MNU MAQSUT NARIKBAYEV UNIVERSITY

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INTERNATIONAL SCHOOL OF ECONOMICS MNU

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Center for Economic Research

KEY FINDINGS AND RECOMMENDATIONS FROM SELECTED ISE MASTER'S THESES AND DIPLOMA PROJECTS BY ECONOMICS AND FINANCE STUDENTS

ACADEMIC YEAR 2024-2025

FOREWORD

This report presents selected Master's theses and diploma projects completed by Economics and Finance students of the International School of Economics at Maqsut Narikbayev University in the 2024-2025 academic year. It reflects the analytical skills, research discipline, and policy-oriented thinking that we aim to foster at the Center for Economic Research.

The works are organized into three areas: 1) *Behavioral Economics and Finance*, 2) *Macroeconomics, Health, and Development*, and 3) *Finance and Investments*. Together, they cover a wide range of issues, from financial decision-making and investor psychology to trade integration, healthcare financing, competitiveness, and the performance of AI and ESG investments. Each study applies rigorous methods to real-world problems, producing findings that have clear relevance for Kazakhstan's economic policy and business practice.

What unites these projects is their practical orientation. The authors move beyond analysis to develop specific, evidence-based recommendations, whether to improve financial literacy, reduce structural trade barriers, or strengthen the governance of major financial institutions.

I congratulate our students and their supervisors for their dedication, and I hope this report will serve as a resource for policymakers, academics, and practitioners seeking informed perspectives on the economic challenges and opportunities facing Kazakhstan.

Dr. Nygmetzhan Kuzenbayev
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Content

Chapter 1. Behavioral Economics and Finance

Rationale for Financial Decision-Making Among Working People in Kazakhstan

Abylay Zhanat
Supervisor: Elmira Mynbayeva

SUMMARY

This master's thesis investigates the socio-demographic, economic, and psychological factors shaping financial decision-making among Kazakhstan's working-age population. Based on a survey of 209 respondents, the study examines savings behavior, loan ownership, emergency financial strategies, and behavioral biases such as herding, status quo, and illusion of control. Results highlight the central role of financial literacy in driving responsible financial practices, including increased savings, preference for self-reliance in emergencies, and reduced susceptibility to cognitive distortions. Income, age, and education also influence borrowing and savings patterns, while behavioral factors correlate with trust in financial institutions. The findings underline the need for targeted financial education policies to improve financial stability of households, enhance decision-making quality, and reduce reliance on risky financial instruments.

KEY FINDINGS

- **Financial literacy is the strongest predictor of responsible financial behavior across multiple domains.**
- **Higher income is associated with higher savings and reduced dependence on loans or risky funding sources.**
- **Older and more educated individuals are less likely to hold loans.**
- **Behavioral biases, such as herding and illusion of control, are mitigated by greater financial literacy.**

RECOMMENDATIONS

- **Expand financial literacy programs tailored to different income, age, and education groups.**
- **Promote savings habits and financial cushion building through incentives and awareness campaigns.**
- **Integrate behavioral insights into policy and product design to reduce cognitive biases in financial decision-making.**

The Impact of Financial Literacy on Students' Behavioral Biases in Financial Decision-Making in Kazakhstan (Astana Focus)

Alina Duisebekova, Aisulu Zhexengaliyeva, Sezim Kumarova
Supervisor: Elmira Mynbayeva

SUMMARY

This study examines the relationship between financial literacy and three behavioral biases (overconfidence, loss aversion, and present bias) among 200 university students in Astana, Kazakhstan. Survey data were analyzed with regression models controlling for gender, age, academic major, and education level. The results show that students with higher financial literacy tend to be less overconfident and less inclined toward short-term financial choices (present bias). In contrast, loss aversion (i.e., the tendency to fear losses more than valuing equivalent gains) does not appear related to financial literacy. Gender, field of study, and education level influence some biases: male students report higher overconfidence than female students, Humanities & Education students display lower overconfidence but higher present bias compared to Economics & Business students, and graduate students are less overconfident than undergraduates. The findings suggest that while financial education can mitigate certain biases, biases like loss aversion may persist regardless of knowledge. The study highlights the importance of integrating behavioral strategies into financial education programs to address these biases more effectively.

