means that the wealth creation capability is moderate and the debt revenue is near the critical point of crisis; and

(c) If the debt net profit is negative, it means that the wealth creation capability is poor and a debt revenue crisis may have already occurred.

The debt net profit indicator provides another perspective to analyze the impact of debt revenue strength on the degree of deviation. The debt net profit indicator is proportional to debt strength.

4.1.5 Final classification of the debt revenue strength is made by using the outstanding debt maturity structure indicator. As the de facto component of debt revenue, outstanding debt has a more practical impact. As a result, it is important to define the degree of impact the outstanding debt has on debt revenue. The main elements influencing the outstanding debt maturity structure indicator include: debt type; debt maturity; and repayment concentration. The outstanding debt maturity structure indicator is proportional to debt repayment strength.

4.1.6 Differentiation of the strength of realizable assets is made by using the realizable net asset indicator. Objectively speaking, the elements influencing the quality of realizable assets include: asset ownership and liquidation rights; asset value; asset liquidation speed; and asset liquidation rate. Therefore, it cannot explain, from the debt repayment perspective, the quality of realizable assets to apply only the gap between realizable assets and wealth creation capability. It is still necessary to apply a method to define the strength of realizable assets.

4.1.7 Risk adjustment of the degree of deviation of total available sources of repayment is made by using a debt management strength indicator to differentiate the debt repayment strength levels. This indicator shows whether debtors can efficiently manage their credit resources and debt risks. Debt management influences the repayment strength of maximum debt through the management of each of the above deviation elements. Therefore, after risk adjustments are applied to the six deviation elements, it is still necessary to use the debt management strength indicator to have an overall risk adjustment of the degree of deviation to allow the degree of deviation to fully reflect the fundamentals of objective movement of credit risks. The debt management strength indicator is proportional to debt repayment strength.

The degree of deviation of available sources of repayment after the above risk adjustments can be used in two aspects:

(a) To differentiate the repayment strength of total affordable debt, laying a foundation for determining credit rating; and

(b) To make the same credit rating assigned to different debtors consistent and make different credit ratings assigned to different debtors comparable.

4.2 Repayment capability of outstanding debt

Repayment capability of outstanding debt refers to the repayment strength of a debtors' outstanding debt in a given period of time. It is an element in determining the credit rating because outstanding debt is part of maximum debt and its repayment strength affects the reliability of the assessment of the repayment strength of maximum debt. Apart from the efforts to differentiate the degree of deviation of available sources of repayment of outstanding debt, there is still a need to apply a risk adjustment to the degree of deviation of available sources of repayment of outstanding debt. This is done the same way the repayment capability of maximum debt is adjusted, so as to have the final analytical conclusion of the outstanding debt repayment strength.

4.3 Repayment capability of incremental debt

Repayment capability of incremental debt refers to the repayment strength of a debtor's incremental debt in a given period of time. It is an element in determining the credit rating because incremental debt is part of the maximum debt and its repayment strength is important in identifying the repayment strength of an entity's maximum debt. After the degree of deviation of the source of repayment of incremental debt is identified, a risk adjustment is applied to the degree of deviation of a debtor's available source of repayment of its incremental debt in the same way repayment capability of maximum debt is adjusted. This is in order to have the final analytical conclusion of the incremental debt repayment strength.

The relationship among the three repayment capabilities is as follows:

(a) The maximum debt repayment capability sets the cap for the repayment strength of the outstanding debt and the incremental debt;

(b) The outstanding debt repayment capability plays a decisive role for the repayment strength of the maximum debt and the incremental debt; and

(c) The incremental debt repayment capability serves as a weight in adjusting the repayment strength of the maximum debt and the outstanding debt.

5. Determination of credit ratings

Credit ratings involve transforming a debtor's three repayment capabilities into a comprehensive repayment ability, which is then represented by a credit rating symbol.

