FINANCIAL GOVERNANCE UNDER THE INTERNET ECONOMY

Xie Ping  Yin Long

FINANCIAL GOVERNANCE UNDER THE INTERNET ECONOMY

Xie Ping  Yin Long

(Research Bureau of the People’s Bank of China, Beijing)

Abstract

The immeasurable potential productivity and high-growth characters contained in Internet Economy attract financial industry to develop internet financial service promptly, which will be mainstream tendency in this century. It has changed the function of traditional financial company and the structure of financial organization. Electronic money has also made the central bank lose the money supply monopoly role and shrink total assets. The changes of financial industry organization and monetary form make a series of development and evolution on monetary theory, money supply and demand, monetary policy, and financial market. It is necessary to adjust the financial governance timely in order to catch the new risk.

The development of the information technology has not only changed the people's blindness to the traditional economic theory, but also the financial theory and financial industrial organization. Internet Information Technology now is infiltrating into the financial supervision, monetary policy and the financial market. New-style financial governance structure is being shaped.
I. Internet Economy and the Evolvement of the Financial Organization

A hundred years ago, when Leon Walras established his general-equilibrium analysis model, he supposed that there would be a well-organized auction market, where all products could be traded instantly, and the supply and demand would be well matched. Moreover, Leon Walras widely used this hypothesis as the basic assumption for his other theoretical research of economic general-equilibrium. But in traditional economy, this assumption could hardly be established because of the trading cost. However, nowadays internet economy has changed the trading mode and the market structure. The costs of information search and analysis, contract complement and the data products transmission are sharply going down, the auction market similar to the Walras' assumption has some inkling. For example, anybody can make the auction with numerous demanders on the e-bay line.

In this market, the marginal cost of the producer is no longer a U curve, but an average cost curve with monotonically diminishing and zero converging. On the contrary, because of the strong externalities of the net, the consumer utility function and the client's number showed an index correlation¹ and shaped an upward marginal utility curve. These two curves imply that the marginal revenue will be increased instead of diminished, thus making the internet economy present high-growth characters. Having reached a certain scale, consumer surplus will be expanded and the producer's profit will be increased geminately.

Furthermore, in the production function of the economy, knowledge and information have been separated from the human capital and become new production factors, which are unlimited resources as compared with the capital and labors factors. When certain amount of capital and the labor are given, the production-possibility frontier is not a single curve; it may have many production-possibility frontier curves compounding differently with knowledge and information factors. Consequently the internet economy contains immeasurable potential productivity.

In internet economy, the competitive model of "the strong bullying the weak" is being replaced by "the anticipator bullying the straggler"

¹ According to the Metcalf Law, the value of net shows an indexed growth..
model. Owing to the accumulating effect, pursuaining effect and the diffusivity effect, any enterprise that is the early bird to get the market will occupy a favorable competitive position with its "leading advantage". The knowledge and information supply has increased geometrically so the exclusion of these information resources will disappear. Every consumer may become the information supplier. However, the consumption capacity of the knowledge and information products are quite limited, therefore, how to attract the people's attention and the limited consumption capacity has become the key point for a successful or failure performance in internet economy.

Net-revolution also removes the time and space restrictions of trading, thereby, in internet economy, supposing there is no language and the regulation obstacle, the market will become a global and integrated place where the national boundaries, the difference of trading time and the instrument are no longer the shackles of the trading.

Internet economy has significantly changed financial organization, business and supervision. In developed countries, on-line securities have accounted for more than one fourth of the whole market share, and in some individual developing countries, such as South Korea, traditional trading has been replaced by the on-line trading. There are more than 100 million consumers around world who are enjoying the internet banking services and insurance services. Accompanied by the investment fund and securitilization, on-line securities trading, on-line insurance and e-banking are changing the traditional financial organizational structure.

With the development of internet economy, the relative information advantage of financial industry has been weakened. The market participant can easily find any useful information on the line through the world. The financial experts provide the professional services and up-to-date intelligentized software, which make the information processing easier. Although it is not free to get these information, which costing the charges for net, membership and software, the cost actually is too low to take into account in the economic analysis framework. All these improve the information structure and the information facility, and broaden the market area.

Traditionally, banks were specialized in assets conversion, risk management and the evaluation and monitor of contract. However, now they can not monopolize the banking business but have to cooperate or share the business with other on-line company, net loan company and discounter. At present, the net loan companies have become stronger

---

2 Net Loan Company is mainly composed of licensed housing loan dealer, comprehensive net station and auctioneer. The specialty of the company is to find the housing loan with low interest rate and low fee for the
competitors and their total e-loan amounted to US$ one billion in 1998.