KEY FINDINGS

- **Higher financial literacy is correlated with lower overconfidence and present bias.**
- **Loss aversion shows no meaningful relationship with financial literacy.**
- **Male students are more overconfident than female students.**
- **Humanities & Education students are less overconfident but more present-biased.**
- **Graduate students are less overconfident than undergraduates**

RECOMMENDATIONS

- **Focus financial education on reducing overconfidence and short-term thinking, where financial literacy appears to make a difference.**
- **Tailor educational content to specific groups (e.g., majors) to address patterns in biases.**
- **Address loss aversion through strategies beyond knowledge-building, as it was not linked to literacy in this study.**

Understanding Behavioral Biases Among Kazakhstani Investors: Implications for Investment Professionals

Arailym Mamyrbek, Bibissara Makhambetumbet, Dariga Meirman
Supervisor: Rustem Kozhakhmetov

SUMMARY

This study examines the prevalence and demographic correlates of six behavioral biases (loss aversion, confirmation bias, overconfidence, herding, hindsight bias, and illusion of control) among retail investors in Kazakhstan. Using an online survey with 64 valid responses, the authors employed descriptive statistics, non-parametric tests, Principal Component Analysis (PCA), and regression analyses. Loss aversion and confirmation bias emerged as the most pronounced tendencies, while illusion of control was the least pronounced. PCA indicated that biases function largely independently rather than clustering into broader behavioral profiles. No statistically significant differences in bias expression were found by age, gender, or investment experience. Overall, the study provides one of the first empirical analyses of investor psychology in Kazakhstan, highlighting specific cognitive and emotional biases rather than broad demographic patterns.

KEY FINDINGS

- **Among all the biases studied, loss aversion and confirmation bias were the most pronounced among retail investors in Kazakhstan, while illusion of control was the least pronounced.**
- **PCA indicated that biases function largely independently rather than clustering into broader behavioral profiles.**
- **Age, gender, and investing experience made no statistically significant difference in the strength of these biases.**

RECOMMENDATIONS

- **Integrate behavioral finance into financial literacy programs, with special focus on loss aversion and confirmation bias, the most common biases found among retail investors in Kazakhstan.**
- **Provide trading platforms and advisory services with features that help investors recognize and counter common behavioral biases by presenting diverse perspectives and encouraging objective analysis.**

Understanding Impulse Spending Behavior in Kazakhstan:
The Role of Digital Payment Systems

Madina Rakhmetova, Adel Kalimullina
Supervisor: Binur Yermukanova

SUMMARY

This study explores the relationship between Buy Now, Pay Later (BNPL) usage and impulse spending among consumers in Kazakhstan, focusing on the psychological and demographic factors influencing such behavior. Using a mixed-method design, the authors surveyed 140 respondents, of whom 102 were BNPL users, combining ordered logistic regression for quantitative analysis with thematic analysis of open-ended responses. Results indicate that higher BNPL usage is significantly associated with increased impulse spending, although demographic variables (age, gender, income, financial literacy) did not significantly predict BNPL overuse. Key psychological drivers – identified through thematic analysis of open-ended survey responses – included ease of access, misperceptions about interest rates, present-biased thinking, and susceptibility to marketing and social influence. Electronics, clothing, and travel emerged as the most common categories for BNPL-related purchases. Respondents suggested measures such as improving financial literacy, stricter BNPL eligibility criteria, clearer terms, and reduced advertising. The findings highlight the need for targeted consumer education and potential regulatory interventions to promote responsible digital finance use.

KEY FINDINGS

- **Frequent BNPL use is positively associated with impulse spending.**
- **Demographic factors (age, gender, income, and financial literacy) were not statistically significant predictors of BNPL overuse.**
- **Psychological factors such as convenience, misperceived affordability, present bias, and marketing influence drive impulsive BNPL purchases.**
- **Electronics, clothing, and travel emerged as the most common categories for BNPL-related purchases.**

RECOMMENDATIONS

- **Implement stricter BNPL approval processes, including income verification and spending limits.**
- **Require BNPL providers to present transparent, easy-to-understand terms and highlight potential costs.**
- **Reduce aggressive BNPL marketing and promote budget-tracking tools for consumers.**

Chapter 2. Macroeconomics, Health, and Development

A Gravity Model Approach to Understanding the Trade Effects of Economic Integration in the EAEU

Assylan Sakim
Supervisor: Kamshat Saginbekova

SUMMARY

This study examines the trade impacts of the Eurasian Economic Union (EAEU) using a gravity model framework applied to bilateral trade data (2005-2023) for five member states (Russia, Kazakhstan, Belarus, Armenia, and Kyrgyzstan) and five major external trading partners (China, Germany, USA, Turkey, and Poland). The Poisson Pseudo Maximum Likelihood (PPML) estimation is employed to handle zero trade flows and heteroskedasticity, with OLS regressions as robustness checks. Key variables include GDP, distance, landlocked status, common border, language, and EAEU membership. The general model finds GDP positively and distance negatively related to trade, while shared language strongly boosts trade. On average, EAEU membership effects are positive but statistically insignificant. Country-specific interactions reveal substantial trade gains for Armenia (+135%) and Kyrgyzstan (+15%), neutral outcomes for Russia and Belarus, and a significant trade decline for Kazakhstan (-32%). These results suggest asymmetric trade creation, benefiting smaller economies more.