5.1. Logic behind the formation of credit ratings

Credit ratings reflect the inherent relationships between the underlying factors of the credit risks, and the results of assessing these factors. It is also the reflection of a rating philosophy. Only by precisely selecting and positioning the risk factors, linking the factors through a logical analytical process and making a credit rating a natural result of the link, can it be kept scientific and reasonable with strong explanatory power.

There are hundreds of factors forming credit risks of debtors. The task of a rating is to express the result of the analysis of the complicated underlying factors into a simple credit language, and enable credit information to circulate across the society by following the logic behind its inherent relationship. Finally then, electing the key credit risk indicators and analyzing the influence of one risk factor on another in an accurate manner.

The logic behind the formation of credit ratings is: that debt size is determined by available sources of repayment; and the strength of debt repayment capability is dependent on the strength of available sources of repayment. Therefore, the risk of each element is gauged in conjunction with the available source of repayment to differentiate the strength of repayment capability. The key aspect of a credit rating is to identify the strength of the available sources of repayment. Wealth creation capability is the cornerstone of all sources of repayment. Ranking based on the degree of uncertainty of the elements of available sources of repayment results in the degree of the deviation of each source of repayment from its wealth creation capability. The composite risk adjustment of the degree of deviation can lead to the degree of strength of available sources of repayment. The various strength degrees represent the strength levels of repayment capabilities determined by the risk levels of available sources of repayment. To this end, it is required to assess the repayment environment and wealth creation capabilities, thus providing technical support to the study of sources of repayment.

5.2 Methodological principles of determination of credit ratings

Transforming the underlying credit risk factors into credit ratings involves converting qualitative factors (e.g., country legal systems etc.) into quantitative symbols, and also quantitative factors (e.g., liquidity ratios etc.) into qualitative benchmarks. Such conversion of various credit risk factors utilizes a matrix.

The debt repayment environment index, wealth creation capability index and the degree of deviation of available repayment sources constitute the primary quantitative analytical framework for credit ratings. The wealth creation capability index, recurring revenue index, credit relationship strength index, debt net profit index, realizable net asset index, outstanding debt maturity structure index and debt management strength index are all used to differentiate the strength of all elements of the degree of deviation of available sources of repayment. This, then generates the respective degree of deviation of strength for the maximum debt, outstanding debt, and incremental debt. Finally, a comprehensive degree of deviation of the strength of available sources of repayment is calculated by assigning risk weights to the degree of deviation of the strength of the three sources of repayment, and the symbols corresponding to the mapping for the degree of deviation represent the credit ratings.

5.3 Connotation of credit ratings

Credit ratings are a credit language, and they are endowed with different connotations by different rating philosophies. The connotation of credit ratings infused by *The Guiding Principles of Credit Rating* is: the degree of deviation of available sources of repayment based on wealth creation capabilities and the strength of repayment capability determined by the deviation. The degree of deviation is reversely proportional to debt repayment strength. Dagong’s credit ratings are the crystallization of its rating philosophy, reflecting the fundamentals for the formation of credit risks. They are the ultimate result of logical reasoning about the credit risk factors with consistency and comparability.

6. Verification of credit ratings

Verification of credit ratings means alerting potential credit risks through a continuous review of the credit risk factors impacting the assigned credit ratings. Credit ratings assigned should be forward looking. The ultimate purpose of alerting credit risks through credit ratings can only be achieved by continuously tracking and reviewing the credit risk factors when the rating is outstanding, verifying those factors against the assigned ratings, and taking rating action on a timely basis.

7. Simulation tests

Simulation tests means testing the credit risk factors under multiple scenarios and predicting the change in the trend of a debtor's repayment capability, which serves as an early-warning of credit rating risks. In reality, the debtor's underlying credit risk factors can have different correlation to each other, and it's difficult to predict how all these underlying factors with different correlations will impact the credit ratings. Hence, it is crucial to run stimulation tests under different scenarios to test how the debtor's repayment strength, and hence the credit rating, may be impacted.