The bank's function is changing too. The settlement function will become the most basic function for the e-bank in the future and also the substructure for the further development. Only first being the payment intermediate for the clients can a bank attract more clients and expand other business field. In order to have better existence, banks have to play a new role in addition to their present functions. First, banks have to be the initiator in building financial infrastructure and providing the financial facilities for the market participants and the economic performance. Second, the banks have to establish more efficient fund transfer system by cooperating with other organizations. Third, they have to improve the company's client business model by reengineering the trading procedure and to help consumer perfect their self-services business.

As for the non-banking financial institutions, internet economy has intensified the competition in the intermediate market. The comprehensive net operation model, diversified product design and individual investment consultancy have strengthened the consumer's dominant position in the market, and the intermediate has been continually weakened. As a result, there emerges a so-called "disintermediate" phenomenon. People recently are doubtful of open outcry model in trading floor and are exploring the possible way for direct trading. One of the results is the development of electronic communications networks (CECNs). In this market, the transacts can be automatically matched through electronic quotation system no longer in need of traditional dealers and market makers.

The potential expansion and the profitability in the future of the internet economy have changed the existing financial organizational structure. In some countries internet, where economy is well developed, the traditional branches have been reduced. In Finland, for example, the bank's branches and the staffs have been reduced from 3300 and 50000 in 1990 to 1500 and 25000 in 1998 respectively. It is obvious that the central banks or the financial authorities are facing great challenges.

II. The Central Bank's Position and the Money Supply

The central bank was born as the one and the only authority. But now it is different in internet economy. The second fundamental revolution of money form has occurred since the middle ages when mint was replaced by fiat money. Since e-money is rapidly expanding worldwide, the way of money supply is changing accordingly, which makes the central bank...
to be confronted with challenge on its position and function. Benjamin Fridman argued that the central bank is already out of date and will be cleared away in the next century. (Friedman, 1999)

Conventionally, the central bank or the monetary authority controls the issuance of the base money. However, in internet economy the monopoly of money supply is being broken due to the expansion of e-money. Nowadays, either the central bank or financial institute, even non-financial institute can issue e-money. It is just like the progression of mint replaced by the fiat money. Initially the paper money was issued by the non-government organization and its value was guaranteed by converting it into the mint. Historically, it took quite a long time that the banking certification had been evolved to fiat money and monopolized by the central bank. Therefor, the multi-issuer of e-money issuance mechanism will keep going at least in the near future. Even if the central bank wishes to continually control the issuance of the e-money, they have to prudently think about the complexity of e-money technology, diversity of the contract and the potential cost of preventing faking money before taking action. On the other hand, the monopoly of the e-money issuance by the central bank can possibly block one country's e-money innovation and the new technology development in its country and thereby they could drop behind other countries. Meanwhile, because the e-money can be used anywhere without space limitation, it is difficult to prevent e-money inflow from foreign countries. All these problems could finally make the central bank change over to a new way.

Theoretically, the settlement system is always aiming at improving the economic efficiency and lowering the trading cost, thus intensifying the competitive mechanism in the money creation process. The replacement of mint by fiat money implied the death of the state monopoly and the introduction of more competitive banking system in the money creation process. Money limited by one country's noble metal now has become an important exogenous variable in the national economy. E-money further strengthens the competition mechanism. The competitive money issuance will definitely affect the issuance mechanism of the money. The monopoly issuance will be replaced by the market principle of money creation "production". E-money will finally make the money supply become endogenetic variable in the economic performance.

E-money and its market-directed issuance mechanism are eroding the central bank's independence and its assets and liabilities.

The central bank's independence, to a great extent, is built upon the financial resources for implementing its functions besides the security of
the legislation. For most countries, the main financial resources are from seigniorage, which is ensured since the central bank as the one and only money issuer. The competitive issuance mechanism of e-money will definitely affect the seigniorage, and the weaker the central bank's competitive capacity is, the more the seigniorage reduces. In France, for example, if the seigniorage reduces by 54 percent, the central bank of France will have to rely on other financial resources; thus its independence will be affected. For the developing countries, where the cash is widely used and the management cost is quite high, this problem will get even more worse.

The main assets of most central banks are circulating currency. The application of the e-money will definitely reduce the central bank's total assets. In the United States, German, France and Italy, for instance, if the circulating currency is totally replaced by the e-money, their central banks' assets will decrease by 87%, 70%, 40% and 28% respectively (Moody, 1996). The more the economy develops, the more the assets reduces. Therefore, it is difficult to imagine that the central bank will be powerful enough to perform its function when its assets is reduced sharply.

