ANNOTATION

dissertation submitted for the degree of Doctor of Philosophy (PhD) in the educational programm 8D04110 "Finance"

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FINANCING OF AVIATION COMPANIES: THEORY, METHODOLOGY AND PRACTICE

Dissertation research topic. The dissertation research focuses on examining the nature of financing in aviation companies and developing recommendations for the successful implementation of financial instruments tailored to the aviation sector within the financial system of the Republic of Kazakhstan. Research on the financing of aviation companies holds significant relevance in today's world. The aviation industry is a critical sector of the global economy and plays a vital role in international trade, tourism, and transportation. Financing aviation companies is a complex and multifaceted process that requires specialized theories, methodologies, and practical approaches.

The financing of airlines has become especially pertinent in the context of global challenges such as pandemics, climate change, and geopolitical tensions. Several key aspects warrant consideration.

Pandemic and Economic Recession: The COVID-19 pandemic has profoundly impacted the aviation industry, leading to reduced passenger traffic, border closures, and substantial financial losses for airlines. Financing has become critically important to sustaining operations and ensuring the survival of companies.

Climate Change and Sustainability: Growing public awareness of climate change exerts pressure on the aviation industry to reduce its environmental footprint. Financing can support research into more efficient technologies and alternative energy sources.

Geopolitical Risks and Trade Conflicts: Geopolitical tensions, such as trade wars or sanctions, can disrupt routes and limit access to resources. Financing enables airlines to adapt to these changes and develop alternative strategies.

Technological Innovations and Digitalization: Financing also supports the development of new technologies in aviation, including autonomous systems, more efficient engines, and enhanced safety systems, which can improve the competitiveness of companies.

Overall, financing plays a pivotal role in ensuring the sustainable development of the aviation industry amidst global challenges, helping companies adapt to change and foster innovative solutions.

The aviation industry faces unique financial challenges, such as high capital expenditures on aircraft and equipment, substantial fuel costs, and the need to maintain airport infrastructure. Research into the financing of aviation companies helps to address these challenges and develop effective strategies to overcome them. Moreover, the aviation industry is heavily influenced by government

regulations and political decisions. Research in this area is vital to understanding the impact of regulatory measures and political policies on aviation financing, as well as to formulating strategies to mitigate associated risks.

Aviation is one of the fastest-growing sectors globally, integrating technology, innovation, entrepreneurship, economic development, infrastructure support, demographic growth, and contributions to globalization. The progress in this sector is remarkable in its speed and diverse nature. Economic growth and passenger traffic are the two key indicators of the growth of commercial aviation worldwide. Economic growth in a region typically has a significant influence on the rising demand for air travel.

Despite its challenges, aviation financing presents an opportunity for new entrants to achieve attractive returns, provided that the type of asset and terms are chosen wisely.

Purpose and objectives of the study. *The purpose of the research* is to develop scientifically grounded methodological and practical recommendations for improving airline financing in the face of global challenges.

The following *research objectives* were formulated:

- To substantiate theoretical and methodological approaches to defining financing and to identify the primary tools and sources of revenue utilized by airlines.
- To provide an original definition of the concept of financing aviation companies based on the analysis of its essence.
- To analyze financial statements and identify key aspects of financial stability and solvency of airlines, focusing on financial performance as the primary internal financing source for the Air Astana group.
- To investigate the main external sources of financing for airlines, such as leasing, bank loans, and initial public offerings (IPO).
- To design an original roadmap for issuing green bonds for airlines as an alternative approach to green finance.
- To propose an original business plan for creating an additional source of income by installing Wi-Fi routers on the fleet of Air Astana group aircraft and to explore how digitalization contributes to the operational efficiency of aviation companies.

The scientific novelty of the research. The scientific novelty of the dissertation is reflected in the conceptualization, theoretical justification, and practical resolution of a set of fundamental methodological and applied issues related to the financing of aviation companies and the reflection of their performance during crisis situations.

The following key *scientific results* were obtained during the research:

– The content of theoretical and methodological approaches to defining financing was structured, including the primary tools and revenue sources used by airlines.

– Criteria were selected and substantiated, leading to the development of an original definition of airline financing.

– Through the systematization and generalization of financial reports from the Air Astana group, key aspects of financial stability, liquidity, and solvency were identified and clarified. Internal financing sources such as equity capital, operating profit, net profit, and depreciation were analyzed, enabling the systematization and specification of business activities of airlines.

– The main results of the analysis of aviation companies' activities were identified, particularly the use of external financing instruments such as leasing, bank loans, and IPOs. These were shown to facilitate access to the capital required for implementing strategic plans and maintaining market competitiveness.

– An original roadmap for issuing green bonds was developed as an alternative means of leveraging green financial instruments for airline financing.

– The significance of digitalization in the financial activities of airlines and the impact of technological transformation were emphasized, leading to the proposal of an original business plan for creating an additional source of revenue. Specifically, this involves the installation of Wi-Fi routers on Air Astana group aircraft.

