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A General Theory of Macrofinance: Towards a New Paradigm

Summary: The 2008 international financial crisis triggered retrospection on both theory and policy, reaching a macroeconomic consensus that the financial system plays an important role in the macro economy and macroeconomic theory must be restructured to incorporate endogenous financial factors. Reflecting on the inherent flaws of traditional mainstream economics, this paper puts forward a "macrofinance" proposition as a new paradigm for macro financial analysis. As a scientific methodology based on systematic logic, the major feature of the macrofinance framework is that we must analyze the financial system as a core part of a complete and endogenous analytical framework, instead of only focusing on the money or credit. The goal of "macrofinance" is to return to scientific economic methodologies by analyzing the inherent laws of modern financial systems to set up a comprehensive theoretical framework that unifies the financial sector with the real economy and combines theory and policy practice.

Key words: Macrofinance, Financial system, Real economy, Methodology.

JEL: E52, E58, E61.

In 1906, Alfred Marshall famously wrote about his skepticism regarding the use of mathematics in economics (Stanley L. Brue 1993, p. 294):

> "[I had] a growing feeling in the later years of my work at the subject that a good mathematical theorem dealing with economic hypotheses was very unlikely to be good economics; and I went more and more on the rules: (1) use mathematics as a shorthand language, rather than an engine of inquiry; (2) keep to them till you have done; (3) translate into English; (4) then illustrate by examples that are important in real life; (5) burn the mathematics; (6) if you can't succeed in (4), burn (3). This last I did often. I don't mind the mathematics, it's useful and necessary, but it's too bad the history of economic thought is no longer required or even offered in many graduate and undergraduate programs. That's a loss."

Marshall is not alone. Here are some other poignant points made by giants in our field:

> "Too large a proportion of recent 'mathematical' economics are mere concoctions, as imprecise as the initial assumptions they rest on, which allow the author to lose sight of the complexities and interdependencies of the real world in a maze of pretentious and unhelpful symbols" (John Maynard Keynes 1936, pp. 297-298).

> "The weak and all too slowly growing empirical foundations clearly cannot support the proliferating superstructure of pure, or should I say, speculative economic theory... By the time it comes to interpretations of the substantive conclusions, the assumptions on which the model has been based are easily forgotten. But it is precisely the empirical validity of these assumptions on which the usefulness of the entire exercise depends" (Wassily Leontif 1971, pp. 1-7).

This leads to a more recent statement made by Paul Krugman (2009):

> "The economics profession went astray because economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth."

These quotes are meant to remind us of the often-made-mistake of putting too much faith in mathematics which seems to be the name of the game nowadays. It also serves as the link between the conceptual discussion of the earlier part and the critical look at the changed corporate landscape that concludes this essay.

1. A New Paradigm

When the real world is going through changes, and theories developed based on the old state of affairs are no longer capable of predicting and reflecting such changes. Triggered by the global financial crisis, it is evident that the omission of financial factors and the ensuing theoretical bias has led to fundamental flaws in macroeconomic theory. Under such circumstances, to systematically reconstruct macroeconomic theories based on endogenous financial factors has become the demand of an era.

The proposal "macrofinance" is no doubt an in-depth retrospection on the existing methodology paradigm which has been dominant for a very long time, but has significantly deviated from the real economic world. Compared with traditional economic methodology, "macrofinance" puts more emphasis on systematic thinking, a holistic field of vision, development perspective and dynamic practice, and its commitment to establish a basic analytical framework that aligns logic with facts and theory with practice. Under such a framework, theories about microfinance and macrofinance are no longer isolated from one another, finance and the real economy along with internal and external financial development receive unified recognition, and in the space between theory and practice a logical link is created for the combination of general laws and "national endowment". Based on such a methodology, the theoretical framework of "macrofinance" will depict a more comprehensive overview of the modern financial system, as well as the logic structures and theoretical systems used to create it.

2. Mainstream Macroeconomics before the Crisis: The Influence of Financial Factors Are Substantially Underestimated

For a long time, mainstream macroeconomics has not formally included the financial system into its analytical framework, resulting in a long-term underestimation of the actual influence of the financial system on the macro economy, artificially cutting off the interaction and correlation between the two. Under the paradigm of mainstream neoclassical economics, the baseline of the perfect market and the "assumption of full cognition" have made it possible to circumvent the impact of uncertainty. The optimized decisions made by individuals based on predetermined possibilities automatically lead to market equilibrium. Therefore, general equilibrium theory involves neither the functions of organizations and systems, nor the innovative activities of entrepreneurs (Roger W. Garrison 1982). Under such circumstances, the general equilibrium theory represented by the Arrow-Debreu paradigm set up a frictionless perfect market which completely ruled out the value and function of the financial system.

However, under the Arrow-Debreu paradigm, the allocation efficiency of the market is based on a series of unrealistic assumptions such as zero transaction costs, perfect credit, divisibility of assets and contracts, full cognition, etc. These assumptions not only rule out the necessity of the existing of financial system as a theoretical premise, but also completely cut off the endogenous connection between the financial system and the real economy, because in a perfect market with zero transaction costs, zero credit friction, and perfect information, it is not necessary to waste resources searching for information, conducting research projects, supervising the management and designing of contracts to facilitate transactions and improve risk positions, neither is it necessary to have central banks.

Using broader view of economic theory to asses financial factors, we find that although economists occasionally focus their attention on financial factors, or try to explain financial factors, such "attention" or "explanations" are always beyond the mainstream economic paradigm, and lack a comprehensive analytical framework with a complete theoretical basis. The early "debt-deflation" theory believes that deflation during a depression will shift wealth from debtors to creditors. Shrinking net wealth of debtors will further dampen investment and consumption, leading to ongoing deterioration caused by economic depression (Irving Fisher 1933). In his General Theory, Keynes believes that financial factors are an important cause of economic depression, but he puts the analytical emphasis on investor confidence. Keynes' successors emphasized "liquidity preference", but their analysis was similarly focused on money rather than credit. It is John Grey Gurley and Edward S. Shaw (1955) who are among the earliest to highlight the function of financial intermediaries. They believed that the intermediary function of the financial system lies mainly in facilitating of the flow of loanable funds which causes enhanced economic efficiency.