Without the monopoly of money issuance, and when e-banks are organized as a mutual-assistance union either in joint form or associate form, the central bank will no longer be the last resort and consequently lose the most of its authority.

Therefore, Friendman argued that the central bank could not control the short-term interest rates and then would be washed out when it lose the monopoly power of base money issuance and the physical currency is replaced by e-money and people deposit their assets in a trust company instead of bank's savings account.

Although this argument has not yet widely recognized and even disproved by some people, we have to reevaluate the central bank's position and function in internet economy environment.

III. The Impacts on Monetary Policy

Significant variations in monetary policy are resulted from internet economy: the selection of intermediate targets is limited; the transmission and reaction are speeding up; monetary policy shows more influence on economy, while its independence is weakened.

The aggregate variables, represented by M1 and M2 especially, are losing their reasonability and accuracy as intermediate targets with the development of internet finance and e-money. The internet economy, on one hand, integrates the demand-and-supply-side in fund transactions and those corresponding financial transactions into a single electronic
platform, and hence speeds up the velocity of circulation of money. On the other hand, the diversification of e-money’s issuance, the swift change between money in various levels and the widened substitution between financial assets make it complicated and difficult to define or compute the money stock. Therefore, it is a mission impossible to estimate the money in aggregation accurately. Even if it were possible, the cost would be such high that there is no feasibility in operation sense. The alternation in money supply as well as the instability of money velocity result in the money stock is out of control. Generally, on condition that the money velocity is stable or along an observable path, it is possible to set and control an intermediate target which is consistent with the ultimate target. On the contrary, without the money velocity participation, even the central bank effectively controls money supply, the ultimate target still would be greatly biased. Given the complexity of multi-level money combination and the volatility of money velocity, the central bank would have difficulties in explaining the exact meanings of the change in money stock.

The impacts on monetary policy instruments are following.

The effects and operational scope of reserve requirement are shrinking for three reasons. Firstly, the share of businesses within balance sheet revolving in required reserve is dropping. In pure e-banks, this indicator is close to 50%. Furthermore, e-money partially substitutes savings with reserve requirement. Secondly, in order to encourage innovation and get the leading advantages in financial technologies, many countries are reforming their reserve requirements. It is a trend to decrease the ratio of reserve requirement and seigniorage in other forms. Thirdly, since geographic move of e-banks would not lose their clients as those traditional banks, and the moving cost is relatively low, e-banks can escape from strict reserve requirement by moving. One direct consequence is international competition in the ratio of required reserve. The effect of open market operation (OMO) will be more complicated. Internet economy fastens the process of financial market integration and the speed of information spread, widens investment market and increases investment opportunities. Therefore, any tiny market fluctuation would lead to a multiplied change in investment structure. However, the diversified issuance of e-money lowers the liability of the central bank, which possibly results in central bank’s asset-liability inadequacy, and hence the central bank is incapable of a large scale money supply operation. The prescription and flexibility of OMO is weakened. In particular, when a huge amount of “electronic hot money” inflows or foreign exchange market fluctuates dramatically, the sterilization would
be hardly to operate by central banks, and thus exchange rates and domestic interest rates would be unstable.

The effectiveness of rediscount rate is restricted into a narrower interval, while it is more sensitive. In those economies whose interest rates are fully liberalized, when commercial banks are permitted to issue e-money, the excess profit by such issuance is surely to attract new entries into this market. Finally, complete competition will drive down the net profit of issuing of e-money to zero. Meanwhile, low operating costs of e-banks generally lead to more sever competitions in interest rates which means the long-run equilibrium interest rates are going down and reach a low level. However, since the value of e-money still depends on traditional money, rediscount rate is an instrument to adjust issuers’ financing costs when they borrow from the central bank to deal with withdrawals.

Traditional banks’ role in monetary policy transmission is to expand the change in money base, which is so-called “multiplier effect”. E-banks bring their own intentions into the money supply procedure. When e-banks issue e-money, their sensitivity to the change in high-powered money will decrease. Furthermore, if their e-money or quasi e-money are sufficiently attractive and the volume is over a critical level, the competition between e-banks and central banks would be inevitable, and money base supply is in a “buyer’s market”. Suppose the re-lending to e-banks is central banks’ major method to input high-powered money, e-banks possibly allocate the money based that they acquired into other investment projects, rather than traditional credits, given lower transaction costs, more investment choices and a widen investment market border. E-banking may enlarge the effect on economy of monetary policy’s dynamic inconsistency than traditional banking. In monetary transmission, e-banks show more technological advantages in gathering new information and reaction. If such information were ignored or unanticipated by central banks in their monetary policy making process, the bias from the ultimate target of the policy would be larger. On the contrary, e-banks could increase the effectiveness of monetary policy transmission by shortening the policy lag, which leads to a faster change in aggregate economic indicators. Note that such effect requires a more flexible monetary policy.

