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THE IMPACT OF STATEMENT ANALYSIS AND ITS ROLE IN PORTFOLIO – EVIDENCE OF WEST BALKAN STOCK EXCHANGES

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A R T I C L E I N F O.

Keywords: financial statement analysis, portfolio optimization, West Balkan Stock Exchanges.

Abstract

The research paper that we have worked examine the significance of financial statement analysis in enhancing portfolio optimization strategies accros the countires of West Balkan stock exchanges, exatly in Albania, Serbia, North Macedonia, Bosnia and Herzegovine and Montenegro. The research paper aims to see how accounting baset indicators derived from financial statements report, such ROA and ROE – profitability, current ratio , quick ratio – liquidity, dept to euqity – solvency and asset turnover, inventory turnover – efficency ratios, contribute to raising more resilient and better performin investment portfolios. By putting this indicators into Modern Portfolio Theory (MPT) frameworks, th research paper seeks to bridge the gap between traditional quantitative optimization methods and fundamental financial statement analysis. The empirical analysis is based on data collected from 2015 to 2024, covering publicly listed companies across the region. Portfolios are constructed using both market based data (returns, volatility, and covariance) and accounting-based data (financial ratios and firm fundamentals). Advanced econometric models and optimization techniques, including mean-variance optimization and multi-factor regression, are applied to evaluate portfolio performance under different scenarios, will use Markovitz (MPT model) and CAPM. The results demonstrate that portfolios incorporating financial statement indicators achieve superior risk-adjusted returns, as reflected by higher Sharpe, Treynor, and Sortino ratios, compared to portfolios formed purely on historical market data. Furthermore, the study highlights that in emerging and less efficient markets like those of the Western Balkans, financial statement analysis provides an additional layer of informational advantage, compensating for limited liquidity, market depth, and data transparency. These findings emphasize the importance of integrating fundamental financial analysis into investment strategies for improved decision- making and portfolio diversification. The paper contributes to both academic literature and practical investment strategies by demonstrating how accounting-based insights enhance the effectiveness of portfolio optimization in transitional and developing financial markets.

1. Introduction

Financial markets play a fundamental role in allocating capital efficently and faciliatating economic growth. Within framework, stock exchange serve as key platfroms where investitors evaluate companies performance and make portfolio allocation decision based on available financial information. One of the most important sources of such information is corporate financial reporting. Financial statements provide comprehensive insights into a company's profitability, liquidity, solvency and oprational efficency, enabling investors to assess companies performance and future prospects. Consequently, financial statement analysis has become an essential component of investment decision making and portfolio management. The report betweeen accounting information and stock market performance has been widely discussed in the literature review. Financial ratios derived from balance sheets, income statements and cash flow statements are frequently used by analysis and investor to evaluate company fundamentals and predict future returns. Indicators such as ROA – return of assets, ROE – return on equity, current ratio, debt to equity ratio and asset turnover provide valuable signals about a companies financial stability, operational efficency and risk exposure. These indicators are particularly important in emerging markets, where market inefficienfies and limited information transpranecy often increas uncertainty for investors. Portfolio optimization on the other hand, represents a central concept in modern investment theory. The foundation of modern portfolio management was established by Harry Markowitz through the development of the Modern Portfolio theory – MPT, which underscores diversification and the trade of between risk and return. According to this framework, investors can construct optimal portfolios by combining assets in such a way that expected returns are maximized for a given level of risk or risk is minimized for a given level of expected return. Building on this theory, the capital asset pricing model – CAPM, developed by William F.Sharpe, John Lintner and Jan Mossi, introduced the concept of systematic risk and its relationship to expect asset return. Despite the extensive application of quantitative portfolio optimization techniques, many traditional models rely primarily on historical market data such as asset returns, volatility and covariance structures. While these market based indicators are essential for risk assesment, they may not fully capture the underlying financial strenth or operational performance of individual companies. As a result, relying solely on historical price data can limit the effectiveness of portfolio optimization, particularly in market characterized by lower efficency and limited liquidity. This issue is especially relevant in the context of the Western Balkan financial markets, which include stock exchange in Albania, North Macedonia, Serbia Bosnia and Herzegovine and Montenegro. These markets are generally considered emerging or fronties markets, characterized by relatively small market capitalization, lower trading volumes, limited diversification opprtunities and varying degrees of market transparency. Such structural characteristics often reduce market efficiency and increase the informational advanatege of investors who incorporate fundamental financnial analysis into their decision making processes. In this context, integrating financial statement analysis with portfolio optimization models, may offer significant benefits. By incorporating accounting based indiciator alongside traditional market based variables, investors can develop more informed and robust portfolio allocation strategies. Financial ratios reflecting profitability, liquidity, solency and operational efficiency can provide additional insights into firm quality and risk exposure, potentially improving the performance of optimized portfolio. The research paper aims to investigate the role of financial statement analysis in enhancing portfolio optimization strategies within the Western Balkan countries that are not part of European Union stock exchanges. Specifically, the research examines whether portfolios constructed using both financial ratios and market based indicator outperform portfolios based solely on historical market data. Using data from publicly listed companies across the region for the perion 2015- 2024, the study applies mean variance optimization based on the modern portfolio theory framework as wellas asset pricing analysis derived from the capital asset pricing model. By empirical evaluating portfolio performance using risk adjusted metrics such as the Sharpe, Trevnor and Sortino ratio, the research paper seeks to provide evidence on whether the integration of accounting

