THE EFFECTS OF RISK EVENTS ON THE EFFICIENCY OF FINANCIAL MARKET

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Abstract: *The network of relationships that exists between the participants on the financial market and the need to match the offer with the demand request the efficiency of the financial mechanism. For this reason, the concept of efficiency is nowadays a central issue of market research. Taking into account the real economy this paper tries to reveal the effects of risk on the efficiency of financial market. The approach of the subject has a double perspective: the negative effects of risk on the efficiency and the positive ones, trying to find the benefits of each aspect for the economy as a whole.*
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1. INTRODUCTION

The current financial context is definitely one of the best examples to illustrate the effects of risk events on the financial market. According to the Financial Stability Report for 2012 issued by the National Bank of Romania, the financial environment has become more and more strained, the financial market's volatility has increased and the investors' perception has worsened amid the sovereign debt crisis and the persistent uncertainties about global growth prospects. Rating agencies have downgraded the marks for many EU countries. All these facts lead us to the conclusion that the financial risk has negative implications as direct effects. But this conclusion is not complete, because it also has positive effects, represented by all the solutions and tools developed and implemented in order to counter the negative effects.

2. HOW IS THE EFFICIENCY PERCEIVED ON FINANCIAL MARKET?

An image of an efficient financial market requires a number of simplifying assumptions, having a referential nature that is needed to model the financial system. In a synthetic form, these assumptions are:

- Financial market participants behave rationally and they seek to maximize the utility function of their total wealth.
- There is a financial investment atomicity that makes the securities readily marketable and ensure market liquidity (investments are perfectly divisible and liquid). An investor is in an atomistic position if he returns on the market an insignificant volume

of transactions compared to total transactions and therefore cannot influence the price equilibrium established in the market.

- Markets are contingent, this fact allowing a distribution of resources in the economy, a very good risk diversification and, therefore, a very good performance of the economic system.

- All relevant information is available and free.

- The securities exchange rates follow a random path (random walk) and the probability of the distribution yield is approximately the same with a normal distribution (Gauss bell).

- Investors realize homogeneous price anticipations (homogeneous expectations) (Symmetry of information), which means that all the investors assign the same probability distribution for the possible returns of each title.

- Loans can be given at the risk-free interest rate and in unlimited volume.

- All the investors expect that the risk-free interest rate is achieved at the balance point between the marginal rate of substitution (RMS) of the current consumption and the future marginal investment rate (RMI) of saving (S).

- All investors have the same economic horizon, involving a single period.

- Market operations are not affected by any tax duty and transaction costs.

In relation to these assumptions and according to the correspondence between the perfect market and the financial reality, there are various kinds of financial market efficiency (Crăciun, 2012): allocative, operational and informational efficiency:

• allocative efficiency requires the achievement of the Pareto optimum in economy. Efficiency or Pareto optimization is an important concept in economics with multiple applications in game theory, engineering and social sciences. This optimum is achieved when, given a set of alternative allocations, assets or income for a particular set of individuals, a movement of one of these from one individual to another, can make at least one individual to gain a better position, without doing any harm to the others;

• operational efficiency means no frictional forces, perfectly divisible and marketable assets, inexistence of transaction costs and taxation, the lack of regulations to restrict free market access;

• informational efficiency requires equal access to information for all market operators, free of charge information and the instant coverage (by the price of all assets) of all available information. Informational efficiency of the capital market can take three forms (Codirlasu, 2010): low ("weak form") semi-hard ("semistrong form") and hard ("strong form"). According to the weak form the stock prices reflect past information, according to semi-hard form, all information made public are incorporated in the stock, while the hard form is an extension of the other two, including confidential information - "insider information" in the exchange rate. Over the time, semi-hard pattern has become the accepted standard.

Reality has shown that the assumptions on which is based the theory of efficient markets are not real, because investors do not always exhibit risk aversion and they do not react immediately to information. In many cases, they react later, being guided by the trend, this attitude meaning that past information are incorporated in present strategies.

Individuals do not always behave in a linear way, incorporating new information immediately, but have a nonlinear behavior and even the markets in which they act are nonlinear dynamic systems.