In an internet economy, the independence of monetary policy\(^3\) is crucial. Since the cross-border use of e-money is much more convenient than traditional money, consumers can purchase foreign goods and

\(^3\) The independence of monetary policy contains two aspects: the independence of policy adoption and the independence of policy implementation. In this paper, the independence means that on implementation.
service by domestic issued e-money, or accept e-money nominated by
foreign or domestic currencies issued by foreign institutions; and
residents is possible to exchange their income from nonresident firms by
offering intellectual service into e-money and spend them locally or
abroad. The openness, all-time and no restrictions on border of
e-commerce transaction platform and e-financial market endow the
internet economy the characteristic of globalization. One economy’s
monetary policy is hard to shield from others’ economic cycle and policy
impact. Therefore, central banks will have to coordinate their policy with
related countries. This coordination at least includes: the control and
report on e-money flow, the exchange of e-money products and system
data, interaction between countries.

IV. The Changes in Financial market
Firstly, the internet economy accelerates the process of the
globalization and integration of financial markets.
E-commerce, e-banking and e-money have broken the geographic
borders of financial markets. The technology is a solid basis for regions
and markets to melt together. E-money breaks the constraints of the
difference of bank notes nomination in different economies, just like
gold, thus is expected to be the widest accepted transaction media.
Furthermore, e-money offers a unified worldwide standard to improve
the birth of a integrated capital market and the globalization of market
participants. Various financial derivatives and financial innovation are
also pushing this trend. E-trade for financial instruments shows to
replace traditional exchange. Major international financial centers are
linked by global sub-centers. Since Germany, France and Switzerland
announced to link their electronic trade system in March 1998, eight
European stock exchanges have been constructing a unified market. In
1999, NASDAQ expanded its business to Tokyo, Singapore, Hong Kong
and London.

Secondly, e-finance changes the procedures of information, orders,
executes, clear and settlements in traditional markets, improves
transparency and competition.
The transmission and spread of information, one of the basic factors
of a market, is continuously strengthened. Its direct effects are
eliminating or cutting all unnecessary transaction costs, and keeping
pricing transparency for each trader. Millions of people can take their
trading actions anywhere, at any time through internet. Brokers, who are
endowed trading privileges to keep market orders, are not so important
as before. A transparent market not only enables consumers to choose
most favored prices to improve competition, but also puts a stricter supervision on brokers. Order is the basic offer and trading method in financial market. E-finance cuts the costs of order transmission. Multi-market automatic comparison and order path selection software is widely applied in internet securities exchange. For example, in the US, a lot of order software on electronic trading platform can automatically select most favored markets and send orders respectively. 85 percent of orders in NYSE have been through SuperDot system. Another contribution of network technology to financial market is the automatic order executing system. In 1980s, NASDAQ applied automatic order executing technology in its Small Order Exchange System (SOES). Automatic trading is a shock on market power. Investors’ power is strengthened with respect to brokers. In the network, the direct and on time settlement weakens the monopoly of clearing house in presence.

Thirdly, the market structure is changed with the development of direct trading market.

In 1997, SEC Order Handling Rules (OHR) was enacted to legally define the market characteristic of the alternative trading system (ATS). ATS contains two sub-markets. One is the electronic communications network (ECNs). The other is so-called other system markets, i.e. the service for special objectives, such as Arizona Stock Exchange, Optimark, ITD Posit, and etc. Its impact is limited. ECNs have brought a big shock on the current market structure.