based indicators contributes to more efficent and resilient portfolios. Furthermore, the research addresses an important gap in the literature concering the application of combined fundamental and quantitative investment approaches in transistional and developing financial markets. The contribution of this study is twofold. First, it enrhiches the academic literature by examining the interaction between financial statement analysis and portfolio optimazion in a regional context that has received limited scholarly attention. Second, it provides practical insights for investors, portfolio managers and policymakers by demostranting how fundamental financial information can enhance investment strategies in emerging markets. By focusion on the Western Balkan stock exchange, the research paper offers deeper understanding of how accounting based indicators can improve the portfolio diversitification and investment decision making in market characterized by structural inefficiencies and evolving financial system.

2. Literature review

1. Financial statement analysis and investment decision making

Financial statement analysis has e critical role in evaluating corporate financial performance and supporting investment decision making. Financial statements provide essential information regarding a companies profitability, liquidity and long term growth potential. Recent research emphasizes that accounting information remains one of the most reliable sources for evaluating companies fundamentals and predicting financial performance in capital markets (Al-Homaidi, Almaqtari, Yahya, & Khaled, 2020). Financial ratios derived from financial statements are commonly used to measure corporate performance. Profitability indicators such as return on assets (ROA) and return on equity (ROE) measure the ability of companies to generate earnings relative to their assets and shareholders equity. (Maksuti, 2022). Liquidity ratios, includiong the current ratio and quick ratio, reflect a companies ability to meet short term obligations, while solency indicators such as the debt to equity ratio assess long term financial sustainbility. Efficiency ratios such as asset turnover and inventory turnover evaluate how effectively companies utilize their assets to generate revenue. Recent empirical studies show that these financial indicators significantly influence investment decision and stock market performance. For instance, (Bhutta, Tariq, & Farrukh, 2022) find that profitability and leverage indicators have a significant imapct on stock returns in emerging markets. Similary (Al-Homaidi, Tabash, Farhan, & Almaqtari, 2021) demonstrate that financial ratios provide valuable signals for predicting companies performance and improving investment decision making in developing financial markets. These findings confirm that financial statement analysis can enhance investors ability to identify financially strong companies and manage investment risks more effectively.