The main statements for thesis defense:

-Theoretical and methodological aspects of financing aviation industry companies were substantiated based on a study of the specific characteristics of airline financing and the methodology for forming financing sources.

-An original interpretation of the concept of airline financing was proposed, revealing the unique features of managing financial resources in airlines.

-As a result of research on Kazakhstan's aviation industry using quantitative and qualitative methods, an analysis of the financial performance of airlines was conducted. This identified the internal financing sources and aspects that determine the assessment of solvency, liquidity, and financial stability for the Air Astana group.

-The main external financing sources for the Air Astana group were evaluated, including operational and financial leasing, bank loans, and IPOs.

-A methodology for using alternative options, such as Islamic and green financial instruments, for financing aviation companies was developed. Additionally, an original roadmap for issuing green bonds for the Air Astana group was proposed.

-A business plan titled "Installation of Wi-Fi Routers on Aircraft" was developed to create an additional source of revenue for the airline under study. This plan supports digitalization and technological transformation within the Air Astana group.

The theoretical contribution of the research results. The theoretical significance of the research lies in the synthesis and systematization of theoretical approaches to the essence and content of the concept of airline financing, as well as the sources and tools of financing. It also focuses on clarifying and highlighting the specific features of financial leasing concepts. The presented results reflect the author's conceptual approach and can be utilized by airlines in the development of strategic programs.

The practical contribution of the study. The practical significance of the research is centered on financing airlines in the context of globalization. The conclusions and findings of the study can be applied by Kazakhstani airlines to navigate crisis situations, adapt international experience, and implement alternative financial instruments, such as Islamic and green finance.

The theoretical and methodological basis of the study. The theoretical foundation of the research is based on scholarly publications by both domestic and international researchers dedicated to the financing of aviation companies during global challenges. It also incorporates examples of international practices and analyses of financial performance.

The study employed a systematic approach, enabling an integrated analysis of the aviation market as a unified structure. Additionally, the research utilized:

- A strategic approach that views an airline in inseparable connection with its external and internal environment.
- A functional approach focused on analyzing airline financing.
- A situational approach that limits the number of analyzed factors to the most critical ones for a given situation.

General scientific methods such as analysis and synthesis, induction and deduction, and economic-statistical methods for data processing were also applied.

Contribution of the doctoral student to the preparation of each publication. The results of the study were presented in 15 reports of International scientific and practical conferences and round tables in the period from 2020-2023. On the topic of the dissertation, 5 scientific papers were published, 4 articles were published in publications recommended by the Committee for Quality Assurance in Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan; 1 article in a journal included in the Scopus database.

The article "Development of an investment management model for air carriers" is devoted to the study of the main areas of scientific research in the social aspects of airline financing, to clarify their role and function, especially in the context of growing problems.

The article "Efficiency of aviation companies' financing and formation of its investment attractiveness", co-authored, is devoted to the study of the main factors influencing the financing of airlines and the formation of their investment attractiveness, the doctoral student substantiated the theoretical basis for the use of financial instruments.

The articles "Forecasting investment processes in airlines" and "Core principles of financing and investment attractiveness of aviation companies" are aimed at studying and analyzing foreign experience for the possible use of airline financing in Kazakhstan. These articles were written under the scientific supervision of a domestic consultant. The doctoral student's contribution to the article "Analysis of financial performance and sustainability of Kazakhstan's aviation industry in pandemic", devoted to the study of the analysis of financial indicators and sustainability of the Kazakhstani aviation industry in a pandemic. The articles in the materials of the international conferences "Digital transformation of the global aviation services market (on the example of Air

Astana JSC)", "Global pandemic and further development of the airlines financial system (on the example of Air Astana JSC)", "Financial stability related to the pandemic (COVID-19) and ensure quarantine measures on the example of Kazakstan's Airline – Air Astana JSC", "Financial analysis and ways to improve the conditions of Air Astana JSC in the context of the COVID-19 pandemic" and "Marketing activities in aviation of RK: JSC Air Astana" were written under the scientific supervision of a domestic scientific consultant.

The articles in the materials of the international conferences "Use of blockchain technology in aviation" is devoted to a comparative analysis of the use of blockchain technology in aviation; and "Sources of financing for aviation companies in the context of modernization investment processes" is aimed at identifying modernization investment processes and the financial efficiency of airline financing sources. The article "Islamic Aircraft Financing: Theory, Structure and Practice", the purpose of which is Islamic financing in aviation and studying foreign experience, was published in the journal "Transit Economy". These articles were prepared and written by the author independently.

All scientific results presented in the dissertation and publications of the doctoral student were obtained by the author independently, the formulation of the tasks was proposed by domestic and foreign scientific consultants Cand. Sc. (Econ.), PhD, Associate Professor Nurmagambetova A.Z. and PhD, Associate Professor D. Dzhamshidi within the framework of scientific consulting and supervision of the dissertation research.