

Conference Paper

The Dimension, Diversity and Complexity of the Macroeconomic Risk

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Abstract

The approach at a macroeconomic level of the challenges in order to foster the competitiveness in certain economic areas implies understanding and assessing the risk as an essential element which can determine in every moment the availability of the mechanisms and the necessary resources for a sustainable future. Even if in a certain measure the risk has to be assumed, the losses caused by undesired events seem to be more ample than the benefits. The most important aspect and part of the risk management is represented by the fact that risk has to be distributed over time, its effects being extended for long periods. While the benefits are hard to distinguish, the efforts seem to be determined at short notice. Any privation of the risk indicators that are correlated with the long-term objectives leads to a barrier when it comes to monitoring the exactitude and performance of the decision makers. Despite the struggle against the global pressure and the political risk, at a macroeconomic level the uncertainty does not only lingers in association with the external framework, but it also succeeded in reaching extreme levels in comparison with the recent history. The present article aims to observe, categorize and explain the dimension, diversity and complexity of the macroeconomic risk and it will also try to demonstrate that when it comes to composite systems, the risk follows the same path as the environmental context, all because of the diversified overlaps between financial systems and societies, together with their economies and ecosystems.

Keywords: integrated risk management, risk society, uncertainty

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1. Introduction

The approach at a macroeconomic level of the challenges in order to foster the competitiveness in certain economic areas implies understanding and assessing the risk as an essential element which can determine in every moment the availability of the mechanisms and the necessary resources for a sustainable future. Even if in a certain measure the risk has to be assumed, the losses caused by undesired events seem to be more ample than the benefits. The most important aspect and part of the risk management is represented by the fact that risk has to be distributed over time, its effects being extended for long periods. While the benefits are mostly hard

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to distinguish, the efforts seem to be observed and determined at short notice. Any privation of the risk indicators that are correlated with the long-term objectives leads to a barrier when it comes to monitoring the exactitude and performance of the decision makers. Defining an acceptable level of risk is almost impossible, not only because of the complexity of the process which has to determine the distribution, but also because of the thorough differences in values, preferences and faiths. Despite the struggle against the global pressure and the political risk, at a macroeconomic level the uncertainty does not only lingers in association with the external framework, but it also succeeded in reaching extreme levels in comparison with the recent history. The world in which we live is becoming more and more complex, but also interconnected, transforming into reality possible dramatic breakdowns. This is why it is mandatory to identify the trends, to evaluate the risks and to initiate the most suitable precautions.

The macroeconomic risks being the central subject of the present article, it is vital first to understand the essence and the importance of this global phenomenon and afterwards to determine the means in which it affects the sustainability and competitiveness of the economic areas, together with all the companies that are part of them. As for the research methodology, the present study is mostly based on general scientific literature, adding techniques and approaches of specific knowledge. Assessing the main causes of the macroeconomic risks, together with their mechanisms and ways of acting will help us study and detect the most precise methods for preventing and minimizing their dimension, diversity and complexity.

This article is organized as follows: part two is analyzing the macroeconomic risks that are part of the economic policies and which afterwards materialize in distinct segments, correlating the dimension of the risk with the fundamental knowledge. Afterwards, in chapter three I will demonstrate how the diversity and complexity of risk can predict companies' failure, being followed in chapter four by some conclusions and closing remarks. The reference list can be found at the end of the entire article.

As for the elements of innovation, paper's contribution can be especially observed in the arguments provided, which demonstrate that the dimension of risk is of great importance when it comes to companies' objectives and competitiveness. Moreover, the diversity and complexity of the macroeconomic risk will be used in predicting business sustainability.

