HIGHER SCHOOL OF INSURANCE AND FINANCE - SOFIA

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FINANCIAL ASPECTS OF TENDENCIES IN CONSTRUCTION

ABSTRACT

of a dissertation for the acquisition of the educational and scientific degree of "Doctor" in the doctoral program "Finance, Insurance, and Assurance" in professional field 3.8. Economics.

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The dissertation consists of a total of 247 pages, including 239 pages of elaborations and 8 pages of appendices. It is structured into a preface, an exposition divided into four thematic chapters, a research summary, a conclusion, references, and six appendices. A total of 31 tables, 22 graphs, and 18 figures are presented. The list of reference sources includes 95 sources in English, Bulgarian, Macedonian, and Serbian languages, as well as 54 websites.

CONTENTS

I. General characteristics of the dissertation

I.1. Relevance of the problem

The construction industry plays a pivotal role in the economic development of nations by contributing to gross domestic product (GDP), generating employment, and driving public infrastructure development. As a sector that is highly sensitive to economic cycles and public investment policies, its performance serves as both an indicator and instrument of macroeconomic stability and recovery, especially during periods of financial crisis or global disruption, such as the 2008 economic downturn and the COVID-19 pandemic.

The relevance of this research lies in the growing complexity of the construction sector's financial environment. Construction projects are capital-intensive, long-term, and exposed to numerous uncertainties, from fluctuating material costs to contractual risks and delays. In this context, efficient financial management is not only a support function, but a strategic necessity that influences project success, company sustainability, and national economic performance.

Additionally, the increasing globalization of the construction industry has created new opportunities and challenges for companies seeking to expand across borders. Entering foreign markets requires not only technical expertise but also strong financial capacity, risk-sharing mechanisms, and strategic frameworks such as FIDIC contracts, joint ventures, and public-private partnerships (PPPs). These factors underscore the need to study how financial instruments and management systems are applied in practice.

Furthermore, the financial performance of construction companies remains underexplored in academic literature, particularly when it comes to the application of international accounting standards, financial projections, and company-specific financial indicators. There is a pressing need for empirical analysis that links financial statement evaluation with strategic decision-making and competitiveness in construction markets.

This research is therefore highly relevant not only in academic terms, but also for industry practitioners, policymakers, and international investors. It addresses the need for integrated financial strategies that can strengthen construction companies' resilience, facilitate international expansion, and promote long-term development at both the company and macroeconomic level.

I.2. Research Thesis

The thesis of the dissertation is that **active, strategically oriented, and analytically supported financial management contributes significantly to the long-term sustainability, operational stability, and international competitiveness of construction companies**.

This impact becomes particularly evident when financial decisions are made with focus on three key levels: the macroeconomic context in which the sector operates, the strategic direction of international expansion, and the internal financial organization of construction firms.

The central thesis of the dissertation can be decomposed into three interrelated components, each addressing a distinct dimension of the construction sector's financial dynamics:

1. Macroeconomic dimension: The strategic role of the construction sector in economic growth (elaborated in chapter I)

The construction sector serves as a vital pillar of economic development, significantly contributing to GDP growth, employment generation, and economic stabilization, particularly during periods of crisis. However, the extent to which the sector fulfills this macroeconomic function is contingent upon the financial soundness and resilience of construction companies.

2. Strategic dimension: Financial requirements for successful internationalization (elaborated in chapter II)

The globalization of construction companies presents enormous opportunities for expansion and competitiveness. However, internationalization strategies, including Joint Ventures (JV), Mergers and Acquisitions (M&A), Public-Private Partnerships (PPP), and can only ensure sustainable growth when accompanied by sophisticated financial planning, standardized contractual practices and comprehensive risk management mechanisms.

3. Microeconomic dimension: Internal financial management as a catalyst for sustainability (Elaborated in chapter III and chapter IV)

Effective internal financial management, encompassing rigorous planning, liquidity control, budgeting, forecasting, represents a critical determinant of corporate flexibility, strategic agility, and operational efficiency in construction companies. Financial management is thus positioned as a strategic, rather than merely technical, function.

I.3. Object and subject of the research

Object of the research is the construction sector as a vital component of national and global economic systems, with special attention to its structural characteristics, economic contribution, and development potential.

Subject of the research is the financial dimension of the construction sector, analyzed through four interconnected perspectives:

- *Structural and economic characteristics of the construction industry*, including its correlation with GDP, employment, capital investment, and its impact on the economic cycles of both developed and developing economies.
- *Expansion strategies of construction companies in international markets*, including the role of FIDIC contracts, financial instruments for risk mitigation, and market entry mechanisms such as joint ventures, mergers and acquisitions, and public-private partnerships (PPPs).
- *Financial management systems within construction companies*, focusing on their organization, planning functions, accounting practices, internal financial control, and application of international financial reporting standards.
- Analysis of financial performance using balance sheets, income statements, financial ratios, and construction-specific indicators, with an emphasis on evaluating company stability, liquidity, and investment efficiency.

The research addresses how financial factors affect both the microeconomic behavior of construction firms and their macroeconomic contribution.

I.4. Aim and tasks of the dissertation

The aim of the dissertation is to analyze the financial aspects of tendencies in the construction industry, focusing on its macroeconomic role, internationalization strategies, internal financial management practices, and financial performance. The study seeks to evaluate how effective financial planning and analysis contribute to the competitiveness, resilience, and sustainable development of construction companies.

To fulfill this aim, the dissertation sets the following research tasks:

1. To identify the structural and functional characteristics of the construction sector and determine its impact on national and global economic growth, particularly through capital investments, employment, and infrastructure development.

2. To assess the effects of major economic events such as the 2008 global financial crisis and the COVID-19 pandemic on the construction industry's contribution to GDP and its economic stability, using comparative data from the period 2010–2021.

3. To analyze the evolution and current trends of the construction sector in selected Southeastern European countries, with emphasis on regional GDP impact, employment data, and future infrastructure prospects.

4. To explore the positioning of the construction sector in the global market, identifying leading countries and companies, and evaluating their competitive strategies.