8. Rating symbols

Credit rating symbols for the debtor's short-term solvency are English alphabetic letters in the upper case. They are divided into three grades: A, B, and C, each of which has three sub-grades, (i.e., AAA, AA, A; BBB, BB, B; CCC, CC, C). All the grades, except AAA and CCC (inclusive) and below, can be appended with a plus sign "+" or a minus sign "-", and each grade denotes the strength of the debtor's repayment capability. This is determined by the degree of deviation between the debtor's available sources of repayment and its wealth creation capability in the short term.

Prediction for the debtor's long-term solvency is indicated by the rating outlook, including "Positive", "Stable" and "Negative". Each of the three outlooks indicate the tendency of strength of the debtor's repayment capability, which is determined by the degree of deviation between the debtor's available sources of repayment and its wealth creation capabilities over the long term.

VI. Historical Status of *The Guiding Principles of Credit Rating*

The Global Credit Crisis has become the turning point in the world history of credit ratings. It marked the major inadequacies of the Western credit rating philosophies, and expedited the development of *The Guiding Principles of Credit Rating*. Since then, a brand-new rating theory has emerged and then ushered in a new chapter of history of credit ratings. Comparing it with the Western credit rating philosophies, we can easily recognize the historical status of *The Guiding Principles of Credit Rating*.

1. Probability of default ("PoD") is the core concept of Western credit rating philosophies

Major America-based credit rating agencies are the founders of the Western credit rating philosophies, which has built its dominant presence around the world over the past hundred years. It is the credit rating reflecting such a rating philosophies that they have constructed the main framework of their international credit system and controlled the global capital flows. Continuing and in-depth research of the Western credit rating philosophies has revealed that PoD is at its core. The principle behind this rating ideology is: a statistical classification of historical rating default samples is conducted and they are mapped onto each credit rating, with each of the rating grades representing a level of PoD. When the sample of rating default is controlled below the speculative rating grade it proves that the rating is able to differentiate the risks of debt issuers and their specific debts. The major issues of the PoD-based rating philosophy are as follows:

1.1 PoD is only a way to verify credit ratings.

Debt default is a fact, and it is the result of application of credit rating information, so the relationship between credit rating and default is causality. Generally speaking, the established defaults of debtors can be used to verify the correctness of ratings. The Global Credit Crisis of 2008 can be deemed as an unprecedented debt default, which testifies that the inadequacy of Western credit ratings and that they have inflicted very serious consequences on the global financial system.

1.2 PoD is not a rating methodology.

History has nothing to do with the potential default in the future, it is simply impossible to reach a correct conclusion speculating the possibility of future default only through analyzing historical data. It has no inherent relationship with underlying factors of credit risks, therefore, it cannot reflect the logic of credit rating analysis that is in line with the rules of intrinsic movement of credit risks, nor can it reveal these credit risks. By no means can it undertake the responsibility of forming credit ratings.

1.3 PoD is not based on any rating theory.

No theoretical system that supports the PoD rating idea is available in the literature of Western credit rating agencies, which suggests unconvincing value boast of PoD as well as the chaos of the Western credit rating philosophy.

1.4 There is not an inherent logic channel for the application of PoD in credit rating methodologies.

Looking at the overall perspective of the Western credit rating methodologies, one can find that the application of the PoD idea is arbitrary and confused, without any holistic methodological system, which leads to this idea being disconnected from the rating practice, making it short of practical applications.

This PoD fundamental concept of credit ratings has dominated our practice in a credit-based economy. PoD proves an absence of rating theory in the world, while triggering a world-wide credit disaster. Therefore it is a very urgent requirement of the time to fill in the historical blank.