2. Statement of the Fundamental Knowledge -- the Dimension of the Macroeconomic Risk

In fundamental economic processes risk and uncertainty become inherent and integral parts, leading to activities that are non-linear, unsymmetrical and to ambiguous economic, business and entrepreneurial sectors. The macroeconomic risks affect the stability of the global economy frequently and their significance has accelerated drastically in a short period of time. At the same time, methods to manage them and alternatives for their reduction, which would appropriately and precisely neutralize their potential negative consequences, have dropped off notably. The comprehensive examination of the systemic risks has to be extended from a historical or geographical angle to a framework of modern economic processes. It is for certain known that risks have caused and continue to injure the economy. Therefore, all the above arguments demonstrate why it is critical to react at the right time to probable or current risks that are inherent for the economic evolution of every nation and country.

Macroeconomic risk is a complex phenomenon with multiple dimensions, which determines the appropriateness of its analysis from numerous aspects. When it comes to categories, the presence of various definitions influences the essence and the manifestation of the macroeconomic risks. In order to demonstrate the dimension, diversity and complexity of the macroeconomic risk it is vital to analyze the nature of the elements and to classify the principles and the approaches for assessing this global issue.

During the years, researchers have demonstrated that the macroeconomic risks are perceived to be on the fifth place (from a list of ten) when it comes to conceptualized uncertainties that influence the social being [4]. Despite this, the macroeconomic risks, together with their origin, nature, characteristics and volatility, continue to remain not enough examined. A considerable expansion of scientific effect is truly needed, especially in regards with the methods of research and examination of the macroeconomic risks.

The subject of the present article is not represented by the risk examination of a single or specific segment, but instead it aims to analyze the macroeconomic risks that are part of the economic policies and which afterwards materialize in distinct segments. For this reason, in order to discern between origins, context, and consequences of the macroeconomic risks it is crucial to determine a unified approach. Every economic risk can be seen as systemic in terms of significance and capacity of influencing, but despite this, not every systemic risk can be referred to as entirely economic, because of the

endogenous factors that have a massive impact. The basic justification for systemic macroeconomic risks lays in the inconsistency of the concepts and in the incorrectness of the economic theories which, furthermore contributes to errors of the institutional policies. A condition that has to be fulfilled in a context of indefinite meanings of risk and unclear methods of reduction is represented by prevention.

Risk prevention efforts are trying to mitigate the effects and impacts of the undesirable events that can anytime occur. The presence of a risky background, together with its prevention have been recently addressed by different authors [7], while others have depicted the importance held by the individual preferences in a framework of optimal prevention [5, 10].

We can refer to a macroeconomic risk as a compound process, in which are integrated indispensable elements such as volatility, uncertainty, multi-criteria and ambiguity in economic relationships. On one hand, the desired economic result is obtained through proper prevention and alleviation of the adverse causes on macroeconomic context, but, on the other hand, serves the economy with a productive management. For example, an idea of a theory from Thomas J. Sargent, who won the Nobel Prize in 2011 express that the development of the economy and the future of the macroeconomic processes should be created and organized in a proactive way [20].

Of great importance is to realize and to comprehend that the macroeconomic systems are formed with systemic risks. Moreover, it is also significant to determine the reasons why a risk appears or not and also which alternatives can be used in order to reduce their unwanted repercussions. As a central point, we can mention the analysis, the estimation of the results and the macroeconomic challenges regarding the development and risks.

For many years, the scientific study of the macroeconomic risks, particularly techniques and mechanisms for their reduction and avoidance, relied on excessively established cornerstones. As an example, one of such actions was represented by a mathematical interpretation of the macroeconomic methods and approaches, evoking negative external results. Despite this, during years, it became visible that only the approaches of mathematical econometrics are not enough and does not lead to any discovery of a broad or general macroeconomic behavior.

The world in which we live has to face unstable macroeconomic conditions and it seems that some of the struggles to initiate mathematical principles regarding its equilibrium are sometimes unsuccessful. Not only the intensity of the social area, but also the technological segments and the financial markets, demonstrate that the macroeconomic development is characterized by non-linearity, being veiled by uncertainty and imbalance. Moreover, at the same time, another vital piece of the economy, represented

by the human activity demands global interdependence between governments. The complexity of the examination in regards to potential benefits or losses that can be correlated with the qualitative rank of determining the macroeconomic risks is described widely by the fact that risks enclose many predominant components in key fields and parts of the national economies, including banking, stock and securities markets, etc.