Meanwhile, Gurley and Shaw (1955) also believe that with the development of the financial system, the monetary stock will no longer be an accurate measure of credit flow. As such, they put forward the concept of "financial capacity" which does not only include monetary stock but also includes monetary analogues. Gurley and

Shaw (1955) clearly identified the function of the financial system and banks in channeling loans, and proposed ideas that were different from the Arrow-Debreu paradigm. However, before the full blossoming of the "new theories" of Gurley and Shaw, Franco Modigliani and Merton H. Miller (1958) presented the Modigliani-Miller (M&M) theorem helped make the "comeback" of the Arrow-Debreu paradigm, proving the lack of correlation between economic and financial decisions under perfect market conditions, using mathematical models. Due to the extensive presence of M&M theory, financial factors gradually disappeared from mainstream economics (Mark L. Gertler 1988).

Since the 1960's, neoclassical economics, represented by monetarism, rational expectation theory, and real economic cycle theory, has become the mainstream of macroeconomics. When dealing with financial factors, such economic theories based on the neoclassical framework usually only emphasize the function of money instead of focusing on the influence of the financial system and financial intermediaries *per se*. Even when dealing with monetary issues, the emphasis on the function of money was significantly weakened during the development of these economic models. Friedman and Schwartz, as representatives of monetarism, believed that two aspects of the general operational difficulties of banks have accelerated economic depressions. The first aspect is the reduction in the wealth of the shareholders of banks. The second is the reduction in the money supply (Milton Friedman and Anna Jacobson Schwartz 1963). However, this theory suffers from two defects. First, it lacks a theoretical basis to assume that monetary factors have a long-term and consistently non-neutral effect on the real economy. Second, it lacks adequate proof to attribute the persistent and sharp reduction in output solely to the reduction in the money supply. After the 1970's, the school of rational expectations, represented by Robert E. Lucas (1972, 1973), and Thomas J. Sargent and Neil Wallace (1975, 1976), became the dominant player in economics. The school of rational expectations believes in the "neutrality of expected money" and the "policy-ineffectiveness proposition", whose theoretical basis is the "monetary misperception theory" proposed by Lucas.

Based on the rational expectations theory, there will not be a short-term substitution between unemployment and inflation unless there is monetary misperception, i.e. money is neutral. Essentially, the rational expectations school is against Keynesianism. It impacts the argument between Keynesianism and monetarism about the function and enforcement of macroeconomic stability policies (or monetary policy). The emergence of the school of rational expectations signifies the further "resurrection" of these conservative ideas. It stresses market completeness and extreme policy ineffectiveness, which essentially strengthens the Friedman theory. In theory, since both of the two core propositions of the rational expectations school lack experiential support, starting from the early 1980's the neoclassical explanation of the instability of total output shifted to "real impact". Hence the "real economic cycle theory", represented by Finn E. Kydland and Edward C. Prescott (1982), was ushered in. It further highlighted the assumption of the neutrality of money and believed that money is not only neutral in the long-term, but also assumed its neutrality in the short-term, or the superneutrality of money.

The initial real economic cycle theory does not involve the factor of money. At the beginning, Kydland and Prescott (1982) developed a model that only includes real variables but can be extended to consider nominal variables. However, after they generated the initial model, Kydland and Prescott summarized that since economic cycles can almost be completely explained by real variables, it is unnecessary to introduce the monetary factor. The concept of the superneutrality of money proposed by the real economic cycle theory is significantly different from the perspectives of Keynesianism, monetarism, and neoclassical economics in the late 1970's. The main representatives of such economic schools like Tobin, Friedman, and Lucas all agree that growth in the money supply has real effects and plays an important role in explaining fluctuations in output. As is pointed out by Lucas (1972), "at least starting from Hume, the see-sawing battle between the two mutually exclusive views - one believing in the neutrality of money and one believing that the change in the money supply will lead to employment and a change in output in the corresponding direction - have always been the core of monetary theories".

The theory of the superneutrality of money is a thorough comeback of the Classical Dichotomy. It means that all financial factors, including money, have finally faded out of the theoretical framework of mainstream economics. In fact, since the publication of Keynes' General Theory in 1936, economics has been clearly divided into microeconomics and macroeconomics. On the one hand, in the realm of microeconomics, although there is the monopolistic competition theory, or incomplete competition theory, proposed by Chamberlain and Robinson, the Walrus General Equilibrium is still the dominant theorem. On the other hand, macroeconomic model based on the Keynesian IS-LM model is believed to lack a micro basis, the same is true in terms if monetary theory. Eager for a micro basis, macroeconomic research is more and more inclined toward neoclassical economics. Since the 1960's and 1970's, neoclassical theories have been playing a dominant role macroeconomics, at least in terms of methodology. As such, we can see that the development of theoretical economics clearly demonstrates how financial factors faded from mainstream macroeconomics since the 1960's, from the "long-term neutrality of money" proposed by the early monetarists, to the "neutrality of expected money" proposed by the school of rational expectations, and finally to the "superneutrality of money", set forth by the school of real economic cycles.

However, the neglect of financial factors in mainstream economics based on the neoclassical framework is not because the financial system plays an insignificant role in the operation of the economy, but because it is difficult to combine financial (monetary) theories with value theories. Within the neoclassical framework, the major obstacle for macroeconomics to include financial factors lies in the difficulty providing a rational micro basis for financial (monetary) theory. Neoclassical macroeconomics has never found a satisfactory answer to this question.

Since the 1980's, neoclassical economics attempted to offer a solution to the longstanding issue of combining monetary theories with value theories. A typical way of combining the two theories is to provide a micro basis for the monetary theories based on the consistency between general equilibrium and optimized individual behavior. Such neoclassical analysis on monetary theories is called "new monetary

economics". There are two ways of research on "new monetary economics". First is to combine monetary theories with modern financial theories, or the so called BFH system; it is targeted at the micro basis of Patinkin or the "new ideas" of Gurley and Shaw. The second is the model developed by Sargent, Wallace, Bryant and Lucas, which attempt to take major issues in macroeconomics and apply them to microeconomic theory, following the ideas of John R. Hicks (1935).

From the point of view of methodology, the neoclassical model represented by the M&M theory has gained so much popularity in part because of the "beautiful form" of its mathematical deductions, but also because the M&M theory has eliminated the difficulty in modeling by conveniently "excluding" difficult financial factors. This is a deep-rooted methodological reason for the popularity of such "financial factor-deprived models". Based on the M&M theory, both the neoclassical investment theory of Robert E. Hall and Dale W. Jorgenson (1967), and the stochastic competitive equilibrium growth model represented by William A. Brock and Leonard J. Mirman (1972), excluded financial factors in their modeling. Such a "financial factor-deprived" concept of modeling dominated mainstream economic theory in the 1960's, and the revolution in macroeconomic methodologies in the 1970's further strengthened this trend. After that, financial factors have disappeared from consideration of mainstream experts performing theoretical modeling and empirical econometric analysis.