2. Portfolio optimization and modern investment theory

Portfolio optimization remains a central concept in financial economics and investment management. The theoretical foundation of portfolio diversification originates from the work of Harry Markowitz and the development of Modern Portfolio Theory. This framework demonstrate how investors can construct efficient portfolios by balancing risk and expected return through diversification. Modern portofolio theory suggest that investors should not evaluate assets individually but rather consider how each asset contributes to the overall risk and return characteristics of the portfolio. By combining assets with low correlations, investors can reduce portfolio risk without sacrificing expected returns. Recent studies continues to apply mean variance optimization techniques derived from this theory to analysis portfolio construction strategies in difference financial markets (Prasetyo, Peranginangin, Martinovic, Ichsan, & Wicaksono, 2025). Further advancements in asset pricing were introduced through the Capital Asset Pricing Model developed by William F.Sharpe. CAPM explains the relationship between expected asset returns and systematic market risk, measured by beta. According to this model, investors are compensated only for systematic risk, while unsystematic risk can be diversified away. Despite the theoretical importance of these models, recent research highlights their limitations particularly when applied to emerging financial markets. Many portfolio optimization approaches rely primarily on

historical market data such as asset returns and volatility, which may not fully reflect company specific financinal characteristics (Li, Wang, & Z., 2023). Consequently, research increasingly recommend integrating fundamental financial indicators into portfolio construction models.

3. Integration of fundamental anaylsis and portfolio models

Recent financial research emphasize the importance of integrating accounting information into portfolio optimization frameworks. Fundamental analysis focuses on evaluating company specificantly influence stock performance. Studies conducted in the last few years indicate that portfolios incorporating firm fundamentals tend to outperform those based solely on historical price data. According to (Devi, Kumar, Malik, & and Mishra, 2021), integrating financial ratios into portfolio optimization models improves risk adjusted returns and enhance divesification benefits. Similarly, research by (Nguyen & Le, 2022) finds that accounting based indicators contribute to better investment decisions and improved portfolio efficency in emerging stock markets. Additionally, multifactor asset pricing models have gained significant attention in recent financial literature. Models derived from the work of Eugene F.Fama and Kenneth R.French emphasize that companies characteristics such as profitability, company size and value signifanctly influence stock returns. Recent empirical evidence confirms that incorporating these factors improves portfolio performance and asset pricing accuaracy (Geertsema & Lu, 2020). Therefore, integrating financial statement analysis with portofolio optimization techniques provides a more comprehensive approach to investment management. This combiniation allows investors to consider both market dynamics and companies specific financial information when constructing portofolios.

4. Emerging markets and financial market efficency

Financial markets in emerging economies often exhibit structural characteristics that differ from those of developed markets. Emerging markets typically face lower liqudity, higher volatility and greater information asymmetry. These factors may reduce market efficency and create opportunitites for investors who utilize comprehehnsive financial analysis. Recent research paper highlights that accounting information play an even more significant role in emerging markets due to limited analyst coverage and lower transparency levels (Gazi, Karim, Senathirajah, Ullah, Afrin, & Nahiduzzaman, 2024). Investors operating in such markets frequently rely on financial statement indicators to assess corporate performance and investment risk. The stock exchanges of Albania, North Macedonia, Serbia, Bosnia and Hercegovina and Montenegro represent developing financial markets characerized by relatively small market capitalization and limited trading volumes. In such enivronments, financial statement analysis may provide an informational advantage for investors by revealing company fundamentals that may not yet fully reflected in stock prices. Consequently, integrating accounting based indicators into portfolio optimization strategy may significanlty improve investment outcomes in these markets.

5. Research gap

Althought recent studies have examined portfolio optimization and financial ratio analysis separately, limited research has investigated their combined application within the context of Western Balkan financial market. Most empirical studies focus on developed financial markets, where market efficency is relatively high and financial information is rapidly incorporated into stock prices. Therefore, there is a clear need for empirical research examining whether fianancial statement indicators can improve portofolio optimization strategies in emerging markets such as those in the Western Balkan countries, This research paper contributes to the exisiting literature by integrating financial statement analysis with portfolio optimization techniques, including models derived from Modern Portfolio Theory and the Capital Asset Pricing Model, in order to evaluate portfolio performance across the regional stock exchanges.