5. To examine the financial risks associated with construction activities, and to evaluate the importance of international contract frameworks such as FIDIC and related financial instruments (e.g., guarantees, retention money, insurance policies) in mitigating those risks.

6. To study internationalization strategies of construction companies, including joint ventures, mergers, and acquisitions (M&A), and public-private partnerships (PPPs), with specific attention to motivations, forms, and success factors.

7. To evaluate the role of financial management as a core function within construction companies, focusing on management structure, financial planning, budgeting, cost control, and the organization of financial departments.

8. To assess the application of international accounting standards and financial reporting practices in construction firms, including the use of accounting information systems and projections.

9. To perform detailed financial statement analysis of construction companies, using balance sheets, income statements, and financial ratios (profitability, liquidity, efficiency, and solvency), as well as construction-specific financial indicators.

I.5. Structure of the dissertation

The dissertation consists of a total of 247 pages, including 239 pages of elaborations and 8 pages of appendices. It is structured into a preface, an exposition divided into four thematic chapters, a research summary, a conclusion, references, and six appendices. A total of 31 tables, 22 graphs, and 18 figures are presented. The list of reference sources includes 95 sources in English, Bulgarian, Macedonian, and Serbian languages, as well as 54 websites.

Each chapter is systematically organized into thematically coherent subsections. The first chapter encompasses six subsections, the second chapter encompasses four subsections,

and the third chapter encompasses four subsections, and the last chapter encompasses seven subsections.

The bibliography of the dissertation includes 95 sources in English, Bulgarian, Macedonian, and Serbian languages, as well as 54 websites. A total of 31 tables, 22 graphs, and 18 figures are presented.

The central thesis is examined through the structure of the dissertation, which is organized into four interrelated chapters. Each chapter explores a specific analytical level that jointly supports the validation of the thesis:

Chapter 1: Construction industry – characteristics and specificities

This chapter supports the macroeconomic dimension of the thesis by examining the role of the construction sector in stimulating economic growth, both globally and regionally. Special emphasis is placed on Southeastern Europe, where the sector's contribution to GDP, employment, and investment cycles is analyzed. The chapter provides historical and structural insight into how construction functions as a counter-cyclical driver during financial and systemic crises.

Chapter 2: Expansion of construction companies in the global market

This chapter corresponds to the strategic dimension of the thesis. It analyzes how construction companies expand into international markets through mechanisms such as joint ventures, mergers and acquisitions, and public-private partnerships. It further explores the use of contractual frameworks—especially FIDIC standards—and financial risk mitigation instruments that support successful global integration.

Chapter 3: Financial management as a core function in construction companies

Here, the thesis is examined at the microeconomic level, focusing on internal financial organization. The chapter investigates the role of financial departments, budgeting, financial reporting, and the application of international accounting standards (IFRS). It highlights how these elements influence cost control, profitability, investment planning, and overall financial decision-making capacity within firms.

Chapter 4: Financial analysis

This chapter provides the empirical foundation for testing the thesis. It applies financial statement analysis to assess operational efficiency and long-term financial health of construction companies. By using key indicators such as liquidity, profitability, solvency, and cash flow metrics, the chapter demonstrates whether firms that apply structured financial management practices achieve greater financial resilience and performance outcomes.

I.6. Research methodology

The methodological approach of the research in this paper should result in theoretical and practical knowledge of the construction sector in the global economy, knowledge of the importance of the construction sector in developing competitiveness of economies around the world, as well as knowledge of ways to manage assets and sources of assets in construction companies. To achieve these aims, the dissertation employs the following scientific methods, each applied in specific parts of the research:

Analysis and synthesis: These methods are used throughout the dissertation, particularly to break down complex processes in the construction industry and financial management into their constituent elements and then reassemble them to form coherent conclusions. For example, synthesis is used to develop a comprehensive view of the financial management framework in construction companies.

Comparative-historical method: This method supports the analysis of construction sector development across different historical periods and regions. It helps trace how global construction markets have evolved and how companies have entered foreign markets through strategies such as joint ventures and mergers and acquisitions.

Analytical-deductive method: This method is employed through dissertation, where theoretical concepts are systematically analyzed and then applied to real-world scenarios. The approach involves deducing conclusions based on established theories and using these insights to examine practical situations within the construction sector, ultimately linking theory to practice in understanding financial aspects and trends.

Quantitative statistical method: This method is integral to the empirical sections of the dissertation, where it is used to analyze numerical data and identify patterns, trends, and relationships within the construction sector. By applying statistical tools, the research quantitatively evaluates financial variables, enabling a data-driven understanding of financial aspects and tendencies in the industry.

To ensure clarity and enhance the visual impact of the findings, the dissertation incorporates:

Tables and graphs – These are used to present statistical data, ratios, and financial indicators, providing a clear and structured way to analyze and compare financial information.

Figures (schematic diagrams) – These figures illustrate organizational structures and financial workflows, offering a visual representation of complex systems and processes

within construction companies. These are included to enhance comprehension of case examples and analytical models, making abstract concepts more tangible and easier to understand. The chosen methods are carefully aligned with the dissertation's research objectives, helping to verify the central premises by presenting data and analysis in a clear, accessible, and impactful way.

I.7. Limitations in the scope of the study

The present research, while comprehensive in its scope, is subject to several limitations arising from its methodological focus and data availability:

- The empirical analysis is based on secondary and processed data, restructured, and adapted from reputable and publicly available sources such as company reports, international databases, and academic publications. Due to the size and complexity of the subject, and the impossibility of collecting original data for every case, primary data collection was not conducted. This may influence the depth and granularity of specific analyses.
- The analysis includes selected case studies on mergers and acquisitions, joint ventures, and public-private partnerships. While relevant to the topic, these cases were chosen based on the availability of data and may not fully represent the diversity of global construction practices.
- The study is focused specifically on financial aspects of the construction industry. It does not include legal, environmental, or technical dimensions of construction management, which are also essential for a holistic interpretation of project performance and sectoral development.