Although financial factors have never made it into the theoretical framework of mainstream economics, the impact of the financial system on the macro economy has not been truly far outside economist's field of vision. Especially after the 1970's, with the establishment and development of the modern financial system, financial activities were playing an increasingly important role in the economy, and the correlation between the financial system and the real economy began to draw the attention of some economists. James Tobin (1975) stressed the imperfection of capital markets and pointed out that the "debt-deflation" theory of Fisher was a natural complement to Keynes' theory of income determination. Hyman P. Minsky (1975) and Charles P. Kindleberger (1978) discussed the damage of financial instability and financial crises on the real economy from the perspective of the capitalist economic system and financial history. On the monetary views of Friedman, Ben S. Bernanke (1983) believed that a change in the money supply was not enough to explain the "great depression"; the paralysis of the financial system was an important cause of sustained deep recession.

Bernanke (1983) believed that financial crises lead to an increased real cost of capital flow between creditors and debtors. When the credit channel is blocked, on the one hand, potential borrowers cannot obtain sufficient funds for investment; on the other hand, lenders have to invest their capital to "less-than-optimal" projects. Besides, due to financial crisis, the credit market cannot effectively spread risk and it is difficult to get finance for indivisible projects. All of these not only hampers the efficiency of capital but also deepens the economic recession. Therefore, different from the M&M theory under perfect market assumptions, financial factors play a very important role in explaining the depth and length of economic recessions in times of information asymmetry.

Entering the 1990's, ever-evolving financial innovation served as fertile soil for the development of financial theory. Robert C. Merton (1995a, b) and Ross Levine (1997) reviewed the function and value of the financial system under conditions of uncertainty, and pointed out that the presence of financial markets and financial intermediaries will not only facilitate the allocation of resources, but also improve social welfare by improving risk allocation and reducing transaction costs. Franklin Allen and Douglas Gale (2000) compared the strengths and weaknesses of financial intermediaries and financial markets in promoting the shift from savings to investments, facilitating transactions, implementing joint control, improving risk management, acquiring investment information, allocating resources, and further expanded the theoretical scope of the function of the financial system, giving rise to the "comparative financial systems theory". Theoretical studies on the correlation between the financial cycle and the economic cycle have been lagging behind. The most prominent studies are the "financial and economic cycle theory" of BGG (Bernanke, Gertler, and Simon Gilchrist 1999) and the "credit cycle theory" of Nobuhiro Kiyotaki and John Moore (1997, 2002). These two theories are positive attempts to include financial factors into the framework of mainstream economics. However, to look at the core of these theories, the "financial and economic cycle theory" of BGG based on the financial accelerator effect, and the "credit cycle theory" of Kiyotaki and Moore (1997, 2002) based on the restraint effect of mortgage credit, both focus analysis of financial constraints caused by information asymmetry. Therefore, credit and financial frictions are reduced to a question of adverse selection and moral hazard as a result of information asymmetry. The theories do not offer clear explanations on key issues such as the endogenous relationship between money, credit, and the real economy, or dynamic feedback paths, etc. Thus they cannot offer complete and in-depth explanations of shocks that originate from the financial system.

More recently, especially after the subprime crisis, several prominent economists have recognized the fundamental mistakes of the development of economic theory (e.g., Olivier Blanchard, Giovanni Dell'Ariccia, and Paolo Mauro 2010; Krugman 2011, and others); and indeed, the critique of pre-crisis economics are now part of standard textbooks (Blanchard and David R. Johnson 2013). Blanchard and Johnson also pointed out that economic theory was able to incorporate adverse financial effects such as bank runs and overshooting of financial variables. Perhaps more importantly, behavioral economists and experimental economics, which have become highly popular already before the financial crisis, pointed out that individuals in the real world differ from the rational individuals typically assumed economic models.

These do have possible implications for financial markets, but were not fully acknowledged in neither economic or financial theory nor models. In short, under neither mainstream nor under other alternative paradigms, macroeconomic theory has not managed to offer a general analytical framework for financial factors in the operation of the economy with consistent logic and a sound theoretical basis. Until now, most of the studies on the relationship between finance and the macro economy have failed to incorporate a complete analysis of the financial system. Most of the analysis of the impact of the financial system on the macro economy is done by implanting certain financial frictions into the neoclassical or Keynesian models. However, if

mainstream economics only regards financial factors as "frictions" in the operation of the economy, and fail to include them as a core component of economic dynamics, then studies on monetary and financial theory can only carry out some "small alterations" and will never escape the traditional framework of neoclassical economics. Beyond all doubt, macroeconomic theory cannot make any major breakthroughs if the inherent laws of the financial system and the endogenous correlation between the financial system and real economy are not fully recognized and analyzed.

Early works have done better in this respect. For example, in their book Austrian economists Hayek and Mises analyzed the adverse impact of credit market frictions and financial distortions on economy. Such analysis is based on the dynamic adjustment of the market structure and stressed the "non-neutrality" of money and "endogenous" credit. They pointed out that credit expansion and monetary distortion will bring severe consequences. However, as modern mainstream economics followed the pure mathematical logic paradigm, the methodologies of the Austrian economists faded out and only appeared only as "ornaments" in a very few number of scholars.

3. The "Macrofinance" Proposition: Three Basic Elements

Since the 1970's, as the financial system was developing and growing more complicated, financial imbalances started to occur periodically, and financial and macroeconomic imbalances started to reinforce each other. Such reinforcements sometimes led to frequent, sustained, and significant deviation from the long-term economic trend. The break out of the recent international financial crisis has put the global economic and financial system under severe stress. This once-in-a-century financial crisis has taught us three lessons. First, the nature and function of financial factors in economic development are not yet fully recognized, and systematic financial risks have been underestimated for a long time. Second, the development of finance has severely departed from real economic growth, and we need to further clarify the relationship between finance and the real economy. Third, the traditional economic framework has failed to integrate financial theory on the macro and micro levels.

Therefore, a new framework for financial theory should be built based on a more holistic, systematic, and realistic methodology. The "macrofinance" we define in this paper is based on the underlying principle of combining macro and micro financial theories. Conceptually this originates from the idea that the financial system and the real economy are an integral part of the whole economic picture. Under the macrofinance framework, the focus is to summarize and organize the general laws of financial development with a global vision, and to analyze the dynamic relationship between financial and economic development from a historical perspective. Based on our analysis, we have developed three basic elements of "macrofinance", which are elaborated below.