2. Degree of deviation is the core concept in Dagong's credit rating philosophy.

The principle of this rating idea is: the wealth creation capability of debtors is the wellspring of debt repayment, but this is not the entirety of sources of repayment; and the debtor is motivated to resort to a new source of repayment when the current source of repayment is exhausted. Thus, the series of sources of repayment run increasingly away from the wealth creation capabilities, with each source of repayment representing a different level of risk. By revealing the degree of the deviation between the sources of repayment and the wealth creation capabilities, and then applying risk adjustment one can differentiate the strength of repayment capabilities which are determined by the sources of repayment. The idea of rating the degree of deviation is characterized in the following:

(a) Degree of deviation sets forth the objective of credit rating to be evaluating the strength of repayment capabilities, and the rating information that reflects this content is able to meet investors' demand for credit ratings;

(b) Degree of deviation takes wealth creation capability, sources of repayment and repayment capability as the soul elements of credit rating, which establishes the inherent logic for credit rating;

(c) Degree of deviation is the focus of the rating theory, and solid theoretical foundation enhances the authority of the rating methodology with degree of deviation as the core idea; and

(d) Degree of deviation finds the inherent link between credit rating and the underlying credit risk factors, and reflects the rating logic among the reality, theory, methodology, and practice, displaying a very strong practical value.

The degree of deviation and probability of default are different rating concepts altogether, and they represent different values and methodologies applied to interpret the real credit world. PoD is to infer future credit risks by applying historical default data, while degree of deviation is to predict future credit risks in accordance with the inherent development logic of underlying credit risk factors. The vast difference between the two ideas in both theory and practice results in opposite impacts of their rating results on our economic society.

3. The historical position of *The Guiding Principles of Credit Rating*

The Guiding Principles of Credit Rating establishes its position in world history of credit rating through revealing the new rules related to forming credit ratings.

3.1. Pinpointing the position of rating for the first time

Production vs. credit and credit vs. rating are two pairs of contradictions that promote the development of a credit-based economy. The first pair of contradiction is a pro-cyclical impetus for the credit-based economy, while the second pair is a counter-cyclical one. This significant discovery about the rules governing the development of a credit-based economy lays the theoretical foundation for the independent innovation of the principles of credit ratings. Committed to answering the three questions about debtors' repayment capabilities and evaluating the strength of repayment capability in an effort to perform the counter-cyclical function of a rating, *The Guiding Principles of Credit Rating* affirms the role of rating in preventing future credit crises. Further, it unravels in theory for the first time of the position of credit ratings in the social evolution of a credit-based economy.

3.2. Explaining fully the credit rating philosophy for the first time

Aiming to assess repayment capability, *The Guiding Principles of Credit Rating* draws a rating roadmap from elements influencing repayment capability to results of disclosing credit risks and develops a full and clear system of rating philosophy, which, for the first time, presents the intrinsic rules of a credit rating in a systematic manner.

3.3. Formulating the degree-of-deviation-based rating idea for the first time

The Guiding Principles of Credit Rating persists in taking wealth creation capabilities as the fundamental source of debt repayment, believing that any source of repayment that deviates from wealth creation capabilities contains uncertainty. The further the deviation, the greater the risk. Such an inventive rating philosophy provides the means to prevent the misuse of credit by debtors, while their sources of repayment substantially deviate from the wealth creation capabilities, playing the countercyclical role of credit rating, and assuring for the first time the right direction for the development of credit rating.

4. The significance of *The Guiding Principles of Credit Rating*.

The Guiding Principles of Credit Rating explores the rules governing the development of a credit-based economy and ratings. Its publication will be significant in the following three aspects:

4.1 Filling in the blank in the world's ratings theory, taking on epoch-making significance

The Guiding Principles of Credit Rating gives a panorama view of the theory on credit rating methodology for the very first time. It provides useful guidance on changing the long-running fettering of the rating practices of the Western credit rating philosophies. Thus, reverting the rating sector onto the right track of development for the future.

4.2. Consolidating the role of rating as a countercyclical driver for the credit-based economy, taking on practical significance.

The prevalent application of *The Guiding Principles of Credit Rating* will surely result in a worldwide change in rating criteria, which will definitely build the capacity of credit ratings in truly disclosing underlying credit risks, transfusing positive energy for the development of credit-based economies with the rating capabilities.

4.3. Changing people's awareness and understanding of credit ratings, which is conducive to wide application of correct rating concepts, taking on social significance.