This dissertation seeks to provide a comprehensive analysis of the financial aspects and emerging tendencies within the construction industry, examining both its macroeconomic role and the internal financial mechanisms that drive company success. Through the integration of theoretical frameworks, strategic insights, and empirical analysis, the study highlights the central importance of financial management as a key enabler of sustainability, operational stability, and international competitiveness. The first chapter begins with an exploration of the construction industry's structural and economic characteristics at the global and regional levels. It establishes the macroeconomic context within which construction activities contribute to national development, capital formation, employment generation, and the stabilization of economic cycles, particularly during periods of crisis.

II. DISSERTATION OUTLINE

Starting from the dissertation topic "Financial aspects of tendencies in construction," the present research aims to analyze the financial dynamics that rule the construction industry, focusing on its macroeconomic role, strategic internationalization processes, and internal financial governance structures. The central thesis of this dissertation is that active, strategically oriented, and analytically supported financial management significantly enhances the sustainability, operational resilience, and global competitiveness of construction companies. Building upon this theoretical foundation, the research examines the sector’s structural importance, financial expansion models, and internal organizational frameworks, employing a multidimensional methodological approach to validate the thesis across different analytical levels. In doing so, the dissertation addresses the pressing need for integrated financial strategies within an increasingly complex and globalized construction environment.

II.1. First chapter of dissertation, titled “Construction industry-characteristics and specificities”

The first chapter of this dissertation, titled “Construction sector – characteristics and specificities,” explores the global construction industry by analyzing its economic, structural, and regional characteristics and its impact on economic growth. It also examines the construction sector in Southeastern Europe, focusing on historical developments, current economic conditions, and the sector’s contribution to GDP and employment in the region. Special attention is given to the construction market globally, through an analysis of the role of construction companies, major market players, evolving market trends, and the challenges companies face in an increasingly competitive and dynamic environment. The chapter further identifies the financial aspects of these tendencies, emphasizing the influence of capital investments, infrastructure development, and the effects of global economic crises on the sector’s financial dynamics. This comprehensive analysis underlines the strategic importance of the construction sector as a catalyst for economic development, infrastructure modernization, and employment generation. By establishing the macroeconomic and market foundation, the chapter directly supports the dissertation’s central thesis: that strategically oriented and analytically supported financial management is essential for ensuring the long-

term sustainability, operational stability, and global competitiveness of construction companies.

This chapter aimed to explore the structural and economic role of the construction industry at both global and regional levels, analyze its market dynamics, and examine the strategic implications of financial governance. The findings reaffirm the central thesis of this dissertation: that active, strategically oriented, and analytically supported financial management is essential for ensuring the long-term sustainability, operational stability, and international competitiveness of construction companies.

The key conclusions resulting from the first part of the study are as follows:

1. Construction as a pillar of economic development

The construction sector plays an important role in both global and national economies, with its contribution to Gross Domestic Product (GDP) being a key indicator of its economic impact. On average, the sector contributes 5.37% to global GDP, with regional shares ranging from 4.5% in the Americas to 7.4% in Oceania and even reaching 9% in India. Developing Asian economies demonstrated particularly strong performances, with the sector contributing 6.28% to regional GDP and achieving an average annual growth of 4.79% between 2010 and 2021.

For example, in China, the construction sector contributed approximately 7% of GDP in 2022, reflecting the nation's ambitious infrastructure projects and urban development. In India, the construction industry contributed nearly 9% to GDP. In Southeastern Europe, the construction industry also plays a vital role in economic development, contributing approximately 4-6% to GDP.

Empirical analysis confirms that the construction sector consistently plays a significant role in driving economic growth, especially in developing and transition economies. In contrast, advanced economies display lower but more stable sectoral shares. These findings corroborate the theoretical frameworks of Turin and Bon, which are further elaborated in this study through the integration of new regional data.

Beyond GDP, the construction sector is a major driver of fixed capital formation, accounting for more than 50% of global fixed capital formation, exceeding USD 13.5 trillion annually. This substantial share highlights the sector's critical role in economic growth, not only in terms of direct output but also as a catalyst for other sectors, including manufacturing, services, and finance. Construction-related investments in infrastructure, housing, and energy drive long-term economic expansion by enhancing connectivity, productivity, and the quality of life.

2. Counter-cyclical nature of construction and resilience during crises

Construction’s counter-cyclical behavior is evident in the response to economic downturns. During the 2008 global financial crisis, infrastructure investment was employed as a strategic recovery tool. Similarly, in 2020, when global GDP declined by -3.15%, the construction sector showed resilience, declining by only -3.59%. In 2021, global GDP rebounded by 5.9%, and the construction sector grew by 3.89%, with Europe leading at 6.2% growth, driven largely by public stimulus packages. The COVID-19 pandemic and the energy crisis (2021–2023) revealed both the vulnerability and adaptability of the construction industry. Rising energy prices directly impacted the cost of key construction materials like cement, aluminum, and bitumen, increasing the cost of building and reducing profitability.

3. Regional disparities and construction market dynamics

Despite its global importance, the sector is geographically concentrated: 80% of the total construction value is generated by just 20 countries, with China (18.53%) and the USA (16.73%) dominating the market. China’s Belt and Road Initiative and massive infrastructure spending contributed to this dominance. Other notable contributors include India (4.02%), Russia (2.62%), and Brazil (2.20%).

In contrast, Southeastern Europe demonstrates a mixed profile: while the sector contributes 4–6% to GDP and plays a key role in employment and infrastructure development, companies often lack autonomy, innovation capacity, and direct access to private capital. Many firms function primarily as subcontractors, depending heavily on public procurement and EU funding, which limits strategic growth.

4. Strategic financial failures – the Evergrande collapse

The case study of Evergrande Group demonstrates how financial management in large-scale firms can trigger systemic collapse: With liabilities exceeding USD 300 billion and assets amounting to only USD 245 billion, the company defaulted on bond payments and stopped thousands of construction sites across China. The absence of strategic liquidity planning and overreliance on speculative real estate markets exposed deep governance failures.

This case validates the dissertation’s core argument that financial governance is not optional but essential for firms ranked among the world’s largest.

5. Structural challenges in southeastern Europe

In Southeastern Europe, the sector has a strong economic presence. It also accounts for significant employment levels. However, despite this macroeconomic weight, construction companies in the region continue to face internal weaknesses, overreliance on public

procurement end investments, limited innovation capacity, and low financial autonomy. These firms often function as subcontractors, lacking the capacity or tools to lead large-scale infrastructure projects.

