To
The members of the Scientific Jury
D. A. Tsenov Academy of Economics
Finance and Credit Department

REVIEW

by a member of the scientific jury, determined by Order No. **293/27.03.2025.**
of the Rector of D. A. Tsenov Academy of Economics – Svishtov
on dissertation for awarding educational and scientific degree "Doctor" (in Economics)

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Author of the dissertation: Vladislav Lyubomirov Lyubenov, PhD student, d010221238, doctoral programme "Finance, money circulation, credit and insurance (finance)"

Dissertation topic: Current Problems in Valuing Equity Share Instruments

Scientific Advisor: Prof. Stefan Marinov Simeonov, PhD

I. General presentation of the dissertation work

1. Subject

The object of study in this dissertation is stocks and shares of exchange-traded funds, as well as related macroeconomic indicators such as inflation and household consumption (p. 9 of the dissertation). The subject of the research is the relationships between the returns on these instruments and macroeconomic variables (also p. 9). From this, the doctoral candidate formulates the thesis that there is a "sustained relationship between the capital gain from stocks and inflationary processes..." (p. 9), as well as four research hypotheses (p. 10), related to:

- the effectiveness of the used evaluation and forecasting models for stock prices;
- the impact of the time horizon on the accuracy of forecasts;
- the role of capital return as a predictor of inflation;
- and the existence of a relationship between changes in stock prices, household behavior, and inflation dynamics.

The aim of the dissertation, closely related to the outlined research tasks, is to contribute to the contemporary understanding of the evaluation of equity instruments by uncovering statistically significant dependencies between capital markets, consumption, and inflation, as well as by proposing a model with practical application value for forecasting (pp. 10-11).

2. Volume

The dissertation is 254 standard pages long, including 8 pages of introduction, 225 pages of main text, 8 pages of conclusion, and a list of references. Additionally, a list of the author's publications on the topic is included.

3. Structure

The dissertation is structured according to a classic academic model and includes: an introduction, a theoretical review (Chapter 1, pp. 13–99), a methodological justification of the

statistical and econometric tools used (Chapter 2, pp. 100–171), a detailed empirical study (Chapter 3, pp. 172–237), and a conclusion. The presentation is enriched with 11 figures and 13 tables, illustrating quantitative results, econometric relationships, and author's models.

The **introduction** (pp. 8–12) argues the relevance of the topic, and based on this, the object, subject, thesis, hypotheses, goal, and tasks are formulated, while the methodology and scope of the research are also clarified.

In **Chapter 1** (pp. 13–99), the theoretical foundations of equity instrument valuation are presented, covering the essence of stocks and their role in the financial market, the logic of the time value of money, as well as classic discount models based on dividends, free cash flow, and residual income. Alternative methods using market ratios are analyzed, and the role of financial analysis in the investment process is acknowledged. Successive sections introduce key concepts for measuring risk, including CAPM and Value at Risk, as well as the application of technical analysis. Chapter 1 concludes with a critical review of contemporary models for time series analysis – ARIMA, GARCH, and VAR, including their advanced versions, with a focus on the opportunities and limitations of their application in financial market analysis and the forecasting of returns and volatility. *The entire chapter highlights the author's analytical approach, which not only systematizes existing models but also offers a critical justification regarding their limitations and applicability in contemporary investment practice.*

Chapter 2 (pp. 100–171) is dedicated to the methodology of the empirical study and contains a systematic review of the main statistical and econometric approaches used in analyzing dependencies in financial markets. Linear and multifactorial regression models, hypothesis testing, as well as key time series models – AR, MA, ARMA, ARIMA, VAR, GARCH – are discussed. The author justifies the choice and applicability of these models through the use of statistical tests for stationarity, autocorrelation, and causality (including Dickey-Fuller, Ljung–Box, and Granger tests), as well as through information criteria (AIC, BIC) for evaluating their adequacy. The methodological section also covers technical aspects related to variable transformation (including the choice between arithmetic and logarithmic returns) and frequency analysis, as well as the efficient market hypothesis and portfolio theory. *This chapter provides a solid theoretical and methodological framework for constructing and verifying the author's models in the empirical part of the work.*