Suitably designed macroeconomic risk should be completed in an equivalent economic strategy, which should also be consolidated effortlessly into the state economic policy. The objectives are required in order to establish, evaluate, measure and manage the macroeconomic risks in each activity of every business entity, and therefore, to build a helpful environment for moderating the unpleasant and unwanted consequences of the microeconomic and macroeconomic events.

A thoroughly recent phenomenon that has emerged worldwide, the knowledge-based economy, can be used as a key element in trying not only to assess the dimension of risk, but also to lessen the uncertain outcomes that can result from the macroeconomic risks, because without a knowledge structure all economic activities would not be able to occur. Economy has to be based on a knowledgeable behavior and on actions that are deliberated.

The concept of knowledge economy has been deeply rooted not only in social, but also in economic theories. Although exists a wide range of definitions and literature about the knowledge economy, the Organization for Economic Cooperation and Development defined the concept as being an expression coined to describe trends in advanced economies towards greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to all of these by the public and business sectors [18].

Succeeding in obtaining a new economy, the economy of knowledge (where the value is created based on intellectual capital), in addition to other benefits, can expend the probability of appearance of other constructive effects that the systemic risks can have on distinct areas and sectors. The economy of knowledge should comprise major tendencies of changes in production, communication and information that are part of the organizational and managerial structures. The knowledge-intensive and high-technological companies, that are capable of performing risk projects, and ways of reducing the undesired outcomes as well, represent the ingredients of a new and sustainable economy.

To conclude this chapter, an appropriate governance of the systemic risks can be achieved when for instance, each state establishes rules, regulating constraints and

restrictions, in such a path so to have economic actions performed in a risk-linked approach, which would not cause any adverse response on the economy, as a whole.

3. Using the Diversity and Complexity of Risk to Predict Company Failure

Many current researches have confronted the subject of prognosis the corporate financial failure, analyzing many factors, predominantly correlating with financial ratios that are extracted from companies' annual reports. The rapidly growth in the rates of insolvency throughout companies have demonstrated that bankruptcy is a problem which cannot be justified without not being linked to macroeconomic variables. Hence, we have to take into account not only the internal financial ratios of the companies, but also the entire status of the economy.

Predicting bankruptcy is a persisting subject in the financial literature. In a traditional way, forecasting bankruptcy researches have pursued to portray corporate well-being in accordance with the financial disparities between companies, determined using accounting inputs. Many articles in the area of financial analysis have tried to underline the utility of forecasting models found on firms' annual accounts [9]. Even though the business cycle has an impact on the condition of the companies, the microeconomic factors were at first perceived to be accountable for financial distress, because it was thought that the macroeconomic determinants influenced all firms uniformly. Many works attempted to demonstrate from a statistical point of view the existence of a relationship between bankruptcy and corporate accounting figures, with distinctive remark on the financial ratios. The broad empirical research and practice that has been in time acquired demonstrates that a part of the reasons for the bankruptcy are represented by the diversity of the macroeconomic factors. The researchers have tried to recognize some other variables which can be of importance in regards to financial distress, besides the economic ratios. This exploration has given rise to a different frame of literature, beginning with Altman's work in 1968 in which he is explaining all the variables involved in the economic failure [1]. Afterwards, it was time for Merton to have a theoretical paper about firm failure [17]. Throughout time, another type of research has evolved, incorporating internal economic data of the firms with macroeconomic facts, considering that not all companies and industries are fairly capable of withstanding a major impact that can occur during macroeconomic uncertainties.