The findings presented in this chapter offer a multidimensional insight into the construction sector's structural and economic role, its global and regional market dynamics, and the strategic implications of financial governance. By analyzing the sector's impact on GDP, its cyclical behavior during economic crises, the state construction activity around the world, and the market positioning of leading global firms, the chapter addresses key analytical goals outlined at the start of this research.

In addition, the Evergrande case is presented in this chapter as a practical example of what can occur when large construction companies fail to manage their finances effectively. While not examined in depth, it clearly illustrates the risks associated with weak financial control and inadequate planning. The case reinforces the argument that strong financial management is essential and helps set the foundation for the following chapters, which will explore financial instruments, internal organizational systems, and international contract standards.

Accordingly, the findings affirm the central thesis of the dissertation: that active, strategically oriented, and analytically grounded financial management is essential for the construction sector to fulfill its macroeconomic role, achieve operational resilience, and sustain long-term global competitiveness. Without the institutionalization of financial governance, even the most structurally significant sectors remain exposed to failure, as the Evergrande collapse demonstrates.

While Chapter I has addressed why the construction sector matters from a structural and macroeconomic perspective, the focus now shifts toward how construction companies manage risk, pursue global growth, and maintain strategic relevance. Chapter II explores the internationalization strategies of construction firms and the financial frameworks, including FIDIC contracts, joint ventures, mergers and acquisitions, and PPPs, that support their expansion and risk management in increasingly complex global markets.

II.2. Second chapter of dissertation, titled "Expansion of construction companies in the global market"

Recognizing the growing complexity and competitiveness of the global market, the second chapter shifts the analytical focus toward the internationalization of construction companies. It explores how firms adapt their financial structures, contractual practices, and risk management strategies to operate successfully across borders. Particular attention is given to the role of FIDIC contracts, financial risk mitigation instruments, joint ventures, mergers, and acquisitions (M&A), and public-private partnerships (PPPs) in facilitating global expansion. By examining these strategic mechanisms, the chapter strengthens the dissertation's central thesis that proactive financial governance is indispensable for sustaining resilience and competitiveness in the global construction industry.

This chapter aimed to analyze the internationalization processes of construction companies, the risks and instruments associated with global operations, and the strategic frameworks that support entry into foreign markets. The findings confirm that in a globalized and increasingly complex business environment, the sustainable expansion of construction firms requires not only technical capacity, but also structured financial risk management, institutionalized contracting practices, and innovative entry strategies. Mechanisms such as FIDIC contracts, financial instruments, joint ventures, mergers and acquisitions, and public-private partnerships play a central role in enabling companies to scale their operations and remain competitive.

The key conclusions resulting from this chapter are as follows:

1. Strategic risk management is an essential for international operations.

Global construction activities are exposed to legal, financial, and political uncertainties, requiring early risk anticipation and mitigation through contractual instruments such as FIDIC agreements.

2. FIDIC contracts as a global standard for contractual risk distribution.

FIDIC contracts offer a modular framework for equitable risk allocation between contractors and investors. Their global adoption and flexible structure make them indispensable tools for international projects, widely endorsed by international financiers.

3. Financial instruments as core components of project security.

The use of bank guarantees, price adjustment, retention deposits, and insurance policies ensures that performance, advance payments, and post-construction obligations are secured. These instruments, codified within FIDIC clauses, provide essential protection for both parties and are particularly critical in high-risk or politically unstable environments. Their combined application improves investor confidence and project liquidity.

4. Collaborative market entry strategies enhance competitiveness and risk-sharing.

Collaborative market entry strategies such as joint ventures and mergers and acquisitions (M&A) have emerged as fundamental tools for construction companies planning to expand globally in an increasingly competitive and risk-prone environment.

These mechanisms allow firms to pool financial, technological, and human resources, gain access to local markets and specialized expertise, and accelerate entry into complex infrastructure sectors. Joint ventures, in particular, offer flexible models of cooperation—either through equity-based companies or contractual partnerships—that facilitate risk-sharing and knowledge transfer. Likewise, M&A transactions have become instrumental in achieving economies of scale, acquiring innovation capacity, and overcoming regulatory or institutional barriers. Notably, recent data confirms that strategic investors dominate global construction-sector transactions, accounting for over 65% of deals in 2023. This reinforces the importance of long-term, strategically guided partnerships as a means of sustainable international growth and operational resilience in the construction industry.

5. Public-Private Partnerships (PPPs) as long-term infrastructure solutions.

PPPs, especially under the BOT model, have evolved into a dominant delivery strategy for public infrastructure without burdening government budgets. Between 2019 and 2023, private infrastructure investments ranged from USD 45.7 billion to USD 91.3 billion, with energy projects leading investment volumes.

6. BOT model as a sustainable business model for construction companies.

The BOT framework allows construction companies not only to build infrastructure but also to operate and maintain it over concession periods, ensuring long-term revenues. Case studies like the SEA High-Speed Rail Line (Tours–Bordeaux) demonstrate the effectiveness and scalability of this model.

The findings presented in this chapter reinforce the central thesis of this dissertation: that active, strategically oriented, and analytically supported financial management is essential for the long-term sustainability and competitiveness of construction companies. Through the exploration of international expansion strategies, risk governance mechanisms (FIDIC contracts, financial instruments), and cross-border growth models (joint ventures, mergers and

acquisitions, and PPPs), it becomes evident that financial anticipation, risk allocation, and strategic collaboration are critical success factors in the global market. Without institutionalized financial governance and proactive risk management, construction companies remain vulnerable to market volatility, operational disruptions, and structural failures. Accordingly, the internationalization of construction activities must be underpinned by robust financial planning and strategic adaptability to ensure resilience and growth in an increasingly complex and uncertain global environment.

While Chapter II has focused on the strategic and operational aspects of international market expansion, Chapter III explores the internal financial management systems of construction companies. It will assess the role of liquidity planning, cost control, investment structuring, and financial performance indicators in sustaining both global growth and domestic operations.