First, financial theory under the "macrofinance" framework stresses the systematic integration of macro and micro analysis. Economic and financial phenomena are an organic unity of micro activities and macro performance. If we cut out the inherent connection between micro and macro finance, or regard micro and macro finance as conceptual "opposites", then it is impossible for us to make breakthroughs

in financial theory, and it will be very difficult to effectively explain real world phenomena. For a long time, there has been a huge "gap" between the micro financial theories represented by APM (asset pricing modles) and corporate finance, and the macro financial theories represented by monetary economics and the credit cycle theory - the former focuses only on the behaviors and decision-making of individual market players, while the latter attempts to circumvent the interaction between individual market players and tries to set up connections between aggregates. One of the lessons that we have learned from the international financial crisis is that the macro analysis of finance hasn't really adopted a "top down" approach to explore how the changes in macrofinance affect the behaviors and decisions of individual market players at the micro level. Micro financial analysis hasn't really adopted a "bottom up" approach to analyze how the behavior of the individual market players may lead to macroeconomic and financial imbalances due to the "fallacy of composition" (Da Huang 2010). The fallacy in methodology has become a huge impediment to the development of financial theory. To solve the problem, we should start to regard micro and macro finance as an integral part of a general financial picture. Only when we analyze the two aspects in a unified and consistent manner, and establish a sound logical connection between micro behaviors and macro phenomenon, can the study of finance advance to new heights.

Second, regarding financial history macrofinance stresses the unity of finance and the real economy. Finance was created to meet the demands of the real economy. However, since its inception financial innovations have gotten more complicated, and financial activities have deviated from the real economy. Externalities caused by the financial system have become a critical source of systemic risk. Unlike industrial capital, financial capital is not limited to a particular industry or region. It is more is homogenous and volatile, and has a shorter capital cycle. Because of this, financial capital is unique and independent from industrial capital, and the financial cycle frequently deviates from the industrial cycle. As the modern financial system develops, the basis and conditions for the operation of finance are changing, and the value basis of the financial system is also evolving. Financial expansions that deviate from the real economy have proved to be unsustainable and extremely harmful to long-term economic stability. Therefore, financial development should be consistent with the real economy, and economic expansions should be based on the generation of real wealth. In essence, the process of finance's return to the real economy is also the process of reconstructing the value basis of finance, because to properly arrange the relationship between finance and the real economy does not only require the reasonable allocation of resources, but it also requires the coordination of means to ends, the production and allocation functions, as well as the deeper issues of coordinating market values and ethics. Only after we have a comprehensive retrospection and systematic analysis of such issues can we reach a sound financial framework.

Third, regarding the development of finance, macrofinance stresses the combination of general laws of economics and finance with "national endowment". The effectiveness of a theory not only depends on whether it is based on reasonable deductions made under general assumptions, but also depends on whether it can explain and guide practice. As a theory to explain complicated phenomena, finance has to

clearly define the application and constraints of the general laws that it endorses. One general law may lead to totally different outcomes under different constraints. Therefore, when a general law of finance is used to guide national practice, it has to take into consideration unique national conditions that constrain financial laws. The history of global financial development has shown that the formation of the financial system is never an isolated phenomenon, and the national endowment of a country has profound influence on its financial system. The so called "national endowment" not only includes the resource endowment in the general sense, but also the social, economic, and political environment which in specific historical terms determines the real choices and development direction of a country's financial system over the long-term. Whether we can combine the general laws of finance with national endowment is the key link between the effectiveness of finance in theory and practice. Therefore, under economic globalization and financial integration, both developed and developing nations must develop a new financial management system which is consistent with the individual national endowment and the globalization trend.

Based on these three basic elements, the financial sytem should focus on the following three bases to develop this macrofinance proposal. First, the experiential basis: the methodology must be built upon objective facts and experiences. Second, the value basis: the financial development should be representative the core values of the nation's economic growth objectives. Third, the practice basis: the financial development should be based on the nation's specific national endowment. On this unified basis the theoretical support and value system for macrofinance is created.

4. Theoretical Basis of "Macrofinance": Returning to a Scientific Economic Methodology

The existing mainstream economics has not taken into consideration the aforementioned three points, and as such, unable to unify the real economy and the financial markets asset pricing. We will devote Section 5 to specifically expound this reality and its very real consequence.

As a bridge between lenders and borrowers, the financial system has long been regarded as a "black box". Economists attach more importance to what's happening on the two ends of the bridge, as for how credit moves and changes within the black box are never the focus of much attention or research. Under the mainstream neoclassical economic framework, the general equilibrium theory represented by the "Arrow-Debreu paradigm" enables a "frictionless" perfect market with the assumptions of zero transaction costs and full cognition. Under this system, the financial sector is of little importance, as it has no impact on the conditions and processes of market equilibrium, or even no reason to exist at all. In fact, if we look at the development of economics over the past decade, financial factors have faded out of the mainstream economics since M&M theory "strictly" proved that economic decisions made under perfect market conditions are independent from financial decisions. Particularly since the inception and wide application of "efficient market theory", research on economic cycles and volatility has focused on real factors rather than financial factors. As a result, risk has been systemically underestimated over the past few decades.

In recent years, deviation of financial expansions from the real economy has started to attract the attention of economists and observers. People began to complain that unchecked financial expansion has hurt economic growth and social welfare, and blame this on regulation loopholes and immoral bankers. However, the long-term deviation of the financial system from the real economy actually reflects the fact that the financial system has some special laws that are different from the real economy, and we know very little about these laws. Based on the methodology of mainstream economics, instability is not explained as a special feature of the financial system, and endogenous instability is not regarded as something that must be explained by a convincing theory. Neither traditional Keynesian theory nor the popular monetarism theory can explain instability in the macro economy and the financial system. In fact, economic phenomena are so closely related to financial factors that only when financial factors are incorporated into the traditional macroeconomics can such a theory serve as a guide to practice (Minsky 1975). In this sense, instability in the macro economy nowadays can be attributed more to the insufficient understanding of financial laws rather than greedy Wall Street tycoons, or the slow and weak action of regulators.

In the past several decades, mainstream economic theory has in a biased manner ignored the importance of financial factors. We can rarely find any systematic analysis of endogenous financial factors in economic literature. This not only causes confusion in understanding the real economy, but also has triggered a crisis in economic theory. Under such circumstances, to systematically reconstruct macroeconomic theory to include endogenous financial factors has become the inevitable demand of the new era. If we look at macro economic development from an historical perspective, the next 10 to 20 years may be another critical period for innovation in macroeconomic theory. The great depression in 1930's gave rise to Keynesian theory, the "stagflation" in the 1970's and 1980's promoted the development of neoclassical economics (including monetarism, the rational expectations school and real economic cycle school), and most recent international financial crisis have brought on calls for macroeconomic theory to incorporate financial factors. Macroeconomic "revolutions" have been occurring every 30 years or so, this in part reflects a shift in the demands being made of economic theory over time, and also exposes the previous theories' inadequate generality and applicability.