The Guiding Principles of Credit Rating provides an approach to develop people's own opinions about credit risks from the perspective of a credit rating, so that they can easily identify and prevent these credit risks. The change of credit rating philosophy incurred by the Principles will eventually produce the social effect of engaging more people to the ratings practice.

The Guiding Principles of Credit Rating links between a theoretical foundation and the practical application. It originates from our observations in the real world: its theoretical framework and logical system are the cognitive result of perennial and close observation and study of the experiences and lessons of the credit-based economic activities and credit rating practices. It is a theoretical representation of the process of motion of credit risks from the perspective of credit rating. It goes beyond reality: the Principles select among myriad disorderly risk factors, those that are most dynamic, most typical, and that can truly reflect the true nature of credit risks as analytical elements. It describes how these elements are connected and interacted, and condenses them into a complete system of ratings philosophy. The ratings philosophy guides the formation of the analytical framework of the Principles as well the orientation of the analytical process. The precise positioning of the analytical elements and deliberate logical reasoning fully embody the essence of the ratings philosophy. This ratings philosophy is closely unified with its application process. It is applicable for reality. *The Guiding Principles of Credit Rating* transform the seemingly disorderly risk factors and their motion into a rating theory with universal significance, and it serves as a theory on the methodology of revealing the rules of the formation of general credit risks. Hence, it gives practical value to *The Guiding Principles of Credit Rating* and therefore, the Principles can be applied for reality in the following way: to help guide the study of particular features in the formation of credit risks of the rated entity and the development of a rating methodology that reflects both the universality and particularity. Practical applications are where the vitality of *The Guiding Principles of Credit Rating* lies.

As the latest component of contemporary philosophy and social sciences, like all other scientific theories, *The Guiding Principles of Credit Rating* is time-marked and it needs further improvement in practice to add new vitality to the theory.

Epilogue

My reflection on credit ratings started fifteen years ago, while my study on Western rating philosophies lasted for five years. The idea of writing the *"The Guiding Principles of Credit Rating"* occurred to me a year ago. I spent my free time in the past three months writing this booklet, which was finally completed at the dawn on New Year's Day of 2014. Staring at stacks of manuscripts on my desk, I had a strong feeling, a sense of relief, and a feeling of an obligation eventually repaid. Credit ratings have a history of one hundred odd years, but one could never find a holistic description of credit rating thoughts, leaving people unable to get a glimpse of the panorama of credit ratings. In the meanwhile, the flawed Western rating system has monopolized the rating business altar, while keeping its ideological domination in the international rating sector. For so long many have apotheosized it, consciously or unconsciously, making it all the more arrogant. I am an intellectual thinker as well as a thought leader. When I refined my train of thought about credit ratings and they developed into formal ideas and opinions, and as they boiled up to the critical point, an inspiration and impulsion to write pushed me to innovate a new rating theory. When I discovered the essence of the inadequacies of the Western ratings, which in part created the world-wide credit havoc, a sense of mission and responsibility urged me to challenge the hegemony in credit ratings. Consequently, it has been my long-cherished aspiration to create a theory that systematically presents the rules on credit ratings.

I have dedicated painstaking efforts and intelligence into the writing of *The Guiding Principles of Credit Rating*. I have realized my value pursuit of sharing with the world the Chinese wisdom in the credit rating sector. My wish for this booklet is to open a window for people to better understand credit ratings, and to play a positive role in developing new credit theories and rating practices. I would like to take this opportunity to thank my leaders, friends and colleagues who have extended to me their encouragement, support and assistance along the way and it is they who have given me the courage and strength to climb to a new height of rating theory, despite various difficulties. My sincere appreciation also goes to this current unique and great time, only in a special era like this, could I have come up with this theoretical innovation.

The publication of *The Guiding Principles of Credit Rating* is just the beginning in exploring the truth, as well as the ultimate meaning and influence in credit ratings in this new world-wide environment. As a dream catcher and dream maker, I know there is still a long and winding road ahead…

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