II.3. The third chapter of dissertation, titled " Financial management as one of the core management functions in construction companies "

Following the analysis of global expansion strategies, this chapter focuses on the internal financial management systems of construction companies, examining their organizational structures, accounting practices, budgeting processes, liquidity control mechanisms, and financial planning activities. Financial management is presented not merely as an administrative function, but as a core strategic component that directly influences the operational efficiency, risk resilience, and sustainable growth of firms operating in the highly dynamic construction sector.

The chapter explores how financial governance frameworks, supported by international accounting standards (IFRS, GAAP) and technological tools such as ERP systems, contribute to transparent reporting, informed decision-making, and strategic resource allocation. Particular attention is given to the role of cash flow management, capital structure optimization, and financial forecasting in maintaining corporate stability during project execution and market fluctuations. By highlighting the integration of financial management into the broader organizational structure of construction companies, this chapter supports the dissertation’s central thesis: that strategically oriented and analytically supported financial management is

essential for ensuring the long-term sustainability, operational stability, and global competitiveness of construction enterprises.

The key conclusions resulting from this chapter are as follows:

1. Financial management is a core strategic function in construction companies.

Financial management extends beyond administrative support, acting as a strategic pillar that ensures liquidity, cost control, risk mitigation, and sustainable project execution. The integration of financial planning, budgeting, reporting, and forecasting into everyday operations is vital for company stability and long-term competitiveness.

2. Efficient organizational structures improve financial performance.

The internal structure of construction companies—whether functional, matrix, projectized, or hybrid—has a direct impact on financial decision-making, operational control, and resource allocation. Larger companies tend to develop complex financial departments led by CFOs, while smaller firms often adopt leaner, more flexible structures or outsource financial functions.

3. Accounting and financial reporting systems are critical for transparency and decision-making.

The application of international standards such as IFRS and GAAP ensures that financial reporting in construction companies is transparent, comparable, and compliant with regulatory requirements. ERP systems and modern accounting software provide integrated, real-time financial data that support project management, cost control, and strategic planning.

4. Financial projections and cash flow forecasting are essential for project success.

Accurate financial forecasting, including capital outlays, revenue, expense predictions, and financing costs, is essential to prevent liquidity crises and financial disruptions. Cash flow management is particularly critical in the construction sector, where payment schedules, retention clauses, and cost overruns can severely affect project continuity and profitability.

5. Internal financial organization strengthens resilience and adaptability.

A properly structured financial department, including specialized roles in accounting, treasury, financial planning, and internal auditing, contributes significantly to operational resilience. It ensures financial integrity, compliance, risk management, and strategic resource allocation, all of which are necessary for maintaining competitiveness in a dynamic industry environment.

The findings presented in Chapter III reinforce the central thesis of this dissertation, that strategic financial management is essential for the sustainability, growth, and competitiveness of construction companies in a globalized market. By analyzing the internal financial

organization, accounting practices, and forecasting mechanisms, it becomes evident that without institutionalized financial governance and data-driven decision-making, construction companies are exposed to severe risks. Therefore, professional financial management is not merely a support function but a core driver of strategic advantage, resilience, and success in the construction industry.

While Chapter III demonstrated the importance of internal financial management systems, Chapter IV critically examines how financial statements, ratio analysis, cash flow evaluation, and construction-specific indicators provide measurable insights into a company's financial health, operational efficiency, and long-term sustainability. Through detailed case studies and comparative analysis, the chapter aims to translate financial theory into practice, offering a deeper understanding of the factors that distinguish financially stable construction firms from those facing structural vulnerabilities.

II.4. Fourth chapter of dissertation, “Financial analysis of a construction company: methods, challenges, and insights in construction company”

Building upon the internal financial management frameworks discussed in the previous chapter, this chapter focuses on the practical application of financial analysis techniques in construction companies. It examines how financial statements, ratio analysis, cash flow evaluations, and construction-specific financial indicators provide critical insights into a firm's financial health, operational efficiency, and strategic sustainability. By applying both conventional and industry-specific metrics, the chapter translates theoretical principles into empirical practice.

This chapter provided a comprehensive financial analysis of construction companies, applying both conventional and construction-specific financial indicators to assess financial health, operational efficiency, and strategic sustainability. It explored the critical role of financial statements, profitability, liquidity, efficiency, solvency ratios, cash flow analysis, and specialized project-level indicators in capturing the unique financial dynamics of construction enterprises. Through comparative analysis of two real-world companies (Stanilov LTD and Trace Group Hold PLC), as well as a practical application to hypothetical scenarios, the chapter highlighted how effective financial management practices

differentiate companies that achieve stability and growth from those facing financial distress.

The key conclusions resulting from this chapter are as follows:

1. Financial analysis is a critical management tool in construction companies.

Financial analysis extends further than traditional reporting; it supports proactive risk identification, cash flow management, cost control, and strategic resource planning. Proper interpretation of balance sheets, income statements, and key financial ratios is essential for timely decision-making and for sustaining project execution and corporate growth.

2. Conventional financial ratios must be supplemented by construction-specific indicators.

While traditional financial metrics remain useful, they often fail to capture the project-driven, contract-specific, and cash flow-sensitive realities of construction operations. Construction-specific indicators such as project completion ratio, backlog ratio, financial exposure ratio, and net advances provide more precise insights into project viability, liquidity risk, and operational progress.

3. Cash flow management is essential for project continuity and financial stability.

Irregular inflows, retention practices, advance payments, and large upfront investments create significant liquidity risks in construction. Cash flow forecasting and management, combined with a thorough understanding of operating, investing, and financing cash flows, are indispensable for maintaining operational stability and avoiding financial crises.

4. Effective management of debt and optimal capital structure determine long-term sustainability.

The analysis showed that companies with balanced capital structures, moderate reliance on debt, and strong interest coverage ratios, such as Trace Group Hold PLC, are better positioned to market fluctuations and fund new projects. High leverage without corresponding liquidity reserves, as observed in Stanilov LTD, exposes firms to severe financial distress.

5. Profitability and operational efficiency are critical indicators of financial strength.

Effective cost control, resource optimization, and efficient project execution directly impact profitability and financial sustainability. Companies that manage to maintain positive margins, even amid revenue volatility, demonstrate stronger financial discipline and strategic management capabilities.