In this context, the use of statistical models for the analysis of standard random walk data generates incorrect results. Irregular assimilation of information, as it happens in reality, can lead to random motion trend – which is analyzed using fractal time series. Thus, for the study of nonlinearity (unable predictability) the chaos theory is the best method. Chaos theory attempts to discover how simple and predictable functions can lead to unpredictable results. Through this theory can be understood how systems that were previously considered to be completely chaotic, have now predictable patterns.

In the study of financial markets, the application of chaos theory and fractal time series has generated several conclusions (Codirlaşu, 2010):

- The market is stable when the investors have different time horizons, this explaining the existence of a large liquidity.

- The set of information is more related to the attitude of the market and short-term technical factors (information obtained through technical analysis) than to the information available in the long term (obtained through fundamental analysis).

- The occurrence of an event which question the validity of basic information, determine long-term investors to stop their participation in the market or to start trading on a short-term information (market attitude and technical information) base. In this context, when all the investment horizons narrow to a uniform level, the market becomes stable.

- Prices reflect a combination of information about technical analysis (short term) and fundamental analysis (long-term). Therefore, short-term price changes are more volatile ("noisier") than the long-term. Basic market trend reflects changes in expected revenues, based on the changes of the economic climate. Short-term trends are the result of group behavior ("crowd behavior"). There is no reason to believe that the length (duration) of the short-term trend is related to the underlying economic trend.

- If an action has no relation with the business cycle, then there will be no long-term trend. Liquidity, short-term information and the data related to trading will dominate.

In relation to the financial market`s efficiency has been developed the concept of arbitrage. The concept of arbitrage deals with the measurement of financial assets (Crăciun, 2012). In connection with this concept was developed as an assessment tool, the net present value (NPV), value which is used by each investor as a criterion for determining the present value of financial securities. Each investor will seek to maximize the NPV criterion. As long as there is a difference between the purchase price, paid for a security, and the present value of future income, released by the investment project, there will be an arbitration of this difference.

3. THE NEGATIVE EFFECTS OF RISK EVENTS

The manifestation of risk on financial market does not mean that it can be exactly located and framed in a certain typology, but involves assessing its impact and its

contagion effect that leads to systemic risk.

Risk is actually the expression of systemic financial instability. This state of financial instability reaches systemic dimensions through different mechanisms: contagion, slow accumulation of financial imbalances and the occurrence of systemic shocks (Cerna, 2012). Under these circumstances, the failure of a market through the collapse of economic agents generates other markets collapse, even if the risks taken were different, leading to a phenomenon called "blocking chain". Such imbalances generate systemic risk because they are not corrected at the right time and become generalized. Once they become generalized they become global shocks, affecting a large number of financial markets, being impossible to restore the balance on the basis of market self-regulation mechanisms.

There are certain characteristics of markets and financial systems that generate a higher probability of developing systemic risk: externalities and asymmetric information.

Externalities are significant due to the fact that they are more important on financial market than in other sectors, because of the complex and dynamic network of mutual exposures of major financial intermediaries (Cerna, 2012), meaning that in normal times, the multiple interconnections between market participants is an effective mechanism in the process of risk division, and in times of tension, turns into an instability transmission channel, generating consequences on third parties, thus systemic risk being greater than the sum of the various risks taken individually.

Information asymmetry occurs because financial systems mobilize funds from businesses which do not know or are not fully informed about investment opportunities. They enter into relationships with agents who know the possibilities of doing business and are willing to work but do not have the required capital, between them occurring phenomena such as agency problem and adverse selection.

The state of instability of the financial system in the economy can be measured by using macroeconomic indicators that reflects the tensions between the main components of the financial system: financial intermediaries, money market, stocks and bonds, foreign exchange etc.. To study the instability condition is used the "composite indicator of systemic stress" (Composite Indicator of Systemic Stress CISS), built by D. Hollo, K. Kremer and M. Lo Duca. Based on this indicator was concluded that systemic crisis began in September 2008, particularly through bankruptcy of "Lehman Brothers".

Financial crises occur in a climate of widespread financial instability. Financial stability itself is defined in terms of appearance of a crisis.

If the financial system does not fulfill its role, the real economy suffers losses. Financial crises as a result of risk events are actually those economic conditions characterized by widespread failures of businesses, lower incomes and prices. Due to economic interdependence these effects are widely transmitted by the contagion and are generally accompanied by financial disturbances, both at micro and macro level.

A financial crisis usually includes a currency crisis, a banking crisis and a debt crisis.