KEY FINDINGS

- **Common language is associated with ~9-fold higher trade flows.**
- **Armenia and Kyrgyzstan experienced significant post-2015 trade growth.**
- **Kazakhstan's trade fell by ~32% after EAEU integration.**

RECOMMENDATIONS

- **Tailor integration strategies to support underperforming members, especially Kazakhstan.**
- **Strengthen regional logistics and reduce structural trade costs.**
- **Negotiate new free trade agreements with external partners to diversify markets.**

Kazakhstan's Wheat Market Integration into Global Grain Market: Empirical Analysis and Policy Implication

Nuray Baigabylova
Supervisor: Stanislav Yugay

SUMMARY

This thesis examines the extent to which Kazakhstan's wheat market is integrated into the global grain market. Using monthly wheat export price data from 2016-2025 for major exporters (France, USA, Russia, Argentina, Australia, Ukraine, and Kazakhstan), the study applies Augmented Dickey-Fuller tests, Johansen cointegration analysis, and Vector Error Correction Models (VECM) to assess both long-term and short-term price relationships. The results show that Kazakhstan's wheat prices are not cointegrated with those of any major exporter, indicating weak integration and a largely isolated price formation process driven by domestic factors. In contrast, France exhibits strong long-term cointegration with most major exporters, positioning it as a central player in global price transmission. The findings align with previous literature, which points to logistical constraints, high transportation costs, and trade barriers as obstacles to Kazakhstan's integration. While limited integration insulates Kazakhstan from global shocks, it also restricts the benefits of global price movements. Policy implications focus on enhancing infrastructure, reducing barriers, and fostering participation in global futures markets.

KEY FINDINGS

- **Kazakhstan's wheat prices show no statistically significant long-term cointegration with other major exporters.**
- **France is strongly cointegrated with most major wheat exporters and acts as a key intermediary in global price transmission.**
- **Structural barriers in Kazakhstan, such as high transportation costs, underdeveloped logistics, and trade restrictions, impede global market integration.**

RECOMMENDATIONS

- **Invest in transport and storage infrastructure to reduce costs and improve export capacity.**
- **Simplify customs procedures and reduce non-tariff trade barriers.**
- **Increase transparency and openness of market information.**
- **Develop domestic grain trading platforms and participate in international futures exchanges.**

Determinants of Healthcare Expenditure in Kazakhstan:
A Time Series Analysis

Svetlana Khvan
Supervisor: Daliya Kaskirbayeva

SUMMARY

This study examines the socio-economic, demographic, and medical determinants of healthcare expenditure in Kazakhstan using both cross-sectional data for 2023 (for 17 regions and 3 major cities) and national time-series data from 2013-2023. Secondary data were sourced from the Bureau of National Statistics, World Bank, and Trading Economics. Two regression approaches were applied: an OLS for cross-sectional analysis and time-series models that examined socio-economic and medical factors. Cross-sectional results indicate that GDP per capita, number of hospital beds, and cancer incidence are significant positive predictors of healthcare spending, while larger average family size and higher elderly population share reduce per capita spending. Time-series analysis shows that a larger elderly population increases expenditures, while higher unemployment reduces them; cancer incidence drives expenditures upward, while respiratory diseases are associated with reduced spending. These findings highlight the importance of economic growth, demographic changes, and disease patterns in shaping healthcare costs. The study provides evidence-based insights for policymakers to improve healthcare financing, infrastructure, and equitable resource allocation.