6. Construction-specific financial monitoring improves strategic decision-making.

The integration of tailored financial indicators into regular financial monitoring practices allows companies to identify early warning signs of financial stress, optimize working capital management, and improve investment planning. This proactive approach is critical for sustaining competitiveness in a volatile and project-based industry environment.

The findings presented in Chapter IV further support the central thesis of this dissertation, that strategic financial management is essential for the sustainability, growth, and competitiveness of construction companies. Through detailed financial analysis, it becomes evident that companies equipped with professional financial management systems, capable of using both conventional and construction-specific indicators, are better positioned to ensure project success, maintain financial resilience, and achieve strategic objectives in a globalized construction market.

III. SUMMARY

The concluding section offers a comprehensive synthesis of the research findings, outlines the key scientific and practical contributions, and formulates the final conclusions derived from the study. A multidimensional research framework was applied, combining macroeconomic analysis, strategic evaluations of internationalization processes, internal financial management structures, and detailed empirical financial assessments of construction companies. The research applied several scientific methods, including analysis and synthesis, comparative-historical analysis, deductive reasoning, and quantitative statistical techniques, all of which ensured a comprehensive and logically connected study. The selected methodological approaches were particularly appropriate for the nature of the research, which required both a comprehensive theoretical understanding and empirical validation of financial management practices in the construction industry. The synthesis presented here consolidates the empirical evidence supporting the central thesis and highlights the broader relevance of the study for academic research, industry practice, and policymaking.

In this context, the following sections present a detailed summary of the key findings, identify the main scientific and practical contributions, and conclude with reflections on the implications and potential future research directions.

III.1. KEY RESEARCH FINDINGS

This dissertation provided a comprehensive examination of the financial aspects and emerging trends in the construction industry at both the macroeconomic and microeconomic levels. Each chapter of dissertation builds a new level of analysis, moving from the macroeconomic context (Chapter 1), through internationalization strategies (Chapter 2), to internal corporate governance (Chapter 3), and culminating with financial empirical analysis (Chapter 4) to confirm the main thesis of the dissertation.

Through a multidimensional research approach, encompassing global economic trends, company-level financial practices, and project-specific financial indicators, the following key findings were identified:

1. The construction sector as a strategic economic pillar:

The construction industry has historically been, and continues to be, a key driver of economic growth. It plays a dual role—stimulating GDP through direct investment in

infrastructure and providing counter-cyclical support during economic crises. The empirical evidence confirmed that investments in construction can accelerate recovery during downturns, stabilize employment, and foster long-term economic resilience. In particular, the sector's correlation with industrialization and urbanization processes underscores its structural importance in both developed and developing economies.

2. *Globalization and new opportunities for construction companies:*

Globalization has transformed the competitive dynamics of the construction sector. While traditionally focused on national markets, construction firms are increasingly expanding internationally, seeking new markets and higher growth opportunities. The study highlighted that successful internationalization requires sophisticated financial strategies, strong compliance practices, and effective risk management tools. Models such as joint ventures, mergers and acquisitions, and Public-Private Partnerships (PPPs) appeared as dominant pathways for companies entering foreign markets. The use of standardized contractual frameworks like FIDIC agreements, along with financial instruments such as guarantees, price adjustment clauses, and insurance, was found to be crucial for mitigating operational and financial risks abroad.

3. *Financial management as a strategic function, not just a support role:*

The research confirmed that financial management in construction companies is not limited to administrative accounting functions. Rather, it is a strategic core that integrates risk assessment, liquidity planning, cost control, capital structure optimization, and decision-making under uncertainty. Firms that institutionalized financial management as a central business function, supported by ERP systems and proactive forecasting, demonstrated greater resilience and competitiveness. In contrast, companies that treated financial management reactively, focusing only on basic compliance, faced liquidity crises, project delays, and financial distress.

4. *Operational structures and financial performance:*

Organizational structure was found to have a direct impact on financial efficiency. Companies with integrated financial departments, covering functions such as budgeting, internal audit, treasury, and financial planning, outperformed those with fragmented or ad

hoc structures. Coordination across departments (finance, operations, procurement, and engineering) was identified as critical for managing project cash flows, optimizing asset utilization, and maintaining profitability. Equipment-intensive operations demanded strict asset management and high utilization rates to prevent cost overruns.

5. *Specialized financial indicators are essential for project evaluation:*

Traditional financial ratios, while useful, were limited in their ability to fully assess the financial health of construction projects. Construction-specific indicators, such as project completion ratios, financial exposure ratios, net advances, and equipment utilization rates, provided more detailed insights into liquidity, operational risks, and future revenue streams. The analysis of two hypothetical companies demonstrated that projects with strong upfront financing, efficient cash flow management, and positive net advance balances were significantly more likely to achieve financial stability and operational success.

6. *Risk management and the role of contractual financial protections:*

The research highlighted the imperative role of contractual financial mechanisms in managing risks associated with construction projects. Instruments such as advance payment guarantees, performance bonds, price adjustment clauses, and insurance policies were shown to safeguard both liquidity and profitability. Companies that proactively used these tools exhibited stronger financial positions, while firms that neglected risk-sharing mechanisms faced greater exposure to project failures and cash flow interruptions.

7. *Empirical case study findings:*

The comparison between Stanilov LTD and Trace Group Hold PLC clearly demonstrated the visible outcomes of differing financial management practices.

Stanilov LTD, with weak cash flow forecasting, high debt leverage, and insufficient internal controls, experienced financial deterioration, negative profit margins, and liquidity crises.

Trace Group Hold PLC, with structured financial planning, reduced reliance on debt, and investment in sustainable growth, maintained positive profitability, liquidity, and long-term stability. This divergence illustrates that strategic, proactive financial management directly determines company survival and success in the construction sector.

The research findings strongly validate the central thesis of the research: that active, strategically oriented, and analytically supported financial management is

essential for ensuring long-term sustainability, operational stability, and international competitiveness of construction companies.

The research confirms that financial management is a decisive factor in the long-term sustainability, operational stability, and global competitiveness of construction companies.