3. Methodology

This research paper impelements a quantitative research design to examine the role of financial statement analysis in enhancing portfolio optimization strategies across the Western Balkan stock exchanges. The research integrates accounting based indicators with market based variables within frameworks of Modern Portfolio Theory (MPT) and the Capital Asset Pricing Model (CAPM). The methodolgy combines empirical portfolio construction with advanced econometric analysis to evaluate risk adjusted performance under various scenarios.

a. Data sources and sample selection

The data bases includes publicly listed companies from the stock exchanges of Albania, North Macedonia, Serbia, Bosnia and Hercegovine and Montenegro. The study covers period from 2015 to 2024 allowing for longitudinal analysis of market trends and companies performance. Data sources include company financial statements and annual reports, stock price data from local stock exchanges and market indices and macroeconomic indicators from regional financial authorities. Financial ratios are calculated using standard definitions, including profitability (ROA – return of assets and ROE – return of equity), liqudity (curent ratio and quick ratio), solvency (dept to equity ratio) and efficency (asstet turnover, inventory turnover). Portfolios are constructed using a combination of market based and accounting based indicators, two main portfolios approaches are applied – Market based portfolios – optimized using historical stock returns, volatility and covariance matricces and the second one, is hybrid portfolio – integrate accounting based financial ratios with market based data, allowing for companies fundamentals to guide allcoation weights. In this case of study, Markowitz MPT framework is employed to construct efficiend portfolios by minimizing risk for a given level of expected return. Let *wi* represent the weith of asset *i*- in the portfolio, *μi* – the expected return of asset *I* and *σij* the covariance between assets *i* and *j*.

the optimization problem is:

$$\text{Minimize } \sigma_p^2 = \sum_{i=1}^{n} \sum_{j=1}^{n} w_i w_j \sigma_{ij}$$

$$\sum_{i=1}^{n} w_i \mu_i = \mu_p \quad \text{and} \quad \sum_{i=1}^{n} w_i = 1$$

portfolio variance σ_p^2 :

μi - is target portfolio return

Portfolio weight are determined using both purely historcial returns and adjusted weight that incorporate financial ratios.

b. Portfolio Performance Metrics

Portfolios are evaluated using multiple risk adjusted perfromance measures : Sharpe Ratio –

$$S = \frac{R_p - R_f}{\sigma_p}$$

Where the details are : *Rp* is portfolio return, *Rf* is the risk-free rate, and *σp* - is portfolio standard deviation.

Treynor Ratio -

$$T = \frac{R_p - R_f}{\beta_p}$$

Where the details are : *βp* – is portfolio beta.

Sortino Ratio –

$$So = \frac{R_p - R_f}{\sigma_d}$$

Where the details are : *σd* - represents downside risk

These metrics collectively assess whether hybrid portofolios outperform market based portfolios in terms of risk adjuted returns, particularly in emerging market conditions where accounting information provide an informational advantage.

c. Variables and measurement

This research paper integrates market based variables and accounting based variables to evaluate portfolio optimization strategies in Western Balkan stock markets. The variables are grouped into three main categories, market variables, financial statement variables and performance evaluation variables. The first group of variables are derived from stock market data and are primarily used within the framework of Modern Portfolio Theory (MPT) and Capital Asset Pricing Model (CAPM) that we have used within this research paper. For the second group of variables are derived from financial statement, ROA and ROE (Return of assets and return of equity), and the third group are evaluated using multiple risk adjusted perfromance measures.

To evaluate the impact of financial statement indicators on portfolio returns, the following regression model is applied in this research paper:

$$R_{pt} = \alpha + \beta_1 ROA_t + \beta_2 ROE_t + \beta_3 CR_t + \beta_4 QR_t + \beta_5 DE_t + \beta_6 AT_t + \beta_7 IT_t + \beta_8 (R_m - R_f)_t + \epsilon_t$$

Dependent variables is

- ✓ Rpt – Portfolio return Independent variables are
- ✓ ROA = return on assets
- ✓ ROE = return on equity
- ✓ CR = current ratio
- ✓ QR = quick ratio
- ✓ DE = debt-to-equity ratio
- ✓ AT = asset turnover
- ✓ IT = inventory turnover
- ✓ Rm−RfR_m - R_fRm−Rf = market risk premium Error Term
- ✓ Etε – standar eror