KEY FINDINGS

- **GDP per capita, hospital bed availability, and cancer incidence are positively associated with healthcare expenditure across regions.**
- **Over time, a larger elderly population is correlated with higher national healthcare spending, while higher unemployment is correlated with lower spending.**
- **Cancer incidence is positively correlated with healthcare spending, while respiratory diseases show a negative correlation.**

RECOMMENDATIONS

- **Strengthen early detection and prevention programs for cancer to reduce costly late-stage treatments.**
- **Plan healthcare infrastructure expansion strategically to balance access with cost efficiency.**
- **Develop targeted healthcare policies for the elderly population to manage the growing demand for services.**

Human Capital as A Factor of Competitiveness

Arnur Kabdushev
Supervisor: Saule Kemelbayeva

SUMMARY

This dissertation investigates how human capital influences national competitiveness using country-level data from international sources, including the United Nations Development Programme (UNDP), World Bank, World Economic Forum (WEF), and International Institute for Management Development (IMD). Competitiveness is measured through the Global Competitiveness Index (GCI) and IMD World Competitiveness Ranking, while human capital is represented by the Human Development Index (HDI), which combines education, health, and income indicators. Additional controls include trade, labor force participation, government spending, inflation, population size, and population growth. The analysis begins with Spearman correlation, showing a strong positive association between competitiveness and all components of human development, particularly income levels and the overall HDI. A panel regression using GCI data finds that both HDI and labor force participation are positively and significantly associated with competitiveness, while higher government spending is associated with lower competitiveness. A second panel regression using IMD data shows that countries with higher HDI, larger populations, greater labor force participation, and growing populations tend to be more competitive, while higher inflation is linked to weaker competitiveness. The findings suggest that policies promoting education, health, and active labor market participation can strengthen a country's competitive position.

KEY FINDINGS

- **HDI is strongly and positively associated with competitiveness.**
- **Countries with higher HDI, greater labor force participation, larger and growing populations tend to achieve stronger global competitiveness, while excessive government spending is associated with weaker competitiveness.**

RECOMMENDATIONS

- **Strengthen human capital by expanding access to quality education and improving healthcare.**
- **Support policies that encourage labor market participation.**
- **Support sustainable population growth through balanced demographic and social policies.**
- **Ensure government spending is efficient and targeted toward productivity-enhancing sectors rather than unproductive uses.**

Chapter 3. Finance and Investments

Arbitrage Opportunities for Stablecoins on Different Cryptocurrency Exchanges

Azhar Kyrgyzbayeva
Supervisor: Assylbek Tanashikov

SUMMARY

This study investigates the feasibility of exploiting arbitrage opportunities for stablecoins (e.g., USDT, USDC, and TUSD) across major cryptocurrency exchanges, including Binance, Kraken, BitMart, OKX, and Bitfinex. Stablecoins are a critical component of the digital asset market due to their price stability, high liquidity, and suitability for rapid cross-platform transfers. Using historical and real-time data from exchange APIs, the research applies ARIMA and GARCH time series models to identify price fluctuations and forecast patterns that indicate arbitrage potential. The analysis finds that while minor price deviations exist, often driven by liquidity differences, transaction delays, and geographic trading patterns, these do not statistically exceed transaction costs in a way that would yield consistent profits. The study concludes that the stablecoin market is largely efficient once costs are considered, limiting the scope for risk-free arbitrage. Nevertheless, the methodological framework and identified influencing factors offer practical insights for traders aiming to optimize strategies under varying market conditions.

KEY FINDINGS

- **Stablecoin prices remain close to their $1 peg, with only short-lived deviations, particularly during high-volatility periods.**
- **Certain platforms, such as BitMart and Kraken, exhibit more pronounced price fluctuations, suggesting varying levels of liquidity support.**
- **Analysis reveals no statistically significant spreads above transaction costs for any of the three stablecoins analyzed.**

RECOMMENDATIONS

- **Enforce robust cybersecurity and operational standards for exchanges to prevent hacks or technical failures that could create artificial price disruptions.**
- **Maintain strong reserve transparency requirements for stablecoin issuers to preserve trust in the peg and avoid destabilizing shocks.**

Financial Efficiency of Artificial Intelligence Investments:
A Comparative Analysis of Companies with High and Low Levels of AI Adoption

Yernaz Izimgaliyev
Supervisor: Nursultan Bazarbay

SUMMARY

This thesis examines how financial performance indicators can be used to assess the effectiveness of investments in artificial intelligence (AI). Using data from 60 publicly traded companies across sectors most and least affected by AI (classified by OECD AI intensity), the study compares market and financial performance between 2020 and 2025. Independent-sample t-tests reveal that AI-intensive companies achieved significantly higher average market returns than non-AI companies but also exhibited significantly greater price volatility. Financial ratio comparisons show that AI adopters had higher average gross margins, profit margins, and revenue growth, but none of these differences reached statistical significance at the 5% level. Regression analysis found no significant direct effect of AI adoption level on return on assets, though the coefficient was positive; volatility had a significant negative effect, while 5-year revenue growth was strongly positive and significant. Case studies from banking, logistics, and manufacturing illustrated operational gains from AI.