Chapter 3 (pp. 172–237) is dedicated to the empirical study and consists of two main parts. The first part develops and tests the author's ADL model, extended with a stochastic discount factor (SDF) derived from capital returns. The model is applied to data from the U.S. for the period 1985–2022 and shows higher predictive efficiency compared to the baseline AR(2) model, especially in conditions of inflationary instability. In this context, a modified version of the Phillips curve is derived, where the SDF acts as a factor linking inflation expectations with the dynamics of financial markets. The second part focuses on the wealth effect, analyzed through the relationship between capital returns and household consumption. Using GMM methodology, models are estimated that account for the roles of returns, inflation, and other macroeconomic factors. The results confirm the presence of a statistically significant wealth effect, especially in shorter (monthly) time intervals. *The findings validate the proposed models and contribute to a better understanding of the interaction between capital markets, inflation dynamics, and consumption, offering a toolkit with practical application value in macroeconomic forecasting.*

The **conclusion** (pp. 238–245) summarizes the main results from both the theoretical and empirical research, systematically organizing the confirmed hypotheses and validated models. The

applicability of these findings in macroeconomic forecasting is emphasized, and general guidance for future research is also provided.

4. Bibliography

The doctoral student has used 103 sources, including academic works in Bulgarian and English, as well as specialized publications. The literary foundation covers classical and contemporary authors in the fields of finance, econometrics, and equity instrument valuation, as well as research related to capital markets, inflation, and consumption. The literature used contributes to the establishment of a solid theoretical and methodological foundation and supports the development of an original research contribution.

5. Appendices to the document

In the dissertation, there are no separate applications as a distinct section, but within the main text, especially in Chapter 3, there are numerous tables and graphs that serve the function of internal analytical applications. They present the empirical results from the author's models, visualize statistical relationships between macroeconomic variables, and contribute to a better illustration and interpretation of the research findings.

II. Assessment of the form and content of the dissertation

1. Assessment of the relevance of the scientific problem developed in the dissertation and the formulated: subject and object, thesis, purpose, tasks and research methods; clarity and argumentation of ideas, uniqueness of novelties

The relevance of the research topic in the dissertation is indisputable, given the key importance of capital markets and their interaction with macroeconomic variables in the context of global instability. The need for conceptually sound and statistically robust models for forecasting economic processes is particularly pressing, as existing approaches are insufficient to capture the complex dynamics between market indices and macroeconomic indicators.

The dissertation by Vladislav Lyubenov stands out with clearly defined object and subject of study, consistently developed goals and tasks, as well as a theoretically grounded and methodologically supported thesis. The proposed four working hypotheses are logically linked to the research structure and are subject to empirical testing using appropriate statistical and econometric tools. The presentation is characterized by consistency, clarity, and reasoning, with the author demonstrating a deep understanding of the complex nature of the interrelationships under study. The contribution of the work is emphasized in the development and application of original models for analyzing the relationships between capital markets, inflation, and consumption.

2. Analysis of the degree of elaboration of the researched issues by other scientists and to what extent the author's own attitude on the issues under consideration is reflected

Despite the abundance of established models and concepts for studying the relationship between financial markets and macroeconomic dynamics, the author convincingly argues the need for a new research approach, tailored to the current conditions of instability and structural changes in the environment. The exposition clearly highlights the author's stance, which combines a critical review of existing approaches with the proposal of original models and interpretations of the interrelationships between capital markets and the real economy.

3. Opinion on the volume of the dissertation, on the quality and number of illustrative materials. Attitude towards scientific, linguistic and stylistic redaction

The volume of the dissertation complies with academic requirements and is optimal for substantiating and defending the set tasks, research thesis, and hypotheses. The presentation of quantitative results is accompanied by tables and graphs that help clarify and substantiate the empirical findings.

The structure of the work is balanced and logically coherent. The content of the chapters and paragraphs follows the aim and tasks set in the introduction and is aligned with proving the research thesis. The distribution between theoretical review, methodological justification, and empirical analysis is clear and well-measured.

The dissertation is well-constructed in terms of terminology and language. The exposition is concise and well-argued. In some places, there are slight imperfections in style, more noticeable in the introduction, where the tone is more descriptive. The structure does not include conclusions at the end of each chapter — a choice I accept, as it reflects the absence of elementary or formal summaries and aligns with the focus of the work toward a specialized audience.

4. Assessment of the toolbox used and the correctness of the calculation procedures

The dissertation employs a complex and multi-component statistical-econometric toolkit that enables precise modelling of the relationships between capital markets and macroeconomic processes. The author uses a variety of contemporary models for analyzing dependencies and dynamics, providing well-argued justification for their applicability in relation to the formulated hypotheses and research objectives.

The selection of models and methods is both theoretically and empirically justified through relevant statistical tests and informational criteria. The PhD student executes the computational procedures meticulously, without omissions or methodological discrepancies, and presents the results with the necessary clarity and analytical interpretation.

5. Opinion on compliance with the rules of scientific ethics

The literary sources are cited correctly, in compliance with the rules of academic ethics and according to the APA style adopted by the D.A. Tsenov Academy of Economics. The referencing is appropriate, consistent, and aligned with the content of the dissertation.

6. Opinion as to how well the abstract accurately and completely reflects the work

In the abstract, the mandatory elements are included as follows: general characteristics; structure and content of the dissertation; main content of the dissertation; directions for future research; summary of scientific contributions; publications on the topic; list of participation in scientific conferences and forums; a reference for the compliance with the national requirements under the Regulations for the implementation of the Law on the development of the academic staff in the Republic of Bulgaria; a statement of originality of the work.

The abstract accurately reflects the structure, logic, and content of the dissertation.

Directly related to the topic of the dissertation are **five publications** from the period 2021-2023, including **one article** and four papers. Two of the publications are co-authored with the academic advisor. During the same period, the PhD student participated in four conferences, one of which was abroad, demonstrating that in a short period, the results of the research have been successfully promoted to the scientific community.

III. Scientific and scientific-applied contributions of the dissertation work

In the conclusion of the dissertation and in the abstract, Vladislav Lyubenov formulates his view on the main contributions of his work. I accept this presentation as precise and objective, but

modest in reflecting the author's achievements. More specifically, my view on the contributions is as follows:

1. **Systematization and critical review of existing concepts and models for evaluating equity instruments and measuring the risk of holding them.** Their limitations and applicability in current investment practices have been analyzed.

2. **Focused presentation of the main statistical and econometric approaches from the perspective of their use in financial market research.** Their advantages and limitations in the context of contemporary economic reality have been examined in detail.

3. **Development and testing of new mathematical models for expressing the relationship between capital returns and inflation, applicable in conditions of inflationary instability – the ADL-SDF and NKPC-SDF models.** In these models, the stochastic discount factor serves as a linking element between inflation expectations and the dynamics of financial markets. The claim that capital market returns precede inflation changes by a one-month interval is verified.

4. **Testing and offering advanced forecasting models focused on the wealth effect through the relationship between capital returns and household consumption.** The models also include significant factors such as unemployment, savings, household debt, and inflation, confirming the statistically significant influence of capital returns on consumption as a macroeconomic variable, especially in the short (monthly) term.

My opinion is that the author's contributions can justifiably be categorized into two main groups – scientific and scientific-applied. **Scientific** contributions, as the dissertation enriches existing investment theories and models through the introduction of new methods and concepts. **Scientific-applied** contributions, as the author presents new models that build upon existing theories and have immediate practical application for analyzing and managing real economic processes, particularly in the context of studying the dynamics of financial markets.

IV. Critical notes and questions on dissertation work

My overall impression of the dissertation is very positive. The minor imperfections in the style mentioned are neutralized by the consistent, in-depth and reasoned thought of the author throughout the presentation, as well as the significant results achieved. As a standard, I would recommend including conclusions and summaries at the end of individual paragraphs and chapters to make the text more readable. However, I emphasize once again that their absence can be attributed to the work's orientation towards a competent professional audience.

PhD student Vladislav Lyubenov offers interesting directions for future research work in the field of investment analysis and modelling, which I recommend him to implement.

Questions for the PhD student:

1.	In your research, you establish a connection between capital returns from equity instruments and macroeconomic indicators (specifically inflation and consumption), using data from the U.S. Can you specify how valid the observed relationships are in the context of the Bulgarian capital market, which is characterized by low liquidity, a limited number of active participants, and traditionally low individual household participation in the capital market?

2.	What specific recommendations can be made for central banks and macroeconomic regulators based on your model for forecasting inflation using capital returns?

V. Summary evaluation of the dissertation work and conclusion

The dissertation submitted for review meets the requirements of the national and university normative framework at the D.A. Tsenov Academy of Economics. Through the dissertation, the author demonstrates solid theoretical preparation, excellent mastery of statistical and econometric tools, as well as adequate interpretation of the results obtained in solving complex financial problems. The dissertation possesses the necessary relevance, contains scientifically significant results, and presents new ideas with clear applicability. A significant part of the ideas and results have been promoted at scientific forums and published in prestigious journals.

All this provides grounds for me to give a positive evaluation of the dissertation and to propose to the respected members of the Scientific Jury to vote in favor of awarding the educational and scientific degree "Doctor" in the doctoral program "Finance, Monetary Circulation, Credit, and Insurance (Finance)" to the PhD student Vladislav Lyubenov.

25.04.2025
Veliko Tarnovo

Assoc. Prof. Vanya Tsonkova, PhD