Having as a model the studies conducted on business cycle, various works concentrated on examples in which variables such as credit, assets, profits, investment and so

on are examined in order to demonstrate a correlation between some of them and the financial distress of the firms. The same have done Rose et al. [19] taking into account a wide range of macroeconomic variables, and all of them were proved to be important in determining financial failure. In 1986, it was Fama's turn to detect proofs of the effects that the business cycle has on bankruptcy possibility, after remarking some disparities in the quarterly premiums [11]. Another achievement has been accomplished with the work of Levy and Bar-Niv, who have speculated that the income and the degree of price fluctuation negatively influence the efficiency of the company, and computed a positive relation between the total number of bankruptcies per year and the deviation incGross Domestic Product [15]. While Melicher and Heart utilized credit circumstances to describe aggregate business distress [16], Lane and Schary justified the proportion of financial failure by referring to more than 20 external variables, together with the maturity of the companies [14]. In 1992, Cressy aimed the attention at the consequences that the macroeconomic factors have on small firm performance [8], and more than 10 years later, Burn and Redwood encompassed supplementary variables such as liquidity, profitability, size of the company, size of the industry, indebtedness, and so on [6].

Besides all the above-mentioned studies, recently some other researches have been added to this list, adopting a different approach and more powerful arguments and forecasts. For instance, the authors Hernandez-Tinoco and Wilson, their work demonstrating the applicability of linking data from accounting, with data gathered from the market and from a macroeconomic level, aiming to illustrate the credit risk [12]. Another change is brought by Kumar and Rao several years ago, wanting to develop the precision in predicting of Altman's Z-Score, by promoting a nonlinear model for estimating it [13]. Two examples from 2016 can also be given, starting with Bauweraerts, who questions the relative significance of diverse bankruptcy predictors that are regularly used [3], and ending with Altman et al., that appraise the efficiency of the Z-Score model in anticipating financial distress, aiming to check the performance of this model for all parts that are implicated, particularly the banks, that are obliged to determine the risk of failure for these companies [2].

The first phase in any empirical study is represented by the election of the variables that will be integrated, whether we are talking about companies' financial ratios, macroeconomic variables, or, why not, a mixture of them. All the above models, especially those that integrate financial data with the macroeconomic aspects are demonstrating that indeed, the diversity and complexity of the macroeconomic risks can be used for anticipating business failure. Moreover, the macroeconomic variables are extremely valuable, reflecting not only the adjustments that appear in the economic cycle, but

also the general progress of the industry and the sector and transitions in the regulatory policies.

4. Summary and Concluding Remarks

In fundamental economic processes risk and uncertainty become inherent and integral parts, leading to activities that are non-linear, unsymmetrical and to ambiguous economic, business and entrepreneurial sectors. The macroeconomic risks affect the stability of the global economy frequently and their significance has accelerated drastically in a short period of time. At the same time, methods to manage them and alternatives for their reduction, which would appropriately and precisely neutralize their potential negative consequences, have dropped off notably. The comprehensive examination of the systemic risks has to be extended from a historical or geographical angle to a framework of modern economic processes. It is for certain known that risks have caused and continue to injure the economy.

Succeeding in obtaining a new economy, the economy of knowledge, in addition to other benefits, can expend the probability of appearance of other constructive effects that the systemic risks can have on distinct areas and sectors. The economy of knowledge should comprise major tendencies of changes in production, communication and information that are part of the organizational and managerial structures. The knowledge-intensive and high-technological companies, that are capable of performing risk projects, and ways of reducing the undesired outcomes as well, represent the ingredients of a new and sustainable economy.

Comparing the scientific approaches to this issue, altogether with studying the foundation of the microeconomic risks and examining the principles and techniques used in their evaluation, helped us understand the importance and the effects that uncertainty can have on companies' long-term objectives, their competitiveness and even their sustainability.

The first phase in any empirical study is represented by the election of the variables that will be integrated, whether we are talking about companies' financial ratios, macroeconomic variables, or, why not, a mixture of them. All the models that were described above in chapter three are demonstrating that indeed, the diversity and complexity of the macroeconomic risks can be used for anticipating business failure. Moreover, the macroeconomic variables are extremely valuable, reflecting not only the adjustments that appear in the economic cycle, but also the general progress of the industry and the sector and transitions in the regulatory policies.

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