Table 1 – Summary of variables

Category	Variables
Market variables	Stock return, market return, risk-free rate, beta
Financial variables	ROA, ROE, current ratio, quick ratio, debt-to- equity, asset turnover, inventory

	turnover
Portfolio variables	Portfolio return, portfolio variance
Performance metrics	Sharpe ratio, Treynor ratio, Sortino ratio

4. Empirical results

a. Joing analysis and results

This research paper present, in this section presents descriptive statistics for the variables included in the econometric model. The sample consist of publicly listed companies from the stock exchanges of Albania, Serbia, North Macedonia, Montenegro and Bosnia and Hercegovina during the period 2015 – 2024. The descriptive statistics provide insight into the distribution and variability of financial indicators and market returns across companies in the Western Balkan region.

Table 2 – Descriptive Statistics of Variables (Western Balkan)

Variable	Mean	Std. Dev.	Min	Max
Portfolio Return (Rp)	0.079	0.138	-0.302	0.396
ROA	0.058	0.053	-0.112	0.214
ROE	0.111	0.098	-0.231	0.371
Current Ratio (CR)	1.74	0.89	0.41	4.53
Quick Ratio (QR)	1.27	0.69	0.29	3.64
Debt-to-Equity (DE)	0.97	0.71	0.1	3.84
Asset Turnover (AT)	0.82	0.48	0.14	2.61
Inventory Turnover (IT)	4.83	2.75	0.91	13.97
Market Risk Premium (Rm − Rf)	0.056	0.121	-0.275	0.338

Author calculation

The average portfolio return across the Western Balkan stock exchanges is approcimately 7.9% reflecting moderate investment performance typical of emerging and fronties markets. Profitability indicators such as ROA and ROE demonstrate moderate variability, indicating differences in operational efficency among companies in the region. Liquidity ratios show relatively higher dispresion, suggesting variations in financial stability and working capital management among companies listed on regional exchanges. Additionally, the relatively high standard deviation of the debt to equity ratio highlights differences in corporae capital structures across companies.

Table 2 - Correlacion matrix

Variable	Rp	ROA	ROE	CR	QR	DE	AT	IT	Rm-Rf
Rp	1								
ROA	0.39	1							
ROE	0.45	0.63	1						
CR	0.18	0.31	0.27	1					
QR	0.16	0.28	0.24	0.72	1				
DE	-0.29	-0.36	-0.39	-0.17	-0.15	1			
AT	0.33	0.41	0.44	0.19	0.16	-0.31	1		
IT	0.21	0.26	0.23	0.12	0.11	-0.09	0.34	1	
Rm-Rf	0.51	0.1	0.12	0.07	0.06	-0.04	0.14	0.09	1

Author calculation

A correlation matric was calculated to assess the relationships between the independent variables and portfolio returns. This analysis alo helps identify potential multicollinearity issues. The results indicate a moderate positive correlation between portfolio returns and profitability indicators, particularly ROE and ROE. This suggests that companies with stronger profitability tend to generate higher stock returns. Additionally, the market risk premium demonstrates a relatively strong positive correlation with portfolio returns, consistent with theoritical predictions of the Capital Asset Pricing Model. The correlations between independent variables remain below commonly accepted multicollinearity thresholds.

Table 3 - Regression results for Western Balkan stock exchanges

Variable	Coefficient	Std. Error	t- statistic	p-value
Constant	0.019	0.008	2.29	0.023
ROA	0.271	0.069	3.91	0
ROE	0.168	0.058	2.89	0.004
Current Ratio	0.038	0.017	2.23	0.027
Quick Ratio	0.026	0.015	1.73	0.086
Debt-to-Equity	-0.071	0.024	-2.95	0.004
Asset Turnover	0.103	0.035	2.94	0.004
Inventory Turnover	0.014	0.006	2.12	0.036
Market Risk Premium	0.498	0.084	5.92	0

Author calculation

Statistic	Value
R^2	0.59
Adjusted R^2	0.56
F-statistic	19.84
Prob (F-statistic)	0
Observations	230

Author calculation

The regression results reveal that several financial statement indicators significantly influence portfolio returns across Western Balkan stock exchanges. ROA and ROE show positive and statistically significant relationshpips with portfolio returns, indicating that firms with stronger financial performance tend to generate higher stock market returns. This finding confirms the importance of profitability indicators in fundamental investment analysis. The current ratio exhibits a positive and statistically significant coefficient, suggesting that companies with stronger liquidity positions are more attractive to investors. The quick ratio shows a positive but weaker relationship with portfolio returns.

The debt to equity ratio has a negative and statistically significant coefficient, implying that higher leverage increases financial risk and negatively affects stock performance in the Western Balkan markets. Both asset turnover and inventory turnover demonstrate positive and statisically significant effects on portfolio returns. This indicates that firms utilizing their resoruces more efficently tend to deliver stronger financial performance and higher stock returns. The market risk premium remains the most influential variables in the model, confirming that systematic market risk plays a major role in determining stock returns. This results is consistent with the predictions of the Capital Asset Pricing Model. Overall, the empirical results indicate that integrating financial statement indicators with market based variables significantly improves the explanatory power of portfolio return models. The regression

results demonstrate that profitabilit, efficiency and liquidity indicators contribute positicely to portofilio performance, while excessive financial leverage negatively affects returns.These findings highlight the importance of combining fundamental financial analysis with portfolio optimization strategies when constructing investment portfolios in emerging markets such as the Western Balkans.

b. Analysis and comparative results between countries

Below is a comparative analysis between the Western Balkan countries – Albania, North Macedonia, Serbia, Montenegro and Bosnia and Hercegovine, consistent with the econometric model and emprical findings in this research papers.

To better understand the role of financial statement indicators in portfolio perfornamce across the Western Balkan region, a comparative analysis was conducted between Albania, Serbia, North Macedonia, Montenegro and Bosnia and Hercegovine. The comparison focuses on average financial indicator, market risk premium and portfolio returns for each country. This analysis highlights structural differences in company perfornamce and financial market development across the region.

Table 4 - Comparative financial and market indicators across Western Balkan countries (2015–2024)

Country	Avg Portfolio Return (Rp)	ROA	ROE	Current Ratio	Debt- to-Equity	Asset Turnover	Market Risk Premium
Albania	0.067	0.051	0.097	1.61	1.05	0.74	0.051
Serbia	0.092	0.066	0.132	1.88	0.89	0.93	0.063
North Macedonia	0.083	0.061	0.118	1.79	0.94	0.85	0.058
Montenegro	0.074	0.054	0.104	1.69	1.02	0.78	0.052
Bosnia and Herzegovina	0.071	0.056	0.109	1.72	0.97	0.81	0.055

Author calculation

The comparative analysis reveal notable diffences in financial performance and investment characteristics among the Western Balkan countries. Among the analyzed markets, Serbia demonstrate the highest average portfolio return 9.2% indicating stronger stock market performance reltaive to other Western Balkan market. This may be attributed to the relatively larger and more active capital market environment in Serbia. North Macedonia shows the second highest portfolio return 8.3% suggesting a relatively stable and moderately performing stock market. Meanwhile, Montenegro and Bosnia and Herzegovina display slightly lower portfolio returns, reflecting smaller and less liquid financial markets. Albania exhibits the lowest average portfolio return 6.7% which may be explained by the limiteed size and lower trading of its stock market. Profitability indicators such as ROA and ROE are highest in Serbia, suggesting that companies listed on the Serbia stock exchange generally exhibit stronger financial performance. Companies in North Macedonia and Bosnia and Herzegovina also demonstrate relatively solid profitability levels while companies in Albania and Montenegro show slightly lower profitability indicators. Liquidity ratio particularly the current ratio, apear relatively similar across countries, ranging from 1.61 in Albania to 1.88 in Serbia, this indicators that most of companies in the region maintaing sufficient levels of short term liquidity to meet their financial obligations. The debt to equity ratio indicates that companies in Albania and Montenegro rely more heavily on debt financing compared to companies in Serbia and North Macedonia. Higher leverage levels may increas financial risk and partially explain the lower stock returns observed in these markets. Asset turnover ration indicate that companies in Serbia operate with higher operational efficiency compared to companies in other Western Balkan markets. Companies in North Macedonia and Bosnia

and Herzegovina demonstrate moderate efficiency levels, while Albania and Montenegro show relatively lower asset utulization rates.

The market risk premium is highest in Serbia 6.3% reflecting greater compensation for systematic risk in the market. North Macedonia and Bosnia and Herzegovina exhibit moderate risk premium, wbile Albania dhe Montenegro demonstrate slightly lower levels. The comparative results suggest that financial market development and companies performance vary significantly across Western Balkan countries. Serbia appears to exhibit the most developed capital market in the region, charaterized by higher profitability, stronger operational efficency and higher portfolio returns. North Macedonia shows relativelty stable financial indicators and moderate investment performance, positioning it as one of the more balanced markets in the region. In contract, Albania and Montenegro face structural limitations related to smaller makret size, lower liquidity and higher leverage among listed companies. These findings highlights the importance of incorporating country spcific financial charactics when constructing diversified portfolios in theWestern Balkan region. Investors seeking regional diversification may benefit from allocating assets multiple markets to balance risk and return characterictics.

Below is a country level regression comparison for the model the we have used in this research paper, but in this part is presented as a panel table. The results compare the impact of financial statement indicators on portfolio returns in Albania, Serbia, North Macedonia, Montenegro and Bosnia and Herzegovina.

Table 5 – Regression results by countries

Variable	Albania	Serbia	North Macedonia	Montenegro	Bosnia & Herzegovina
Constant	0.018	0.024	0.021	0.017	0.019
ROA	0.241**	0.298***	0.276***	0.231**	0.252**
ROE	0.152*	0.184**	0.169**	0.141*	0.158*
Current Ratio	0.034*	0.046**	0.039*	0.031*	0.035*
Quick Ratio	0.022	0.031*	0.027	0.02	0.024
Debt-to-Equity	-0.058**	-0.081***	-0.069**	-0.052*	-0.061**
Asset Turnover	0.087*	0.118**	0.101**	0.082*	0.093*
Inventory Turnover	0.012	0.018*	0.015*	0.011	0.014
Market Risk Premium	0.463***	0.542***	0.501***	0.448***	0.472***
R^2	0.54	0.63	0.59	0.51	0.55
Observations	42	58	47	39	44

Author calculation

Significance levels:

*$\mathbf{p < 0.01}$, $\mathbf{p < 0.05}$, $p < 0.10$

The country level regression analysis reveals important differences in how financial indicators influence portfolio returns across the Western Balkan region. Return of assets (ROA) shows a positive and statistically significant relationship with portfolio returns in all five countries. The strongest effect is observed in Serbia, where the coefficiend is the highest, indicating that profitabilitity plays a particularly important role in epxlaining stock performance in this market. Return on equity (ROE) also demonstrate a positive effect across all markets, althouth its statistical significance is slightly weaker compared to ROA. This suggest that profitability remains one of the most reliable financial indicators for investors across Western Balkan stock exchange. The current ratio exhibits a positive and

significant impact on portfolio returns in most countries, indicating that companies with stronger liquidity positions tend to be perceived as less risky by investors. The quick ratio, however, appears to have a weaker impact across countries, suggesting that broeader liqudity measures such as the current ratio may provide more relevant information for investment decisions in these markets.

The dept to equity ratio demonstrate a negative and statistically significant relatinoship with portfolio returns across all countries. The strongest negative effect is observed in Serbia and North Macedonia, implying that higher financial leverage is associated with greater investment risk and lower stock performance. This finding highlights the importance of maintainging balanced capital structures in emerging markets. Assets turnover shows a positive and statistically significant impact on portfolio returns in most countries, particularly in Serbia and North Macedonia. This suggest that companies capable of utilizing their assets more efficiently tend to generate stronger market performance. Inventory turnover demonstrate weaker significance across countries but remians positively associated with portfolio returns.

The market risk premium remains highly significant in all countries, confiming the central role of systematic market risk in determining stock returns. This results aligns with theoritical predictions deriver from the Capital Asset Pricing Model (CAPM) . Overall, the regression results suggest that financial statement indicators influnce portfolio performance across all Western Balkan marekts, although the magnitude of these effectsvaries by country. Serbia shows the strongest overall model perfomrance (R2-0.63) reflecting a relatively more developed and efficient stock market, North Macedonia also demonstrate strong explanatory power, indicating a balanced relationship between financial indicators and stock returns, Albania ,Montenegro and Bosnia and Herzegovina disply slightly lower explanatory power, which may reflect smaller market size, lower liqudity and limited trading acitivity. These findings suggest that while financial statement analysis is relevant across all Western Balkan markets, itr predictive power tend to increas with the level of market development and financial transparency.

5. Conclusions

This study examined the role of financial statement analysis in enhancing portfolio optimization strategies within the stock market of the Western Balkan region. Using a dataset of publicly listed companies from Albania, Serbia, North Macedonia, Montenegro and Bosnia and Herzegovina over the period 2015 – 2024, the research integrated accounting based financial indicators with market based variables within the frameworks of Modern Portfolio Theory (MPT) and the Capital Asset Pricing Model (CAPM). The empirical findings indicate that financial statement indicators significanlty influence portfolio performance in Western Balkan stock markets. Profitability indicators such as return on assets and return on equity demonstrate strong positive relationship with portfolio returns, suggesting that companies with stronger financial performance tend to deliver higher investment returns. Similarly, efficiency indicators such as asset turnover and inventory turnover also exhibit positive effects on portfolio returns, highlighiting the importance of operational efficiency in determining stock performance. Liquidity indicators, particularly the current ratio, also show a positive relationship whith portfolio returns, indicating that companies with stronger short term financial stability are generally perseived as less risky by investors. In contract, the debt equity ratio exhibits a negative relationship with portfolio returns, suggesting that higher financial leverage increase investment risk and negatively affect stock performance. The results further confirm that the market risk premium remains e key determinant of portfolio return across all markets, consistent with theoritical prediction derived from the Capital Asset Pricin Model. However, the integration of accounting basse indicators significantly imporves the explanatory power of portfolio return models, demonstrating that fundamental financial analysis provides valuable additional insights beyond traditional market based measures. So, the findings sugges that incorporating financial statement indicators into portfolio optimization strategies can enhance investment decision making and improve risk adjusted returns in

emerging financial markets.

6. Policy and practical impications

The results of this study and research paper have important impications for investors, financial analysts and policymakers in the Western Balkan region. For investors and portfolio managers , the finding highlight the importance of integrating financial statement analysis into portfolio construction strategies. Relying solely on historical market data may overlook valuable companies specific information than can improve portfolio performance. By incorporating profitability, liquidity and efficency indicators, investors can identify financial stronger companies and construct more resilient portfolios. For financial analysts, the results emphasize the importance of comprehensive fundamental analysis when evaluating investment opportunitites in emergining markets. Accounting based indicators provide critical instights into companies performance and financial stability, which can help reduce information asymmetry and improve investment recommendations. For policymakers and financial markets regulators, the findings highlight the need to improve financial reporting standards, transparency and information discosure across regional stock exchanges. Enhancing the availability and reliability of financial information can strengthen investor confidence and support the develompent of more efficienc capital markets in the Western Balkans. Future research could extend this study in several ways. First, future studies may incorporate additional financial indicators such as cash flow ratios, market valuation metrics, or corporate governance variables to further improve portfolio optimization models. Second, researchers may apply alternative asset pricing models or machine learning techniques to evaluate whether more advanced analytical approaches can improve the predictive power of portfolio return models. Third, future research may examine the integration of Western Balkan stock markets with global financial markets in order to better understand the role of international capital flows and financial integration in shaping regional investment opportunities.

Finally, comparative studies involving other emerging European markets could provide valuable insights into how financial statement analysis contributes to portfolio optimization in different economic and institutional environments.

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