ECNs is a computer network which matches puts and calls by electronic means, rather than traditional exchanges which need brokers and market makers, so the former has simpler and more transparent trading process, higher efficiency and lower price. In 1997, there was only one ECN, the Instinet. In 1999, nine ECNs operated on-line financial business, including: Island ECN, Archipelago, Tradebook, REDIbook, BRUT, Strike, etc. The total property of Island ECN is a lot of DELL computers and one brokerage license. It takes Big Board 22 seconds to deal with a 10,000-share transaction, while it only takes Island ECN less than a half second. The trading fee of Island ECN is $0.0025 per share, while traditional brokerage commission is about $0.06 per share. Island ECN and MarketXT have postponed their trading time to 8 pm. Instinet, a subordinate of Reuters Group PLC, permits its clients to trade till 5:15 pm, and plans to offer all-night trading service for individual clients. Almost 30 percent daily trade volume in NASDAQ is through ECNs, currently. However, this share is zero two years ago. Option traders also show great preference in ECNs. Suffering from the e-trade, CBOT’s market share in futures market has dropped to
30 percent. On the other hand, Eurex, established 9 year ago, takes the first place, whose daily trading volume is twice more than CBOT. In Germany, the electronic trading system have taken 90 percent transactions within two years.

V. Financial Governance

In internet economy, the asymmetric status between financial authorities and banks, between banks and consumers are changing. Huge amount funds’ sudden transfer between financial markets in the world is realized. Financial signals transmission and spread characterizes as a “chain reaction”, as atomic reaction, which is a new challenge the financial sector is facing.

Firstly, the probability of financial risk contagion has been increasing. In an economy, the authority could separate and resolve risks within several relatively independent areas by separating banking and investment banking, or setting market entry barriers, or issuing licenses. However, the effectiveness of such physical separation is less. The interaction of various financial business, clients, and countries, and the huge flows of international speculating capital, increase the risk corelation between various economies.

Secondly, given the increasing e-trade volume, the risk of payment and clearance caused by the pause of trade is also rise. On one hand, the swiftness and convenience of financial transaction do not require trading partners to hold over-sufficient excess reserves. To enhance efficiency, the funds allocation is based on accurate plans. When one part faces liquidity problem, e.g. caused by heckers’ attack, the whole clearing system will trap into a continuous chaos. On the other hand, in paper settlement, there exists sufficient time to correct occasional errors or omissions. In e-trade, the correcting operation space is narrower, the spread of such mistakes is wider, and the correction cost is higher.

Thirdly, the probability and destructiveness of sudden financial crises are rising. Two changes mentioned above and some financial giants whose international investment and speculation through international financial network to maximize their revenue may partially escape from financial supervision, and raise the suddenness of financial crises. If crises occur, related economies and markets would be inevitably infected.

Traditional financial regulation is not suitable for e-finance. The financial manipulation principles must be adjusted.

Internet economy breaks the framework that the financial authority adopts the game rules independently. To cooperate with financial
institutions, and to rely more on the self-discipline of financial firms and
the market should be rule no. 1 that the authority should obey in the
future. Given the rapid changes in internet economy, any rules
unilaterally stipulated by the regulator will lead to such dilemma that the
agents regulated have been changed before the rules are enacted as laws.
Even if regulations are sufficiently perfect, financial firms can run
offshore business by taking advantages of the globally linked network.
Considering the anonymity and mass data in the network, financial
regulator acts as cooperator, accelerator and coordinator for e-finance,
improves the infra structure construction and financial information
exchange, offers services actively, then its function of governance can be
fulfilled.

Unified supervision is required, i.e. financial regulator should be
restructured from multi-institutions into uni-institution. Since the
e-financial businesses of financial institutions in various types interact
one each other, it is difficult to define the business type according to
traditional regulations. Multi-institution supervision system results in
duplication or absence of supervision, and higher transaction costs for
both regulators and the public. A uni-institution supervision system
offers a fair and consistent supervision framework in which the conflicts
of views and information requirements among regulators can be avoided,
and the public and financial institutions can be clear about the referee to
whom they request when encounter disputes. The regulation targets are
necessarily to be expand from financial institutions to some
non-financial information firms. With the development of e-money and
e-finance, some non-financial institutions operate financial or
quasi-financial businesses, such as short-term electronic commercial
credit, intermediate payment, investment consultation. As logic
reasoning, the supervision domain should be expanded symmetrically.
Supervision emphasizes on the security of financial transactions and
clients’ information protection, rather than asset-liability and liquidity. In
detail, the regulator pays close attention to the security of the financial
transaction information transmission and storage, and private
information, transaction information and financial information of clients.

Fundamentally, the nature of internet economy is computerization,
globalization and integration. In long-run, the authority in each economy
will face cross-border business and clients as a result of the worldwide
expansion of internet. The international coordination of financial
supervision is expected to be more and more crucial. The new
environment requires to establish new regulations and market
infrastructure which are fit for international standard, such as
information disclosure, real time settlement, to improve transparency of financial supervision, not only to deregulate interest rates and exchange rates to avoid price distortion. All these are effective guarantees for the development of internet economy in the future.

References: