

FINANCIAL IDEOLOGY AND THE GLOBAL MASS MEDIA ENVIRONMENT: NARRATOLOGICAL ANALYSIS

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Abstract. A variety of financial information circulating in the global mass media may be ordered on the basis of a limited number of models and formalized through the methods of narratological (actant-modelling) analysis. This paper explores the methods of narratological analysis, also the opportunities to apply these methods for economic analysis. In the article is presented actant modelling methodology, scenario analysis method and stress testing method, also opportunities to apply these methods in economy is discussed. The analysis allows identification of the opportunities of these methods' application in economic analysis.

JEL classification: L8, L80.

Keywords: economic ideology, mass media environment, narratological methodology, economic scenarios, mathematical and structurological formalisation.

Raktžodžiai: ekonominė ideologija, visuomnės informavimo priemonių aplinka, naratologinė metodologija, ekonominiai scenarijai, struktūrologinis formalizavimas.

1. Introduction

Narratological methodology becomes much more popular in social sciences (sociology, politology, jurisprudence, ethics and others). Narratology refers to both the theory and the study of narrative and narrative structure and the ways that these affect our perception. The proposed analysis has its origin in the 60s of the last century in the works of French (native Lithuanian) semiotian A. Greimas, who interpreted the various ideological (including economic) manifestations. Narratological and structurological analysis allows the touching of micro-ideology—the specific motivational systems of economic actors. This analysis does not require the use of macro-ideologies, based on meta-narratives (“class approach,” “libertarian” approach). It offers a new perspective on the object of economic analysis, as well as the distance from the natural-scientific view of economic theory. A variety of financial information circulating in the global mass media of various types, in fact, can be ordered on the basis of a limited number of models and formalized by actant methods of narratological analysis. Such an analysis

has obvious prognostic application and can be involved as an alternative to the methods of game theory, behavioural economics and any mathematical probabilistic modelling in the economic sphere.

The article's goal is to come in touch with two absolutely different epistemological paradigms never compared before: the paradigm of actant analysis by Algirdas Julien Greimas (Greimas, 1973, p. 106-120) and the paradigm of scenario analysis. The main sources are LIBOR and swap market modelling and measurement by Farshid Jamshidian, (1997) (Kellner, 1987); research dedicated to Libor and Swap Market Models for the Pricing of Interest Rate Derivatives aimed at an empirical analysis by Frank de Jong, Joost Driessen and Antoon Pellser (2000), also the numerous literature dedicated to financial markets scenarios, especially to derivatives and options markets should be highlighted. The innovative approach of this article, for example, involves some structurological and narratological literature (Maines D.R. (1993)). Altogether more than 46 sources of literature are used.

2. Mass media and dynamics of financial markets

Financial markets in a post-industrial economy are a special communicative phenomena. We can talk about the kind of coverage of financial markets, i.e. creating specific media environment in which all are market participants, and which contributes to an asymmetric distribution of information on the market. This media environment is composed of multiple operating of all types of mass media (print, audio-visual, online). This media produces a special product—media content that is actually consumed, and participants in financial markets, contrary to their ideas about anything, just use the information. Media content is rather differentiated. It combines analytical and news information, fed in the form of printed publications, television or radio programs, an array of information on the Internet, or even software that facilitates decisions, for example, an Internet trader or investor. Generally speaking, the media environment can be analysed on the basis of the theory of “information parasitism” by the French philosopher M. Serres (45). The media environment is both a condition and distorting barrier of communication between its members being present. On the one hand, it synchronizes the actions of individual market participants, and also allows them to predict their subsequent activity. But on the other hand, the media environment narrows the horizons of vision problems and selectively inhibits or enhances market trends. It generates a specific “parasitic circuit,” when a mediator is a “parasite” of the other, such as, for example, a consultant based on information received from a news agency based on the materials or publications of the business press, which in turn may be a reprint. It is important to bear in mind that the media environment has a market nature. In it there is competition between different media. In the competitive media-oriented market, rather than to increase the reliability of the information and media content, its quality, its market efficiency, i.e. sensationalism, is foremost. Noise is generated through various information. This noise is productive—it changes the system preferences of market participants.

By creating conditions for supporting a certain behaviour, and the trend of providing interaction between a large number of investors, the media can bring instability to the market. The fact of paying attention to the media one way or another by a firm, corporation, a specific financial instrument, currency, etc., as well as the general increase in informational noise in the market, can induce a behavioural response from the participants. For example, a message found effective against cancer can lead in time to a 600% per cent increase in stock prices of a small biotechnology company, a tool that seems to have already found. Moreover, this information has been published before in a specialist journal, *Nature*, but only after it was replicated in the *New York Times*, covered on CNN, CNBS, and others, did it lead to changes in the market. It is important that the time of the secondary treatment of the original event does not lend itself to any rational prediction. The ultimate market reaction to the publication of these facts was the growth of the price of shares of all companies in the industry. The conventional view of financial markets suggests that price changes are caused by non-fundamental factors, the nature of which is rare, minor and quickly corrected. Price changes are an adequate response to all the available information, and the media does not play any special role in the formation of prices—they are only a channel for the transmission of news. And it is not exposed to the slightest doubt that the media increase information efficiency of markets, by their very functioning, contributing to finding a fair price. There is a fundamental misunderstanding of mass media producing a logical and causal relationships, interpret reality, bring emotions and even create pseudo-events, raising your own rating. All this does not contribute to the balanced dissemination of information. Generally speaking, the mass media serves as a teaching laboratory, but they do not teach effective responses to the changing world of the financial and political situation, as they teach that the meta-language in which they are presented with this conjuncture. This meta-language is a particular sign system, which serves to implicit communication among market participants, both at the stock exchange and OTC platforms, business journalists and financial analysts. This implicit communication, based on a media mythology system and cultured media of special financial and political connotations. In addition, investors are guided not only by changes in fundamental factors, but also on the development of prices in the past. And it is the media that accumulate a “price history” accompanying its financial market forecasts. For example, we see permanent discussions on the Internet (chat rooms) that show price changes in the past, which contributes to the interpretation of their investors as market trends. Recommendations on securities or prediction of their prices are intended to form a vision of the future investor and his understanding of its future program of profitable investment decisions. “We are making news to use” is the motto of media interpreters of the financial markets. Moreover, the differentiation of news and analysis is very difficult to produce. However, the relevance of news deviates from its expected utility. The aesthetics of the presentation, when focused on financial news, are meant to cause an emotional reaction. Design magazines, filing of information in television news, involves emotional processing of media content. In the end, the media balances between the need for preservation of trust and the temptation to create audiences spectacular

stuff, the story. News stories of different media reinforce each other and constrict the information perspective. Competition between media leads to homogenization and “exaggeration” of content, as well as an abundance of information noise. Response to informational noise traders is mostly naive, but it leads to changes in market dynamics. These traders are irrational, but the agglomeration of the elemental form enhances the dynamics of changes in market prices, in spite of the “rational” traders. Ultimately, investors ignore fundamentals and react to each other’s behaviour, which further supports the imposition of all media through a single view of the market as an organic whole (“That’s the way the market reacted today ...”).

It is important that the business media propagate itself to perform actions on the financial markets. It does not matter whether investors buy or sell, the object of mass media is price changes. Often the media portrays the markets as subordinate to the will of an unknown event or liken them to travel on a roller coaster. But the media has always cultivated “market optimism,” regardless of the macroeconomic cycle stages (including recession). After the success of publications focused on the capital market, it is strictly correlated with “market perceptions.” In emerging markets, where more information is circulated, the media ratings are rising and falling in the fall. Business media is full of positive future scenarios and contains a minimum of pessimistic forecasts. As noted by Schuster (44), most of the recommendations in the media are about securities—tips on buying and significantly less likely to sell. The authors are inclined to pre-fabricate the positive news about companies-investment facilities. And the reason the bear trend, however, ignored. As a business journalist in demand during the boom in the stock market, even if in the recession he seeks to highlight the positive aspects of the market situation. Generally speaking, the more people are involved in the financial markets, the higher the profits for those who provide information and financial markets, as well as increasing advertising budgets in the business media. Media tends to ignore the risks in capital markets, which is most pronounced in the case of information provision of Internet trading, especially Forex, OTC and trade in general. A characteristic feature is that all the mass media involved in the stimulation of investment activity of the population are to be outside ideology. Regardless of the original political orientation (liberal conservative, etc.), they operate within a discourse that involves liberalization of the financial system as inevitable and desirable at the same time, attracting the masses to the capital markets. It is noteworthy that the mass media provides reflexivity (George Soros) (46), or, rather, self-reflexivity of markets. The information available through “noise” traders is already used at the time of communication. The fact that news travels in large auditoriums, says that many others have already learned the news. And, trying to get ahead of its competitors, investors try to anticipate their reactions, rather than actually increase it. Figuratively speaking “The whole world is watching and knows that the whole world is watching and knows.” Noise distributed by the mass media leads to the homogenization behaviour of investors and the rational behaviour of some of those, for example, who relies on technical analysis is absorbed by the general collective irrational market reaction. The behaviour of the so-called “market gurus” is curious. They are in the media to warn about the impact of other market

gurus (also acting through the media) on the market. Media criticizes other mass media, showing its alleged objectivity. On the Internet we see an abundance of information noise critics, who themselves are creators of the noise, in particular with the help of their own critics. This is a prime example of “information parasitism” as seen by M. Serres (45): some mediators, or, rather media interpreters, are “parasites” of other media interpreters. Generally speaking, the development of the Internet as a means of mass communication is an illustration of why mediatisation is called the speculative growth market. The permanent presence of mass media is felt everywhere: in pricing the stock markets and the general ups and downs of trading, and in the formation of market capitalization firms. In a post-industrial society, the knowledge economy combines a digital set of little narratives, representing the economic reality for investors at the same total media narrations, a meta-language which clearly defines the trend of the investor, who is destined to follow. Media stories multiply the content, which provide an opportunity for significant price changes. We can identify the model of speculative excess in the financial market: an event changes the economic outlook—a story appears in the media, describing the opportunities for additional income; the plot is embodied by market participants; new investments lead to increased revenues—this stimulates further investments. Then the euphoria and desire to get rich captures a growing number of people, but, in the end, comes to the understanding that opportunities to enrich themselves in this market are greatly exaggerated. The result is panic in the market. The history of speculative booms is related to the very beginning of the press. For example, we can recall the tulip mania in 1630 in the Netherlands, or the role of media in the last market crash.

Today, the newly-emerged financial television sensationalism and exaggeration have become commonplace. There is a standardization of media content and the recommendations of financial commentators are invariably positive. Media content is becoming of an increasingly undifferentiated nature: it has become increasingly difficult to distinguish between news, analysis, and, frankly, promotional material (commercials). Not to mention the overall strategy for information and entertainment (infotainment), even in the business media which does not make information on financial markets more transparent for market participants, or for third party analysts. Infotainment, with its focus on sensationalism, of course, contributes to the growth of media rankings, but the information generates noise and prevents from obtaining reliable information about markets and the global economic life in general. Thus, we can see how the media environment distorts communication between financial market participants and creates a system of their preference. Competition in the market is reflected in media content, and ultimately on the movements of global capital. Competition in the media market and its impact was particularly noticeable in terms of coverage of OTC marketplaces, especially online trading. Media content in the form of packets of information services are available off-line and on-line, as well as the corresponding software essentially limits the horizons of the visions of traders and investors. But, on the other hand, competition in the financial market media content leads to a complication of the information infrastructure of capital markets and reduces the possibility of price

control by the stakeholders, i.e., in fact it increases the information efficiency of these markets. In addition, according to the concept of “information parasitism” by M.Serra, no doubt a positive contribution to the parasite-broker communication is synchronization of its participants. The participants represent a communication system communication discrepancy, which is removed through distortion by the clock mediator. In regards to financial and capital markets, mass media, we can see synchronized activity of market participants and global economic realities, synchronize them with each other (through the formation of trends) and synchronization of the global markets of all types. Consequently, the duality of the influence of the media environment on the financial markets should be considered in the analysis and, in particular, the prognostic analysis of financial markets, both exchange and OTC markets.

3. Actantial model analysis methodology

Greimas, in his work, offers an investor to consider ideology as a set of scene-specific interactions of characters—actants. The actantial model, developed by A.J. Greimas, allows the breaking down of an action into six facets, or actants: (1) the subject is one who wants or does not want to be conjoined with (2) an object. (3) The sender is what instigates the action; while (4) the receiver is what benefits from it. Lastly, (5) a helper who helps to accomplish the action, while (6) an opponent hinders it. Actantial analysis consists of assigning each element of the action being described to the various actantial classes. This model can be applied in analysing every topic (economics, literature, religion, etc.). An actantial model is a conceptual network which is generally depicted as diagram (see. Fig. 1)

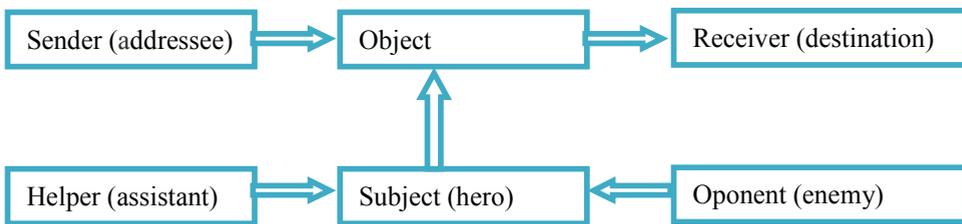


Fig. 1. The actantial model represented as a square (source: Herbert 2011, p.72)

In the financial sphere the subject is an investor who is trying to describe the relationship of certain economic action, seeking to take into account the value in order to elevate their own role in them. The object is identified as an ideological goal and is a success.

Greimas applies this model for enterprises (subject). He speaks of an enterprise as a child that needs protection from the dangers of the outside world. The opponent (enemy), in this context is presented as scientific and technical progress, threatening the established economic equilibrium of the interacting actants. The helper (assistant, as an ideological construct in terms of French semiotics) is all kinds of research, prior to in-

vesting the capital: study of a particular market, patents, economic efficiency, economic and applied social and market research; However the main actant is the subject (or hero)—“this, in fact, pales against the background of intuition and insight, the magic and the ‘manly’ power that is required show at the crucial moment and that just makes the president and CEO of the company into the mythological hero.” As the sender (addressee), Greimas distinguishes an economic system, which concludes with the hero-investor in the implicit contract and relying on the possibility of its individual freedom, trust him on a mission to save the fate of the enterprise. The receiver (destination) of this model is the enterprise itself, which is a “syncretic” actor, the synthesized actant-object-actant and the recipient, as the hero acts totally unselfishly, and the reward for him is the profitability of the enterprise. These relations between actants become even more complicated when we analyse this situation from the personal level. However, this analysis method can be applied in analysing agent relations. An investor’s decision is influenced by various external factors and narratives, formed in following different interest groups. These factors can act as a helper or as an opponent for the investor. There exist complicated relations in the axis of transmission (sender/receiver). The conflict of interest can appear between the sender, who requests the object, and the receiver, who benefits from the object, and the subject. This example shows that by defining actants and their relations, it is easy to gain a better understanding of the economic processes.

In a post-ideological era, after the collapse of meta-narratives, we can speak of a multiplicity of narratives and a plurality of ideologies within the general libertarian paradigm. Libertarianism in the economic sphere can be considered as a recent meta-narrative, by the formula of *laissez faire*, providing a multiplicity of narrative interpretations of the economic reality of each participant in capital markets. In fact, predictive analysis in the financial sector is part of everyday life; we call it the economic realities of life by each of the participants in the monetary and other capitalist relations. For example, in the global economy, with the advent of affordable to almost any electronic exchange, online trading, the trader creates their own micro-ideology about the global economy. In her global trends, based on analysis, it regulates its market activity, act as stories, narratives. Narratives include specific characters; there are financial institutions and financial instruments, political figures. They also include a set of specific events: the fundamental and non-fundamental factors of price formation in financial markets, the risks of natural disasters, etc. However, different types of investors (institutional and mass) are equally guided by the narrative interpretation of the near or distant future for predictive analysis of financial markets. This is where the concept of the actant model and Greimas seems to be very effective, because it allows formalization of the mythological and ideological system, produced by capitalists of different scale systems based on the multiplicity of narratives of the world information space. It is perpetrated by those who create narratives and global economic trends.

To sum it up, this example demonstrates the possibility of formalizing a multi-narrative financial ideology through the selection of mythological models. This model helps to identify factors which create a pattern of thinking and influence our behaviour. Greimas suggests that this process helps to illustrate complex (positive and negative,

practical and mythical) characters in any discursive manifestation. This analysis model can be applied in various spheres not only to the investment activity, both at the global and the local and personal level. Entire areas of financial activity, such as insurance, banking and others in global mediatization can be interpreted on the basis of narratological analysis. Though, at some point, this model narrows the horizons of the consideration of the problem. Plurality of narration produced in the everyday economy and lying at the base, shows that both global and local trends are fundamentally different from the narrative as a methodological principle in the scientist discourse. However, the narratological paradigm is increasingly recognized as being most effective for economic analysis. A recent trend is seen as being within the diachronic (the history of changes in market demand, supply, price) and the measurement of synchronic (momentary time “snapshot” of economic denotation of market participants).

4. Scenario analysis methodology

Since the 1970s, both academics and practitioners have propagated multiple-scenario analysis to deal effectively with the many uncertainties that surround the future of business organizations (Postma, Liebl, 2005). Actantial analysis helped to identify actants and relations between them, whereas scenario analysis helps to identify future development perspectives. Scenario analysis supplements actantial analysis and shows the probability of reaching the object. Considered in this regard, widely applied today is the “scenario method” in economic theory and practice. The simplest form of scenario analysis is the Monte Carlo simulation, when numbers are generated randomly. The simulation calculates numerous scenarios with the same probability, but is not convenient to use. Later this method of formulating scenarios was improved. F. Jamshidian and Yu Zhu in 1996-1997 proposed a scenario method that is one of the best known; it was used for simulation and evaluation of Multicurrency portfolio of options on bonds, the so-called LIBOR-based option portfolios. The concept of the proposed method of financial and narrative analysis is as follows, based on established correlations between the yields of bonds of different maturities are three fundamental factors. In the financial literature they are usually interpreted as:

1. The first factor—parallel shift in the term structure of returns (shift);
2. The second factor—the slope of the term structure of yields (twist);
3. The third factor—curve of the term structure of yields, which in the English-language literature on the study of financial markets has shaped, but it is applicable the name of butterfly - a butterfly).

Isolation of these factors significantly narrows the subsequent modelling of the future while preserving the accuracy of predictive analysis. We study the changes in these factors during the selected time period (daily or hourly, etc.) and correlate them with relevant, mathematically speaking, language of distributions, which are then used to simulate the increments of factors.

Methodologically, scenario analysis is a mathematical form. In the range of increments for each of the factors, in a special way (depending on the properties of the

previously received distributions) a few points are selected. Jamshidian and Zhu (1997) suggested a method for reducing the number of factors by using principal components analysis. Rather than allow each risk variable to take on all the potential values, they look at likely combinations of these variables in order to arrive at scenarios. For example, 7 scenarios for the first factor, 5 for second and 3 for third. Thus all the different combinations (scenarios) for the three factors will change $105 = 7 \times 5 \times 3$. For each of the 105 scenarios, the entire term structure of yields and the calculated value of the currently existing portfolio are recovered. In accordance with the selected probability, distributions of increments of the factors are simulated. Portfolio value, in each iteration, is estimated as a linear or quadratic interpolation of the value of the portfolio at the points of the scenarios. The corresponding weights for interpolation are selected depending on the distance increments of the simulated factors of 105 points scenarios. Next, on the simulated portfolio, value scenarios are used to estimate the required characteristics of the portfolio. If the study contains a portfolio of derivative financial instruments (such as options whose value is largely determined by the volatility), in this case, one should consider scenarios for volatility. The number of these scenarios is most often assumed to be 3 (greater volatility, medium and small). Thus, we can provide a significant overall, but fixed, number of scenarios ($315 = 105 \times 3$).

Mathematical models of scenarios of financial markets suggest not only an objective economic reality, but also the structuring of an implicit, temporal reality created by market participants, in particular, their expectations of the system, their reflection and self-reflection. Volatility, instability, ideologies, taken as market-forming factors, are also an integral part of the financial and forecasting scenarios. The empirical analysis of returns in the modern economic theory and practice is structuralized in a narratological way (scenario), in an integrated manner for all actions of market participants; the structuring of the material embodied in this case creates a model price of options and models of the dynamics of market trends. This analysis can be a methodological basis for the formation of investment portfolios. These scenarios, mathematical models, on the one hand are the true subject of the reality of these ideological constructions, produced by the consciousness of investors. But, on the other hand, these methods are themselves specific modelling methods in the ideological construction of scientific discourse. Graphs of changes in yields are a schematic representation of changes in investors' preferences. Preferences, in the conceivable scenario, are presented in a narrative form, even in a system of scientific knowledge. The exact number of mathematically defined models of scenarios is similar to the invariable number of actant models by Greimas applied to ideology. Generally speaking, the methodology for the formalization of scenarios as basic structurological and mathematical methods are always posited as predictive knowledge—the transfer of a finite number of alternatives, anticipate the future.

Another scenario method approach in the financial sector is stress analysis and stress testing. Stress testing involves the study of risk factors that could threaten the stability of the company or bank. These factors are also presented in view of the scenario model. The concept of stress testing is the concept of “exceptional, but possible

events” on the basis of a few isolated groups of typical scenarios in which, and by stress testing. In a separate group charged single-factor scenarios, which are based on the so-called sensitivity tests (simple sensitivity test). In fact, compose scripts coming from the exclusive consideration of changing one factor while keeping unchanged the other conditions, such as the fall of the exchange rate while maintaining the level of interest rates and securities prices. This scenario model is quite abstract, but the study corresponding to it is technically simple and clear, determining its acceptance as a practical method. There is also a group of multi-factor scenarios, which in turn are divided into historical, expert, or hypothetical scenarios and statistical maximum losses. Historical scenario reproduction was supported previously by the crisis, checking on the case risk protection ability of the company. A peer scenario, as their name implies, is based on expert judgment, taking into account both historical crises, as well as current market conditions, and allow one to focus on the most significant risk factors (“enemies” in the terminology of A. Greimas) of the company. Statistical scenarios, in turn, are based on modelling of the possible values of risk factors. In this case, it is dominated by the probability-specific estimates, i.e., subsequent testing scenarios are offered with a certain probability of implementation, which allows you to integrate the results of stress tests in the model estimates of the necessary capital. Scenarios for the maximum loss for the least favourable view all a combination of risk factors. Such analysis is important not only because of the result, which characterizes the margin of the company, but because of the looming risk profile, which allows one to highlight the most significant threats and take necessary precautions. Generally speaking, the formation of a particular portfolio of risks is a vivid example of the manifestation of “local rationality,” based on the formation of a script. The scenarios can be classified into groups considered as risk factors—internal and external to the company. The content of both “internal” inspection business technologies, tests, and “external” tests is determined mainly by the industry affiliation of the company. Local rationality, defined by a specific scenario for a particular subject or a particular localizable branch, needs to be included in the global scenario of the model. Thus, according to the IMF for financial market participants the main risk factors are the global changes in interest rates and exchange rates (“enemies,” according to A. Greimas). It is important that the most effective analysis of complex yield stress scenarios combines the factors of local financial markets and global macroeconomic conditions.

To summarise, the need to focus on risk factors of the financial market, marked by the Committee on the world financial system, following a series of studies of stress-testing practices (2001-2004 years.), to a certain extent were due to the technical simplicity of simulation compared with the analysis of credit positions and the liquidity crisis scenarios. It is noted that the possibility of using a wide range of models essentially means that there is no standard approach. The multiplicity of scenarios is understood as a necessary condition for a methodological analysis of the global financial markets. According to these studies, the practice of stress testing is greatly extended, to date, involving various categories of financial market participants, including banks, financial and insurance companies. The process of incorporating stress testing in the

overall risk management system now comes in two guides: “bottom up”—as a result of awareness of the market, participants need to use scripting techniques to manage risk; and “top down”—definition of the requirements of regulators, supervisors and recommendation stress tests based on the specific scenario of a vision. Moreover, the role of regulators is extremely important as a tool in the implementation of stress testing, as well as to improve its effectiveness: centralized determination of the stress-test scenarios makes it understandable to external users and comparable for the various market participants.

5. Conclusions

The discussion may be undertaken concerning the particular methodology of probabilistic-scenario analysis. But the narratological way of thinking becomes the hidden imperative of global financial research projects. The regulators of financial markets in the UK published annually a review of the financial risks in the analysis of risks and threats to financial stability, describing several options for stress scenarios. In 2005, the proposed scenario was a significant reduction in property prices, sharp depreciation of the dollar and a significant increase in interest rates. That is prognostic knowledge, embodied in the form of a scenario. Theory and practice of stress testing is similar to the modelling of financial actant ideology. Risk factors are also considered as actants, opponents, while many other fundamental factors, can also be formalized in the form of the actants.

In addition, the dynamics of our markets can be interpreted in terms of social-constructivism—the expectations and actions of market participants form a specific economic reality (the report is critical of the theory of “rational expectations” and the paradigm of “behavioural economics”). Attention is paid to the so-called “self-reflection of the market,” which is manifested in the nonlinear dynamics of trends.

Characteristically, the scenario method, in its different variations, shows an obvious focus on modern financial theory and practice in choosing an authentic analysis methodology of financial markets, which would take into account their ideological matter (understanding the need to formalize it and not just through mathematical methodology) and market self-reflection.

References:

1. Albanese, C. (2007). “Callable Swaps, Snowballs and Videogames.” MPRA Paper 5229, University Library of Munich, Germany, revised 01 Oct 2007.
2. Andersen, L.; Piterbarg, V. (2007). “Moment explosions in stochastic volatility models.” *Finance and Stochastics*, Springer, vol. 11(1), pp. 29-50, January.
3. Andersen, L.; Andreasen, J. (2000). “Volatility skews and extensions of the Libor market model.” *Applied Mathematical Finance*, Taylor and Francis Journals, vol. 7(1), pp. 1-32.

4. Brigo, D.; Liinev, J. (2005). "On the distributional distance between the lognormal LIBOR and swap market models." *Quantitative Finance*, Taylor and Francis Journals, vol. 5(5), pp. 433-442.
5. Davis, M.; Mataix-Pastor, V. (2007). "Negative Libor rates in the swap market model." *Finance and Stochastics*, Springer, vol. 11(2), pp. 181-193, April.
6. Decamps, M.; Goovaerts, M.; Schoutens, W. (2005). "Self-exciting threshold interest rate models" Open Access publications from Katholieke Universiteit Leuven urn:hdl:123456789/122736, Katholieke Universiteit Leuven.
7. Errais, E.; Mercurio, F. (2005). "Yes, Libor Models can capture Interest Rate Derivatives Skew : A Simple Modelling Approach." *Computing in Economics and Finance* 2005 192, Society for Computational Economics.
8. Fries, C.; Kampen, J. (2010). "On a class of semi-elliptic diffusion models. Part I: a constructive analytical approach for global existence, densities, and numerical schemes." *Quantitative Finance Papers* 1002.5031, arXiv.org, revised Feb 2011.
9. Greimas, A. J. (1973). "Actants, Actors, and Figures." *On Meaning: Selected Writings in Semiotic Theory*. Trans. Paul J. Perron and Frank H. Collins. *Theory and History of Literature*, 38. Minneapolis: U of Minnesota P, 1987. pp. 106-120.
10. Greimas, A. J. (1966). *Structural Semantics: An Attempt at a Method*.
11. Heath, D.; Ku, H. (2006). "Consistency among trading desks." *Finance and Stochastics*, Springer, vol. 10(3), pp. 331-340, September.
12. Hebert, L. (2011). "Tools for Text and Image Analysis. An Introduction to Applied Semiotics." Département de lettres Université du Québec à Rimouski. <<http://www.signo-semio.com/documents/Louis-Hebert-Tools-for-Texts-and-Images.pdf>>.
13. Henry-Labordere, P. (2006). "Unifying the BGM and SABR Models: A short Ride in Hyperbolic Geometry." *Quantitative Finance Papers* physics/0602102, arXiv.org.
14. Ingo, B.; Uwe, W. (2010). "On the calibration of the Cheyette interest rate model." CPQF Working Paper Series 25, Frankfurt School of Finance and Management, Centre for Practical Quantitative Finance (CPQF).
15. Jamshidian, F. (1997). "LIBOR and swap market models and measures (*)." *Finance and Stochastics*, Springer, vol. 1(4), pages 293-330.
16. Jeppe, L.; Regitze, L.; Brink, A. E.; Dimitri, V. (2007). "The use of derivatives to hedge embedded options: the case of pension institutions in Denmark." Policy Research Working Paper Series 4159, The World Bank.
17. Jong, F. C. J. M.; Driessen, J. J. A. G.; Pelsser, A., 2000. "Libor and Swap Market Models for the Pricing of Interest Rate Derivatives: An Empirical Analysis." Discussion Paper 2000-35, Tilburg University, Center for Economic Research.
18. Kampen, J.; Kolodko, A.; Schoenmakers, J. (2008). "Monte Carlo Greeks for financial products via approximative transition densities." *Quantitative Finance Papers*.
19. Keller-Ressel M., Papantoleon A. and Teichmann J., (2009). "The affine LIBOR models." *Quantitative Finance Papers* 0904.0555, arXiv.org, revised Jul 2011.
20. Kellner, H. (1987). *Narrativity in History: Post structuralism and Since, in History and Theory*. 26 P. 2.
21. Kerkhof, F. L. J.; Pelsser, A. (2002). "Observational Equivalence of Discrete String Models and Market Models." Discussion Paper 2002-28, Tilburg University, Center for Economic Research.
22. Kokholm, T. (2008). "Pricing of Traffic Light Options and other Correlation Derivatives." Finance Research Group Working Papers F-2008-01, University of Aarhus, Aarhus School of Business, Department of Business Studies.

23. Maines, D. R. (1993). "Narrative's moment and sociology's phenomena – toward a narrative sociology." *Sociological Quarterly*. 1993. Vol.34. №1.
24. Morini, M.; Brigo, D. (2008). "Arbitrage-free Pricing of Credit Index Options: The no-arbitrage pricing measure and the role of correlation after the subprime crisis." *Quantitative Finance Papers* 0812.4156, arXiv.org.
25. Musiela, M.; Rutkowski, M., (1996). "Continuous-Time Term Structure Models." Discussion Paper Series B 377, University of Bonn, Germany.
26. Neftci, S. N., (2004). "Swap Curve Dynamics in Hong Kong: An Interpretation." *Working Papers* 062004, Hong Kong Institute for Monetary Research.
27. Papapantoleon, A., (2009). "Old and new approaches to LIBOR modeling." *Quantitative Finance Papers* 0910.4941, arXiv.org, revised Apr 2010.
28. Pelsser, A. (2002). "Pricing and Hedging Guaranteed Annuity Options via Static Option Replication." Tinbergen Institute Discussion Papers 02-037/2, Tinbergen Institute.
29. Pelsser, A. (2003). "Pricing and hedging guaranteed annuity options via static option replication." *Insurance: Mathematics and Economics*, Elsevier, vol. 33(2), pages 283-296, October.
30. Pietersz, R.; Groenen, P. J. F. (2005). "Rank Reduction of Correlation Matrices by Majorization." Finance 0502006, EconWPA.
31. Pietersz, R.; Pelsser, A. (2005). "A Comparison of Single Factor Markov-functional and Multi Factor Market Models." Finance 0502008, EconWPA.
32. Pietersz, R.; Pelsser, A. (2005). "Risk Managing Bermudan Swaptions in the Libor BGM Model." Finance 0502004, EconWPA.
33. Pietersz, R.; Pelsser, A. (2010). "A comparison of single factor Markov-functional and multi factor market models." *Review of Derivatives Research*, Springer, vol. 13(3), pages 245-272, October.
34. Pietersz, R.; Pelsser, A. A. J. (2003). "Risk managing Bermudan swaptions in the Libor BGM model." Econometric Institute Report EI 2003-33, Erasmus University Rotterdam, Econometric Institute.
35. Pietersz, R.; Pelsser, A. A. J. (2005). "A Comparison of Single Factor Markov-Functional and Multi Factor Market Models." Research Paper ERS-2005-008-F&A, Erasmus Research Institute of Management (ERIM), ERIM is the joint research institute of the Rotterdam School of Management, Erasmus University and the Erasmus School of Economics (ESE) at Erasmus Uni.
36. Pietersz, R.; Groenen, P. J. F. (2004). "Rank reduction of correlation matrices by majorization." Econometric Institute Report EI 2004-11, Erasmus University Rotterdam, Econometric Institute.
37. Platen, E. (2001). "A Benchmark Model for Financial Markets." Sonderforschungsbereich 373 2001-52, Humboldt Universitaet Berlin.
38. Platen, E. (2001). "A Benchmark Model for Financial Markets." Research Paper Series 59, Quantitative Finance Research Centre, University of Technology, Sydney.
39. Postma, T. J. B. M.; Liebl, F. (2005). "How to improve scenario analysis as a strategic management tool?" *Technological Forecasting & Social Change*, 72, pp. 161-173.
40. Rutkowski, M. (1997). "A note on the Flesaker-Hughston model of the term structure of interest rates." *Applied Mathematical Finance*, Taylor and Francis Journals, vol. 4(3), pp. 151-163.
41. Rutkowski, M. (1999). "Models of forward Libor and swap rates." *Applied Mathematical Finance*, Taylor and Francis Journals, vol. 6(1), pp. 29-60.
42. Schanbucher, P.J. (2000). "A Libor Market Model with Default Risk." Bonn Econ Discussion Papers bgse15_2001, University of Bonn, Germany.

43. Svenstrup, M. (2003). "On the Suboptimality of Single-Factor Exercise Strategies for Bermudan Swaptions." Finance Working Papers 02-24, University of Aarhus, Aarhus School of Business, Department of Business Studies.
44. Shuster, Th. (2003). "Meta-Communication and Market Dynamics." *Reflexive Interactions of Financial Markets of Financial Markets and Mass Media*. Institute for Communication and Media Studies. Leipzig University, 2003. p. 36-46
45. Serres, M. (1980). *Le parasite*. Grasset, Paris. p. 68-80.
46. Soros, G. (1988). *The Alchemy of Finance*. Simon & Schuster, pp. 27-30.

FINANSINĖ IDEOLOGIJA IR GLOBALI VISUOMENĖS INFORMAVIMO PRIEMONIŲ APLINKA: NARATOLOGINĖ ANALIZĖ

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Santrauka. Daug įvairios informacijos, cirkuliuojančios globalioje masinės informacijos priemonių aplinkoje, gali būti sugrupuota, taikant ribotą skaičių modelių bei formalizuota pritaikant naratologinės analizės arba *aktant* modeliavimo metodus. Straipsnyje nagrinėjami naratologinės analizės metodai bei galimybės juos pritaikyti ekonominėje analizėje. Šiame straipsnyje pristatyta *aktant* modeliavimo metodika, scenarijų analizės metodas, streso testų metodas bei aptartos galimybės išvardintus metodus pritaikyti ekonominėje analizėje.

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