The findings of this research not only contribute to a deeper academic understanding of the financial aspects of the construction sector but also offer practical insights for industry practitioners, policymakers, and investors. By illustrating the critical role of strategic financial management in enhancing resilience, profitability, and sustainable growth, the study provides valuable lessons applicable at both company and sectoral levels. The following section outlines the broader benefits of the research, emphasizing its relevance for various stakeholders within the construction industry and the wider economic environment.

While the study offers a comprehensive analysis, future research could deepen and expand these findings by:

1. Conducting primary empirical surveys across a wider range of construction companies and geographic regions to further validate the financial performance models proposed.
2. Exploring the intersection between financial management practices and technological innovations (such as BIM, ERP, and AI tools) in the construction sector.
3. Analyzing how ESG (Environmental, Social, and Governance) factors increasingly influence financial decision-making in construction firms, particularly in the context of sustainable infrastructure development.

In summary, the results of this research reaffirm the central role of strategic financial management in ensuring the sustainability, stability, and international success of construction companies. By bridging theoretical principles with practical observations from the construction sector, the study emphasizes that financial decision-making processes are critical enablers of competitive advantage and long-term viability.

These findings lay a solid foundation for identifying the broader academic and practical benefits of the dissertation, highlighting its contribution not only to scholarly literature but also to the operational practices of construction firms and policy development in the industry. The next section presents the specific benefits and contributions of the research at theoretical, practical, and societal levels.

III.2. CONTRIBUTIONS

This dissertation offers significant benefits and contributions at both academic and practical levels, addressing critical gaps in the existing literature and offering actionable insights for the construction industry.

The primary benefit of this research lies in its holistic analysis of financial management within the construction sector. It deepens the understanding of how strategic financial planning, internationalization strategies, and internal financial structures influence the stability and competitiveness of construction companies. By linking theoretical knowledge with empirical analysis, the study enhances comprehension of financial dynamics in project-driven industries. For industry practitioners, the research provides a structured framework for applying financial management principles in construction company operations, project planning, and international market expansion. It offers practical guidelines for mitigating financial risks, optimizing liquidity, and sustaining long-term growth. The study is particularly valuable for financial managers, project managers, investors, and policymakers seeking to strengthen the financial resilience of construction enterprises. At the societal level, the dissertation contributes to broader economic knowledge by demonstrating how a financially stable construction sector supports national economic development, infrastructure modernization, and employment generation. Recognizing the construction industry's counter-cyclical role during economic downturns, the study shows how effective financial management within construction firms supports macroeconomic stability and promotes growth. Moreover, by focusing on the impact of globalization, financial innovation, and regulatory frameworks like FIDIC on the construction sector, the research offers insights that are relevant to countries intending to improve their infrastructure competitiveness in a globalized economy.

The dissertation makes several significant contributions to academic knowledge and professional practice:

I. Theoretical Contributions:

The primary theoretical contribution of this research lies in its holistic analysis of financial management within the construction sector. It expands the understanding of how strategic financial planning, internationalization strategies, and internal financial structures influence the stability and competitiveness of construction companies. By linking theoretical frameworks with empirical analysis, the study advances comprehension of financial dynamics in project-driven industries.

Moreover, the research:

1. Expands the theoretical understanding of construction sector financial management by integrating conventional financial analysis with project-specific indicators tailored to the industry's unique characteristics.

2. Presents a structured framework for applying construction-specific ratios (such as the project completion ratio, backlog ratio, and financial exposure ratio), allowing a more detailed assessment of financial performance in project-based enterprises.

3. The dissertation introduces a set of construction-specific financial indicators—Project Completion Ratio, Backlog Ratio, Financial Exposure Ratio, and Net Advances—designed to capture project liquidity, operational stability, and financial risk exposure more accurately than traditional financial ratios. This original framework significantly advances the financial analysis of construction companies by aligning evaluation tools with the real dynamics of project-based operations, offering a methodological innovation both for academia and industry practice.

4. Deepens the academic dialogue on financial management as a strategic function, moving beyond its traditional administrative role and aligning it with modern business theories.

II. Methodological contributions:

1. The study employs a multi-level analytical approach combining macroeconomic, strategic, organizational, and financial analysis perspectives, setting a model for future interdisciplinary research in construction sector economics.

2. It validates the use of comparative case study methodology to draw empirical insights from company-level financial data over a five-year period, showcasing a replicable approach for financial performance analysis in project-based industries.

III. Practical and social contributions:

1. The dissertation provides a practical toolset of specialized financial indicators that construction managers and financial controllers can immediately apply in practice to monitor project health, forecast risks, and optimize working capital.

2. By emphasizing the strategic importance of financial planning in cross-border projects, it offers guidelines for companies seeking to expand internationally while maintaining financial discipline and minimizing exposure to market fluctuations.

3. By illustrating how construction company strengthens national economies, fosters infrastructure modernization, and supports employment, the research provides valuable

input for policymakers and development agencies aiming to promote sustainable economic growth.

This research emphasizes that strategic financial management is not merely a technical necessity but a supporter of sustainable growth, resilience, and global competitiveness in the construction sector. The findings serve as both a scholarly contribution and a practical guide for future industry and policy developments. Building upon these findings and contributions, the final conclusion of the dissertation provides a comprehensive synthesis of the study's overall significance for academia, industry, and economic development.

III.3. FINAL CONCLUSION OF THE DISSERTATION

The construction industry, as one of the oldest and most strategic sectors of the global economy, continues to play a fundamental role in supporting economic development, employment, and infrastructure growth. As outlined in the Preface, the sector not only contributes significantly to national GDP but also serves as an important stabilizing force during periods of economic crises. Given its complex and dynamic environment, effective financial management is crucial for the competitiveness, resilience, and long-term sustainability of construction companies.

This dissertation provided a comprehensive analysis of the financial aspects affecting the construction industry, focusing on macroeconomic impact, international expansion strategies, internal financial management systems, and empirical financial performance analysis. Through this approach, the study confirmed the mail thesis that strategically oriented and analytically supported financial management is essential for construction firms to successfully operate in an increasingly globalized and uncertain market.