There are several economic theories on the causes of financial crises (Radu, 2011). The first category identifies as causes predictable events due to inconsistent policies. A second category refers to the interaction between private sector behavior and

compromises made by governments, and the third generation of theories brings the idea that crises were generated by the banking system. The crisis we face today is part of the third generation, being classified as a twin crises of banking and currency type.

Financial crises have significant implications on the economy and can be summarized as follows (Radu, 2011):

- additional budget expenditure due to recapitalization of financial institutions affected by systemic shock and of the deposit guarantee schemes;
- damage on the effectiveness of monetary policy, the transmission mechanism being severely altered;
- slow growth or even loss of gross domestic product by: restricting production, rising cost of financial intermediation, which can fuel the development of the phenomenon of adverse selection;
- reducing the wealth and/or income through impairment of financial investments (partial loss of bank deposits and reduction of the value of stock portfolios) and the loss of disposable income (by reducing wages as a result of reduced demand for labor and tax increases to achieve budgetary resources covering government spending shock occasioned by limiting systemic spread of the financial sector).

4. BENEFITS AND POSITIVE EFFECTS OF RISK EVENTS

Besides negative effects, the financial crisis caused a mobilization phenomenon in order to create and develop the necessary analytical tools to formulate and apply policy to ensure financial stability.

The first aspect (Cerna,2012) was the understanding of all aspects concerning the organization and functioning of modern financial systems (elements, function, efficiency parameters, etc.) and of the risks that they generate. This fact imposed the understanding of the essence of some major changes - financial innovation - and the prediction of how these modern financial products may occur in credit process (credit default swaps or CDS).

Crises have shown the need and importance of timely referral tension and imbalances and the importance of analytical tools necessary to evaluate new financial products, and risk involved.

Second, the crisis demonstrated the need for models, not only the ones that reflect emerging systemic risks in the banking sector, but also models that allow to explain how non-bank financial intermediaries contribute to the transmission of the financial instability.

Third, the postulate of efficiency of financial markets was reviewed. Economic research has shown that the assessment and accounting of assets, financing arrangements of firms and the brokerage process have some major shortcomings that diminish the efficiency of financial markets - contrary to the widespread belief in market efficiency.

The crises have increased the importance of the macroeconomic stress tests (stress tests), tests based on an extreme but plausible macroeconomic scenario, which examine its punctual effect on banks.

Meanwhile, the financial crisis led to systemic risk regulation.

There have been developed five models for systemic risk assessment (Dănilă,2011):

- aggregate indicators of imbalances, which are either macroeconomic data, or monetary data sheet and which are used to signal the strengthening of risk in the financial sector or the economy as a whole;
- indicators of financial market based on risk appetite and liquidity conditions;
- indicators of risk concentration in the financial system, considered very important because they bring into question contagion;
- macroeconomic stress tests, for each national and international economies which are focused on two risk factors for the financial system: economies of scale on the demand side (network effect) and the fact that poor development of the economy and financial conditions influence each other (adverse feedback effect);
- integrated monitoring systems, which are in fact models of exposure of all elements presented above, through a certain representation (such as risk maps (Cechetti, Fender, McGuire, 2010) or through a set of compounds.

Complex systems theory deals with the impossibility of directing risks. Therefore, instead of trying to eliminate or directly limiting risk, a more effective solution may be to create, within the system, some safety nets that allow the survival of financial institutions even in case of strong shocks. And in fact, this is the philosophy of Basel III concerning funds and liquidity of financial institutions. It is also desired to create a rapid procedure for adjudicating bankruptcies, improving recovery plans and creating ad hoc reserve funds.

At the same time in order to solve the problems of contagion, it is expected that financial transactions will be concentrated in central clearing houses. This way, the counterparty risk can be managed more efficiently and recovery operations can be faster.

Crisis phenomena as effects of increased risk events have increased the importance of the macro prudentiality concept.

Macro prudential policies consist of measures to ensure the health of the financial system or prevent out-of-control problem from one part of the financial system (Isărescu, 2011). G20 recommendations on macro-prudential policy, take into account three activities (Dănilă, 2011): identification and monitoring of systemic risk, building a set of indicators for the macro prudential policy, institutional arrangements for policy coordination.