In terms of reform, the consistency of theory and practice is a precondition for rationality and legitimacy. For economic theory to be beneficial to sound policy decisions, it must be compatible with events in the real world. However, for mainstream macroeconomics, the economic conditions it was modeled on have historically never existed. Right now the problem economists must face is how to transition from unrealistic modeling to theoretical reconstruction with insight and sensitivity. Insight and sensitivity means that new theories must be universally applicable, aligned with the real world, and have explanatory and predictive power. They should not only be able to explain historical events, but also should be predictive of current and future phenomena. Only a scientific economic methodology based on phenomena and behavior of the real world can support a universal and living analytical framework. Three basic elements of macrofinance are proposed on the basis of this retrospection on

mainstream economic methodology. The purpose of macrofinance is to return to scientific economic methodology by analyzing the inherent laws of the modern financial system and set up a comprehensive theoretical framework to unify finance with the real economy by combining theory and practice.

In general, the macrofinance is a unique methodology which aims to identify the basic ideas, principles, and research of economic and financial systems, and to offer practical guidance for policy decisions. Compared with traditional economic methodology, "macrofinance" puts more emphasis on systematic thinking, a holistic field of vision, development perspective and dynamic practice, and its commitment to establish a basic analytical framework that aligns logic with facts and theories with practice. Under such a framework, theories about microfinance and macrofinance are no longer isolated from one another, finance and the real economy along with internal and external financial development receive unified recognition, and in the space between theory and practice a logical link is created for the combination of general laws and "national endowment". Based on such a methodology, the theoretical framework of "macrofinance" will depict a more comprehensive overview of the modern financial system, as well the logic structures and theoretical systems used to create it.

5. Modern Financial Theories Based on "Macrofinance": A New Paradigm

In general, the international financial crisis has triggered retrospection on economic theories and policy practices, and more and more economists are reaching a consensus on marcoeconomics, the financial system plays an important role in the macro economy, and macroeconoic theory must be restructured to incorporate endogenous financial factors. Such restructured theories will become the basis for the study of macroeconomics and the formulation of macroeconomic (and financial) policies.

Theoretically speaking, to restructure macroeconomic theory to incorporate endogenous financial factors, we should first of all study the features and laws of the financial system and set up an analytical framework that can clearly summarize and describe laws that dictate the operation and development of finance. According to the basic elements and general methodology of macrofinance, such an analytical framework must be based on the objective facts of the development of the financial system so it can summarize and systemically integrate into the existing foundation and developmental laws. To do this, we should consider the connections between the real economy and the financial system, as well as basic questions about the transmission of economic policy within the real economy and financial system.

Furthermore, every theory should have a value basis which determines the starting point and foundation of analysis. Based on the basic elements of macrofinance and the function of the financial system in the operation of the economy, the purpose of financial development is to promote long-term, sustainable, and stable economic development by setting up a highly competitive modern financial system. As such, the general logical thought process for developing the macrofinance theoretical framework is to conduct analysis on the factors that affect the financial

competitiveness of a country in the long-term, draw conclusions about the basic features and general laws of the development and evolution of the financial system, and restructure the theoretical basis of the modern financial system.

Experience has shown us although there are many factors may affect the competitiveness of a country's financial system, the history of global economic and financial development has demonstrated there are three core factors that determine the competitiveness of a nation's financial system, namely efficiency, stability and the ability to contain crises. The first two fields are the pillars of financial competitiveness, while the ability to contain crises determines to what degree a country's financial system can regain efficiency and stability after a crisis strikes. In short, efficiency determines the "vitality" of a financial system. Stability determines its "flexibility". The ability to contain a crisis determines its "resilience". These three complementary factors constitute the "three pillars" of a modern financial system's competitiveness.

1. Efficiency. The financial system affects real output by affecting resource allocation. Therefore, the efficiency of a financial system can be evaluated in two aspects. The first aspect is the real efficiency of the financial system. The second is whether or not resource allocation within the financial system can affect economic output. The former has to do with the transmission mechanism within the financial system, while the latter has to do with the efficiency realization mechanism. Under the macrofinance framework, the evaluation of the efficiency of a financial system should not be confined to the system itself, but should be extended to the correlation between the financial system and the real economy. The key is a deep connection between its micro basis and macro effects. A comprehensive evaluation a country's financial system's efficiency should include three basic dimensions, micro efficiency, macro efficiency and synergistic efficiency. Within the efficiency realization mechanism, the transition from micro efficiency to macro efficiency is not a process of simple linear aggregation, but relates to the reinforcing, offsetting, or even mutating effects caused by various frictions and synergies created during the process of its composition. Only when we correctly understand these nonlinear transmission mechanisms can we set up a link between micro efficiency, based on individuals, and macro efficiency, based on the aggregate. Furthermore, financial systems never work in isolation, but are closely and broadly related to the external environment and policy variables. The development of financial systems in different countries have proven that during the process of transition from the micro base to macro effects, the efficiency of the financial system is widely affected by the economic, political, cultural, and policy environment of the country. Therefore, the efficiency of the financial system not only depends on the development and quality of the financial system itself, but also depends on the correlation and level of coordination between the financial system and real economy. In this process, to create the external conditions (policy environment, legal framework, ethics, social and cultural environment, etc.) which can ensure the interactive relationship between the financial system and the real economy is critical to all countries.

2. Stability. Financial stability is the basic premise for the financial system to function, as well as a necessary condition for sustained economic growth. History has

shown that financial crises usually create huge economic and social costs, especially banking crises caused by housing bubbles. Since the 1970's, financial crises on a global scale have the following basic features. First, financial innovation is increasingly related to financial crises. Second, crises frequently occur during financial opening and liberalization. Third, credit expansions and asset pricing bubbles are a major cause of crises. Fourth, financial crises are more likely to spread to a global scale. Fifth, the ability for a country to control the financial system plays an important role in financial stability. In practice, financial stability is affected by many complicated factors and is beyond the explanatory power of any single economic factor. Empirical analysis of major world economies shows that although economic factors play a critical role in the formulation of a financial crisis, noneconomic factors such as political, institutional, and regulatory factors cannot be neglected. This means that we need to adopt a multidimensional perspective when we look back upon financial crises and financial stability. Furthermore, the breakout, spread and expansion process of financial crises are not completely isolated, but are inherently related. The key is to analyze the crisis in a dynamic manner set against changing economic prospects. Under the macrofinance framework, to fully analyze the linkages between bubbles, the real economy and the financial system, the perspective will have to be expanded to include the formation, development, and collapse of bubble economies and financial crises in their entirety. The understanding of the market process itself is key to analyzing the formation of bubble economies and financial crises. Only from an understanding of the long-term feedback mechanisms between the financial sector and real economy for price, interest rates, and credit during the crisis can a dynamic understanding of the gradual processes by which bubble economies push forward financial crises, and a basis for their detection and prevention, be established.

3. Ability to contain crises. Experience has shown us that the ability to contain crises is critical to the stable and efficient operation of the financial system in the long-term. Only those countries that can successfully fend off financial crises and efficiently cope with financial instability can sustain and strengthen the efficiency and stability of its financial system in the long-term. Major factors affecting a country's ability to handle crises include emergency bailout programs during the crises, the effectiveness of intervention measures after the crises, the effectiveness of monetary and fiscal policies after crises, early warning mechanisms for crises, and the treatment of problematic financial institutions, etc. To deal with the recent crisis, central banks have expanded their balance sheets and tried to ease credit crunches by injecting outside liquidity. However, whether such liquidity injections can boost the economy as expected depends on how such liquidity is utilized. In the modern banking system, the willingness to lend is more important than the credit reserves of central banks. During a credit squeeze, what's truly scarce is not money or liquidity, but the real generation of credit along with the expansion of production. In the long-run, to strengthen the central banks' ability to counter crises, we should focus on four aspects. First, in terms of authoritative bodies, central banks should be granted necessary autonomy, and in between autonomous powers and the constraints of responsibility create a reliable institutional framework. Second, in terms of policy targets,

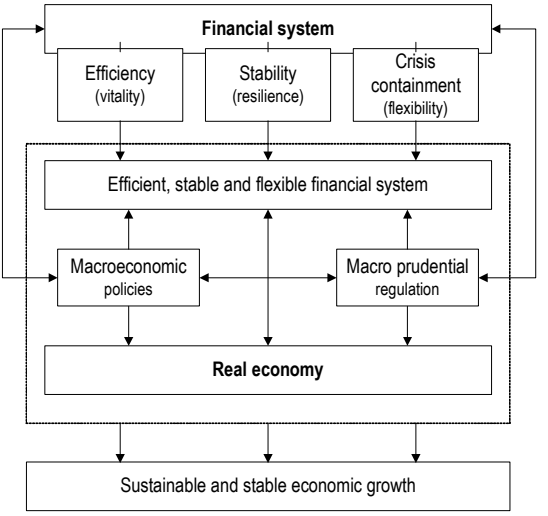
central banks should adopt continuous monitoring of asset price bubbles along and credit expansions, and take measures when necessary to try to best strike a balance among price, production, and financial stability. Third, in terms of policy tools, when the interest rate is approaching zero, central banks should launch nontraditional monetary tools on top of traditional tools to cope with all the complications triggered by the crisis. Fourth, in terms of policy transmission, when traditional monetary policies are not able to be transmitted during a crisis, central banks' ability to reconstruct a mechanism for the transmission of clear monetary policy will determine the ability of central banks to counter the crisis.

It should be pointed out that the analytical framework of modern financial systems based on the "three pillars" attempts to research the basic factors of change in a country's financial system from the inside. Such an analytical framework offers us a structural view on the financial system. However, to understand the laws of the operation and development of modern financial systems in a more comprehensive manner, we should extend the analysis to the interactive relationship between the financial system, the real economy, and macroeconomic (financial) policies, and formulate a comprehensive new theory based on this, or what is called the macrofinance framework. In fact, global economic and financial development experience has fully demonstrated that if the financial system deviates from the real economy, it will not only hamper economic sustainability, but will also lead to serious asset pricing bubbles and financial crises. In particular, when the opportunity cost of industrial investments are determined by financial transactions, financial assets will deviate from the real economy and the investment logic will override production logic. When financial capital drives out industrial capital and pursues self expansion and self realization, systematic financial risks start to accumulate in an accelerated manner. Furthermore, under the macrofinance framework, each country will have an optimized financial structure that is consistent with its development stage and unique features. Such an optimized structure will evolve with its national economic and industrial stage of development, and will be profoundly affected by its "national endowment". The key to evaluate whether a country's financial structure is efficient lies in whether this structure can fully meet the demands of real economic development in different stages, while minimizing financial costs and maximizing financial stability.

To summarize, from the point of view of theoretical structure, the analytical framework of microfinance logically should follow a process of deconstruction followed by comprehensive theoretical reconstruction, as is summarized in Figure 1.

6. Paradox between Real Economic Models and Financial Asset Models

Up to now, our discussion has been essentially abstract essays, perhaps a form of history of economic theory. Here we would like to expound how economic theory may have led to changes in the real structure of the economy, more specifically corporate structure and corporate governance, and how that has led to the increasing divergence of real economic models and the financial asset pricing models.



Source: Authors' own design and configuration.

Figure 1 The Basic Framework of Macrofinance

At this point, we would like to ask the reader to return to the poignant points made by giants in our profession that we used to open this paper, especially the statement made by Krugman (2009):

> "The economics profession went astray because economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth."

This is also the most appropriate to our concerns made. Let us elaborate.

At the turn of the 20th century, the U.S. was clearly on the rise economically and militarily. Even with the disruption of the Great Depression, the U.S. economy was dominated by barons of business, the Rockefellers, Carnegie, the Vanderbilts, etc. Whether they are Robber Barons according to Mathew Josephson (U.S. political and economic commentator) or Industrial Statesmen from Allan Nevins' (business historian) point of view is not the point. What is undeniable is the stylized facts of a corporate controlled society:

- Produce tangible goods;
- Dispersed ownership;
- Concentrated control;
- Growth objectives expressed in asset accumulation or maximize employment numbers;
- Long-lived corporate organization.

These economic structures started to see changes during the turbulent 1970s, the U.S. was facing challenges domestically and globally. The Vietnam War was raging, the gold standard of Brenton Woods came to an end, OPEC and the energy crisis shook the world, and domestically President Nixon took actions to rein in the big corporations with the establishment of OSHA, EPA, EEOC, etc. perhaps even

more critical to our concerns here is the sort of mutual funds as a financial instrument of choice for many Americans.

Mutual funds were introduced in the late 19th century and became quite popular in the 1920s. After the Great Depression, the U.S. Congress took a series of action to rein in mutual funds, but up to World War II, with confidence in the stock market returning, the mutual fund industry saw of renewed life. This was further aided by the M&M theorem.

Earlier we discussed the pivotal role of the M&M theorem in the evolution of economic theory regarding the treatment of risk and uncertainty. Readers should also remember that the M&M theorem showed how picking orthogonal assets, one can dramatically reduce the risk while retaining high returns through by diversification. This forms the cornerstone of modern mutual funds.

By the end of 2014, in the U.S. alone, mutual funds command control asset of $18.2 trillion; worldwide, mutual funds have amassed $33.4 trillion. Not only are mutual funds popular among retirement plans (accounting for roughly 50% of 401(k), 403, and IRAs), it is also a major part of ordinary family's household finances (accounting for 24% of household financial assets).

Now we have the background taking care of, we proceed with the change in the stylized facts of Corporate America that we listed earlier (Gerald Davis 2009).

6.1 Produce Tangible Goods

As recent as 1980, the top 10 largest firms in the U.S. based on employment were companies like GM, Ford, and GE; all manufacturing firms producing tangible goods. Today they are Walmart, Target, and UPS, retail and service firms.

With off-shoring, MFNs, and globalization of the supply chain, this change cannot be overstated. Let us take a look at the not so atypical example of Vizio. Founded in 2002 (by Wang, Newsome, and Lowe) with $600,000 and three employees in Irvine, California, it showed revenue of $700,000 in 2006, but exceeded 2 billion in 2007. It started sponsoring the Rose Bowl in 2011, and hosted the 2014 BCS championship game in college football. By 2012 is controlled 22% of the U.S. market on flat screen TVs, with only 400 employees (196 in Irvine, and the rest in call centers around the country).

6.2 Dispersed Ownership

The stockholders were originally characterized as "widows and orphans", which is meant to represent a wide cross section of normal American families[1]. This diverse ownership of Corporate America is no longer the case, as institution-owners account for 75% of outstanding shares, while "widows and orphans" are now buying mutual funds. Perhaps the most well-known of such institution owners is Black Rock, which controls $4.7 trillion of assets and is the largest stockholder in one out of three U.S. corporations, including Exxon-Mobil, Chevron, Phillips, Apple, GE, and all major banks.

[1] The term "widows and orphans" used here is coined from Corporate America's attempt to shake that image in the 1970s when they were under attack. It showcased the stock of a large well-known firm, with an unassailable market leadership position, that paid good dividends to its stockholders, literally thought to be the only investments suitable for widows and orphans.

6.3 Concentrated Control

In the heydays of Corporate America, the Board of Directors of large U.S. corporations was pretty much limited to a small group of 1000, most sitting on multiple Boards. Today, there is only one person sitting on 5+ Boards (as recent as 2001, there were five). One often overlooked benefit of such a "good old boys" network is information sharing across major corporations, which promotes stability both operationally and in the financial markets[2]. Nowadays, with the high percentage of institution owners, the composition of the board is in evidently influenced by such ownership, and as such, so has the actions of the Boards.

6.4 Growth Objectives

This is perhaps the most troubling change, and is the consequence of the aforementioned transformations. The old behavioral objective of Corporate America has mostly been expanding the scope of operation and the number of employees. The new corporate strategy is now pervasive outsourcing and maximizing earnings with least assets (as earnings-per-share, or EPS, has become the single most important variable in determining stock prices).

During the days of "widows and orphans", the main objective of stockholders was the dividend, but as these dispersed stockholders was replaced by mutual funds and institution owners, the focus switched to capital gains in the form of increases in share prices. As the preference of stock owners changed so did Board actions and corporate managers. As a corporate objective shifts from operational growth to EPS, we see fundamental changes in corporate structure.

To increase EPS, the firm can either increase earnings and/or decrease assets (which is directly related to operational cost of the firm), with the latter being much easier to achieve. The name of the game of modern corporate America is to shed less profitable divisions and subsidiaries, off-shoring and outsourcing productions. Between 2001 and 2010, U.S. manufacturing loss close to 6 million jobs, before making a small comeback after 2011. This dramatic loss of blue-collar jobs is perhaps partially responsible for Donald Trump's surprising win in the 2016 presidential election. Whether his protectionism or "America First" platform and controversial tactics in bringing jobs back to the U.S. will make a difference, only time will tell. Increasingly, Vizio is becoming the new model "corporation" of the U.S.

6.5 Long-Lived Corporate Organization

The old view that a corporation is a legal entity which never dies started to decline with the shortening of product cycles. As the focus shifted to EPS and firms started to narrow their operational focus, culminated with the dot-com boom, the long-lived Corporation may soon be a memory of a long bygone past. If we look at the 1987 Dow Jones Industrial (DJI), out of 30 firms only three remain in the current DJI.

[2] Of course, as poignantly pointed out by one of the referees, being on numerous Boards also clearly has its negative sides, such as collusion, price fixing, conflict of interest, etc. Even more serious, is "overboarding" (the term used when someone sits on too many boards) often implies the board member will not be able to fulfill his/her legal obligations as a Board of Director.

Take Kodak as an example, it was an icon of American industry for over a century (1888-2012). When it finally emerged from bankruptcy in 2013, it bears little resemblance to the Kodak of the old. Flip Camera, which was partially responsible for the demise of Kodak, was itself short-lived (2006-2011) as improved built-in phone cameras (e.g. iPhone, Samsung, HTC, etc.) quickly made it obsolete.

Indeed, the new trend seems to be organizing, designing, production/assembly, delivery and sales, without large corporate organizations; again, Vizio comes to mind. What most people have not noticed is that 55% of publicly listed and traded companies in 1997 no longer exist. With this much shortened corporate life-span, the question is has our asset pricing models sufficiently taken this into account?

Given that we have experienced several economic crisis caused by financial bubbles in the last few decades, the evidence seems to point against it. Let us compare two major U.S. corporations; one representing the old guard of Corporate America (Kroger), the other is the darling of the new breed (Twitter)[3]:

Table 1 Old Guard vs. New Darlings

Company	Kroger	Twitter
Year established	1883	2006
Total assets	$98 billion	$0.665 billion
Employment	375,000	2,713
Net earnings	$1.5 billion	–$0.645 billion

Source: Authors' synopsis from official websites.

As can be seen from the above, the two cannot be more different, yet at the end of June, 2015, the market capitalization was both around $24 billion. How can that be?

From traditional asset pricing models based on economic theory, the case for Kroger appears to be based on market fundamentals. Twitter, on the other hand, is a totally different animal altogether. It has never had a positive profit, and is not expected to do so in the foreseeable future. The market capitalization of Twitter cannot be explained by economic models, that much is clear. It is safe to say that nobody has figured out, yet, on how to make money on social media platforms. As such, the name of the game now is to maximize users and wait for someone to figure it out. The current stock price of Twitter (and other similar stocks) has been said to reflect the potential for future profits.

This is what financial models seem to suggest based on behavioral finance and herding effects. It is unclear to the authors whether financial models have probably taken into account the risk and uncertainty with such expectations for future profits. Even if they have done so, is the pricing implicitly computed based on infinite horizons?

[3] Twitter needs no introduction, but Kroger may not be a household name to some readers. Kroger is the largest supermarket chain in the U.S., it operates several brands and manufacture many of its own products under the Kroger brand as an alternative to pricier national brands.

But there lies the question, in the ever-changing world of technology and shortened product cycles, what is to say that a better alternative will not of knowledge in the very near future that would render Twitter obsolete? If so, the $24 billion of Twitter (or the $300 billion market value of Facebook) could evaporate within months. Adding on a multiplier effect, who is to say this will not generate the next financial crisis?

7. An Unorthodox Proposal

We started off laying out the evolution of general economic theory by focusing on the role of risk and uncertainty. Mesmerized by the beauty and elegance of the M&M theorem (let us remind all readers of Krugman's statement that we quoted earlier), financial factors gradually disappeared from economic theory. Combined with the dramatic change in the corporate landscape, economic models -- though grounded in fundamentals -- are simply in adequate in explaining movements of financial asset pricing. Finance theory may have kept up (or did it "cause") with this change, but are increasingly based on "market-driven" (i.e. trying to explain the behavior of the market rather than improving price modeling) rather than economic fundamentals.

Given the fact that economic models and finance models seems to be drifting further and further apart, and the fact that financial bubbles are becoming more common, and not just limited to the U.S. or Europe, but globally. Take the recent stock market meltdown in China as an example. In a little over a month (July 08 to August 24, 2015), the Chinese stock market fell close to 40%. The impact was felt worldwide. The DAX lost 22% during the ordeal. The Black Monday (August 24, 2015) in China, the Nikkei lost close to 5%, India's market for the lowest in seven years, the Dow lost 1000 points in the first 10 minutes (closed 588 points lower).

It is not our intention to compare such financial bubbles to the 9/11 terrorist attack, but we are inspired by one of the actions taken by the U.S. intelligence community. It is rumored that special advisory committee was formed consisting of not only the head of various security and intelligence agencies but also noted novelists such as Tom Clancy. The role of the advisers, such as Tom Clancy, is to dream up scenarios where terrorists could threaten U.S. security.

The question that begs to be is, can (and should) we do the same regarding potential financial bubbles? Much like the advisory committee for Homeland Security, their job would be to dream of improbable or impending financial disasters. In addition to the involvement of various related government agencies, it could include prominent scholars that have no close ties to the financial sector, such as William Barnett (and the Center for Financial Stability), who worried about the Monetarist Experiment that led to the 1981 economic recession. Or Robert Shiller, raises the question of a real estate bubble as early as 2003, more than four years before the subprime crisis materialized; in a recent CNBC interview (September 03, 2015), Shiller worries that we may be in yet another bubble.

This "devil's advocate" advisory committee may not be totally thinking outside-of-the-box, as EU has the European Systemic Risk Board (ESRB). However, the advisory committee here is somewhat different. Their primary role is not to assess risks or formulate countercyclical policy, instead, their role is to identity vulner-

abilities and think of any improbable circumstances that would cause the economy to collapse. Their role is really to be "chicken little" in a robust economy and worry that the sky is falling. Given the consequence of the recent financial collapses, we feel this could be part of the "macro prudential regulation" in our new Macrofinance paradigm (referred to Figure 1). After all, just like the importance of government policy during the transition of the former Socialist economies, during economic crisis, all eyes turn to the government, much like a cancer patient put his/her life in the hands of the oncologist (Jack W. Hou 2011).

8. Conclusion

As a logical system serves in linking observable facts, scientific theories are constructions that satisfy the premise experiential fact and the rules of logic. A scientific economic methodology should be built on the following three bases. First, the experiential basis, the methodology must be built upon objective facts and experience. Second, the behavioral basis, the methodology must be based on the logic and rules of behavior of the market players. Third, the practical basis, the methodology must find the link between theory with practice. The guidelines for the "macrofinance" methodology are formulated based on the three basic principles described above. On the one hand, we need a simple and clear theoretical framework to summarize the laws for the development of the global financial system. On the other hand, we need to apply these laws to the practices of national development, so as to set up a holistic theoretical framework which combines theory with practice.

As a holistic scientific methodology based on systematic logic, macrofinance offers us a new paradigm to understand and research the laws of the operation and development of modern financial systems. With its depth and breadth, the paradigm not only offers us a bird's eye view over the whole financial system, but also points out a basic logical track from general theory to practice. As a "projection" of the real world in the logical dimension, scientific theories carry the basic goal of establishing the logic behind facts to depict the correlation or causal effects between facts, and to explain and guide practice. Therefore, the scientific consistency between theory and fact is the basic premise of a reasonable and legitimate theoretical revolution. If an economic theory can help to make the right policy decision, then it must be compatible with the real world. The goal of "macrofinance" is to return to scientific economic methodologies by analyzing the inherent laws of modern financial systems to set up a comprehensive theoretical framework that unifies the financial sector with the real economy and combines theory and policy practice.

In general, the major feature of the macrofinance framework is that we must analyze the financial system as a core part of a complete and endogenous analytical framework, instead of only focusing the analysis on money and credit. In fact, for any object, only when we go beyond its visible boundaries can we ever gain a complete understanding of it. Therefore, a comprehensive financial theory can only be developed through a more comprehensive logical framework, instead of confining its view to the fragmented "dots" of facts, such as money or currency. As such, the macrofinance proposition focuses on three pillars (efficiency, stability, and ability to contain crises), to restructure modern financial theory, and extend them to the endog-

enous relationship between the financial system, the real economy, and economic policies, which creates a comprehensive and dynamic picture of the development of modern financial systems.

It is often said that economics is the father of finance (and accounting is the mother of finance). One of our contentions is that the gap between economic and finance theory/model has been increasing for some time, much like estranged father and son. Though our macrofinance paradigm focuses on a holistic operational system, we also would like to call to arms a rethinking of financial factors in real-world economic models, and to return finance models to be grounded in real economy fundamentals, with government agencies to take a more active role in monitoring and sounding alarms when signs of financial bubbles are obvious.

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