At the macroeconomic level, the findings confirm the construction sector’s critical role in supporting economic cycles, particularly during recessions. Investments in construction activities stimulate growth, create jobs, and contribute to infrastructure modernization, making the sector a key driver of recovery during crises.

On the strategic level, companies that aim to expand internationally must implement robust financial planning and risk management strategies, especially when entering complex and competitive global markets through joint ventures, mergers and acquisitions, or public-private partnerships (PPPs).

Internally, the research highlights the need for construction firms to establish integrated financial management systems that comply with international accounting

standards and utilize modern technologies to enhance transparency, operational efficiency, and financial control. The financial statement analysis confirmed that companies demonstrating strong liquidity, solid profitability, and optimized capital structures tend to perform better, withstand market shocks, and achieve sustainable growth.

This dissertation made important contributions to both theory and practice. Theoretically, it advanced academic understanding by proposing construction-specific financial indicators that better capture the project-driven and capital-intensive nature of the industry, addressing gaps in traditional financial analysis models. Practically, the findings provide valuable insights for construction managers, financial professionals, policymakers, and international investors. They underline the importance of strategic financial planning, accurate forecasting, the use of risk mitigation instruments, and adherence to international contract standards such as FIDIC.

Nevertheless, certain limitations must be recognized. The empirical analysis primarily relied on secondary financial data from selected companies, which may limit the general applicability of the findings. Furthermore, the research focused predominantly on financial aspects, without fully addressing other influential factors such as technological innovation, environmental regulations, or legal frameworks, which are becoming increasingly significant for the construction industry.

Future research should try to incorporate these additional dimensions, offering a more holistic understanding of success factors in the construction sector. Long-term studies, tracking financial strategies and outcomes over longer periods, would also strengthen the evidence base and provide deeper insights into sustainable financial management practices.

In addition to the confirmation of the central thesis, the dissertation makes several notable contributions to the academic field and professional practice. It introduces an analytical model tailored to the construction sector by developing a set of specialized financial indicators, project completion ratio, backlog ratio, financial exposure ratio, and net advances, that offer a more precise assessment of project liquidity, operational stability, and financial risk exposure.

Furthermore, the research establishes a conceptual framework linking financial management with contractual risk mitigation mechanisms, particularly through the application of FIDIC standards. These innovations extend traditional financial analysis methodologies and provide practical tools for construction companies aiming to strengthen resilience and ensure sustainable growth in an increasingly complex global market.

The dissertation affirms that the construction sector remains a vital pillar of economic development, adaptable to global challenges through strategic financial governance. It confirms that effective financial management is not merely a support function but a strategic enabler of operational stability, international competitiveness, and sustainable development within the construction sector. Companies that institutionalize strong financial practices, adapt to global economic trends, and invest in resilient financial structures will be better equipped to navigate future uncertainties, capitalize on emerging opportunities, and contribute significantly to national economic growth and infrastructure advancement

PUBLICATIONS

I. ON THE TOPIC OF THE DISSERTATION

1. Tatjana ACKOVSKA. CONSTRUCTION IN THE GLOBAL ECONOMY: ASSESSING ITS IMPACT ON ECONOMIC GROWTH, ONLINE JOURNAL FOR ECONOMICS Finance, Financial Markets, Banking, Marketing, Insurance, Accounting and Control, Business, Entrepreneurship, Application of Mathematics, and ICT in Economics, VUZF Review, Volume 8, Number 3, 2023, pg. 4-17 ISSN 2534-9228
Link - https://www.ceeol.com/search/article-detail?id=1174945

SCIENTIFIC CONFERENCES

2. Tatjana Ackovska, TRENDS AND OPPORTUNITIES IN THE CONSTRUCTION SECTOR IN SELECTED SOUTH-EASTERN EUROPE'S COUNTRIES, 9th ANNUAL MONETARY AND ECONOMIC SCIENTIFIC CONFERENCE, INFLATION 2022 - CIRCUMSTANCES, CHALLENGES, IMPACT, 18-20 SEPTEMBER 2023, SOFIA, organized by the Monetary Research Center and the Institute of Economics and Politics at the UNWE. Conference Papers ISSN ISBN: 978-619-90797-9-9 , pg. 28-50
Link - https://mrcenter.info/ResearchMaterials/General/Books/a/3204

3. Tatjana Ackovska, ENSURING OF THE FINANCIAL RISKS IN BUILDING OF A CONSTRUCTION PROJECT, Conference: Synergy of architecture and civil engineering - SINARG 2023, 14-15 September 2023, organized by Faculty of civil engineering and architecture, University of Niš, Serbian academy of sciences and arts - Branch in Niš and Serbian academy of sciences and arts - Department of technical sciences, Conference Proceedings Volume 1, ISBN 978-86-88601-80-1 ISBN 978-86-88601-82-5 (FOR PUBLISHING ISSUE), pg. 113-124
Link - https://project.gaf.ni.ac.rs/sinarg/sites/default/files/2023-09/SINARG23_proceedings_volume_1_print%20final.pdf

II. OTHER PUBLICATIONS

1. Tatjana Ackovska "BULGARIA IN THE EURO AREA AND ITS IMPACTS ON THE INTERNATIONAL TRADE", Money and culture, ISSN/ISBN, 2683-0965, Volume 2, 2023, pg. 14-24
Link- https://drive.google.com/file/d/1H4zZ_DkGOPBkd3l8PJaR96JSPK0WjBZb/view

DECLARATION OF ORIGINALITY AND AUTHENTICITY

I, the undersigned TATJANA ACKOVSKA, PhD student at the department of Finance and Insurance, at VUZF , I declare that the dissertation submitted by me for defense on the topic: “FINANCIAL ASPECTS OF TENDENCIES IN CONSTRUCTION” for awarding the educational and scientific degree "Doctor" is an original work and contains original results obtained during scientific research carried out by me.

I declare that the results obtained, described, and/or published by other scientists are properly cited in the bibliography, subject to copyright protection requirements.

I am informed that if plagiarism is detected in the submitted dissertation, the defense committee has the right to reject it.

I declare that this dissertation has not been submitted to other universities, institutes, and other higher schools for the acquisition of an educational and scientific degree.

26.04.2025 Tatjana Ackovska