In the same category we can include awareness of the beneficial effects that have quality, quantity and speed of information, this fact involving the submission of efforts to improve data collection, stress tests quality and harmonization of accounting rules to better reflect the economic value of assets in the portfolio.

The current crisis has also revealed the dangers of excessive debt and debt multiplication phenomena. For example, lending to a wide range of economic agents (households of sophisticated financial intermediaries) that do not have sufficient income, own funds or guarantees, was a major cause of instability. Consequently, it became necessary to use administrative tools such as loan-to-value ratio (loan amount to the value of goods purchased) and capping debt relative to income.

Basically, the financial crisis has generated a process of reform. New rules on economic governance in the EU entered into force in late 2011, continuing the process begun in 2010 to strengthen the monitoring and prevention of macroeconomic imbalances, fiscal and competitiveness gaps between EU countries.

The new framework focuses on two components: fiscal and macroeconomic surveillance. It also strengthens the Stability and Growth Pact (SGP), this new regulatory framework targeting multiple components of the financial stability (National Bank of Romania, 2012):

A. Strengthening the existing framework for monitoring and correcting fiscal slippages:

- preventive side of the SGP: Member States must ensure the achievement of medium-term budgetary objectives in order to ensure fiscal sustainability, in this sense being envisaged a maximum level for the annual increase in public spending;
- corrective side of the SGP: the start of the excessive deficit procedure (EDP) may result in overrunning the limit of budgetary deficit and public debt.
- minimum requirements concerning budgetary frameworks: Member States must ensure the existence of minimum fiscal standards.

B. the introduction of macroeconomic imbalances procedure aimed to monitor and correct the macroeconomic imbalances:

- a monitoring and early warning system (a set of indicators established in order to highlight the possible macroeconomic slippage). European Commission (EC) analyzes the set of indicators and prepares *The report on the alert mechanism,* report based on their analysis. EC may decide to deepen the analysis for specific risk areas and may propose measures for member States;
- the preventive role of the EC is to decide the issue of recommendations in the early stages of formation imbalances;
- the corrective side is represented by the excessive imbalance procedure which can be opened for Member States where there is a severe macroeconomic slippage.

C. Introducing measures to strengthen the new framework by applying penalties for breach of the EC European Council decisions.

According to Governor Isărescu a viable financial system reform should address market failures sources on two levels. The first level refers to the coverage of financial institutions activity in order to preclude involvement in certain risky activities and to protect their essential functions; reintroduction of the separation of commercial banking activity from investment activity (according to the original version of the Glass-Steagall Act) and introducing Volcker Rule severe restrictions on operations on their own. The second level refers to the size of the financial institutions. Starting from the issue of "too big to fail" it is found that bankruptcy law is inadequate and requires a special frame building solutions, which do not cause unacceptable risks to the economy.

At the same time it is envisaged the creation of a banking union. This process involves the simultaneous implementation of four pillars. They refer to the harmonization of the regulatory framework and banking supervision in terms of a single set of regulations, the transfer of the main responsibilities of supervision in terms of a single mechanism of supervision from the national to the European level, the harmonization and centralization of deposit insurance schemes by a single scheme for the guarantee of bank

deposits and the introduction of common provisions to ensure legal support necessary to manage bank failures problems through a single bank crisis resolution mechanism.

5. CONCLUSIONS

Risk effects and the lessons of the present financial crisis have been and will be a landmark for the future development of financial stability. Financial reform measures should not seek to circumvent the market, but to ensure its proper functioning. A higher degree of certainty should not be achieved at the expense of lower efficiency and a lower capacity of the financial system to support robust economic growth in terms of financial globalization. Consequently, transnational cooperation is essential and will need mechanisms and new techniques for achieving information exchange and harmonization of approaches, all of them requested to solve the problems of the banks in difficulty.

Fighting the imbalances and financial market risks, both institutions and companies must adapt their strategies. The risk must be understood through its impact upon development and in this regard is very important the correlation between the maturities of the funds taken and of the funds placed in the form of loans, in the case of banks, and in the case of companies, between the form of the profitability of the investments made with borrowed capital and the repayment terms of loans. Basically, any imbalance of maturities is an imbalance of liquidity and therefore, must be correlated the loan's liquidity with the market's liquidity. The lack of correlations between these liquidity sources attracts the impossibility of repayment and constitutes the essence of what did not work in the economic models of financial markets.

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