KEY FINDINGS

- **AI-intensive companies outperformed non-AI firms in market returns but faced higher volatility.**
- **Gross margin, profit margin, and revenue growth were higher on average for AI companies, but differences were statistically insignificant.**

RECOMMENDATIONS

- **Evaluate AI projects using risk-adjusted metrics to balance higher return potential against elevated volatility.**
- **Manage AI-related risk through diversification across industries and project types.**
- **Apply independent benchmarking and explainable AI standards to improve transparency, trust, and compliance.**

Exploring the Impact of ESG Ranking on Financial Performance Among Oil and Gas Companies

Adilbek Alimgaliyev
Supervisor: Roman Dovolnov

SUMMARY

This study examines whether Environmental, Social, and Governance (ESG) performance influences short-term financial outcomes in the oil and gas sector. Using stakeholder theory as the conceptual framework, it evaluates ESG's relationship with Return on Assets (ROA) for 36 publicly listed oil and gas firms from 2019 to 2023. Data from Bloomberg, Yahoo Finance, and company financial statements were analyzed using an OLS regression model controlling for market capitalization, price-to-earnings ratio, EV/EBITDA, and sales growth. The results reveal a statistically significant negative relationship between ESG scores and ROA, indicating that higher ESG performance is associated with reduced short-term profitability. This likely reflects the substantial upfront costs of sustainability initiatives in capital-intensive, environmentally sensitive industries. While highlighting the trade-offs of ESG adoption in the short term, the study emphasizes the importance of longer time horizons for evaluating its potential in building resilience and long-term value in the oil and gas sector.

KEY FINDINGS

- **Higher ESG scores are significantly associated with lower ROA, suggesting short-term profitability trade-offs.**
- **ESG initiatives in oil and gas may require substantial upfront costs before long-term benefits emerge.**

RECOMMENDATIONS

- **Conduct longer-term studies to assess ESG's potential for resilience and value creation beyond short-term horizons.**
- **Implement cost-control measures to offset initial ESG investment expenses while maintaining sustainability commitments.**
- **Explore targeted ESG initiatives that balance environmental and social goals with near-term financial performance.**

Factor Analysis of Pension Funds and Potential Application to ENPF

Duman Duisenbayev
Supervisor: Assylbek Tanashikov

SUMMARY

This study investigates the macroeconomic, microeconomic, and internal factors influencing the investment performance of Kazakhstan's Unified Accumulative Pension Fund (ENPF). Using data from 2014-2024, the research applies Principal Component Analysis (PCA), OLS regression (including lagged models), and machine learning (XGBoost) to identify the most significant determinants of returns. Results show that GDP growth, Brent crude oil prices, and domestic stock market performance (KASE Index) are the strongest positive contributors, while inflation and exchange rate volatility have weaker or negative effects. Asset allocation analysis indicates that greater investment in foreign assets correlates with higher returns, with effects materializing within the same year. Comparative benchmarking against top global pension funds (e.g., GPFG, CPPIB) reveals that ENPF underperforms in diversification, governance independence, and ESG integration. The study recommends a shift towards more diversified, globally oriented portfolios, hybrid investment management strategies, improved governance, stricter cost controls, and adoption of ESG principles to enhance resilience, profitability, and public trust.

KEY FINDINGS

- **Macroeconomic factors, especially GDP growth and oil prices, significantly influence ENPF returns.**
- **PCA reveals vulnerability to inflation and exchange rate shocks, while machine learning confirms GDP and oil prices as top predictors.**
- **Greater allocation to foreign assets is linked to improved returns.**
- **ENPF lags behind global peers in diversification, governance, and ESG adoption.**

RECOMMENDATIONS

- **Expand diversification into international equities, bonds, and alternative assets (e.g., real estate, private equity).**
- **Reform governance by establishing independent investment committees and enhancing transparency.**
- **Adopt forward-looking, dynamic portfolio management with macroeconomic scenario analysis and stress testing.**
- **Develop and integrate an ESG policy to manage long-term risks and enhance stakeholder confidence.**

About the MNU Center for Economic Research

The MNU Center for Economic Research is a leading research institute at Maqsut Narikbayev University, dedicated to generating innovative solutions for the most pressing economic challenges both locally and globally. Our mission is to drive the advancement of economic knowledge and provide evidence-based insights that influence policy, business practices, and societal well-being.

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